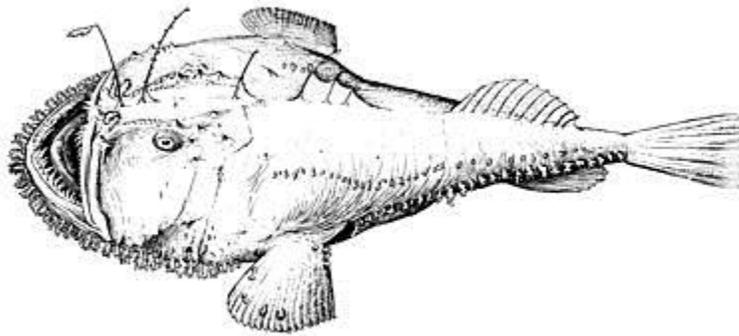


**Monkfish Fishery Management Plan
Framework Adjustment 9**

**Northeast Multispecies Fishery Management Plan
Framework Adjustment 54**

Incorporating Stock Assessment and Fishery Evaluation (SAFE) Report
For the 2013 Fishing Year
and the Environmental Assessment



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

in consultation with
National Marine Fisheries Service

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1.0 Executive Summary

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

This framework action would implement changes to the current DAS declaration regulations and trip limits in the NFMA, and would also modify gillnet gear requirements when on a monkfish DAS in the SMFA.

The primary purpose for this action is to consider changes to vessel fishing declarations requirements and possession limits. This action is needed to reduce operational discards and provide flexibility to vessels fishing in both the monkfish and NE multispecies fisheries.

A secondary purpose of this action is to consider changes to the possession limits to Category F monkfish permits. These vessels comprise the offshore monkfish fishery and travel greater distances to fish. This action is needed to improve flexibility in operations and make the offshore fishery more profitable.

A third purpose of this action is to change the regulations regarding mesh size requirements for standup gillnet gear. This action is needed to allow vessels using this gear to target dogfish and monkfish on the same trip.

Proposed Action

Under the provision of the M-S Act, the Council submits proposed management actions to the Secretary of Commerce for review. The Secretary of Commerce can approve, disapprove, or partially approve the action proposed by the Council. In the following alternative descriptions, measures identified as Preferred Alternatives constitute the Council's proposed management action.

If the Preferred Alternatives identified in this document are adopted, this action would implement a range of measures designed to achieve mortality targets and net benefits from the fishery. Details of the measures summarized below can be found in Section 4.0 .

The Preferred Alternatives include:

- *Modifications to Current Monkfish Days-at-Sea and Trip Limits*
 - *Allow vessels to declare a Northeast Multispecies Day-at-Sea at sea* . The preferred alternative would allow monkfish Category C and D sector vessels fishing on a NE multispecies sector non-DAS trip or under a monkfish-only DAS in the NFMA to declare a NE multispecies Category A DAS while at sea.
 - *Southern Management Area at-sea Monkfish DAS declaration*. The preferred alternative would maintain the current regulation that prohibits the declaration of a monkfish DAS

while at sea in the SFMA. Vessels in the SFMA must continue to start a trip on a monkfish DAS in order to be able to land more than the incidental monkfish possession limit.

- *Modify DAS/Trip Limit Allocation for Category F (offshore) Vessels.* The preferred alternative would maintain the current 1,600 pound per DAS possession limit and would not adjust the DAS allocation for Category F vessels.
- *DAS requirements for RSA vessels when on a monkfish DAS.* The preferred alternative would maintain the current regulation that prohibits the re-declaration of a monkfish DAS to a monkfish RSA DAS while at sea. Vessels must continue to start a trip on a monkfish RSA DAS in order to be able to land more than the monkfish possession limit.
- *Modifications to Monkfish Possession Limits*
 - *Northern Area Monkfish Trip Limit on a NE multispecies and monkfish DAS.* The preferred alternative would eliminate the monkfish trip limit in the NFMA for Category C and D vessels fishing under both a NE multispecies DAS and monkfish DAS.
- *Modifications to gear requirements while on a monkfish DAS*
 - *Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in the SFMA.* The preferred alternative would modify the minimum mesh size allowed for standup gillnet gear in the SFMA when fishing on a monkfish DAS. Vessels fishing on a combined NE multispecies DAS and monkfish DAS in the SFMA would be allowed to use 6.5” minimum mesh standup gillnet gear. Within the Mid-Atlantic Exemption Area, vessels fishing on a monkfish DAS would be allowed to use 5” minimum mesh standup gillnet gear and retain both monkfish and dogfish on the same trip. Within the SNE Dogfish Exemption Area, vessels fishing on a monkfish DAS would be allowed to use 6” minimum mesh standup gillnets and retain both monkfish and dogfish on the same trip during the exemption season. Within the SNE Monkfish and Skate Exemption Area, vessels fishing on a monkfish DAS would be allowed to use 10” minimum mesh gillnets and retain both monkfish and dogfish on the same trip, year round.

Summary of Environmental Consequences

The environmental impacts of all of the alternatives under consideration are described in Section 7.0. Biological impacts are described in Section 7.1, impacts on essential fish habitat are described in Section 7.2, impacts on endangered and other protected species are described in Section 7.3, the economic impacts are described in Section 7.4, and social impacts are described in Section 7.5. Summaries of the impacts of the Preferred Alternatives are provided in the following paragraphs. As required by NEPA, the Preferred Alternatives are compared to the No Action alternative.

Biological Impacts

Allowing monkfish Category C and D sector vessels to declare a NE multispecies DAS at sea in the NFMA would have neutral biological impacts because it would be expected to help the fishery better achieve, but not exceed, the TAL, which has been under-harvested in recent years. The preferred alternative not allowing the declaration of a monkfish DAS at sea in the SFMA would have neutral to low positive impacts on the monkfish stock because it would not increase the ability of the fishery to achieve its TAL, leaving a portion of the TAL unharvested (or potentially discards). Maintaining current trip limit and DAS allocation for Category F vessels would have neutral impacts on monkfish because no change in effort would be expected. Maintaining current restrictions that prohibit the re-declaration from a monkfish DAS to a monkfish RSA DAS while at sea would have neutral to low negative impacts on monkfish because while there would be no expected change in current fishing effort there would also not be a reduction in monkfish discards. Eliminating the trip limit in the NFMA for monkfish Category C and D

vessels fishing on both a NE multispecies and monkfish DAS would have neutral impacts on monkfish because it would be expected to help the fishery better achieve, but not exceed the TAL. Modifying the minimum mesh size requirements for standup gillnet gear in the SFMA would have a low potential to negatively impact monkfish if an increased number of small monkfish were caught and discarded.

Essential Fish Habitat (EFH) Impacts

The preferred alternatives are expected to have neutral to low negative impacts on EFH because the majority would not be expected to increase fishing effort. Under specifications set in Framework Adjustment 8, there would not be an adverse impact to EFH because monkfish and NE multispecies DAS catch limits were not revised, which serve as a restriction on fishing effort in the monkfish fishery. The preferred alternative that eliminates the trip limit on a NE multispecies and monkfish DAS would be expected to have slightly greater impacts to EFH because it has the potential to increase monkfish landings and fishing effort, however, as noted these are constrained by existing catch limits, effort controls, and AMs in both fisheries.

Impacts on Endangered and Other Protected Species

The preferred alternatives are expected to have neutral impacts on protected species, with the exception of the preferred alternative modifying the minimum mesh requirements for standup gillnets on a monkfish DAS in the SFMA. The majority of preferred alternatives would not result in a change in effort pattern and would not be expected to result in additional takes of species that would jeopardize them. The modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in the SFMA would have low negative impacts on protected resources because the use of smaller mesh would potentially have increased negative interactions with protected resources, particularly sturgeon and turtles in the SFMA.

Economic Impacts

Allowing monkfish Category C and D sector vessels to declare a NE multispecies DAS at sea in the NFMA would have neutral to possibly low positive economic impacts because the analysis identified few trips that would have yielded additional monkfish landings had this option been in place. The preferred alternative not allowing the declaration of a monkfish DAS at sea in the SFMA would have neutral economic impacts, assuming other factors external to this action that may influence monkfish landings and revenues remain constant, because it would not increase the ability of the fishery to achieve its TAL. Maintaining current trip limit and DAS allocation for Category F vessels would have neutral economic impacts on monkfish, assuming other factors external to this action that may influence monkfish landings and revenues remain constant, because no change in trip limit or DAS allocation would occur. Maintaining current restrictions that prohibit the re-declaration from a monkfish DAS to a monkfish RSA DAS while at sea would have neutral impacts on monkfish, assuming other factors external to this action that may influence monkfish landings and revenues remain constant, because while there would be no expected change in current fishing effort. Eliminating the trip limit in the NFMA for monkfish Category C and D vessels fishing on both a NE multispecies and monkfish DAS would have low positive to positive economic impacts because based on the analysis, a small number of trips were approaching the existing trip limit and may be able to take advantage of an unlimited possession limit. Modifying the minimum mesh size requirements for standup gillnet gear in the SFMA would have neutral to low positive economic impacts because most gillnet trips under a monkfish-only or combined monkfish/NE multispecies DAS occur in the SFMA, portions of the preferred alternative would apply to vessels with monkfish permits in Categories A and B as well as those with monkfish permits in Categories C and D, and it would provide greater flexibility as to mesh size used.

Social Impacts

The preferred alternatives are expected to have neutral to positive social impacts. Allowing monkfish Category C and D sector vessels to declare a NE multispecies DAS at sea in the NFMA would have low

to positive social impacts because the analysis identified few vessels likely to be impacted economically by this measure. The preferred alternative not allowing the declaration of a monkfish DAS at sea in the SFMA would have neutral social impacts, despite potential negative impacts on a very small number of fishermen, because it would not increase the ability of the fishery to achieve its TAL. Maintaining current trip limit and DAS allocation for Category F vessels would have neutral social impacts on monkfish because no change in trip limit or DAS allocation would occur; therefore monkfish landings and revenues would not be expected to change. Maintaining current restrictions that prohibit the re-declaration from a monkfish DAS to a monkfish RSA DAS while at sea would have neutral impacts on monkfish because there would be no expected change in current fishing effort; therefore monkfish landings and revenues would not be expected to change. Eliminating the trip limit in the NFMA for monkfish Category C and D vessels fishing on both a NE multispecies and monkfish DAS would have positive social impacts because it would increase flexibility. Modifying the minimum mesh size requirements for standup gillnet gear in the SFMA would have positive social impacts because it would slightly increase operational flexibility.

Alternatives to the Proposed Action

If the Proposed Action is based on the Preferred Alternatives there are a number of alternatives that would not be adopted. These alternatives are briefly described below.

- *Modifications to Current Monkfish Days-at-Sea and Trip Limits*
 - *Requirement for vessels with NE multispecies permits to also use a NE multispecies DAS when on a monkfish DAS.* The No Action alternative would not allow monkfish Category C and D sector vessels fishing on a NE multispecies sector non-DAS trip or under a monkfish-only DAS in the NFMA to declare a NE multispecies Category A DAS while at sea. Option 2 would allow both sector and common pool vessels to declare a NE multispecies DAS while at sea.
 - *Southern Management Area at-sea Monkfish DAS declaration.* Option 2 would allow the declaration of a monkfish DAS while at sea in the SFMA.
 - *Modify DAS/Trip Limit Allocation for Category F (offshore) Vessels.* Options 2 and 3 would increase the trip limit and adjust the monkfish DAS allocation for Category F, respectively.
 - *DAS requirements for RSA vessels when on a monkfish DAS.* Option 2 would allow the re-declaration of a monkfish DAS to a monkfish RSA DAS while at sea. Vessels must continue to start a trip on a monkfish RSA DAS in order to be able to land more than the monkfish possession limit.
- *Modifications to Monkfish Possession Limits*
 - *Northern Area Monkfish Trip Limit on a NE multispecies and monkfish DAS.* The preferred alternative would eliminate the monkfish trip limit in the NFMA for Category C and D vessels fishing under both a NE multispecies DAS and monkfish DAS.
- *Modifications to gear requirements while on a monkfish DAS*
 - *Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in the SFMA.* The preferred alternative would modify the minimum mesh size allowed for standup gillnet gear in the SFMA when fishing on a monkfish DAS. Vessels fishing on a combined NE multispecies DAS and monkfish DAS in the SFMA to use 6.5” minimum mesh standup gillnet gear. Within the Mid-Atlantic Exemption Area, vessels fishing on a monkfish DAS would be allowed to use 5” minimum mesh standup gillnet gear and retain both monkfish and dogfish on the same trip. Within the SNE Dogfish Exemption Area, vessels fishing on a monkfish DAS would be allowed to use 6” minimum mesh standup gillnets and retain both monkfish and dogfish on the same trip during the

exemption season. Within the SNE Monkfish and Skate Exemption Area, vessels fishing on a monkfish DAS would be allowed to use 10” minimum mesh gillnets and retain both monkfish and dogfish on the same trip, year round.

Impacts of Alternatives to the Proposed Action

Biological Impacts

The No Action alternative, maintaining the regulation that a NE multispecies DAS must be declared prior to leaving the dock, would not increase flexibility for vessels to achieve a higher portion of the TAL resulting in neutral to low positive impacts on the monkfish stock. Option 2, that would allow monkfish Category C and D common pool and sector vessels to declare a NE multispecies DAS at sea in the NFMA would have neutral biological impacts because it would be expected to help the fishery better achieve, but not exceed, the TAL, which has been under-harvested in recent years. Allowing the declaration of a monkfish DAS at sea in the SFMA would have neutral impacts on the monkfish stock because it would be expected to help the fishery better achieve, but not exceed, the TAL. Modifying the trip limit and/or the DAS allocation for Category F vessels would have negligible impacts on monkfish because the DAS allocation would decrease if the trip limit was increased roughly maintaining current effort levels. Allowing the re-declaration from a monkfish DAS to a monkfish RSA DAS while at sea would have neutral impacts on monkfish because despite reducing discards, the number of RSA DAS would not be increased. Maintaining the trip limit in the NFMA for monkfish Category C and D vessels fishing on both a NE multispecies and monkfish DAS would have neutral impacts on monkfish because the majority of vessels are not restricted by the incidental trip limit. Modifying the minimum mesh size requirements for standup gillnet gear in the NFMA, or in both the NFMA and SFMA would have a low potential to negatively impact monkfish if an increased number of small monkfish were caught and discarded. Maintaining the requirement for gillnet vessels to use 10” or greater mesh while on a monkfish DAS, under No Action, would have negligible impacts because no change in fishing patterns would be expected.

Essential Fish Habitat (EFH) Impacts

The No Action alternative, maintaining the regulation that a NE multispecies DAS must be declared prior to leaving the dock, would have neutral impacts on EFH because the monkfish and NE multispecies DAS catch limits would serve as a restraint on fishing effort. Option 2 that would allow monkfish Category C and D common pool and sector vessels to declare a NE multispecies DAS at sea in the NFMA would also have neutral impacts on EFH for the same reason. Allowing the declaration of a monkfish DAS at sea in the SFMA would have neutral impacts on EFH because fishing effort would be restricted by the specifications set in FW8, along with Accountability Measures. Modifying the trip limit and/or the DAS allocation for Category F vessels and the alternative that would allow the re-declaration from a monkfish DAS to a monkfish RSA DAS while at sea would have neutral impacts on EFH because fishing effort would be restricted by the specifications set in FW8 and with Accountability Measures. Maintaining the trip limit in the NFMA for monkfish Category C and D vessels fishing on both a NE multispecies and monkfish DAS would have neutral impacts on EFH because the NFMA TAL and ACT, and monkfish and NE multispecies DAS catch limits would not change, serving as a restraint along with Accountability Measures. Modifying the minimum mesh size requirements for standup gillnet gear in the NFMA, or in both the NFMA and SFMA would have neutral impacts on EFH because a change in mesh size would not affect the vulnerability of EFH to gillnet gear.

Impacts on Endangered and Other Protected Species

The No Action alternative, maintaining the regulation that a NE multispecies DAS must be declared prior to leaving the dock, and Option 2 that would allow common pool and sector vessels to declare a NE multispecies DAS at sea in the NFMA, would have neutral impacts on protected resources because neither alternatives would be expected to result in additional takes of species that would jeopardize them.

Allowing the declaration of a monkfish DAS at sea in the SFMA would have neutral impacts on protected resources because it would not be expected to introduce any new risks or additional takes that have not already been considered and/or authorized by NMFS to date. Modifying the trip limit and/or the DAS allocation for Category F vessels would have neutral impacts on protected resources because it would not be expected to introduce any new risks or additional takes that have not already been considered and/or authorized by NMFS to date. Allowing the re-declaration from a monkfish DAS to a monkfish RSA DAS while at sea would have neutral impacts on protected resources because it would not modify expected interactions of monkfish or groundfish gear with protected resources and therefore would not introduce any new risks or additional takes that have not already been considered and/or authorized by NMFS to date. Maintaining the trip limit in the NFMA for monkfish Category C and D vessels fishing on both a NE multispecies and monkfish DAS would have neutral impacts on protected species because it would not change fishing opportunities and therefore would not be expected to result in additional takes of species that would jeopardize them. Modifying the minimum mesh size requirements for standup gillnet gear in the NFMA, or in both the NFMA and SFMA, would have low negative impacts on protected resources because the use of smaller mesh would potentially have increased negative interactions with protected resources. Maintaining the requirement for gillnet vessels to use 10" or greater mesh while on a monkfish DAS, under No Action, would have neutral impacts because no change in fishing patterns would be expected, and therefore no additional takes of species would occur that would jeopardize them.

Economic Impacts

The No Action alternative, maintaining the regulation that a NE multispecies DAS must be declared prior to leaving the dock, would have neutral economic impacts, assuming other factors external to this action that may influence monkfish landings and revenues remain constant. Option 2, that would allow monkfish Category C and D common pool and sector vessels to declare a NE multispecies DAS at sea in the NFMA would have neutral, but possibly low positive, economic impacts because the analysis indicated few trips, if any, that would have yielded additional monkfish landings in recent fishing years had this been in place. Allowing the declaration of a monkfish DAS at sea in the SFMA would have neutral, but possibly low positive, economic impacts because the analysis indicated a low number of trips that would have benefited from this alternative. Modifying the trip limit and/or the DAS allocation for Category F vessels would have uncertain economic impacts because the DAS calculation chosen would determine the direction and magnitude of impacts. Allowing the re-declaration from a monkfish DAS to a monkfish RSA DAS while at sea would have uncertain economic impacts because any economic benefits gained by vessels enrolled in the RSA program must be weighed against the possible negative impacts of decreased participation in the RSA program. Maintaining the trip limit in the NFMA for monkfish Category C and D vessels fishing on both a NE multispecies and monkfish DAS would have neutral economic impacts, assuming other factors external to this action that may influence monkfish landings and revenues remain constant. Modifying the minimum mesh size requirements for standup gillnet gear in the NFMA, or in both the NFMA and SFMA would have neutral to low positive economic impacts because expected positive economic impacts of increased profits to gillnet vessels, owner and crew, are expected to offset or slightly exceed any possible negative impacts. Maintaining the requirement for gillnet vessels to use 10" or greater mesh while on a monkfish DAS, under No Action, would have negligible impacts because no change in fishing patterns would be expected.

Social Impacts

The No Action alternative, maintaining the regulation that a NE multispecies DAS must be declared prior to leaving the dock, would have neutral social impacts given that proposed changes seem to impact very few vessels. Option 2, that would allow monkfish Category C and D common pool and sector vessels to declare a NE multispecies DAS at sea in the NFMA would have low to positive social impacts because of the extremely small number of vessels likely to be impacted economically by the alternative. Allowing the declaration of a monkfish DAS at sea in the SFMA would have low positive social impacts because it would provide more flexibility to some active Category C and D vessels. Modifying the trip limit and/or

the DAS allocation for Category F vessels would have neutral social impacts because the analysis indicated that very few vessels were likely to be impacted by the alternatives. Allowing the re-declaration from a monkfish DAS to a monkfish RSA DAS while at sea would have low positive impacts because of limited distribution of monkfish RSA DAS among communities. Maintaining the trip limit in the NFMA for monkfish Category C and D vessels fishing on both a NE multispecies and monkfish DAS would have neutral impacts because this would maintain current regulations and therefore monkfish landings and revenues would not be expected to change. Modifying the minimum mesh size requirements for standup gillnet gear in the NFMA, or in both the NFMA and SFMA would have slightly low positive impacts resulting from slightly increased operational flexibility. Maintaining the requirement for gillnet vessels to use 10" or greater mesh while on a monkfish DAS, under No Action, would have neutral impacts because no change in fishing patterns would be expected.

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2.0 Contents

2.1 Table of Contents

1.0	Executive Summary	3
2.0	Contents	11
2.1	Table of Contents	11
2.2	List of Tables	18
2.3	List of Figures	24
2.4	List of Appendices	26
2.5	List of Acronyms	27
3.0	Background, Purpose and Need	30
3.1	Background and Introduction	30
3.1.1	History of the Fishery Management Plan	30
3.1.1.2	2013 Emergency Action	33
3.1.1.3	Standardized Bycatch Reporting Methodology (SBRM) Omnibus Amendment (Amendment 3)	33
3.1.1.4	Essential Fish Habitat Omnibus Amendment 2 (Monkfish Amendment 4)	33
3.1.2	Other Fishery Management Plans Affecting the Monkfish Fishery	34
3.1.2.1	Multispecies FMP	34
3.1.2.2	Atlantic Sea Scallop FMP	35
3.1.2.3	Northeast Skate Complex FMP	36
3.1.2.4	Spiny Dogfish FMP	37
3.2	Purpose and Need	37
3.3	Goals and Objectives	38
4.0	Alternatives under Consideration	39
4.1	Modifications to Current Monkfish Days-at-Sea and Trip Limits	39
4.1.1	Allow vessels to declare a Northeast Multispecies Day-at-Sea at sea	39
4.1.1.1	Option 1: No Action	39
4.1.1.2	Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area	39
4.1.1.3	Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category C, and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (<i>Preferred Alternative</i>)	40
4.1.2.1	Option 1: No Action (<i>Preferred Alternative</i>)	40
4.1.2.2	Option 2: Allow at-sea Monkfish DAS declaration in the Southern Fishery Management Area	40
4.1.3	Modify DAS/Trip Limit Allocation for Category F (offshore) Vessels	41
4.1.3.1	Option 1: No Action (<i>Preferred Alternative</i>)	41
4.1.3.2	Option 2: Increase the trip limit for Category F vessels	41
4.1.4	DAS requirements for RSA vessels when on a monkfish DAS	43
4.1.4.1	Option 1: No Action (<i>Preferred Alternative</i>)	43
4.1.4.2	Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea	43
4.2	Modifications to Monkfish Possession Limits	43
4.2.1	Northern Area Monkfish Trip Limit on a NE multispecies and monkfish DAS	43
4.2.1.1	Option 1: No Action	43

4.2.1.2	Option 2: Eliminate the Trip Limit on a NE multispecies DAS and monkfish DAS (<i>Preferred Alternative</i>).....	43
4.3	Modifications to Gear Requirements while on a Monkfish DAS.....	45
4.3.1	Modification to mesh size requirements on a monkfish DAS.....	45
4.3.1.1	Option 1: No Action.....	45
4.3.1.2	Option 2: Allow the use of 5-7” mesh in standup gillnet on a monkfish DAS....	46
5.0	Considered but Rejected.....	49
5.1	Option 1: Allow all limited access Monkfish Category C, D, and H vessels to declare a NE multispecies DAS at sea in both the NFMA and SFMA.....	49
5.2	Option 2: Allow only groundfish sector vessels holding limited access Monkfish Category C, D, and H permits to declare a NE multispecies DAS at sea in both the NFMA and SFMA 49	
5.3	Option 2: Increase monkfish-only DAS based on higher groundfish common pool DAS counting.....	49
6.0	Affected Environment (SAFE Report for 2014).....	51
6.1	Biological Environment and Stock Status.....	51
6.1.1	Monkfish Life History.....	51
6.1.2	Monkfish Stock Status.....	51
6.1.3	Bycatch of Non-target Species in the Fishery.....	52
6.2	Protected Resources (ESA Listed Species and MMPA Protected Species).....	54
6.2.1	Species Present in the Area.....	54
6.2.2	Species Not Likely to be Affected.....	56
6.2.3	Species Potentially Affected.....	57
6.2.3.1	Sea Turtles.....	57
6.2.3.2	Large Cetaceans.....	58
6.2.3.3	Small Cetaceans.....	61
6.2.3.4	Pinnipeds.....	65
6.2.3.5	Atlantic Sturgeon DPSs.....	66
6.2.4	Interactions between Gear and Protected Resources.....	70
6.2.4.1	Marine Mammals.....	70
6.2.4.2	Large Cetaceans.....	71
6.2.4.2.1	Small Cetaceans and Pinnipeds.....	75
6.2.4.2.2	Sea Turtles.....	84
6.2.4.2.3	Atlantic Sturgeon.....	85
6.2.4.3	Atlantic Salmon.....	87
6.3	Physical and Biological Environment.....	87
6.3.1	Fishing Effects on EFH.....	88
6.3.2	Essential Fish Habitat.....	88
6.4	Human Environment, Vessels, Ports and Communities.....	94
6.4.1	Vessels and Fishery Sectors.....	94
6.4.1.1	Permits.....	94
6.4.1.2	Landings and Revenues.....	96
6.4.1.3	Days-at-Sea (DAS).....	109
6.4.2	Ports and communities.....	112
7.0	Environmental Consequences of the Alternatives.....	123

7.1	Biological Impacts of Alternatives on Monkfish, Non-Target Species and Protected Species	123
7.1.1	Modifications to current DAS/Trip Limit system.....	123
7.1.1.1	Allow vessels to declare a Northeast Multispecies DAS at sea.....	123
7.1.1.1.1	Option 1: No Action.....	123
7.1.1.1.2	Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area.....	128
7.1.1.1.3	Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category D and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (<i>Preferred Alternative</i>)	130
7.1.1.2	Southern Management Area at-sea Monkfish DAS declaration.....	131
7.1.1.2.1	Option 1: No Action (<i>Preferred Alternative</i>).....	131
7.1.1.2.2	Option 2: Allow at-sea Monkfish DAS declaration in the SFMA.....	135
7.1.1.4.1	Option 1: No Action.....	139
7.1.1.4.2	Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea.....	139
7.1.2	Modifications to Monkfish Possession Limits.....	140
7.1.2.1	Northern Area Monkfish Trip Limit on a NE multispecies and monkfish DAS.....	140
7.1.2.1.1	Option 1: No Action.....	140
7.1.2.1.2	Option 2: Eliminate the trip limit on a NE multispecies and monkfish DAS (<i>Preferred Alternative</i>).....	141
7.1.3	Modifications to gear requirements while on a Monkfish DAS.....	142
7.1.3.1	Modification to mesh size requirements on monkfish DAS.....	142
7.1.3.1.1	Option 1: No Action.....	142
7.1.3.1.2	Option 2: Allow the use of 5-7” mesh in standup gillnet on monkfish-only DAS.....	142
7.1.3.1.3	Option 3: Allow the use of 5-7” mesh standup gillnet on a monkfish DAS in NFMA.....	146
7.1.3.1.4	Option 4: Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in SFMA (<i>Preferred Alternative</i>).....	146
7.2	Essential Fish Habitat Impacts.....	148
7.2.1	Modifications to current DAS/Trip Limit system.....	148
7.2.1.1	Requirement for vessels with groundfish permits to also use a NE multispecies DAS when on a monkfish DAS.....	148
7.2.1.1.1	Option 1: No Action.....	148
7.2.1.1.2	Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area.....	148
7.2.1.1.3	Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category D and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (<i>Preferred Alternative</i>)	148
7.2.1.2	Southern Fishery Management Area at-sea Monkfish DAS declaration.....	149
7.2.1.2.1	Option 1: No Action (<i>Preferred Alternative</i>).....	149
7.2.1.2.2	Option 2: Allow at-sea Monkfish DAS declaration in the SFMA.....	149
7.2.1.3	Modify DAS/trip limit allocation for Category F (offshore) vessels.....	149
7.2.1.3.1	Option 1: No Action (<i>Preferred Alternative</i>).....	149
7.2.1.3.2	Option 2: Increase the trip limit for Category F vessels.....	150

7.2.1.3.3	Option 3: Adjust monkfish DAS allocations for Category F vessels	150
7.2.1.4	DAS requirements for RSA vessels when on a monkfish DAS	150
7.2.1.4.1	Option 1: No Action (<i>Preferred Alternative</i>).....	150
7.2.1.4.2	Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea.....	150
7.2.2	Modifications to Monkfish Possession Limits.....	151
7.2.2.1	Northern Area Monkfish Trip Limit on a NE multispecies and monkfish DAS	151
7.2.2.1.1	Option 1: No Action.....	151
7.2.2.1.2	Option 2: Eliminate the trip limit on a NE multispecies and monkfish DAS (<i>Preferred Alternative</i>).....	151
7.2.3	Modifications to gear requirements while on a Monkfish DAS	152
7.2.3.1	Modification to mesh size requirements on monkfish only DAS.....	152
7.2.3.1.1	Option 1: No Action.....	152
7.2.3.1.2	Option 2: Allow the use of 5-7” mesh in standup gillnet on monkfish-only DAS	152
7.2.3.1.3	Option 3: Allow the use of 5-7” mesh in standup gillnet on monkfish DAS in NFMA	152
7.2.3.1.4	Option 4: Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in SFMA (<i>Preferred Alternative</i>).....	152
7.3	Impacts on Endangered and Other Protected Species.....	153
7.3.1	Modifications to current DAS/Trip Limit system.....	153
7.3.1.1	Requirement for vessels with groundfish permits to also use a NE multispecies DAS when on a monkfish DAS	153
7.3.1.1.1	Option 1: No Action.....	153
7.3.1.1.2	Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area.....	155
7.3.1.1.3	Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category D and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (<i>Preferred Alternative</i>)	156
7.3.1.2	Southern Management Area at-sea Monkfish DAS declaration.....	156
7.3.1.2.1	Option 1: No Action (<i>Preferred Alternative</i>).....	156
7.3.1.2.2	Option 2: Allow at-sea Monkfish DAS declaration in the SFMA.....	156
7.3.1.3	Modify DAS/trip limit allocation for Category F (offshore) vessels.....	157
7.3.1.3.1	Option 1: No Action (<i>Preferred Alternative</i>).....	157
7.3.1.3.2	Option 2: Increase the trip limit for Category F vessels	157
7.3.1.4	DAS requirements for RSA vessels when on a monkfish DAS	159
7.3.1.4.1	Option 1: No Action (<i>Preferred Alternative</i>).....	159
7.3.1.4.2	Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea.....	160
7.3.2	Modifications to Monkfish Possession Limits.....	160
7.3.2.1	Northern Area Monkfish Trip Limit on a NE multispecies DAS	160
7.3.2.1.1	Option 1: No Action.....	160
7.3.2.1.2	Option 2: Eliminate the trip limit on a NE multispecies and Monkfish DAS (<i>Preferred Alternative</i>).....	160
7.3.3	Modifications to gear requirements while on a Monkfish DAS	161
7.3.3.1	Modification to mesh size requirements on monkfish DAS.....	161

7.3.3.1.1	Option 1: No Action.....	161
7.3.3.1.2	Option 2: Allow the use of 5-7” mesh in standup gillnet on monkfish-only DAS 161	161
7.3.3.1.3	Option 3: Allow the use of 5-7” mesh in standup gillnet on monkfish DAS in NFMA	162
7.3.3.1.4	Option 4: Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in SFMA (<i>Preferred Alternative</i>).....	162
7.4	Economic Impacts.....	164
7.4.1	Modifications to current DAS/Trip Limit system.....	165
7.4.1.1	Requirement for vessels with groundfish permits to also use a NE multispecies DAS when on a monkfish DAS	166
7.4.1.1.1	Option 1: No Action.....	166
7.4.1.1.2	Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area.....	167
7.4.1.1.3	Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category D and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (<i>Preferred Alternative</i>)	171
7.4.1.4.1	Option 1: No Action (<i>Preferred Alternative</i>).....	180
7.4.1.4.2	Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea.....	180
7.4.2	Modifications to Monkfish Possession Limits.....	184
7.4.2.1	Northern Area Monkfish Trip Limit on a NE multispecies DAS.....	184
7.4.2.1.1	Option 1: No Action.....	184
7.4.2.1.2	Option 2: Eliminate the trip limit on a NE multispecies DAS and monkfish DAS (<i>Preferred Alternative</i>).....	185
7.4.3	Modifications to gear requirements while on a Monkfish DAS.....	188
7.4.3.1	Modification to mesh size requirements on monkfish only DAS.....	188
7.4.3.1.1	Option 1: No Action.....	189
7.4.3.1.2	Option 2: Allow the use of 5”-7” mesh in standup gillnet on a monkfish DAS 198	198
7.4.3.1.3	Option 3: Allow the use of 5-7” mesh in standup gillnet on a monkfish DAS in NFMA	204
7.4.3.1.4	Option 4: Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in the SFMA (<i>Preferred Alternative</i>).....	207
7.5	Social Impacts.....	221
7.5.1	Modifications to current Days-at-Sea and Trip Limits.....	222
7.5.1.1	Allow vessels to declare a Northeast Multispecies Day-at-Sea at sea.....	222
7.5.1.1.1	Option 1: No Action.....	222
7.5.1.1.2	Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area.....	222
7.5.1.1.3	Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category C and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (<i>Preferred Alternative</i>)	224
7.5.1.2	Southern Fishery Management Area at-sea Monkfish DAS declaration.....	225
7.5.1.2.1	Option 1: No Action (<i>Preferred Alternative</i>).....	225

7.5.1.2.2	Option 2: Allow at-sea Monkfish DAS declaration in the Southern Fishery Management Area.....	225
7.5.1.3	Modify DAS/trip limit allocation for Category F (offshore) vessels.....	226
7.5.1.3.1	Option 1: No Action (<i>Preferred Alternative</i>).....	226
7.5.1.3.2	Option 2: Increase the trip limit for Category F vessels.....	227
7.5.1.3.3	Option 3: Adjust monkfish DAS allocations for Category F vessels.....	227
7.5.1.4	DAS requirements for RSA vessels when on a monkfish DAS.....	228
7.5.1.4.1	Option 1: No Action (<i>Preferred Alternative</i>).....	228
7.5.1.4.2	Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea.....	228
7.5.2	Modifications to Monkfish Possession Limits.....	229
7.5.2.1	Northern Area Monkfish Trip Limit on a NE multispecies DAS and monkfish DAS.....	229
7.5.2.1.1	Option 1: No Action.....	229
7.5.2.1.2	Option 2: Eliminate the trip limit on a NE multispecies DAS and monkfish DAS (<i>Preferred Alternative</i>).....	229
7.5.3	Modifications to gear requirements while on a Monkfish DAS.....	230
7.5.3.1	Modification to mesh size requirements on a monkfish DAS.....	231
7.5.3.1.1	Option 1: No Action.....	231
7.5.3.1.2	Option 2: Allow the use of 5-7” mesh in standup gillnet on a monkfish DAS.....	231
7.5.3.1.3	Option 3: Allow the use of 5-7” mesh in standup gillnet on a monkfish DAS in NFMA.....	231
7.5.3.1.4	Option 4: Allow the use of 5-7” mesh in standup gillnet on a monkfish DAS in SFMA (<i>Preferred Alternative</i>).....	231
7.6	Cumulative Effects Analysis.....	232
7.6.1	Introduction.....	232
7.6.1.1	Valued Ecosystem Components (VEC).....	232
7.6.1.2	Evaluation Criteria.....	233
7.6.2	Past, Present and Reasonably Foreseeable Future Actions.....	234
7.6.3	Baseline Conditions for Resources and Human Communities.....	245
7.6.4	Summary of the Impacts from the Preferred Alternatives.....	245
7.6.5	Cumulative Effects Summary.....	246
8.0	Consistency with Applicable Laws.....	250
8.1	Magnuson-Stevens Fishery Conservation and Management Act (MSA).....	250
8.2	National Environmental Policy Act (NEPA).....	257
8.3	Endangered Species Act (ESA).....	265
8.4	Marine Mammal Protection Act (MMPA).....	266
8.5	Paperwork Reduction Act (PRA).....	266
8.6	Coastal Zone Management Act (CZMA).....	266
8.7	Data Quality Act (DQA).....	267
8.8	Executive Order 13132 (Federalism).....	269
8.9	Executive Order 13158 (Marine Protected Areas).....	269
8.10	Administrative Procedure Act (APA).....	269
8.11	Regulatory Impact Review and Initial Regulatory Flexibility Analysis (EO 12866 and IRFA).....	270
8.11.1	Determination of significance under E.O. 12866.....	270

8.11.1.1	Objectives	270
8.11.1.2	Description	270
8.11.1.3	Problem Statement	271
8.11.1.4	Analysis of Alternatives.....	271
8.11.1.5	Summary of Analysis for the Proposed Action	297
8.11.1.6	Determination of Significance	298
8.11.2	Initial Regulatory Flexibility Analysis (IRFA).....	298
8.11.2.1	Introduction.....	298
8.11.2.2	Description of reasons why action by the Agency is being considered.....	299
8.11.2.3	Statement of the objectives of, and legal basis for, the proposed rule.....	299
8.11.2.4	Description and estimate of the number of small entities to which the proposed rule will apply	299
9.0	References.....	307

2.2 List of Tables

Table 1 - Purpose and need for Framework 9.....	38
Table 2- Monkfish DAS Allocation and Potential Maximum Monkfish Landings in a fishing year from the Three Proposed Trip Limit Options (Option 2) Applied to the Current DAS Allocation Formula (Option 3, Sub-option 1).....	42
Table 3 - Monkfish DAS Allocation and Potential Maximum Monkfish Landings in a fishing year from the Three Proposed Trip Limit Options (Option 2) Applied to an Alternative DAS Allocation Formula (Option 3, Sub-option 2).....	42
Table 4- Current incidental monkfish landing limits when not on any DAS	44
Table 5- Incidental monkfish trip limits while on a NE multispecies DAS in the NFMA.....	44
Table 6-Possession limits when on a monkfish DAS in the NFMA.....	44
Table 7- Monkfish possession limits while on a NE multispecies DAS and a monkfish DAS....	45
Table 8 - Summary of proposed modifications to minimum mesh requirements for standup gillnet in SFMA	47
Table 9- Monkfish reference points and stock status from the 2013 Monkfish Operational Assessment.....	51
Table 10 - Current status of groundfish stocks for fishing year 2014 managed under the Northeast Multispecies FMP (GB = Georges Bank.....	53
Table 11 - Skate discard rates on observed tows for vessels using large mesh trawl and gillnets	54
Table 12 - Total skate incidental landings (whole skate and wings in lbs. live weight) from directed monkfish trips by gear type for FYs 2011 and 2012.....	54
Table 13 - Species Protected under the Endangered Species Act and/or Marine Mammal Protection Act that may occur in the operations area of the monkfish fishery.....	55
Table 14 - Species of large whales occurring in the affected area of the monkfish fishery	59
Table 15 - Large cetacean occurrence in the GOM, GB, SNE, and Mid-Atlantic sub-regions of the monkfish fishery	59
Table 16 - Small cetacean species that occur in the affected environment of the monkfish fishery	62
Table 17 - Small cetacean occurrence in the Gulf of Maine (GOM), Georges Bank (GB), Southern New England (SNE), and Mid-Atlantic sub-regions of the monkfish fishery ¹	63
Table 18 - Pinniped species that occur in the affected environment of the monkfish fishery	65
Table 19 - Pinniped occurrence in the Gulf of Maine (GOM), Georges Bank (GB), Southern New England (SNE), and Mid-Atlantic sub-regions of the monkfish fishery.....	66
Table 20 - Descriptions of the Tier 2 Fishery Classification Categories (50 CFR 229.2).....	70
Table 21- Summary of confirmed serious injury or mortality to fin, minke, humpback, sei, and North Atlantic right whales from 2009-2013 due to fisheries entanglements. ¹	73
Table 22 - Summary of gear modification requirements and restrictions for the Northeast and Mid-Atlantic Gillnet Fisheries under the Atlantic Large Whale Take Reduction Plan.....	74
Table 23 - Northeast and Mid-Atlantic Gillnet Management Areas under the Atlantic Large Whale Take Reduction Plan.....	75
Table 24 - Small cetacean and pinniped species observed from 2008-2012 seriously injured and/or killed by Category I or II sink gillnet or bottom trawl fisheries in the affected environment of the monkfish fishery.....	77
Table 25 - Mid-Atlantic trawl bycatch rates (Warden 2011a).....	85

Table 26 - EFH descriptions for all benthic life stages of federally-managed species in the U.S. Northeast Shelf Ecosystem with EFH vulnerable to bottom tending gear (Stevenson <i>et al.</i> 2004) [GOM = Gulf of Maine, GB = Georges Bank, SNE = Southern New England]	89
Table 27 - Number and percent of monkfish limited access vessels also issued a limited access permit in other fisheries in 2014, by permit category	95
Table 28 - Monkfish open-access (Category E) permits issued each year since implementation of the FMP since 1999.	96
Table 29 - Monkfish landings by area, gear and month for FY2014 (converted to live weight) .	98
Table 30- Monkfish landings by management area FY1999 - 2014	99
Table 31 - FY2014 monkfish landings from dealer reports, showing live weight (top) and landed weights (bottom)	100
Table 32 - Total monkfish landings (landed weight) and revenues, 1995-2014	101
Table 33 - Total monkfish landings (landed weight), 2009-2014, by state	103
Table 34 - Monkfish landings, 2006-2014, as a percentage of total landings by permit category	104
Table 35 - Monkfish revenues, 2006-2014, as a percentage of total revenues by permit category	105
Table 36 - Monkfish landings, 2006-2014, as a percentage of total landings by vessel length .	106
Table 37 - Monkfish revenues, 2006-2014, as a percentage of total revenues by vessel length	107
Table 38 - Landings of monkfish and other species, 2006-2014, as a percent of total landings	108
Table 39 - Revenues of monkfish and other species, 2006-2012, as a percent of total revenues	109
Table 40 - Monkfish DAS usage, FY 2014	111
Table 41 - Monkfish-only, monkfish/multispecies and monkfish/scallop DAS usage by active vessels by area, FY 2014	111
Table 42 - Monkfish permits by port, FY 2014	118
Table 43 - FY 2012 monkfish landings by primary port (excluding Barnegat Light, NJ) and state, by gear.....	119
Table 44 - Monkfish landing and revenues for monkfish primary ports, in FY 2010-2012.....	120
Table 45 – Monkfish landing and revenues for monkfish secondary ports in FY 2010-2012 ...	121
Table 46 - Monkfish revenues, FY 2006-2012, as a percentage of total revenues by port	122
Table 47 - NFMA target monkfish TALs, trip limits, DAS allocations, and landings (FY 2004 - 2014).	124
Table 48 - NFMA monkfish total landings in FY 2014 (May - March 2014).....	124
Table 49 - NFMA DAS usage between FY2009 and FY 2014	125
Table 50 - SFMA target monkfish TALs, trip limits, DAS allocations and landings (FY 2000-2014)	131
Table 51 - SFMA monkfish total landings in FY 2014 (May-March 2014)	131
Table 52 - SFMA Monkfish DAS usage between FY 2009 and FY 2014	133
Table 53 – Number of trips from VTR data and the observer database identified as having used more than 1 gillnet mesh size when landing monkfish.....	143
Table 54 - Summary of spiny dogfish landings relative to the quota(s) for fishing years 2000-2012 from MAFMC 2014.....	145
Table 55- Observed standup gillnet (4.5' to 7.5" mesh) from the NFMA and SFMA between 2000 and 2013.....	146
Table 56- Average monkfish ex-vessel price per landed pound, dealer data, fishing years 2009-2013.....	164

Table 57- Number of vessels with monkfish landings >0lbs., by monkfish permit category and fishing year.....	164
Table 58- Monkfish landings and percent of all species landings derived from monkfish by permit category.	165
Table 59- Monkfish and percent of all species revenue derived from monkfish by permit category.....	165
Table 60- Monkfish daily trip limits under different DAS programs.	167
Table 61- Number of monkfish Category C and D Vessels with at least one sector non-DAS trip of 41-50 lbs. monkfish t.w. per DAS, fishing years 2012-2013.	169
Table 62- Number of Category C and D monkfish permits that took at least one NE multispecies DAS trip in the NFMA, fishing years 2012-2013.....	170
Table 63- Monkfish trip limits for vessels fishing in the SFMA on a NE multispecies DAS and trip limit fishing on a monkfish DAS, as well as the potential gain from switching.....	171
Table 64- Number of monkfish permit Category C and D vessels that had at least one trip of 41-50 lbs. and 1-50 lbs. monkfish tail weight per DAS while using non-trawl gear in the SFMA, fishing under a NE Multispecies only DAS	173
Table 65- Number of monkfish permit Category C and D vessels that had a least one trip of >290-300 lbs. monkfish tail weight per DAS while using trawl gear in the SFMA, fishing under a NE Multispecies DAS, but not a monkfish DAS.....	174
Table 66- Trips taken in the SFMA by monkfish permit Category C and D vessels fishing with non-trawl gear while under a monkfish DAS, fishing years 2009-2013.	176
Table 67- Trips taken in the SFMA by monkfish permit Category C and D vessels fishing with trawl gear while under a monkfish DAS, fishing years 2009-2013.....	177
Table 68- Number of non-RSA trips using monkfish DAS by vessels enrolled in the RSA program, fishing years 2009-2013.	182
Table 69- Number of RSA trips by monkfish permit Category A, B, C, and D vessels, fishing years 2009-2013.....	183
Table 70- Monkfish catch rates for Category A, B, C, & D vessels on a monkfish DAS and a monkfish-RSA DAS for the Northern Fishery Management Area and Southern Fishery Management Area, fishing years 2009-2013.	184
Table 71- Breakdown of monkfish landings on trips taken under a combined monkfish/NE Multispecies DAS in the NFMA when there was no monkfish trip limit on such trips (May 1, 2013 through October 27, 2013).....	185
Table 72- Breakdown of monkfish landings on trips taken under a NE multispecies DAS in the NFMA when there was no monkfish trip limit on such trips (October 28, 2013 through April 30, 2014).....	186
Table 73 – Number of trips taken under a monkfish-only or a combined monkfish/NE Multispecies DAS using sink gillnets in each fishing year 2009-2013, by monkfish permit category and fishery management area.....	191
Table 74 – Average nominal revenues per trip earned by monkfish permits in Categories A, B, and H under a monkfish-only DAS using sink gillnets, for FY2013 and averaged over FYs 2009-2013, by monkfish permit category and fishery management area.....	193
Table 75 – Average nominal revenue per trip earned by monkfish permits in Categories C and D under a monkfish-only or combined monkfish/NE Multispecies DAS using sink gillnets, for FY2013 and averaged over FYs 2009-2013, by monkfish permit category and fishery management area.	194

Table 76 – Number of trips using combinations of mesh sizes for trips fishing with sink gillnet gear with at least two distinct mesh sizes under a monkfish-only or combined monkfish/NE Multispecies DAS, by fishing year and fishery management area.	196
Table 77 – Number of observed trips taken fishing with sink gillnet gear under a monkfish-only or a combined monkfish/NE Multispecies DAS in each fishing year 2009-2013, by monkfish permit category and fishery management area.	197
Table 78 – Numbers of Category C and D monkfish permits that took at least one trip fishing with sink gillnet gear under a monkfish-only or combined monkfish/NE Multispecies DAS, and total number of trips taken by these permits, by monkfish permit category, for FY2009-FY2013, in both fishery management areas.	199
Table 79 – Numbers of Category C and D monkfish permits that took at least one trip fishing with sink gillnet gear under a monkfish-only or combined monkfish/NE Multispecies DAS with a second mesh between 5” to 7”, inclusive, by monkfish permit category, for FY2009-FY2013, in both fishery management areas.	200
Table 80 – Value of landings obtained by Category C and D vessels from fishing 5” to 7” mesh using sink gillnets while on a combined monkfish/NE Multispecies DAS in the Northern Fishery Management Area, by mesh size used, FY2013.	201
Table 81 – Top species, by value, obtained by Category C and D vessels from fishing 5” to 7” mesh using sink gillnets while fishing on a combined monkfish/NE Multispecies DAS in the Northern Fishery Management Area, FY2013.	201
Table 82 – Value of landings obtained by Category C and D vessels from fishing 5” to 7” mesh in sink gillnets while fishing on a monkfish only or combined monkfish/NE Multispecies DAS in the Southern Fishery Management Area, by mesh size used, FY2013.	202
Table 83 – Top species, by value, obtained by Category C and D vessels from fishing 5” to 7” mesh in sink gillnets while fishing on a monkfish-only or combined monkfish/NE Multispecies DAS in the Southern Fishery Management Area, FY2013.	202
Table 84 – Number of observed trips by Category C and D vessels that fished 5”-7” mesh in stand-up gillnets, for FY2009-FY2013, in both fishery management areas.	203
Table 85 – Total landings and total revenues (where total revenues ≥\$100 nominal \$USD) from species landed in 5”-7” mesh in stand-up gillnets from observed trips taken in the NFMA by Category C and D vessels, for each fishing year in FY2011-FY2013.	204
Table 86 – Total landings and total revenues (where total revenue ≥\$100 nominal \$USD) from species landed in 5”-7” mesh in stand-up gillnets from observed trips taken in the SFMA by Category C* and D vessels, for each fishing year in FY2011-FY2013.	204
Table 87 – Number of permits that took at least one trip in the NFMA, fishing under a monkfish-only or combined monkfish/NE Multispecies DAS with sink gillnet gear, and total number of trips taken by these permits, by monkfish permit category, for FY2009-FY2013.	205
Table 88 – Numbers of monkfish permits in Categories A, B, C, and D that took at least one trip fishing under a monkfish-only or combined monkfish/NE Multispecies DAS in the NFMA using sink gillnet gear with a second mesh between 5” to 7”, inclusive, for FY2009-FY2013.	207
Table 89 – Numbers of Category C and D monkfish permits that took at least one trip fishing under a monkfish only or combined monkfish/NE Multispecies DAS that used sink gillnet gear with a mesh size between 6.5” to less than 10”, by monkfish permit category, for FY2009-FY2013, in the SFMA.	210

Table 90 – Value of landings obtained by Category C and D vessels from fishing 6.5” less than 10” mesh in sink gillnets while on a monkfish only or combined monkfish/NE Multispecies DS in the Southern Fishery Management Area, by mesh size used, FY2013.	210
Table 91 – Top species, by value, obtained by Category C and D vessels from fishing 6.5” to less than 10” mesh in sink gillnets while fishing on a monkfish-only or combined monkfish/NE Multispecies DAS in the Southern Fishery Management Area, FY2013.	211
Table 92 – Number of observed trips by Category C and D vessels that fished 6.5” to less than 10” mesh in stand-up gillnets while on a monkfish-only or combined monkfish/NE Multispecies DAS, for FY2009-FY2013, in the Southern Fishery Management Area.	211
Table 93 – Total landings and total revenues (where total revenue ≥\$100 nominal USD per fishing year) from species landed in 6.5” to less than 10” mesh in stand-up gillnets from observed trips taken in the SFMA by Category C* and D vessels, for each fishing year in FY2011-FY2013.	211
Table 94 – Number of permits that took at least one trip in the Mid-Atlantic Exemption Area, fishing under a monkfish-only or combined monkfish/NE Multispecies DAS using sink gillnet gear, and total number of trips taken by these permits in the Mid-Atlantic Exemption Area, by monkfish permit category, for FY2009-FY2013.	212
Table 95 – Number of permits fishing under a monkfish only or combined monkfish/NE Multispecies DAS that used sink gillnet gear with, a mesh size between 5” to less than 10”, by monkfish permit category, for FY2009-FY2013, in the Mid-Atlantic Exemption Area.	213
Table 96 – Numbers of trips by mesh size and fishing year for trips taken in the Mid-Atlantic Exemption Area using 5” to less than 10” in sink gillnets while fishing under a monkfish-only or combined monkfish/NE Multispecies DAS.	214
Table 97 – Value of landings obtained by Category A-D* vessels from fishing 5” to less than 10” mesh using sink gillnets while on a monkfish-only or combined monkfish/NE multispecies DAS in the Mid-Atlantic Exemption Area, by mesh size used, FY2013.	214
Table 98 – Top species, by value, obtained by Categories A-D* vessels from fishing 5” to less than 10” mesh in sink gillnets while fishing on a monkfish only or combined monkfish/NE Multispecies DAS in the Mid-Atlantic Exemption Area, FY2013.	215
Table 99 – Number of monkfish permits that took at least one trip in SNE Dogfish Exemption Area during May1-October 31, fishing with sink gillnet gear under a monkfish-only or combined monkfish/NE Multispecies DAS using 6” to less than 10”, and total number of trips taken by these permits in the SNE Dogfish Exemption Area, by monkfish permit category, for FY2009-FY2013.	216
Table 100 – Top species, by value, obtained by Categories A-D* vessels from fishing 6” to less than 10” mesh in sink gillnets while fishing on a monkfish-only or combined monkfish/NE Multispecies DAS in the SNE Dogfish Exemption Area, May 1-October 31 FY2013.**.	217
Table 101 – Number of monkfish permits that took at least one trip in SNE Monkfish and Skate Exemption Area, at any point in the FY, fishing under a monkfish-only or combined monkfish/NE Multispecies DAS, using 10” minimum mesh in sink gillnet gear, and total number of these trips taken, by monkfish permit category, for FY2009-FY2013.	218
Table 102 – Top species, by value, obtained by Categories A-D vessels from fishing 10” or larger mesh in sink gillnets while fishing on a monkfish only or combined monkfish/NE Multispecies DAS in the SNE Monkfish and Skate Exempted Area, all month, FY2013.	219

Table 103 – Top species, by value, obtained by Categories A-D vessels from fishing 10” minimum mesh in sink gillnets while fishing on a monkfish-only or combined monkfish/NE Multispecies DAS in the SNE Monkfish and Skate Exempted Area, from January 1-April 30 and November 1-December 31, FY2013.	219
Table 104 - All primary and secondary monkfish ports	222
Table 105 - Combined C/D permits associated with a sector: ports with at least 3 permits in all years with permits and 5-year average of at least 3 permits	223
Table 106 - Combined C/D permits who fished in the NFMA, FY2009-2013: ports with at least 3 permits in all years with permits and 5-year average of at least 3 permits	224
Table 107 - Common pool combined C/D permits: ports with at least 3 permits in all years with permits and 5-year average of at least 3 permits.....	225
Table 108 - Combined C/D permits who fished in the SFMA, FY2009-2013: ports with at least 3 permits in all years with permits and 5-year average of at least 3 permits	226
Table 109 - C Permits: ports with at least 3 permits in all years with permits and 5-year average of at least 3 permits	228
Table 110 - Ports with a 5-year average of 5 or more monkfish RSA DAS used, FY2009-2013	229
Table 111 - Gillnets: ports with at least 3 permits using gillnets in all years with permits and a 5-year average of at least 3 permits.....	230
Table 112 - Criteria used to evaluate the potential impacts of past, present, and reasonably foreseeable future actions	234
Table 113- Summary of effects on VECs from past, present, and reasonably foreseeable FMP and other fishery-related actions.	238
Table 114 - Summary effects of past, present, and reasonably foreseeable future actions on the VECs.....	244
Table 115 - Summary of baseline conditions for each VEC	245
Table 116 - Monkfish daily trip limits under different DAS programs.....	272
Table 117 - Monkfish trip limits for vessels fishing in the SFMA on a NE multispecies DAS and trip limit fishing on a monkfish DAS, as well as the potential gain from switching.....	274
Table 118 - Entities directly regulated by the proposed action.	301
Table 119 - Description of directly regulated entities by gross sales.	301
Table 120 - Entities directly regulated and impacted by the proposed action.	302
Table 121 - Description of directly regulated and impacted entities by gross sales.....	302

2.3 List of Figures

Figure 1 – Monkfish fishery management areas and statistical areas.....	30
Figure 2 - Mid-Atlantic Exemption Area.....	48
Figure 3 - Southern New England Dogfish and Monkfish Exemption Areas	48
Figure 4 - Northern monkfish biomass and fishing mortality estimated from the 2013 Monkfish Operational Assessment.....	52
Figure 5 - Southern monkfish biomass and fishing mortality estimated from the 2013 Monkfish Operational Assessment.....	52
Figure 6- Estimated range of Atlantic sturgeon distinct population segments	67
Figure 7- Capture locations and DPS of origin assignments for observer program specimens ...	69
Figure 8- Summary of Gillnet Management Areas under the Atlantic Large Whale Take Reduction Plan	75
Figure 9- 2008-2012 total mean annual mortality of small cetaceans and pinnipeds by Category I and II sink gillnet or bottom trawl fisheries.....	78
Figure 10 - Map of marine mammals bycatch in gillnet gear in the New England region (excluding large whales) observed by traditional fishery observers and at-sea monitors between 2007 and 2011	79
Figure 11 - Map of marine mammal bycatch in trawl gear in the New England region (excluding large whales) observed by traditional fishery observers and at-sea monitors between 2007 and 2011	80
Figure 12- HPTRP Management Areas for New England.....	81
Figure 13 - HPTRP waters off New Jersey management area.....	82
Figure 14 - HPTRP Southern Mid-Atlantic management area	83
Figure 14 - NFMA and SFMA monkfish landings, FY 2004-2014	99
Figure 15 - Monkfish landings and revenue, 1995-2012.....	101
Figure 16 - Monkfish landings by gear and month (FY2014) in pounds (live weight).....	102
Figure 17 - DAS used by permit category, FY 2009-2012.....	110
Figure 18 - Monkfish engagement level by community.....	114
Figure 19 - All high monkfish engagement communities with both engagement and reliance scores.....	115
Figure 20 - Social vulnerability of communities with high monkfish engagement.....	116
Figure 21 - NFMA monthly monkfish landings for FY 2013 and 2014.....	125
Figure 22 - Active groundfish vessels between 2010 and 2013	127
Figure 23 - Recent effort by active NE multispecies and monkfish vessels.....	127
Figure 24 – Daily catch rate (monkfish tail weight/DAS fished) for all monkfish vesels fishing in the NFMA on a NE multispecies DAS during 2013. Y axis = count; x-axis=monk lb/DAS bins.....	129
Figure 25 – Daily catch rate (monkfish tail weight/DAS fished) for sector vessels fishing in the NFMA on a NE multispecies DAS in 2013. Y-axis=count; x-axis=monk lb/DAS bins....	130
Figure 26 - Comparison of FY 2013 and FY2014 SFMA monthly monkfish landings	132
Figure 27 - Cumulative SFMA monkfish landings between 2009 and 2014	132
Figure 28 - Active Monkfish Vessels by Area.....	134
Figure 29 - SFMA monkfish Operations	134
Figure 30 - Frequency of trips grouped by trip limit in SFMA in FY2013	136

Figure 31 - Frequency of monkfish category C and D directed trips grouped by trip limit in SFMA in FY2013. 136

Figure 32 - Frequency of permit category C and D trips grouped by trip limit in NFMA in FY 2013..... 140

Figure 33 - Comparison of length frequencies of monkfish caught in large mesh (<8") and extra-large mesh (>8") with no tie downs on observed trips where both large and extra-large mesh were used on the same trip. Minimum mesh size is shown in purple. X-axis represents monkfish length (in cm); y-axis shows number of monkfish in each length category. 144

Figure 34- Number of trips, by monkfish tail weight per DAS, for trips taken in the NFMA by Category C vessels while fishing under a sector non-DAS trip, fishing years 2012-2013. 168

Figure 35- Number of trips, by monkfish tail weight per DAS, for trips taken in the NFMA by Category D vessels while fishing under a sector non-DAS trip, fishing years 2012-2013. 169

Figure 36- Sector groundfish-only DAS (no monkfish DAS) trips taken by monkfish permit Category C and D vessels while fishing in the NFMA, fishing years 2012-2013..... 170

Figure 37- Number of trips, by monkfish tail weight per DAS, for trips taken in the SFMA by monkfish permit category C and D vessels while fishing non-trawl gear under a NE Multispecies DAS, but not a monkfish DAS, fishing years 2009-2013. 172

Figure 38 (A & B)- Number of trips, by monkfish tail weight per DAS, for trips taken in the SFMA by permit Category C and D vessels while fishing trawl gear under a NE Multispecies DAS, but not a monkfish DAS, fishing years 2009-2013. 174

Figure 39- Number of trips, by monkfish tail weight per DAS, for Category C vessel trips taken in the NFMA while fishing under a combined monkfish/NE Multispecies DAS, fishing years 2009-2013..... 187

Figure 40- Number of trips, by monkfish tail weight per DAS, for Category D vessel trips taken in the NFMA while fishing under a combined monkfish/NE Multispecies DAS, fishing years 2009-2013..... 188

Figure 41 – Number of monkfish permits that took at least one trip on a monkfish-only or monkfish/NE multispecies DAS using sink gillnet gear (in either fishery management area), FY2009-FY2013. 190

Figure 42 - All high monkfish engagement communities with both engagement and reliance scores..... 221

2.4 List of Appendices

No appendices are included with this action.

2.5 List of Acronyms

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

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

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3.0 Background, Purpose and Need

3.1 Background and Introduction

3.1.1 History of the Fishery Management Plan

The Monkfish FMP was initially implemented in 1999, and has been modified several times, most recently in 2011 with the implementation of Amendment 5 and FW 8 in 2014. The documents pertaining to previous management actions are available on the NEFMC website, www.nefmc.org. A synoptic discussion, focusing on the science and management aspects of the FMP up to FW 4 (2007) is also contained in an article “*The monkfish fishery and its management in the Northeastern USA*”, (Haring and Maguire 2008), which is available on the NEFMC website. Below is a summary of recent management actions beginning with FW 4.

For management purposes, the monkfish fishery is divided into two areas; the Northern Fishery Management Area (NFMA) and the Southern Fishery Management Area (SFMA; see Figure 1). While scientific evidence for two biological stocks is uncertain, and additional research, including archival tagging, is ongoing, fisheries in the two areas are clearly distinct. As a result, stock assessments are completed for the two areas separately to be able to support the management plan. The NFMA monkfish fishery is closely integrated with the multispecies fishery, and is primarily a trawl fishery, while the SFMA fishery is primarily a gillnet fishery targeting monkfish almost exclusively. These differences have resulted in some differences in management measures, such as landing limits and DAS allocations, between the two areas.

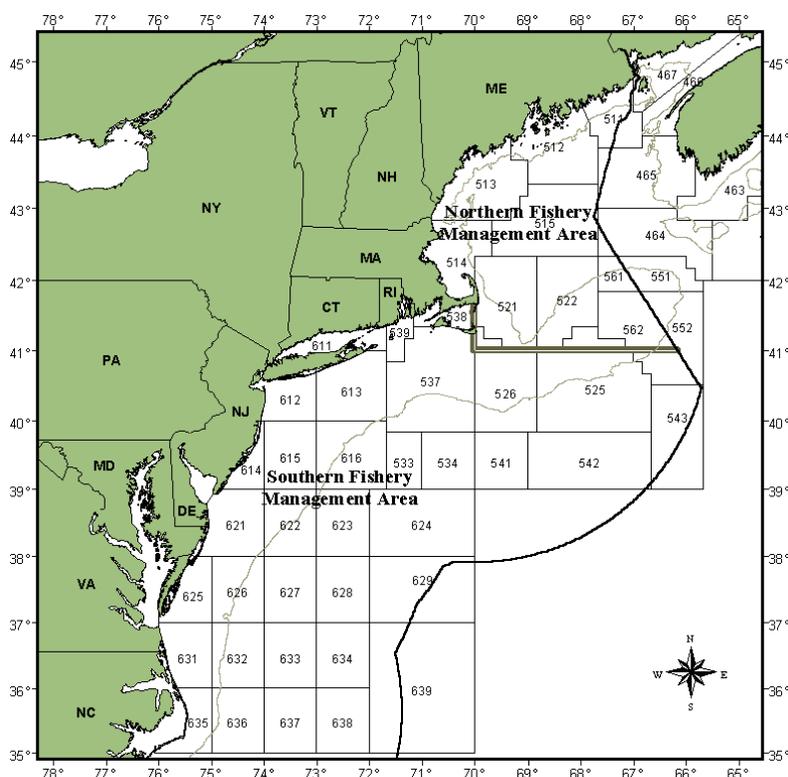


Figure 1 – Monkfish fishery management areas and statistical areas.

FW4 was implemented on October 22, 2007 and set target total allowable catch levels (TTACs) at 5,000 mt and 5,100 mt for the NFMA and SFMA, respectively. FW 4 also established the requirement that vessels that exceeded the monkfish incidental catch limit while fishing in the NFMA on a multispecies DAS, must declare they were using a monkfish DAS, which could be done by Vessel Monitoring Systems (VMS) any time prior to returning to port. Vessels in the SFMA were already required to declare a monkfish DAS when exceeding the incidental limit. FW 4 also reduced the monkfish incidental limit in the NFMA from 400 lb tail weight/DAS or 50% of the weight of fish on board, whichever is less, to 300 lb tail weight/DAS or 25% of the total weight of fish on board, whichever is less.

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

FW 5, which was implemented prior to the start of the 2008 fishing year (*73 Federal Register* 22831, April 28, 2008; NEFMC, 2008a), reduced the number of unused DAS that could be carried over to the next fishing year from 10 to 4; revised the DAS accounting method for gillnet vessels such that all trips less than 15 hours would be counted as 15 hours, eliminating the provision that trips less than 3 hours would be counted as time used; and, revised the monkfish incidental catch allowance applicable to vessels in the Southern New England Regulated Mesh Area (SNE RMA) fishing with large mesh but not on a monkfish, scallop or multispecies DAS, from 5% of the total weight of fish on board (with no landings cap) to 5% of total weight of fish on board not to exceed 50 lb per day, up to 150 lb maximum, and also applied this revision to all vessels fishing under a Skate Bait Letter of Authorization (LOA) east of 74°00'W. In addition, FW 5 modified the Monkfish LOA requirement for vessels fishing under the less restrictive measures for the NFMA such that vessels using a VMS would no longer be required to obtain the LOA, but could make the declaration via the VMS.

With the adoption of new biological reference points and revised stock status as a result of the DPWG assessment, as well as the measures adopted in FW 5 designed to reduce the likelihood of TTAC overages, the Councils concluded that the backstop provision, established in FW4, was no longer necessary. They submitted the regulatory change in FW 6 in April 2008, and the final rule became effective on October 10, 2008, approximately seven months before the start of FY 2009 (*73 Federal Register* 52635, September 10, 2008; NEFMC, 2008b). This was the only action taken in FW 6.

Amendment 5 was also developed to bring the Monkfish FMP into compliance with recently revised National Standard 1 (NS1) Guidelines (74 FR 3178; January 16, 2009), which not only established a process for setting ACLs and guidance for establishing AMs, but also provided updated guidelines for establishing reference points and control rules (i.e., maximum sustainable yield (MSY), optimum yield (OY), OFL, ABC, ACLs, and ACTs) and clarified the relationship between them. Amendment 5

implemented two different types of AMs to ensure that overfishing does not occur (NEFMC, 2011a). First, ACTs were set sufficiently below the ACL for each area to account for management uncertainty (ability of management measures to control catch). Management measures were then developed to achieve this lower level of catch. Amendment 5 also implemented reactive AMs that deduct any overages of the ACL on a pound for pound basis from the ACT specified for the year following the overage. Management measures must then be revised to achieve, but not exceed the revised ACT for that area. In doing so, these measures were implemented to ensure that sufficient protections are in place to prevent overfishing. Amendment 5 also established biological and management reference points consistent with NS1 guidelines using the most recent scientific information available at the time it was developed, from the 2007 DPWG assessment.

Given the timing of SAW 50 (July 2010) and the Councils' final action on Amendment 5 in June 2010, Amendment 5 provided new biomass reference points, recalculated the fishing mortality rate (F) corresponding to the overfishing threshold, F_{max} , and concluded that the stock status would not change, even under the new reference points. Furthermore, the Councils addressed two primary purposes regarding Amendment 5: 1) to implement the MSA mandated ACLs and accountability measures (AMs), and 2) to set the specifications of DAS, landing limits and other management measures to replace those adopted in FW 4. The Councils also proposed modifications to the FMP to improve the Research Set Aside (RSA) Program, to minimize bycatch resulting from trip limit overages, and to allow the landing of monkfish heads.

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

Framework 8 became effective on July 18, 2014 (79 *Federal Register* 41918; NEFMC, 2014a). It increased monkfish day-at-sea allocations and landing limits, allowed vessels issued a limited access monkfish Category H permit to fish throughout the SFMA, enabled vessels to use an allocated monkfish-only day-at-sea time throughout the fishing year and revised biological reference points for the monkfish stocks in the Northern and Southern Fishery Management Areas.

3.1.1.1 Monkfish Exemption Areas

Exempted fisheries allow fishing vessels to fish for specific species without being subject to certain NE multispecies regulations including DAS, provided the bycatch of regulated species is minimized. The GOM/GB monkfish gillnet exemption area restricts vessels fishing under the exemption to gillnets with minimum mesh size of 10 inches (diamond) throughout the net between July 1 through September 14; only monkfish and lobster can be landed. The SNE monkfish and skate trawl exemption restricts vessels fishing under the exemption to a minimum mesh size of 10 inch square or 12 inch diamond mesh. Landings are restricted to monkfish, incidentally caught species allowed in the SNE Regulated Mesh Area, and skates. Currently, the SNE monkfish and skate gillnet exempted fishery restricts vessels fishing under the exemption to gillnet gear with a minimum mesh size of 10 inches with only monkfish, some incidentally caught species, and skate allowed to be retained. Currently the Mid-Atlantic Exemption Area exempts vessels fishing in the exemption area from the 5-percent bycatch criteria specifications and may, therefore, fish in a fishery outside of a NE multispecies DAS, provided that the vessel does not possess or land regulated multispecies finfish. Further information on possession limit restrictions can be found at https://www.greateratlantic.fisheries.noaa.gov/regs/infodocs/large_mesh_exemption.pdf.

3.1.1.2 2013 Emergency Action

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

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

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

To comply with the ruling, NMFS announced on December 29, 2011 (76 FR 81844) that the Northeast Region SBRM Omnibus Amendment was vacated and all regulations implemented by the SBRM Omnibus Amendment final rule (73 FR 4736, January 28, 2008) are removed. This action removed the SBRM section at § 648.18 and removes SBRM-related items from the lists of measures that can be changed through the FMP framework adjustment and/or annual specification process for the Atlantic mackerel, squid, and butterfish; Atlantic surfclam and ocean quahog; Northeast multispecies, monkfish; summer flounder; scup; black sea bass; bluefish; Atlantic herring; spiny dogfish; deep-sea red crab; and tilefish fisheries. This action also makes changes to the regulations regarding observer service provider approval and responsibilities and observer certification. The SBRM Omnibus Amendment had authorized the development of an industry-funded observer program in any fishery, and the final rule modified regulatory language in these sections to apply broadly to any such program. This action revises that regulatory language to refer specifically to the industry-funded observer program in the scallop fishery, which existed prior to the adoption of the SBRM Omnibus Amendment.

NMFS, NEFMC and MAFMC are developed a new omnibus amendment to bring Northeast fishery management plans into compliance with Magnuson-Stevens Act requirements for a standardized bycatch reporting methodology. The amendment became effective July 30, 2015. It implemented a new prioritization process for allocation of observers if agency funding was insufficient to achieve target levels, bycatch reporting and monitoring mechanisms, analytical techniques and allocation of at-sea fisheries observers, a precision-based performance standard for discard estimates, a review and reporting process, framework adjustment and annual specifications provisions, and provisions for industry-funded observers and observer set-aside programs.

3.1.1.4 Essential Fish Habitat Omnibus Amendment 2 (Monkfish Amendment 4)

The NEFMC began development of Phase 1 of the Essential Fish Habitat (EFH) Omnibus Amendment in 2004, which includes Amendment 4 to the Monkfish FMP. The primary purpose of Phase 1 was to review EFH designations, consider Habitat Areas of Particular Concern (HAPC) alternatives, describe

prey species, and evaluate non-fishing impacts. This action is an amendment to all FMPs in this region. The NEFMC approved the DSEIS for Phase 1 at the February 2007 NEFMC meeting, which then was submitted to NMFS in March 2007. The NEFMC made final decisions on Phase 1 topics at their June 2007 meeting. Phase 2 of the EFH Amendment began in September 2007 to consider the effects of fishing gear on EFH and move to minimize, mitigate or avoid those impacts that are more than minimal and temporary in nature. The NEFMC took final action on the Omnibus Habitat Amendment 2 at the June 2015 Council meeting.

Omnibus Habitat Amendment 2 Environmental Impact Statement is currently being finalized and likely to be implemented in the foreseeable future. This amendment could affect monkfish via increased protection of benthic habitats used by the species from the adverse effects of various regional fisheries. The biological and fishery impacts on monkfish are expected to be mixed based on the analysis for the DEIS (NEFMC, 2015a). However, the overall impacts on monkfish may differ in the final document as some of the preferred alternatives were modified during the Council process.

3.1.2 Other Fishery Management Plans Affecting the Monkfish Fishery

A majority of monkfish limited access vessels also hold limited access permits in either the Northeast Multispecies or Atlantic Sea Scallop fisheries. Both of those fisheries continue to undergo changes in their respective management programs, which have direct and indirect effects on the monkfish fishery. In large part due to the success of the Scallop FMP and the profitability of the fishery, scallop vessels that also have monkfish limited access permits use their allocated effort to target scallops rather than monkfish; they would be required to use a scallop DAS to target monkfish, and be prohibited from using a dredge on those trips. As a result, a substantial portion of the allocated monkfish effort (DAS) is not used. In contrast, while some multispecies stocks have responded positively to management actions (e.g., haddock and redfish) others remain overfished and in need of rebuilding. Consequently, the Multispecies FMP continues to constrain fishing effort and recently underwent major changes, most notably the adoption of catch shares through the allocation of quota to sectors.

3.1.2.1 Multispecies FMP

Amendment 16 implemented major changes to the NE Multispecies FMP (NEFMC, 2009a). Notably, it greatly expanded the sector program and implemented ACLs and AMs in compliance with 2006 revisions to the MSA. The amendment also included a host of mortality reduction measures for “common pool” (i.e. non-sector) vessels and the recreational component of the fishery. Amendment 16 became effective on May 1, 2010. In 2011, the NEFMC approved Amendment 17, which allowed for NOAA-sponsored state-operated permit banks to function within the structure of Amendment 16.

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

FW 51 was implemented during FY 2014 (NEFMC, 2014b). This action would update catch levels for several stocks, revise management measures for Georges Bank yellowtail flounder, establish a quota trading mechanism for transboundary Georges Bank stocks that are jointly managed with Canada (cod,

haddock, and yellowtail flounder), and revise common pool and recreational measures. That action is scheduled to become effective May 1, 2014. Amendment 18 is under development, and is focused on addressing concerns over excessive shares and improving the efficiency of sector and Handgear A measures. The Draft Environmental Impact Statement was submitted in 2015 (NEFMC, 2015b).

Framework Adjustment 52 was implemented on January 14, 2015 and revised the accountability measures (AMs) for the groundfish fishery for the northern and southern windowpane flounder stocks (NEFMC, 2014c). The size of the AM gear-restricted areas could be reduced if it was determined that improvements in windowpane flounder stock health occurred despite the catch limits being exceeded. The duration of the AM could also be shorted if it was determined that an overage of the catch limit did not occur in the year following the overage.

On November 12, 2014, NMFS issued a temporary rule that revised the stock status determination criteria for Gulf of Maine haddock and increased the Gulf of Maine haddock catch limits for the remainder of FY2014.

On November 13, 2014, NMFS issued a temporary rule that changed commercial and recreational fishery management measures in order to protect Gulf of Maine cod in response to a recent updated assessment of the status of this stock. The interim measures implemented time and area closures to commercial and recreational vessels using gear capable of catching Gulf of Maine cod, a 200 lb. Gulf of Maine cod trip limit for common pool and sector vessels, changes to commercial fishing declarations, prohibition of the possession of recreationally caught Gulf of Maine cod and revocation of a previously authorized Gulf of Maine exemption that allowed sector vessels that had declared into the gillnet fishery to use more gillnets. The measures were effective until May 12, 2015.

Framework Adjustment 53, which was implemented on May 1, 2015, included a range of measures designed to achieve mortality targets and net benefits from the fishery, including setting catch levels for FY 2015-2017, revising Gulf of Maine cod spawning protection measures, establishing a provision for the rollover of specifications and modifying sector ACE carryover (NEFMC, 2015c).

The NEFMC has begun work on Framework Adjustment 55, which would include a range of measures designed to achieve mortality targets and net benefits from the fishery, including status determination criteria, setting catch levels for FY 2016-2018, implementing an additional sector, modifying the definition of the haddock separator trawl, modifying the groundfish monitoring program, measures for US/CA TACs, and modifying GOM cod protection measures. FW55 has not been submitted yet and the implementation date is currently unknown.

3.1.2.2 Atlantic Sea Scallop FMP

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

The most recent scallop actions include FW 23 (NEFMC, 2011f), FW 24 (NEFMC, 2013d), FW 25 (NEFMC, 2014d), and FW 26 (NEFMC, 2015d). FW 23 developed measures to minimize impacts on sea turtles through the requirement of a turtle deflector dredge starting in 2013 in the Mid-Atlantic in the summer and fall. FW 23 also has provisions to improve the effectiveness of the accountability measure adopted under Amendment 15 for the yellowtail flounder sub-ACL, to consider specific changes to the general category Northern GOM management program to address potential inconsistencies, and to consider modifications to the vessel monitoring system to improve fleet operations. FW 24 set specifications for FY2013 and default measures for FY2014. FW 24 also adjusted the Georges Bank scallop access area seasonal closure schedules and continued the closures of the Delmarva and Elephant Trunk scallop access areas, refined the management of yellowtail flounder AMs in the scallop fishery and made adjustments to the industry-funded observer program and provided more flexibility in the management of the individual fishing quota program. FW 25 set specifications to adjust the DAS allocations and an area rotation schedule for FY 2014, default measures for FY 2015, inclusion of accountability measures for SNE/MA windowpane flounder, and measures to reduce mortality of juvenile scallops. FW 26 set specifications for FY2015 and closed a portion of the Elephant Trunk Access Area and extended the boundaries of the Nantucket Lightship Access Area, adjusted the State Waters Exemption Program, allowed for Vessel Monitoring System declaration changes, implemented a proactive AM to protect windowpane and yellowtail flounder, aligned two gear measures, and implemented other measures. FW 27 is currently under development and includes specifications for FY2016 and default measures for FY2017.

3.1.2.3 Northeast Skate Complex FMP

The final rule for Amendment 3 to the Northeast Skate Complex FMP was published on June 16, 2010 (NEFMC, 2009b). This amendment establishes ACLs, AMs, seasonal bait fishery quotas, and skate wing, bait, and incidental skate landing limits to address the following issues:

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

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

An annual monitoring report and a bi-annual specification process replaced the obsolete baseline review procedures. The report describes the expected impacts of recent regulations and pending management alternatives in other fisheries that impact the skate resource. The first annual monitoring report was published in June 2010 and is available at:

http://www.nefmc.org/skates/annual_reviews/2010%20Annual%20Monitoring%20Report%20Final.pdf.

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

The 2012-2013 Northeast Skate Complex Specifications were implemented in May 2012 (NEFMC, 2012). This action set the annual catch limit specifications (ABC, ACL, ACT, and TALs) to maintain the skate fisheries while adequately minimizing the risk of overfishing the seven skate stocks. The skate specifications also include an adjustment to the skate wing landing limits to be consistent with the updated ACL and with new estimates of daily landings rates under current fishery conditions (through July 2011). Lastly, because skates are primarily used as bait they are considered the largest component of at-sea transfers and are reported in VTRs, but not reported by shoreside dealers, and the at-sea transfers of skates are a significant component of total skate catch. Thus, it is proposed that these at-sea transfers on VTR reports will count against the skate bait TAL.

FW 2 to the Skate FMP was implemented on September 29, 2014 and set skate fishery specifications for FYs 2014-2015 (NEFMC, 2014e). This action also modified skate reporting requirements for vessels and dealers. The ACL and TAL for the skate complex would decline by 30%. However, skate possession limits would remain unchanged from current levels. FW3 to the Skate FMP is currently under development and proposes fishery specifications for FY2016 and 2017. This action also proposes a seasonal structure for the wing fishery that splits the wing TAL into two seasons based on a three year moving average of landings. Skate possession limits would remain unchanged. This action, if approved, would become effective in early summer 2016.

3.1.2.4 Spiny Dogfish FMP

Amendment 3 to the Spiny Dogfish FMP was implemented on August 14, 2014 to address four issues in the management of the spiny dogfish fishery (MAFMC, 2014). This action implemented a research set-aside funding program for spiny dogfish, updated spiny dogfish essential fish habitat definitions, allowed rollover of management measures from one year to the next until replaced via rulemaking, and eliminated the seasonal allocation of the commercial quota to improve alignment of management measures with those of the Atlantic States Marine Fisheries Commission's (ASMFC) interstate management plan for spiny dogfish.

In 2013, NOAA Fisheries implemented specifications for the spiny dogfish fishery for FY 2013-2015. However, based on an updated review of stock status, the Councils adopted revised specifications for FY 2014-2015, which became effective on September 8, 2015. Specifications would increase the FY 2014 ACL and commercial quota to 60.695 million lb (+10 percent) and 49.037 million lb (+17 percent), respectively. For FY 2015, the ACL and commercial quota would be increased to 62.269 million lb (+13 percent) and 50.612 million lb (+22 percent), respectively. The federal spiny dogfish trip limit was raised to 5,000 lb (2,268 kg).

Specifications for FY2016-2018 are currently under development. Proposed specifications would decrease the ABC to 23,617 mt in 2016, 23,045 mt in 2017 and 22,635 mt in 2018. For FY2016, the commercial quota was reduced to 18,307 mt. The federal spiny dogfish trip limit was maintained at 5,000 lb.

3.2 Purpose and Need

The primary purpose for this action is to consider changes to vessel fishing declarations requirements and possession limits. This action is needed to reduce operational discards and provide flexibility to vessels fishing in both the monkfish and NE multispecies fisheries.

A secondary purpose of this action is to consider changes to the possession limits to Category F monkfish permits. These vessels comprise the offshore monkfish fishery and travel greater distances to fish. This action is needed to improve flexibility in operations and make the offshore fishery more profitable.

A third purpose of this action is to change the regulations regarding mesh size requirements for standup gillnet gear. This action is needed to allow vessels using this gear to target dogfish and monkfish on the same trip.

To better demonstrate the link between the purpose and need for this action, Table 1 summarizes the need for the action and corresponding purposes.

Table 1 - Purpose and need for Framework 9

<i>Need for Framework 9</i>	<i>Corresponding Purpose for Framework 9</i>
<ul style="list-style-type: none"> • Reduce operational discards during periods of high monkfish catch, increase vessel flexibility 	<ul style="list-style-type: none"> • Modification of DAS declaration restrictions by allowing declaration of a NE multispecies DAS while at sea • Modification of DAS declaration restrictions by allowing declaration of a monkfish DAS while at sea • Modification of DAS declaration restrictions by allowing re-declaration to Monkfish RSA DAS • Elimination of the trip limit on a NE multispecies and monkfish DAS
<ul style="list-style-type: none"> • Allow vessels using stand-up gillnet gear to target multiple species on a single trip 	<ul style="list-style-type: none"> • Modify management measures regulating standup gillnet mesh allowances to improve economic impacts to fleet
<ul style="list-style-type: none"> • Improve flexibility and make the offshore monkfish fishery more profitable 	<ul style="list-style-type: none"> • Modify possession limits for category F vessels

3.3 Goals and Objectives

The original FMP specified the following management objectives:

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

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

4.0 Alternatives under Consideration

4.1 Modifications to Current Monkfish Days-at-Sea and Trip Limits

4.1.1 Allow vessels to declare a Northeast Multispecies Day-at-Sea at sea

In order to land more than incidental amounts of monkfish, vessels must be fishing under one or a combination of the following: a monkfish DAS, a Northeast (NE) multispecies day-at-sea (DAS), an Atlantic sea scallop DAS. Monkfish Permit Category C and D vessels (i.e., those also issued a limited access NE multispecies DAS permit) can declare a monkfish DAS while at sea in the NFMA if they are fishing on a NE multispecies DAS and declare the “monkfish option” prior to leaving port at the start of its trip. If a vessel belongs to a sector, they may be fishing without using a NE multispecies DAS. Similar flexibility does not currently exist to allow such vessel operators to also declare a NE multispecies DAS at sea.

The following options consider revising when and by whom a NE multispecies DAS can be declared to reduce monkfish discards, increase allowable monkfish landings, and increase operational flexibility by allowing vessels to also fish outside of existing monkfish exempted fisheries.

4.1.1.1 Option 1: No Action

Existing regulations do not allow a vessel operator to declare a NE multispecies DAS while at sea. Sector vessels are not required to utilize a multispecies day at sea in order to fish for groundfish. Therefore, if the operator of a limited access monkfish Category C and D vessel began a NE multispecies sector trip without also declaring his/her intent to fish under a NE multispecies DAS and the “monkfish option”, he/she could not land more than an incidental amount of monkfish (Table 4). Further, the operator could not declare a NE multispecies DAS after leaving port to land the higher incidental amount of monkfish allowed when fishing under a NE multispecies DAS (Table 5). While vessels may declare a monkfish DAS at sea if the monkfish incidental limit is exceeded, there is no such provision in the NE multispecies plan for sector vessels fishing without declaring a NE multispecies DAS. Instead, vessels must start the trip on a NE multispecies DAS to allow the use of the at-sea monkfish DAS declaration provision.

4.1.1.2 Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area

The operator of any limited access monkfish Category C and D vessel fishing on a NE multispecies sector non-DAS trip or under a monkfish-only DAS in the Northern Fishery Management Area (NFMA) may declare his/her intent to use a NE multispecies Category A DAS on the same trip before returning to port. The vessel operator must change the DAS declaration to include a NE multispecies DAS through the vessels’ vessel monitoring system (VMS) unit before crossing the VMS demarcation line upon its return to port.

Rationale: Similar to the existing provision allowing monkfish DAS to be declared at-sea (i.e., the monkfish “option”), this would allow NE multispecies DAS to be declared at sea as well. This would enable monkfish vessels to declare a NE multispecies DAS after leaving port to enable them to land more monkfish than the incidental monkfish limit if a NE multispecies DAS were not already being used on that trip, rather than encouraging the discard of monkfish in excess of the incidental limit. This would also increase the operational flexibility of monkfish vessels by allowing those vessels fishing under a

monkfish-only DAS to fish in more than just the monkfish exemption areas upon declaring a NE multispecies DAS at sea. Currently, vessels fishing on a monkfish-only DAS are restricted to the monkfish exemption areas, which have been identified for their low groundfish bycatch. The use of a NE multispecies DAS allows vessels to increase the species they can land and removes any restriction on where they want to fish. This option focuses on the NFMA only because incidental limits have been shown to be more likely to be exceeded there (FW 4; NEFMC, 2007).

4.1.1.3 Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category C, and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (*Preferred Alternative*)

The operator of any limited access monkfish Category C and D sector vessel fishing on a NE multispecies sector non-DAS trip or fishing under a monkfish-only DAS in the NFMA may declare his/her intent to use a NE multispecies Category A DAS on the same trip before returning to port. The vessel operator must change the DAS declaration to include a NE multispecies DAS through the vessels' VMS unit before crossing the VMS demarcation line upon its return to port.

Rationale: Similar to the existing provision allowing monkfish DAS to be declared at-sea (i.e., the monkfish “option”), this would allow NE multispecies DAS to be declared at sea as well. This would enable monkfish vessels to declare a NE multispecies DAS after leaving port to enable them to land more monkfish than the incidental monkfish limit if NE multispecies DAS were not being used on that trip, rather than encouraging the discard of monkfish in excess of the incidental limit. This would also increase the operational flexibility of monkfish vessels by allowing those vessels fishing under a monkfish-only DAS to fish in more than just the monkfish exemption areas upon declaring a NE multispecies DAS at sea. Currently, vessels fishing on a monkfish-only DAS are restricted to the monkfish exemption areas, which have been identified for their low groundfish bycatch. The use of a NE multispecies DAS allows vessels to increase the species they can land and removes any restriction on where they want to fish. However, this may allow a small portion of sector vessels to bypass the PTNS system when fishing on a monkfish-only DAS as the non-sector trip would not be required to declare into the ASM program prior to leaving the dock. This option focuses on the NFMA only because incidental limits have been shown to be more likely to be exceeded there (FW 4; NEFMC, 2007).

4.1.2 Southern Management Area at-sea Monkfish DAS declaration

4.1.2.1 Option 1: No Action (*Preferred Alternative*)

The provision that allows a vessel on a groundfish, but not a monkfish DAS, to declare a monkfish DAS at sea prior to returning to port in the event the vessel exceeds the monkfish incidental limit currently only applies in the Northern Management Area. Vessels in the Southern Management Area must start the trip on a monkfish DAS to be able to land more than the incidental limit.

4.1.2.2 Option 2: Allow at-sea Monkfish DAS declaration in the Southern Fishery Management Area

This alternative would allow Category C, D, and H permitted vessels on a NE multispecies DAS in the Southern Fishery Management Area (SFMA) to declare a monkfish DAS at sea prior to returning to port in the event the vessel exceeds the monkfish incidental limit.

Rationale: Vessels fishing for monkfish in the SFMA must be on a NE multispecies DAS to land more than the incidental limit of monkfish. In some cases, while fishing for monkfish, vessels catch more than

the applicable monkfish incidental limit and must discard the overage. This provision would enable those vessel to land monkfish up to the applicable monkfish DAS trip limit by allowing those vessels to declare a monkfish DAS prior to returning to port. Adopting this provision will make the SFMA fishery more consistent with the NFMA fishery, which already has the at-sea declaration provision.

4.1.3 **Modify DAS/Trip Limit Allocation for Category F (offshore) Vessels**

4.1.3.1 **Option 1: No Action (*Preferred Alternative*)**

Category F vessels may possess 1,600 pounds (tail weight) and their DAS usage is prorated, depending on what standard monkfish permit the vessel has been issued. A Category F permit's monkfish DAS allocation will be calculated based on the existing formula as follows:

$$\text{Monkfish DAS allocation} = [\text{applicable SFMA trip limit for original permit category}/1,600] \times [32 \text{ monkfish DAS} + \text{carry over DAS}]$$

4.1.3.2 **Option 2: Increase the trip limit for Category F vessels**

Under this alternative, the trip limit applicable to Category F vessels would be increased. The PDT analyzed three potential trip limits: 1,600 (status quo), 1,800, and 2,200 lb/DAS. The trip limits analyzed were selected based on preliminary guidance from the Committee and limited observer data confirming the relevancy of the analyzed range.

Rationale: Currently, the DAS adjustment for trip limit overage allows any limited access monkfish vessel fishing on a monkfish DAS to land up to the equivalent of one additional day's worth of its trip limit than would otherwise be authorized. This provision would help to improve the profitability and safety of Offshore Area trips by allowing vessels to land more monkfish per DAS fished and return to port without having to remain at sea until sufficient time has elapsed to account for the amount of monkfish retained on board.

4.1.3.3 **Option 3: Adjust monkfish DAS allocation for Category F vessels**

The number of DAS that would be allocated for the year would be based on either the existing DAS allocation calculation, or a revised DAS allocation calculation, as follows:

Sub-Option 1 (existing DAS calculation): Monkfish DAS allocation = [the applicable SFMA trip limit for original permit category ÷ monkfish Category F trip limit] x [32 monkfish DAS + carry over DAS] (see Table 2)

Sub-Option 2 (revised DAS calculation): Monkfish DAS allocation = monkfish Category F trip limit ÷ the applicable SFMA trip limit for original permit category] (see Table 3)

Rationale: This provision would help to improve the profitability and safety of Offshore Area trips by allowing vessels to land more monkfish per DAS fished and return to port without having to remain at sea until sufficient time has elapsed to account for the amount of monkfish retained on board.

Options 2 and 3 could be combined resulting in the following options for consideration, as listed in Tables 1 and 2:

Table 2- Monkfish DAS Allocation and Potential Maximum Monkfish Landings in a fishing year from the Three Proposed Trip Limit Options (Option 2) Applied to the Current DAS Allocation Formula (Option 3, Sub-option 1).

Proposed Possession Limit (lb tail weight/DAS)	Permit Type	Carry Over	DAS Allocation	Calculation	Potential maximum landings (in lbs)
1,600	A & C	Max	13.73	(610/1600)(32+4)	21,960
		None	12.20	(610/1600)(32+0)	19,520
	B & D	Max	11.25	(500/1600)(32+4)	18,000
		None	10.00	(500/1600)(32+0)	16,000
1,800	A & C	Max	12.20	(610/1800)(32+4)	21,960
		None	10.84	(610/1800)(32+0)	19,520
	B & D	Max	10.00	(500/1800)(32+4)	18,000
		None	8.89	(500/1800)(32+0)	16,000
2,200	A & C	Max	9.98	(610/2200)(32+4)	21,960
		None	8.87	(610/2200)(32+0)	19,520
	B & D	Max	8.18	(500/2200)(32+4)	18,000
		None	7.27	(500/2200)(32+0)	16,000

Table 3 - Monkfish DAS Allocation and Potential Maximum Monkfish Landings in a fishing year from the Three Proposed Trip Limit Options (Option 2) Applied to an Alternative DAS Allocation Formula (Option 3, Sub-option 2).

Proposed Possession Limit (lb tail weight/DAS)	Permit Type	Carry Over	DAS Allocation	Calculation	Potential maximum landings (in lbs)
1,600	A & C	Max	2.62	(1600/610)	4,197
		None	2.62	(1600/610)	4,197
	B & D	Max	3.20	(1600/500)	5,120
		None	3.20	(1600/500)	5,120
1,800	A & C	Max	2.95	(1800/610)	5,311
		None	2.95	(1800/610)	5,311
	B & D	Max	3.60	(1800/500)	6,480
		None	3.60	(1800/500)	6,480
2,200	A & C	Max	3.61	(2200/610)	7,934
		None	3.61	(2200/610)	7,934
	B & D	Max	4.40	(2200/500)	9,680
		None	4.40	(2200/500)	9,680

4.1.4 DAS requirements for RSA vessels when on a monkfish DAS

4.1.4.1 Option 1: No Action (Preferred Alternative)

Vessels participating in the RSA program are allocated additional monkfish RSA DAS. A vessel must declare its intent to use a monkfish RSA DAS prior to leaving the dock. Trip limits under a monkfish RSA DAS are dictated by the terms of the project grant and are therefore higher than those when fishing on a monkfish DAS.

4.1.4.2 Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea

Vessels that exceed existing monkfish trip limits while on a monkfish DAS would be allowed to switch to a monkfish RSA DAS, while at sea, to land additional monkfish. Such a declaration must occur before returning to port, and comply with applicable reporting requirements for the monkfish RSA program and applicable EFP conditions.

Rationale: This measure would reduce discards and increase operational flexibility by allowing vessels to land monkfish in excess of existing monkfish trip limits while under a DAS.

4.2 Modifications to Monkfish Possession Limits

4.2.1 Northern Area Monkfish Trip Limit on a NE multispecies and monkfish DAS

4.2.1.1 Option 1: No Action

Under current regulations, vessels on a monkfish DAS are subject to a trip limit, and when on a groundfish, but not a monkfish DAS they in the Northern Management Area have an incidental limit of 600 lbs. tail wt. per DAS.

4.2.1.2 Option 2: Eliminate the Trip Limit on a NE multispecies DAS and monkfish DAS (Preferred Alternative)

This alternative would eliminate the monkfish possession limit when Category C and D permitted vessels (i.e. vessels issued both limited access NE multispecies and monkfish permits) are fishing under both a NE multispecies DAS and monkfish DAS, on the same trip, in the NFMA. This alternative would introduce a fourth tier to the monkfish possession limit paradigm. Tier 1 represents the incidental monkfish possession limits when fishing on no DAS and is outlined in Table 4. Tier 2 represents the incidental monkfish possession limits when fishing on a NE multispecies DAS and is outlined in Table 5. Tier 3 represents the monkfish possession limits on a monkfish DAS and is outlined in Table 6. Tier 4 would remove the possession limit while fishing on a NE multispecies DAS and a monkfish DAS and is outlined in Table 7.

Table 4- Current incidental monkfish landing limits when not on any DAS

DAS Program	Area	Gear	Landing Limit (per trip unless otherwise stated)
No DAS	Gulf of Maine or Georges Bank Regulated Mesh areas	Minimum mesh size or larger	Up to 5% of total weight of fish on board
	Southern New England RMA east of Mid-Atlantic exemption area		Up to 5% of total weight of fish on board, not to exceed 50 lb per day, up to 150 lb per trip
	SNE RMA west of the Mid-Atlantic Exemption area boundary or Mid-Atlantic RMA		Up to 5% of total weight of fish on board, not to exceed 450 lb
	NFMA or SFMA	Mesh smaller than minimum	50 lb per day, or partial day, not to exceed 150 lb per trip
		Rod and reel or handlines only	
No DAS and fishing under a skate bait letter of authorization	SNE RMA	Minimum mesh size or larger	Up to 5% of the total weight of fish on board, not to exceed 50 lb per day, up to 150 lb per trip

Table 5- Incidental monkfish trip limits while on a NE multispecies DAS in the NFMA

Permit Category	C	D
Gear	All gear	
Landing Limit (tail weight per DAS)	600 lb (1,746 lb whole weight)	500 lb (1,455 lb whole weight)

Table 6-Possession limits when on a monkfish DAS in the NFMA

Permit Category	C	D
Gear	All gear	
Landing Limit (tail weight per DAS)	1250 lb	600 lb

Table 7- Monkfish possession limits while on a NE multispecies DAS and a monkfish DAS

Permit Category	C	D
Gear	All gear	
Landing Limit (tail weight per DAS)	Unlimited	unlimited

Rationale: Eliminating the monkfish trip limit in the NFMA is intended to increase monkfish landings to more fully utilize the ACT in the NFMA. This could provide additional fishing revenue for groundfish vessels to help offset expected fishing revenue reductions associated with reduced groundfish quotas in NFMA in the near future, and minimize the potential for effort to shift from the groundfish fishery in the NFMA to the monkfish fishery in the SFMA. This alternative could be implemented in conjunction with alternative 4.1.1, which would allow Category C and D vessels to go from the no DAS monkfish possession limit to no trip limit if a NE multispecies DAS was declared at sea.

4.3 Modifications to Gear Requirements while on a Monkfish DAS

4.3.1 Modification to mesh size requirements on a monkfish DAS

4.3.1.1 Option 1: No Action

Vessels fishing under monkfish DAS must fish with trawls having mesh no smaller than 10-inches square or 12-inches diamond in the codend, unless the vessel has a Category C or D permit and is also fishing under a NE multispecies DAS. If a vessel is fishing on a NE multispecies and monkfish DAS, a trawl must have mesh that conforms with the regulations for the NE Multispecies FMP. If using a gillnet during a monkfish DAS, the gillnet must have mesh no smaller than 10-inches diamond. Vessels may have smaller mesh on board if it is stowed so that it is not available for immediate use.

To accommodate situations when a vessel hauls up mesh smaller than the minimum legal size (for example, a lost or discarded small mesh net), the minimum mesh on board regulation will apply to pieces of mesh larger than three feet square. Vessel captains should take necessary steps to render the mesh unusable (e.g. cutting up large pieces into pieces smaller than three feet square, and otherwise destroying the mesh).

Rationale: The primary purpose of requiring large mesh is to reduce bycatch of other marine species while retaining the larger monkfish. This management measure could improve the possibility that more exempted areas would be open for targeting monkfish, if the bycatch of other species was below the legal thresholds. Monkfish size selectivity by these large mesh nets is unknown, but they could have a beneficial effect on size selection. The body shape of monkfish, however, prevents even large changes in minimum mesh size from substantially improving monkfish selectivity. The FMP, therefore, relies more on day-at-sea allocations, trip limits, and size limits to reduce fishing mortality.

4.3.1.2 Option 2: Allow the use of 5-7” mesh in standup gillnet on a monkfish DAS

This alternative would allow limited access Category C and D monkfish vessels to target other species, e.g. dogfish, using mesh size between 5 and 7-inches stand-up gillnets and also retain legal-sized monkfish when fishing on a monkfish or a monkfish/NE multispecies DAS on the same trip. This would be allowed in both the NFMA and the SFMA on a year-round basis. This measure would not modify minimum mesh size requirements for trawl vessels or gillnet vessels using tie-downs. This measure would also not modify the existing regulations in the Gulf of Maine/ Georges Bank Dogfish and Monkfish Gillnet Fishery Exemption Area, the Southern New England Monkfish, Skate, and Dogfish Exemption Area or the Mid-Atlantic Exemption Area.

Rationale: This alternative increases operational flexibility of monkfish operations by allowing vessels to target both monkfish and dogfish using different gear types when on a monkfish DAS.

4.3.1.3 Option 3: Allow the use of 5-7” mesh standup gillnet on a monkfish DAS in NFMA

This alternative would allow limited access monkfish vessels to target other species, e.g. dogfish, using mesh size between 5 and 7-inches stand-up gillnets and also retain legal-sized monkfish when fishing on a monkfish or a monkfish/NE multispecies DAS on the same trip. This would be allowed only in the NFMA. This measure would also not modify the existing regulations in the Gulf of Maine/ Georges Bank Dogfish and Monkfish Gillnet Fishery Exemption Area.

Rationale: This alternative increases operational flexibility of monkfish operations by allowing vessels to target both monkfish and dogfish using different gear types when on a monkfish DAS.

4.3.1.4 Option 4: Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in SFMA (*Preferred Alternative*)

This alternative would allow vessels fishing on a combined NE multispecies DAS and monkfish DAS to use of 6.5” minimum mesh standup gillnet in the Southern Fishery Management Area.

Within the Mid-Atlantic Exemption Area (Figure 2), vessels fishing on a monkfish DAS would be allowed to use 5” minimum mesh standup gillnet and retain both monkfish and dogfish on the same trip. Vessels would still adhere to the regulation limiting the total number of gillnets fished (160 gillnets for monkfish Category A and B permits and 150 gillnets for monkfish Category C and D permits), but this alternative would limit the number of standup gillnets fished to 50.

Within the Southern New England Dogfish Exemption Area (Figure 3), vessels fishing on a monkfish DAS would be allowed to use 6” minimum mesh standup gillnets and retain both monkfish and dogfish on the same trip only during the designated exemption season (May 1 to October 31). Vessels would still adhere to the regulation limiting the total number of gillnets fished (160 gillnets for monkfish Category A and B permits and 150 gillnets for monkfish Category C and D permits), but this alternative would limit the number of standup gillnets fished to 50.

Within the SNE Monkfish and Skate Exemption Area, vessels fishing on a monkfish DAS would be allowed to use 10” minimum mesh gillnets and retain both monkfish and dogfish on the same trip, year-round. Vessels would still adhere to the regulation limiting the total number of gillnets fished (160 gillnets for monkfish Category A and B permits and 150 gillnets for monkfish Category C and D permits).

Alternatives Under Consideration
 Modifications to Gear Requirements while on a Monkfish DAS

Rationale: This alternative increases operational flexibility of monkfish operations by allowing vessels to target both monkfish and dogfish using different gear types when on a monkfish DAS. It is focused on the SFMA out of concerns for interactions with groundfish. A summary of the proposed modifications to the minimum mesh requirements, including the applicable changes to each exemption area, is provided in Table 8.

Table 8 - Summary of proposed modifications to minimum mesh requirements for standup gillnet in SFMA

	Mid-Atlantic Exemption Area	SNE Dogfish Exemption Area	NE Multispecies DAS	SNE Monkfish and Skate Exemption Area
Minimum gillnet mesh	5" for standup nets	6" for standup nets	6.5" for standup nets	10" for all nets
DAS	Monkfish	Monkfish	NE multispecies and monkfish	Monkfish
Season	Year-round	May 1 – October 31	Year-round	Year-round
Modification required to retain both dogfish and monkfish	Yes	Yes	No	Yes



Figure 2 - Mid-Atlantic Exemption Area



Figure 3 - Southern New England Dogfish and Monkfish Exemption Areas

5.0 Considered but Rejected

5.1 Option 1: Allow all limited access Monkfish Category C, D, and H vessels to declare a NE multispecies DAS at sea in both the NFMA and SFMA

The operator of any limited access monkfish Category C, D, or H vessel fishing on a NE multispecies sector non-DAS trip or under a monkfish-only DAS may declare his/her intent to also use a NE multispecies Category A DAS on the same trip before returning to port. The vessel operator must change the trip's DAS declaration to include a NE multispecies DAS through the vessels' VMS unit before crossing the VMS demarcation line upon its return to port.

This option was not pursued because the Council was concerned about negative biological and economic impacts on the fishery in the SFMA, which might arise if a lot of effort shifted to the SFMA.

5.2 Option 2: Allow only groundfish sector vessels holding limited access Monkfish Category C, D, and H permits to declare a NE multispecies DAS at sea in both the NFMA and SFMA

The operator of any limited access monkfish Category C, D, or H sector vessel fishing on a NE multispecies sector non-DAS trip or under a monkfish-only DAS may declare his/her intent to also use a NE multispecies Category A DAS on the same trip before returning to port. The vessel operator must change its DAS declaration to include a NE multispecies DAS through the vessels' VMS unit before crossing the VMS demarcation line upon its return to port.

This option was not pursued because the Council was concerned about negative biological and economic impacts on the fishery in the SFMA, which might arise if a lot of effort shifted to the SFMA.

5.3 Option 2: Increase monkfish-only DAS based on higher groundfish common pool DAS counting

This alternative would increase the allocation of monkfish DAS to offset the impact of NE multispecies DAS differential counting for common pool vessels. A vessel's monkfish allocation would be increased proportionate to the difference between NE multispecies DAS charged and monkfish DAS charged so that each vessel would be able to fully utilize its annual allocation of monkfish DAS to the extent possible. Any monkfish DAS allocated that exceed the NE multispecies DAS allocation would have to be fished as monkfish-only DAS, or the vessel would have to lease in additional NE multispecies DAS to continue fishing its monkfish DAS in combination with NE multispecies DAS.

This option was not pursued because after examination of the data, there was no basis (or need) for such a measure at this time.

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6.0 Affected Environment (SAFE Report for 2014)

6.1 Biological Environment and Stock Status

6.1.1 Monkfish Life History

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

6.1.2 Monkfish Stock Status

NMFS conducted an updated assessment for monkfish in 2013 (NEFSC 2013), with a terminal year of 2011 (Table 9). Long-term assessments of total biomass at F_{max} were recommended in SAW 50 (NEFSC 2010) and utilized for management purposes in 2011 and updated in the current assessment. The 2013 assessment indicates that monkfish are not overfished in the NFMA or the SFMA (Figure 4 and Figure 5), however there are high levels of uncertainty regarding Biological Reference Points (BRPs) due to gaps in the input data and a persistent retrospective pattern that underestimates F and overestimates B in each area. The 2013 assessment states:

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

Table 9- Monkfish reference points and stock status from the 2013 Monkfish Operational Assessment

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

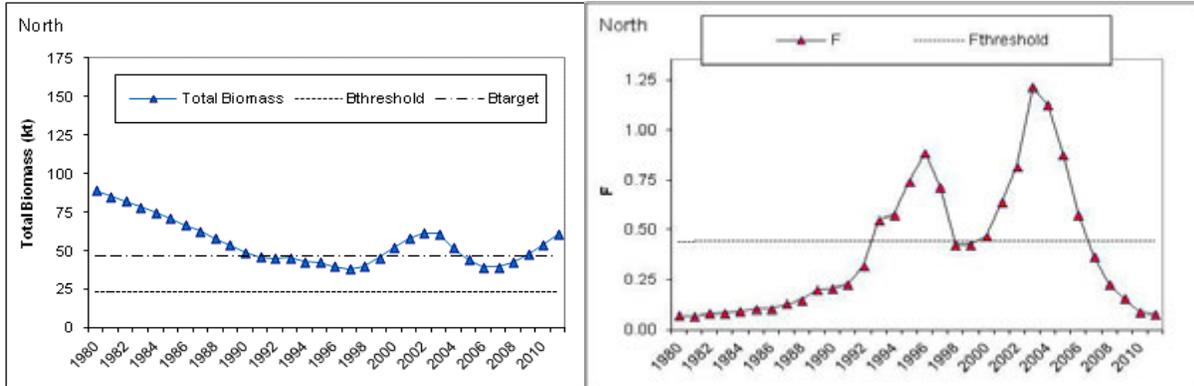


Figure 4 - Northern monkfish biomass and fishing mortality estimated from the 2013 Monkfish Operational Assessment

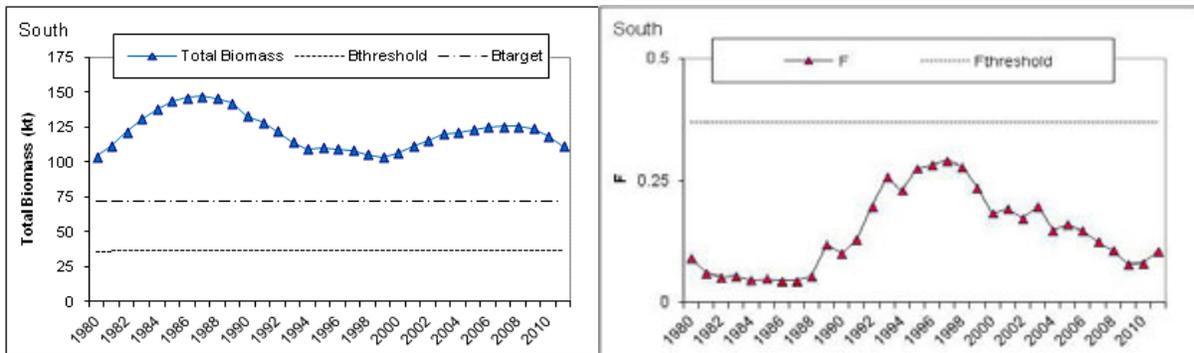


Figure 5 - Southern monkfish biomass and fishing mortality estimated from the 2013 Monkfish Operational Assessment

6.1.3 Bycatch of Non-target Species in the Fishery

The monkfish fishery is closely associated with the catch of several species managed by other FMPs, specifically groundfish, skate, and spiny dogfish fisheries. Particularly in the NFMA, monkfish can be targeted or caught as incidental bycatch during trips in which groundfish are also caught, depending on the focus of a trip. Further, skates and spiny dogfish are often caught when targeting monkfish in both areas, particularly in the SFMA.

The status of all managed groundfish stocks were most recently updated in 2015. Updated assessments occurred in 2015. These assessments are summarized in recent management actions under the Northeast Multispecies FMP, including FW 48 (NEFMC 2013a), FW 50 (NEFMC 2013b), FW 51 (NEFMC 2014b), FW 53 (NEFMC, 2015c), and FW55. Several groundfish stocks are overfished, while others are subject to overfishing (Table 10).

Table 10 - Current status of groundfish stocks for fishing year 2014 managed under the Northeast Multispecies FMP (GB = Georges Bank)

Stock	2015 Assessments	
	Overfishing?	Overfished?
Georges Bank Cod	Unknown	Yes
Gulf of Maine Cod	Yes	Yes
Georges Bank Haddock	No	No
Gulf of Maine Haddock	No	No
Georges Bank Yellowtail Flounder	Unknown	Unknown
Southern New England/Mid-Atlantic Yellowtail Flounder	Yes	Yes
Cape Cod/Gulf of Maine Yellowtail Flounder	Yes	Yes
American Plaice	No	No
Witch Flounder	Yes	Yes
Georges Bank Winter Flounder	Yes	Yes
Gulf of Maine Winter Flounder	No	Unknown
Southern New England/Mid-Atlantic Winter Flounder	No	Yes
Acadian Redfish	No	No
White Hake	No	No
Pollock	No	No
Northern Windowpane Flounder	No	Yes
Southern Windowpane Flounder	No	No
Ocean Pout	No	Yes
Atlantic Halibut	Unknown	Yes
Atlantic Wolffish	No	Yes

Source: NEFSC 2015

The 2013-2013 Skate Specifications document (NEFMC 2012) detailed skate discards by gear type (Table 11). FW 2 to the Skate FMP indicates that over 8.6 million lb of skates (whole and wings) landed during FY 2012 were attributed to monkfish directed trips (Table 22 of NEFMC 2014b). The monkfish fishery accounted for a very small portion (< 1%) of the bait fishery (whole skates) during that year, but represented approximately 44 % of skate wing landings during FY 2012 in both the NFMA and SFMA combined once unmatched trips were assigned to an FMP based on the proportion of matched landings. Matched skate landings on directed monkfish trips were further broken down to evaluate skate landings by gear and monkfish management area (Table 12). During both FYs 2011 and 2012, the monkfish SFMA gillnet fishery was responsible for 92-94 % of skate wing landings from the directed monkfish fishery, with very little skate landings attributable to either the monkfish trawl or gillnet fisheries in the NFMA. Skate landings while on a monkfish research set aside (RSA) DAS could not be parsed by gear or area during these FYs, but it is likely to reflect skate landings under a conventional monkfish DAS due to the nature of the monkfish RSA program. In general, total skate discards are proportional to fishing effort in the monkfish and groundfish fisheries; as effort increases in these fisheries, skate discards are expected to increase. Discard mortality is low for skates caught in all gear types (less than 50 percent for most species), with discard mortality ranging from 9-23 percent for winter, little, and thorny skates, and 60 percent for smooth skates (see NEFMC 2014e).

Table 11 - Skate discard rates on observed tows for vessels using large mesh trawl and gillnets

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

Table 12 - Total skate incidental landings (whole skate and wings in lbs. live weight) from directed monkfish trips by gear type for FYs 2011 and 2012

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

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

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

6.2 Protected Resources (ESA Listed Species and MMPA Protected Species)

6.2.1 Species Present in the Area

Numerous protected species inhabit the environment within the monkfish FMP (Table 13). 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).

Table 13 - Species Protected under the Endangered Species Act and/or Marine Mammal Protection Act that may occur in the operations area of the monkfish fishery

Species	Status	Potentially affected by this action?
Cetaceans		
North Atlantic right whale (<i>Eubalaena glacialis</i>)	Endangered	Yes
Humpback whale (<i>Megaptera novaeangliae</i>)	Endangered	Yes
Fin whale (<i>Balaenoptera physalus</i>)	Endangered	Yes
Sei whale (<i>Balaenoptera borealis</i>)	Endangered	Yes
Blue whale (<i>Balaenoptera musculus</i>)	Endangered	No
Sperm whale (<i>Physeter macrocephalus</i>)	Endangered	No
Minke whale (<i>Balaenoptera acutorostrata</i>)	Protected	Yes
Pilot whale (<i>Globicephala spp.</i>) ¹	Protected	Yes
Risso's dolphin (<i>Grampus griseus</i>)	Protected	Yes
Atlantic white-sided dolphin (<i>Lagenorhynchus acutus</i>)	Protected	Yes
Short Beaked Common dolphin (<i>Delphinus delphis</i>) ²	Protected	Yes
Spotted dolphin (<i>Stenella frontalis</i>)	Protected	No
Bottlenose dolphin (<i>Tursiops truncatus</i>) ³	Protected	Yes
Harbor porpoise (<i>Phocoena phocoena</i>)	Protected	Yes
Sea Turtles		
Leatherback sea turtle (<i>Dermochelys coriacea</i>)	Endangered	Yes
Kemp's ridley sea turtle (<i>Lepidochelys kempii</i>)	Endangered	Yes
Green sea turtle (<i>Chelonia mydas</i>) ⁴	Endangered ⁴	Yes
Loggerhead sea turtle (<i>Caretta caretta</i>), Northwest Atlantic DPS	Threatened	Yes
Hawksbill sea turtle (<i>Eretmochelys imbricate</i>)	Endangered	No
Fish		
Shortnose sturgeon (<i>Acipenser brevirostrum</i>)	Endangered	No
Atlantic salmon (<i>Salmo salar</i>)	Endangered	Yes
Atlantic sturgeon (<i>Acipenser oxyrinchus</i>)		
<i>Gulf of Maine DPS</i>	Threatened	Yes
<i>New York Bight DPS, Chesapeake Bay DPS, Carolina DPS & South Atlantic DPS</i>	Endangered	Yes
Cusk (<i>Brosme brosme</i>)	Candidate	Yes
Thorny skate (<i>Amblyraja radiata</i>)	Candidate	Yes

Species	Status	Potentially affected by this action?
Porbeagle shark (<i>Lamna nasus</i>)	Candidate	Yes
Pinnipeds		
Harbor seal (<i>Phoca vitulina</i>)	Protected	Yes
Gray seal (<i>Halichoerus grypus</i>)	Protected	Yes
Harp seal (<i>Phoca groenlandicus</i>)	Protected	Yes
Hooded seal (<i>Cystophora cristata</i>)	Protected	Yes
Critical Habitat		
North Atlantic Right Whale ⁵	ESA-listed	No
Northwest Atlantic DPS of Loggerhead Sea Turtle	ESA-listed	No
<p><i>Notes:</i></p> <p>¹ There are two species of pilot whales: short finned (<i>G. melas melas</i>) and long finned (<i>G. macrorhynchus</i>). Due to the difficulties in identifying the species at sea, they are often just referred to as <i>Globicephala spp.</i></p> <p>² Prior to 2008, this species was called “common dolphin.”</p> <p>³ This includes the Western North Atlantic Offshore, Northern Migratory Coastal, and Southern Migratory Coastal Stocks of Bottlenose Dolphins.</p> <p>⁴ 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. On March 23, 2015, a proposed rule was issued to remove the current range-wide listing and, in its place, list eight DPSs as threatened and three as endangered (80 FR 15272).</p> <p>⁵ Originally designated June 3, 1994 (59 FR 28805); Expanded and revised on January 27, 2016 (81 FR 4837).</p>		

Cusk, porbeagle shark, and thorny skate, a NMFS "candidate species" under the ESA, occurs in the affected environment of the monkfish fishery. Candidate species are those petitioned species that NMFS is actively considering for listing as endangered or threatened under the ESA and also include those species for which NMFS has initiated an ESA status review through an announcement in the Federal Register. Once a species is proposed for listing the conference provisions of the ESA apply (see 50 CFR 402.10); however, candidate species receive no substantive or procedural protection under the ESA. As a result, cusk, porbeagle shark, and thorny skate, will not be discussed further in this, and the following sections. However, for additional information on these species, please visit: <http://www.nmfs.noaa.gov/pr/species/esa/candidate.htm>

6.2.2 Species Not Likely to be Affected

Based on available information, it has been determined that this action is not likely to affect blue whales, sperm whales, Atlantic spotted dolphins, shortnose sturgeon, or hawksbill sea turtles. Further, this action is not likely to adversely affect any critical habitat provided in Table 13. This determination has been made because either the occurrence of the species is not known to overlap with the monkfish fishery and/or there have never been documented interactions between the species and the monkfish fishery (http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html; Waring *et al.* 2014, 2015; NMFS 2013; NMFS NEFSC FSB 2015). In the case of critical habitat, this determination has been made because the monkfish fishery will not affect the primary constituent elements of the critical habitat, and therefore, will not result

in the destruction or adverse modification of critical habitat (See: <http://www.nmfs.noaa.gov/pr/species/criticalhabitat.htm>; NMFS 2013).

6.2.3 Species Potentially Affected

The monkfish fishery may affect multiple protected species of cetacean, sea turtles, pinnipeds, and fish (Table 13). Of primary concern is the potential for the fishery to interact (e.g., bycatch, entanglement) with these species. To understand the potential risk of an interaction, it is necessary to consider (1) species occurrence in the affected environment of the fishery and how the fishery will overlap in time and space with this occurrence; and (2) records of protected species interaction with particular fishing gear types. Information on species occurrence in the affected environment of the monkfish fishery is presented in this section, while information on protected species interactions with fishery gear is presented in Section 6.2.4.

6.2.3.1 Sea Turtles

Below is a summary of the occurrence and distribution of sea turtles in the affected environment of the monkfish fishery. Additional background information on the range-wide status of affected sea turtle species, as well as a description and life history of each of these species, can be found in a number of published documents, including sea turtle status reviews and biological reports (NMFS and USFWS 1995; Hirth 1997; Turtle Expert Working Group [TEWG] 1998, 2000, 2007, 2009; NMFS and USFWS 2007a, 2007b; Conant *et al.* 2009; NMFS and USFWS 2013), and recovery plans for the loggerhead sea turtle (Northwest Atlantic DPS; NMFS and USFWS 2008), leatherback sea turtle (NMFS and USFWS 1992, 1998a), Kemp's ridley sea turtle (NMFS *et al.* 2011), and green sea turtle (NMFS and USFWS 1991, 1998b).

Hard-shelled sea turtles

Distribution. In U.S. Northwest Atlantic waters, hard-shelled turtles commonly occur throughout the continental shelf from Florida to Cape Cod, MA, although their presence varies with the seasons due to changes in water temperature (Braun-McNeill *et al.* 2008; Braun & Epperly 1996; Epperly, Braun & Chester 1995; Epperly, Braun, Chester, *et al.* 1995; Mitchell *et al.* 2003; Shoop & Kenney 1992; TEWG 2009). While hard-shelled turtles are most common south of Cape Cod, MA, they are known to occur in the Gulf of Maine (GOM). Loggerheads, the most common hard-shelled sea turtle in the GAR, feed as far north as southern Canada. Loggerheads have been observed in waters with surface temperatures of 7°C to 30°C, but water temperatures $\geq 11^\circ\text{C}$ are most favorable (Epperly, Braun, Chester, *et al.* 1995; Shoop & Kenney 1992). Sea turtle presence in U.S. Atlantic waters is also influenced by water depth. While hard-shelled turtles occur in waters from the beach to beyond the continental shelf, they are most commonly found in neritic waters of the inner continental shelf (Blumenthal *et al.* 2006; Braun-McNeill & Epperly 2004; Griffin *et al.* 2013; Hawkes *et al.* 2006; Hawkes *et al.* 2011; Mansfield *et al.* 2009; McClellan & Read 2007; Mitchell, *et al.* 2003; Morreale & Standora 2005).

Seasonality. Hard-shelled sea turtles occur year-round in waters off Cape Hatteras, North Carolina and south. As coastal water temperatures warm in the spring, loggerheads begin to migrate to inshore waters of the southeast United States and also move up the Atlantic Coast (Braun-McNeill & Epperly 2004; Epperly, Braun & Chester 1995; Epperly, Braun, Chester, *et al.* 1995; Epperly, Braun & Veishlow 1995; Griffin, *et al.* 2013; Morreale & Standora 2005), occurring in Virginia foraging areas as early as late April and on the most northern foraging grounds in the GOM in June (Shoop & Kenney 1992). The trend is reversed in the fall as water temperatures cool. The large majority leave the GOM by September, but some remain in Mid-Atlantic and Northeast areas until late fall (i.e., November). By December, sea turtles have migrated south to waters offshore of North Carolina, particularly south of Cape Hatteras, and further

(Epperly, Braun, Chester, et al. 1995; Griffin, et al. 2013; Hawkes, et al. 2011; Shoop & Kenney 1992).

Leatherback sea turtles

Leatherback sea turtles also engage in routine migrations between northern temperate and tropical waters (Dodge et al. 2014; James et al. 2005; James et al. 2006; NMFS & USFWS 1992). Leatherbacks, a pelagic species, are known to use coastal waters of the U.S. continental shelf (Dodge, et al. 2014; Eckert et al. 2006; James, et al. 2005; Murphy et al. 2006). They have a greater tolerance for colder water than hard-shelled sea turtles. They are also found in more northern waters later in the year, with most leaving the Northwest Atlantic shelves by mid-November (Dodge, et al. 2014; James, et al. 2005; James, et al. 2006).

6.2.3.2 Large Cetaceans

Species of large whales occurring in the affected environment of the monkfish fishery are provided in Table 14. For additional information on the biology, status, and distribution of each species, refer to: Waring et al. (2014), Waring et al. (2015), and NMFS (1991; 2005; 2010a; 2011; 2012).

Right, humpback, fin, sei, and minke whales are found throughout the waters of the Northwest Atlantic Ocean. In general, these species follow an annual pattern of migration between low latitude wintering/calving grounds (south of 35°N) and high latitude spring/summer foraging grounds (primarily north of 41°N) (NMFS 1991; 2005; 2010a; 2011; 2012; Waring, et al. 2014, Waring, et al. 2015). This, however, is a simplification of whale movements, particularly as it relates to winter movements. It remains unknown if all individuals of a population migrate to low latitudes in the winter, although, increasing evidence suggests that for some species (e.g., right and humpback whales), some portion of the population remains in higher latitudes throughout the winter (Brown et al. 2002; Clapham et al. 1993; Cole et al. 2013; Khan et al. 2010; 2011; 2012; Khan et al. 2009; NOAA 2008; Swingle et al. 1993; Vu et al. 2012; Waring, et al. 2014; Waring, et al. 2015). Although further research is needed to provide a clearer understanding of large whale movements and distribution in the winter, the distribution and movements of large whales to foraging grounds in the spring/summer is well understood. Movements of whales into higher latitudes coincide with peak productivity in these waters. As a result, the distribution of large whales in higher latitudes is strongly governed by prey availability and distribution, with large numbers of whales coinciding with dense patches of preferred forage (Baumgartner et al. 2003; Baumgartner & Mate 2003; Brown, et al. 2002; Kenney 2001; Kenney et al. 1986; Kenney et al. 1995; Mayo & Marx 1990; Payne et al. 1986; Payne et al. 1990; Schilling et al. 1992). These foraging areas are consistently returned to annually, and therefore, can be considered important, high use areas for whales.

Table 14 - Species of large whales occurring in the affected area of the monkfish fishery

Species	Listed Under the ESA	Protected Under the MMPA	Minimum Population Size	Population Trend	MMPA Strategic Stock ¹
North Atlantic Right Whale	Yes-Endangered	Yes	465	positive and slowly accelerating	Yes
Humpback Whale	Yes-Endangered	Yes	823	positive	Yes
Fin Whale	Yes-Endangered	Yes	1,234	unknown	Yes
Sei Whale	Yes-Endangered	Yes	236	unknown	Yes
Minke Whale	No	Yes	16,199	unknown	No

¹A strategic stock is defined under the MMPA as a marine mammal stock: for which the level of direct human-caused mortality exceeds the potential biological removal level; which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the ESA within the foreseeable future; or which is listed as a threatened or endangered species under the ESA, or is designated as depleted under the MMPA.
Source: Waring, et al. (2015).

As the affected area of the monkfish fishery occurs in waters north of 35°N, and whales may be present in these waters throughout the year, the monkfish fishery and large whales are likely to co-occur in the affected area. To further assist in understanding how the monkfish fishery overlaps in time and space with the occurrence of large whales, Table 15 gives an overview of species occurrence and distribution in the affected environment of the monkfish fishery. For additional information on the biology, status, and range wide distribution of each whale species, refer to: Waring et al. (2014), Waring et al. (2015), and NMFS (1991; 2005; 2010a; 2011; 2012).

Table 15 - Large cetacean occurrence in the GOM, GB, SNE, and Mid-Atlantic sub-regions of the monkfish fishery

Species	Prevalence and Approximate Months of Occurrence
North Atlantic Right Whale	<ul style="list-style-type: none"> • Distributed throughout all continental shelf waters of the GOM, GB, and Mid-Atlantic (SNE included) throughout the year. • New England waters (GOM and GB regions): Foraging Grounds. Important foraging grounds include: <ul style="list-style-type: none"> › Cape Cod Bay (January-April); › Great South Channel (April-June) › western GOM (April-May and July-October); › northern edge of GB (May-July); › Jordan Basin (August-October); and › Wilkinson Basin (April-July) • Mid-Atlantic waters: Migratory pathway to/from northern (high latitude) foraging

Species	Prevalence and Approximate Months of Occurrence
	<p>and southern calving grounds (primarily November-April).</p> <ul style="list-style-type: none"> • Increasing evidence of wintering areas (approximately November – January) in: <ul style="list-style-type: none"> › Cape Cod Bay; › Jeffreys and Cashes Ledges; › Jordan Basin; and › Massachusetts Bay (e.g., Stellwagen Bank).
Humpback	<ul style="list-style-type: none"> • Distributed throughout all continental shelf waters of the Mid-Atlantic (SNE included), GOM, and GB throughout the year. • New England waters (GOM and GB regions): Foraging Grounds (approximately March-November). • Mid-Atlantic waters: Migratory pathway to/from northern (high latitude) foraging and southern (West Indies) calving grounds. • Increasing evidence of wintering areas (for juveniles) in Mid-Atlantic (e.g., waters in the vicinity of Chesapeake and Delaware Bays; peak presence approximately January through March) and Southeastern coastal waters.
Fin	<ul style="list-style-type: none"> • Distributed throughout all continental shelf waters of the Mid-Atlantic (SNE included), GOM, and GB sub-regions throughout the year. • Mid-Atlantic waters: <ul style="list-style-type: none"> › Migratory pathway to/from northern (high latitude) foraging and southern (low latitude) calving grounds; › Possible offshore calving area (October-January) • New England/SNE waters (GOM, GB, and SNE regions): Foraging Grounds (greatest densities March-August; lower densities September-November). • Important foraging grounds include: <ul style="list-style-type: none"> > Massachusetts Bay (esp. Stellwagen Bank) > Great South Channel > waters off Cape Cod (~40-50 meter contour) > western GOM (esp. Jeffrey's Ledge) > Eastern perimeter of GB > Mid-shelf area off the east end of Long Island. • Evidence of wintering areas in mid-shelf areas east of New Jersey, Stellwagen Bank; and eastern perimeter of GB.
Sei	<ul style="list-style-type: none"> • Uncommon in shallow, inshore waters of the Mid-Atlantic (SNE included), GB, and GOM; however, occasional incursions during peak prey availability and

Species	Prevalence and Approximate Months of Occurrence
	<p>abundance.</p> <ul style="list-style-type: none"> • Primarily found in deep waters along the shelf edge, shelf break, and ocean basins between banks. • Spring through summer, found in greatest densities in offshore waters of the GOM and GB (eastern margin into the Northeast Channel area; along the southwestern edge in the area of Hydrographer Canyon).
Minke	<ul style="list-style-type: none"> • Widely distributed throughout continental shelf waters of the Mid-Atlantic (SNE included), GOM, and GB during the spring, summer and fall; however, spring through summer found in greatest densities in the GOM and GB.
<p>Sources: NMFS 1991, 2005, 2010b, 2011, 2012; Hain <i>et al.</i> 1992; Payne 1984; Good 2008; McClellan <i>et al.</i> 2004; Hamilton and Mayo 1990; Schevill <i>et al.</i> 1986; Watkins and Schevill 1982; Payne <i>et al.</i> 1990; Winn <i>et al.</i> 1986; Kenney <i>et al.</i> 1986, 1995; Khan <i>et al.</i> 2009, 2010, 2011, 2012; Brown <i>et al.</i> 2002; NOAA 2008; 50 CFR 224.105; CETAP 1982; Clapham <i>et al.</i> 1993; Swingle <i>et al.</i> 1993; Vu <i>et al.</i> 2012; Baumgartner <i>et al.</i> 2011; Cole <i>et al.</i> 2013; Risch <i>et al.</i> 2013; Waring <i>et al.</i> 2014; Waring <i>et al.</i> 2015; 81 FR 4837.</p>	

6.2.3.3 Small Cetaceans

Table 16 provides the species of small cetaceans that occur in the affected environment of the monkfish fishery. For additional information on the biology, status, and range wide distribution of each small cetacean species please refer to Waring *et al.* 2014 and Waring *et al.* (2015).

Table 16 - Small cetacean species that occur in the affected environment of the monkfish fishery

Species	Listed Under the ESA	Protected Under the MMPA	Minimum Population Size	Population Trend	MMPA Strategic Stock
Atlantic White Sided Dolphin	No	Yes	30,403	unknown	No
Short-Finned Pilot Whale	No	Yes	15,913	unknown	No
Long-Finned Pilot Whale	No	Yes	19,930	unknown	No
Rissos Dolphin	No	Yes	12,619	unknown	No
Short Beaked Common Dolphin	No	Yes	112,531	unknown	No
Harbor Porpoise	No	Yes	61,415	unknown	Yes¹
Bottlenose Dolphin (<i>Western North Atlantic Offshore Stock</i>)	No	Yes	56,053	unknown	No
Bottlenose Dolphin (<i>Western North Atlantic Northern Migratory Coastal Stock</i>)	No	Yes	8,620	unknown	Yes²
Bottlenose Dolphin (<i>Western North Atlantic Southern Migratory Coastal Stock</i>)	No	Yes	6,326	unknown	Yes³
<p>Notes: ¹ Harbor porpoise are considered a strategic stock under the MMPA as the level of direct human-caused mortality has exceeded the PBR level for this species.</p> <p>^{2,3} Both northern and southern migratory coastal stocks of bottlenose dolphins are considered a strategic stock under the MMPA as both stocks are designated as depleted under the Act.</p> <p>Source: Waring <i>et al.</i> 2014, Waring <i>et al.</i> 2015</p>					

Small cetaceans are found throughout the waters of the Northwest Atlantic Ocean. In the affected area, they can be found throughout the year from Cape Hatteras, North Carolina (35°N), to the Canadian border (Waring *et al.* 2014; Waring *et al.* 2015). Within this range; however, there are seasonal shifts in species distribution and abundance. As the affected area of the multi-species fishery occurs in waters north of 35°N, and small cetaceans may be present in these waters throughout the year, the monkfish fishery and small cetaceans are likely to co-occur in the affected area. To further assist in understanding how the monkfish fishery overlaps in time and space with the occurrence of small cetaceans, a general overview of species occurrence and distribution in the continental shelf waters of the affected environment of the monkfish fishery is provided in Table 17. For additional information on the biology, status, and range wide distribution of each species please refer to Waring *et al.* 2014 and Waring *et al.* 2015.

Table 17 - Small cetacean occurrence in the Gulf of Maine (GOM), Georges Bank (GB), Southern New England (SNE), and Mid-Atlantic sub-regions of the monkfish fishery¹

Species	Prevalence and Approximate Months of Occurrence (if known)
Atlantic White Sided Dolphin	<ul style="list-style-type: none"> • Distributed throughout the continental shelf waters (primarily to 100 meter isobath) of the Mid-Atlantic (north of 35°N), SNE, GB, and GOM sub-regions; however, most common in the SNE, GB, and GOM sub-regions (i.e., shelf waters from Hudson Canyon (~ 39°N) and into GB, Massachusetts Bay, and the GOM). • Seasonal shifts in distribution: <ul style="list-style-type: none"> *January-May: low densities found from GB to Jeffreys Ledge; *June-September: Large densities found from GB, through the GOM; *October-December: intermediate densities found from southern GB to southern GOM. • South of GB (SNE and Mid-Atlantic sub- regions), low densities found year round, with waters off Virginia and North Carolina representing southern extent of species range during winter months.
Short Beaked Common Dolphin	<ul style="list-style-type: none"> • Regularly found throughout the continental shelf-edge-slope waters (primarily between the 100-2,000 meter isobaths) of the Mid-Atlantic, SNE, and GB sub-regions (esp. in Oceanographer, Hydrographer, Block, and Hudson Canyons). • Occasionally found in the GOM. • Seasonal shift in distribution: <ul style="list-style-type: none"> *January-May: occur from Cape Hatteras, NC, to GB * Mid-summer-autumn: moves onto GB; <i>Peak abundance</i> found on GB in the autumn.
Risso's Dolphin	<ul style="list-style-type: none"> • Common in the continental shelf edge waters of the Mid-Atlantic, SNE, and GB sub-regions; rare in the GOM sub-region. • From approximately March-November: distributed along continental shelf edge from Cape Hatteras, NC, to GB. • From approximately December-February: distributed in continental shelf edge of the Mid-Atlantic (SNE and Mid-Atl. sub-regions).
Harbor Porpoise	<ul style="list-style-type: none"> • Distributed throughout the continental shelf waters (primarily in waters less than 150 meters) of the Mid-Atlantic (north of 35°N), SNE, GB, and GOM sub-regions. • Seasonal shifts in distribution: <ul style="list-style-type: none"> *July-September: Concentrated in the northern GOM; low numbers can be found on GB. *October-December: widely dispersed in waters from New Jersey to Maine. *January-March: intermediate densities in waters off New Jersey to North Carolina (SNE and Mid-Atl sub-regions); low densities

Species	Prevalence and Approximate Months of Occurrence (if known)
	<p>found in waters off New York to GOM. *April-June: widely dispersed from New Jersey to Maine</p>
Bottlenose Dolphin:	<p><u>Western North Atlantic Offshore Stock</u></p> <ul style="list-style-type: none"> • Spring-Summer: Primarily distributed along the outer continental shelf/edge-slope of the Mid-Atlantic, SNE, and GB sub-regions • Winter: Distributed in waters south of 35°N <p><u>Western North Atlantic Northern Migratory Stock</u></p> <ul style="list-style-type: none"> • Summer (July-August): distributed from the coastal waters from the shoreline to approximately the 25-m isobaths between the Chesapeake Bay mouth and Long Island, New York (Mid-Atl and SNE sub-regions). • Winter (January-March): Distributed in coastal waters south of 35°N. <p><u>Western North Atlantic Southern Migratory Stock</u></p> <ul style="list-style-type: none"> • Spring and Summer (April-August): distributed along coastal waters from North Carolina to Virginia (Mid-Atl and SNE sub-regions). • Fall and Winter (October-March): Distributed in coastal waters south of 35°N.
Pilot Whales: <i>Short- and Long-Finned</i>	<p><u>Short- Finned Pilot Whales</u></p> <ul style="list-style-type: none"> • Primarily occur south of 40°N (Mid-Atl and SNE sub-regions); although low numbers have been found along the southern flank of GB, but no further than 41°N. • Distributed primarily in the continental shelf edge-slope waters of Mid-Atlantic and SNE sub-regions from approximately May through December, with individuals moving to more southern waters (i.e., 35°N and south) beginning in the fall. <p><u>Long-Finned Pilot Whales</u></p> <ul style="list-style-type: none"> • Range from 35°N to 44°N • Winter to early spring (approximately November through April): primarily distributed along the continental shelf edge-slope of the Mid-Atlantic, SNE, and GB sub-regions. • Late spring through fall (approximately May through October): movements and distribution shift onto/within GB, the Great South Channel, and the GOM. <p><u>Area of Species Overlap:</u> between 38°N and 40°N (Mid-Atl and SNE sub-regions)</p>
<p><i>Notes:</i> ¹Information presented in table is representative of small cetacean occurrence in the Northwest Atlantic continental shelf waters out to the 2,000 meter isobath.</p> <p><i>Sources:</i> Waring <i>et al.</i> 1992, 2007, 2014, 2015; Payne and Heinemann 1993; Payne 1984; Jefferson <i>et al.</i> 2009.</p>	

6.2.3.4 Pinnipeds

Table 18 provides the species of pinnipeds that occur in the affected environment of the monkfish fishery. For additional information on the biology, status, and range wide distribution of each pinniped species please refer to Waring *et al.* 2014 and Waring et al. (2015).

Table 18 - Pinniped species that occur in the affected environment of the monkfish fishery

Species	Listed Under the ESA	Protected Under the MMPA	Minimum Population Size	Population Trend	MMPA Strategic Stock
Harbor Seal	No	Yes	66,884	unknown	No
Gray Seal	No	Yes	Unknown for U.S. waters; total Canadian population=331,000	positive	No
Harp Seal	No	Yes	Unknown for U.S. waters; total western North Atlantic stock=7.1 million	positive	No
Hooded Seal	No	Yes	Unknown for U.S. waters; minimum population size for the North Atlantic stock \geq 512,000	unknown	No
<i>Source: Waring et al. 2014 and Waring et al. (2015).</i>					

Pinnipeds are found in the nearshore, coastal waters of the Northwest Atlantic Ocean. In the affected area, they are primarily found throughout the year or seasonally from New Jersey to Maine; however, increasing evidence indicates that some species (e.g., harbor seals) may be extending their range seasonally into waters as far south as Cape Hatteras, North Carolina (35°N) (Waring *et al.* 2007, 2014, 2015). As the affected area of the monkfish fishery occurs in waters north of 35°N, and pinnipeds may be present in these waters throughout the year, monkfish fishery and pinnipeds are likely to co-occur in the affected area. To further assist in understanding how the monkfish fishery overlaps in time and space with the occurrence of pinnipeds, a general overview of species occurrence and distribution in the affected environment of the monkfish fishery is provided in Table 19. For additional information on the biology, status, and range wide distribution of each species of pinniped please refer to Waring *et al.* 2007, 2014, 2015.

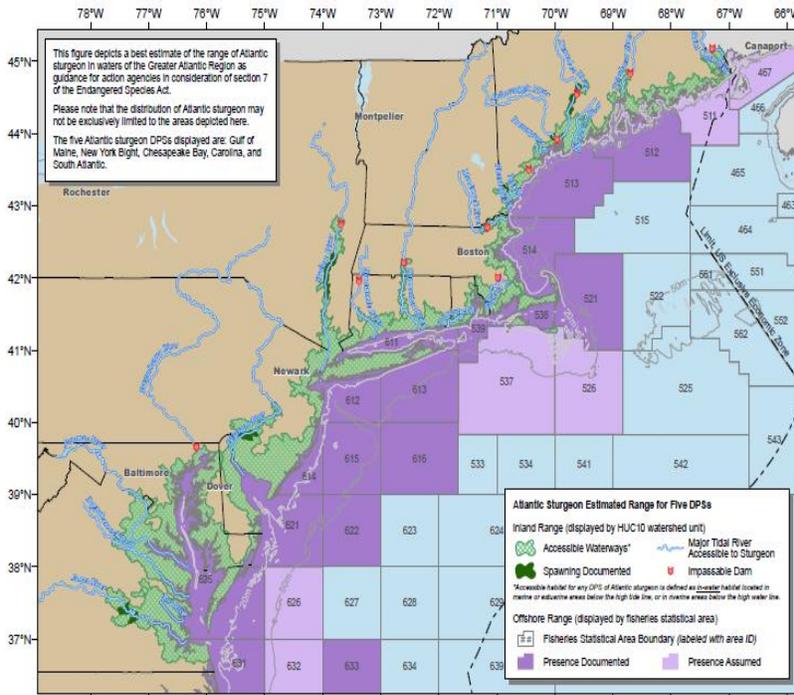
Table 19 - Pinniped occurrence in the Gulf of Maine (GOM), Georges Bank (GB), Southern New England (SNE), and Mid-Atlantic sub-regions of the monkfish fishery

Species	Prevalence and Approximate Months of Occurrence (if known)
Harbor Seal	<ul style="list-style-type: none"> • Primarily distributed in waters from New Jersey to Maine; however, increasing evidence indicates that their range is extending into waters as far south as Cape Hatteras, North Carolina (35°N). • Seasonal distribution: *Year Round: Waters of Maine *September-May: Waters from New England to New Jersey; potential for some animals to extend range into waters as far south as Cape Hatteras, NC.
Gray Seal	<ul style="list-style-type: none"> • Distributed in waters from New Jersey to Maine • Seasonal distribution: *Year Round: Waters from Maine to Massachusetts *September-May: Waters from Rhode Island to New Jersey
Harp Seal	<ul style="list-style-type: none"> • Winter-Spring (approximately January-May): Waters from Maine to New Jersey.
Hooded Seal	<ul style="list-style-type: none"> • Winter-Spring (approximately January-May): Waters of New England.
<i>Sources: Waring et al. 2007 (for hooded seals); Waring et al. 2014, 2015.</i>	

6.2.3.5 Atlantic Sturgeon DPSs

The marine range of U.S. Atlantic sturgeon extends from Labrador, Canada, to Cape Canaveral, Florida. All five DPSs (Gulf of Maine, New York Bight, Chesapeake Bay, Carolina, and South Atlantic) of Atlantic sturgeon have the potential to be located anywhere in this marine range (Figure 6) (ASSRT 2007; Dadswell 2006; Dadswell et al. 1984; Dovel & Berggren 1983; Dunton et al. 2010; Erickson et al. 2011; Kynard et al. 2000; Laney et al. 2007; O'Leary et al. 2014; Stein et al. 2004b; Waldman et al. 2013; Wirgin et al. 2012b).

Figure 6- Estimated range of Atlantic sturgeon distinct population segments



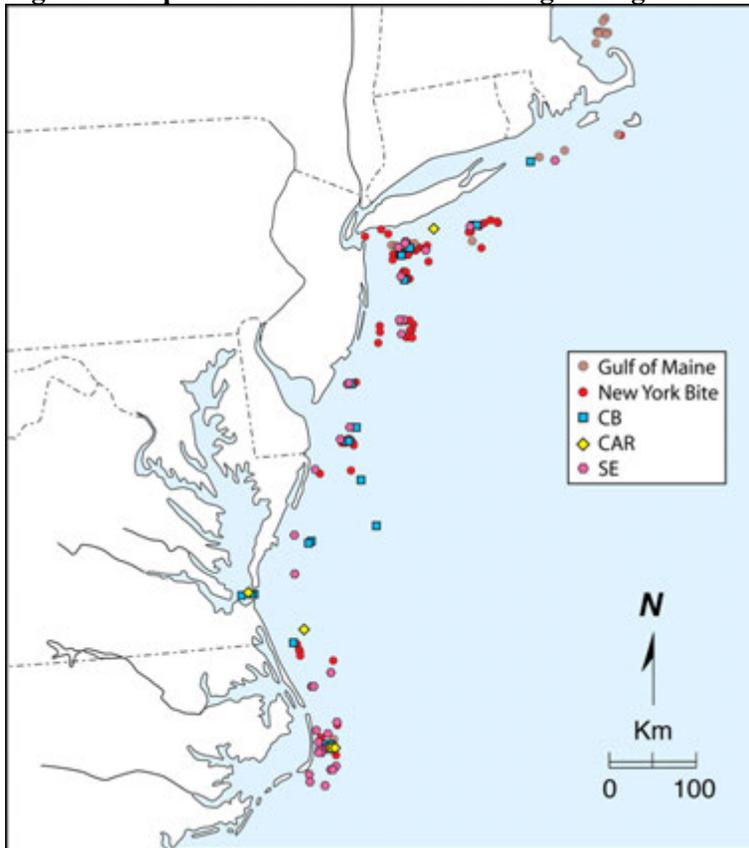
Based on fishery-independent and dependent data, as well as data collected from tracking and tagging studies, in the marine environment, Atlantic sturgeon appear to primarily occur inshore of the 50 m depth contour (Dunton, et al. 2010; Erickson, et al. 2011; Stein et al. 2004a; Stein, et al. 2004b). However, Atlantic sturgeon are not restricted to these depths, as excursions into deeper continental shelf waters have been documented (Collins & Smith 1997; Dunton, et al. 2010; Erickson, et al. 2011; Stein, et al. 2004a; b; Timoshkin 1968). Data from fishery-independent surveys and tagging and tracking studies also indicate that Atlantic sturgeon undertake seasonal movements along the coast. Tagging and tracking studies found that satellite-tagged adult sturgeon from the Hudson River concentrated in the southern part of the Mid-Atlantic Bight, at depths >20 m, during winter and spring, while in the summer and fall, Atlantic sturgeon concentrations shifted to the northern portion of the Mid-Atlantic Bight at depths <20 m (Erickson, et al. 2011). A similar seasonal trend was found by Dunton et al. (2010); analysis of fishery-independent survey data indicated a coastwide distribution of Atlantic sturgeon during the spring and fall; a southerly (e.g., North Carolina, Virginia) distribution during the winters; and a centrally located (e.g., Long Island to Delaware) distribution during the summer. Although studies such as Erickson et al. (2011) and Dunton et al. (2010) provide some indication that Atlantic sturgeon are undertaking seasonal movements horizontally and vertically along the U.S. eastern coastline, there is no evidence to date that all Atlantic sturgeon make these seasonal movements. For instance, during inshore surveys conducted by the NEFSC in the GOM, Atlantic sturgeon have been caught in the fall, winter, and spring between the Saco and Kennebec Rivers (Dunton, et al. 2010).

Within the marine range of Atlantic sturgeon, several marine aggregation areas have been identified adjacent to estuaries and/or coastal features formed by bay mouths and inlets along the U.S. eastern seaboard; depths in these areas are generally ≤ 25 m (Dunton, et al. 2010; Erickson, et al. 2011; Laney, et al. 2007; Stein, et al. 2004b). Although additional studies are still needed to clarify why these particular sites are chosen by Atlantic sturgeon, there is some indication that they may serve as thermal refuge, wintering sites, or marine foraging areas (Dunton, et al. 2010; Erickson, et al. 2011; Stein, et al. 2004b). The following are the currently known marine aggregation sites located within the range of the monkfish fishery:

- Waters off North Carolina, including Virginia/North Carolina border (Laney, et al. 2007);
- Waters off the Chesapeake and Delaware Bays (Dunton, et al. 2010; Erickson, et al. 2011; Oliver et al. 2013; Stein, et al. 2004b);
- New York Bight (e.g., waters off Sandy Hook, New Jersey, and Rockaway Peninsula, New York; Dunton, et al. 2010; Erickson, et al. 2011; O'Leary, et al. 2014; Stein, et al. 2004b);
- Massachusetts Bay (Stein, et al. 2004b);
- Long Island Sound (Bain et al. 2000; Savoy & Pacileo 2003; Waldman, et al. 2013);
- Connecticut River Estuary (Waldman, et al. 2013);
- Kennebec River Estuary (termed a "hot spot" for Atlantic sturgeon by Dunton, et al. 2010).

In addition, since listing of the five Atlantic sturgeon DPSs, several genetic studies have occurred to address DPS distribution and composition in marine waters. Genetic analysis has been conducted on Atlantic sturgeon captured (fishery-independent) from aggregations in Long Island Sound and the Connecticut River (summer aggregations; Waldman, et al. 2013), as well as the New York Bight, specifically the coastal waters off the Rockaway Peninsula (spring and fall aggregations; O'Leary, et al. 2014). Results from these studies showed that these aggregations, regardless of location, were comprised of all five DPSs, with the NYB DPS consistently identified as the main contributor of the mixed aggregations, followed by the GOM, CB, SA, and Carolina DPSs. In a similar assessment, genetic analysis was conducted on Atlantic sturgeon captured (fishery-dependent) during the Northeast Fisheries Observer Program and At Sea Monitoring Program, which ranges from Maine to North Carolina. Results from this assessment affirmed that in waters of the Mid-Atlantic, all five DPSs co-occur (Figure 7), with the percentage of each DPS estimated to be as follows: 51% NYB DPS; 22% SA DPS; 13% CB DPS; 11% GOM DPS; 2% Carolina DPS; and 1% Canadian stock (Damon-Randall et al. 2013). However, these results have not been examined relative to the amount of observed fishing effort throughout the area. In a study by Wirgin et al. (2012b), genetic analysis revealed that the summer assemblage of Atlantic sturgeon in Minas Basin, Inner Bay of Fundy, Canada, was comprised not only of Canadian origin Atlantic sturgeon, but also Atlantic sturgeon from the GOM DPS (34-64% contribution to the mixed assemblage) and NYB DPS (1-2% contribution to the mixed assemblage). Although additional studies are needed to further clarify the DPS distribution and composition in non-natal estuaries and coastal locations, these studies provide some initial insight on DPS distribution and co-occurrence in particular areas along the U.S. eastern sea board.

Figure 7- Capture locations and DPS of origin assignments for observer program specimens



Source: Map by Dr. Isaac Wirgin (Damon-Randall, et al. 2013).

Note: N=173

Based on the above studies and available information, as the affected area of the monkfish fishery occurs in waters north of 35°N, and Atlantic sturgeon from any of the 5 DPSs may be present in these waters throughout the year, the monkfish fishery and Atlantic sturgeon of the 5 DPSs are likely to co-occur in the affected area.

6.2.3.6 Atlantic Salmon

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, while the marine range of the GOM DPS extends from the GOM (primarily northern portion of the GOM), to the coast of Greenland (Fay et al. 2006; NMFS & USFWS 2005). In general, smolts, post-smolts, and adult Atlantic salmon may be present in the GOM and coastal waters of Maine in the spring (beginning in April), and adults may be present throughout the summer and fall months (Baum 1997; Fay, et al. 2006; Hyvarinen et al. 2006; Lacroix & Knox 2005; Lacroix & McCurdy 1996; Lacroix et al. 2004; NMFS & USFWS 2005; Reddin 1985; Reddin & Friedland 1993; Reddin & Short 1991). For additional information on the on the biology, status, and range wide distribution of the GOM DPS of Atlantic salmon, refer to NMFS and USFWS (2005); Fay et al. (2006). Based on the above information, as the monkfish fishery operates throughout the year, and is known to operate in the GOM, it is possible that the fishery will overlap in time and space with Atlantic salmon migrating northeasterly between U.S. and Canadian waters.

6.2.4 Interactions between Gear and Protected Resources

Protected species described in Section 6.2.3 are all known to be vulnerable to interactions with various types of fishing gear. In the following sections, available information on gear interactions with a given species (or species group) will be provided. Please note, these sections are not a comprehensive review of all fishing gear types known to interact with a given species; emphasis is only being placed on those gear types that are known to pose the greatest risk to the species under consideration.

6.2.4.1 Marine Mammals

Pursuant to the MMPA, NMFS publishes a List of Fisheries (LOF) annually, classifying U.S. commercial fisheries into one of three categories based on the relative frequency of incidental serious injuries and/or mortalities of marine mammals in each fishery.¹ The categorization in the LOF determines whether participants in that fishery are subject to certain provisions of the MMPA such as registration, observer coverage, and take reduction plan requirements. Individuals fishing in Category I or II fisheries must comply with requirements of any applicable take reduction plan.

Categorization of fisheries is based on the following two-tiered, stock-specific approach:

- **Tier 1**- considers the cumulative fishery mortality and serious injury for a particular stock. If the total annual mortality and serious injury rates within a stock resulting from all fisheries are less than or equal to ten percent of the stock’s potential biological removal rate (PBR), all fisheries associated with this stock fall into Category III.² If mortality and serious injury rates are greater than ten percent of PBR, the following Tier 2, analysis occurs.
- **Tier 2** -considers fishery-specific mortality and serious injury for a particular stock. Specifically, this analysis compares fishery-specific annual mortality and serious injury rates to a stock’s PBR to designate the fishery as a Category I, II, or III fishery (see Table 20).

Table 20 - Descriptions of the Tier 2 Fishery Classification Categories (50 CFR 229.2)

Category	Level of incidental mortality or serious injury of marine mammals	Annual mortality and serious injury of a stock in a given fishery is...
Category I	frequent	≥50% of the PBR level
Category II	occasional	between 1% and 50% of the PBR level
Category III	remote likelihood, or no known	≤1% of the PBR level

¹ The most recent LOF was issued December 29, 2014; 79 FR 77919.

² PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.

Please note, in this EA, the following discussion on fishery interactions with marine mammals (large cetaceans, and small cetaceans and pinnipeds) are in reference to the Tier 2 classifications of fisheries in Table 20.

6.2.4.2 Large Cetaceans

Atlantic large whales are at risk of becoming entangled in fishing gear because the whales feed, travel, and breed in many of the same ocean areas utilized for fishing. Below we provide the best available information on large whale interaction risks with gear types primarily used in the monkfish fishery (i.e., sink gillnet and bottom trawl).

6.2.4.2.1 Bottom Trawl Gear

Aside from minke whales, large whale interactions with bottom trawl gear are have never been observed and therefore, this gear type is not expected to pose a serious injury or mortality risk to these species. In regards to minke whales, interactions with bottom trawl gear have been observed (strictly northeast bottom trawl fishery to date); however, the frequency of bottom trawl interactions have declined since 2008 (estimated annual mortality=7.8 whales), with an estimated annual mortality of zero minke whales from 2009-2012 and no serious injuries reported during this time as well (Henry *et al.* 2015; Waring *et al.* 2014a; Waring *et al.* 2015a; Lyssikatos 2015). Based on this information, although minke whales have the potential to interact with this gear type, the likelihood of an interaction in the monkfish fishery is likely to be low.

6.2.4.2.1 Sink Gillnet Gear

The greatest entanglement risk to large whales is posed by fixed fishing gear (e.g., sink gillnet and trap/pot gear) comprised of lines (vertical or ground) that rise into the water column. Any line can become entangled in the mouth (baleen), flippers, and/or tail of the whale when the animal is transiting or foraging through the water column (Johnson *et al.* 2005; NMFS 2014; Kenney and Hartley 2001; Hartley *et al.* 2003; Whittingham *et al.* 2005a, b; Waring *et al.* 2014; Waring *et al.* 2015). For instance, in a study of right and humpback whale entanglements, Johnson *et al.* 2005 attributed: (1) 89% of entanglement cases, where gear could be identified, to fixed gear consisting of pot and gillnets and (2) entanglement of one or more body parts of large whales (e.g., mouth and/or tail regions) to four different types of line associated with fixed gear (the buoy line, groundline, floatline, and surface system lines).³ Although available data, such as Johnson *et al.* 2005, provides insight into large whale entanglement risks with fixed fishing gear, to date, due to uncertainties surrounding the nature of the entanglement event, as well as unknown biases associated with reporting effort and the lack of information about the types and amounts of gear being used, determining which part of fixed gear creates the most entanglement risk for large whales is difficult (Johnson *et al.* 2005). As a result, any type or part of fixed gear is considered to create an entanglement risk to large whales and should be considered potentially dangerous to large whale species (Johnson *et al.* 2005).

The effects of entanglement to large whales range from no injury to death (NMFS 2014; Johnson *et al.* 2005; Angliss and Demaster 1998; Moore and Van der Hoop 2012). “When... [whales] become fouled in gear, normal breathing and movement may be impaired or stopped completely. If the animal does

³ Buoy line connects the gear at the bottom to the surface system. Groundline in trap/pot gear connects traps/pots to each other to form trawls; in gillnet gear, groundline connects a gillnet or gillnet bridle to an anchor or buoy line. Floatline is the portion of gillnet gear from which the mesh portion of the net is hung. The surface system includes buoys and high-flyers, as well as the lines that connect these components to the buoy line.

manage to struggle free, portions of gear may remain attached to the body. This trailing gear, often made of durable synthetic material, may create excess drag, snag onto objects in the environment and impede normal behavior like breathing, feeding, movement, or breeding. Other effects include infections and deformations" (quote from Center for Coastal Studies, May 14, 2003, in NMFS 2014; Moore and Van der Hoop 2012). Considering these factors, the risk of injury or death in the event of an entanglement may depend on the characteristics of the whale involved (species, size, age, health, etc.), the nature of the gear (e.g., whether the gear incorporates weak links designed to help a whale free itself), human intervention (e.g., the feasibility or success of disentanglement efforts), or other variables (NMFS 2014). Although the interrelationships among these factors are not fully understood, and the data needed to provide a more complete characterization of risk are not available, to date, available data does indicate that the entanglement in fishing gear is a significant source of serious injury or mortality for Atlantic large whales (Table 21; Waring *et al.* 2014; Waring *et al.* 2015; Henry *et al.* 2015).

Table 21 summarizes confirmed human-caused serious injury and mortality to humpback, fin, sei, minke, and North Atlantic right whales along the Gulf of Mexico Coast, U.S. East Coast, and Atlantic Canadian Provinces from 2009 to 2013 (Henry *et al.* 2015); the data provided in Table 21 is specific to confirmed serious injury or mortality to whales from entanglement in fishing gear. As many entanglement events go unobserved, and because the gear type, fishery, and/or country of origin for reported entanglement events are often not traceable, it is important to recognize that the information presented in Table 21 likely underestimates the rate of large whale serious injury and mortality due to entanglement. Further, scarring data suggests that entanglements may be occurring more frequently than the observed incidences indicate (i.e., Table 21; NMFS 2014). For instance, a study conducted by Robbins *et al.* (2009) analyzed entanglement scars observed in photographs taken during 2003-2006. This analysis suggests high rates of entanglements of GOM humpback whales in fishing gear. In an analysis of the scarification of right whales, 519 of 626 (82.9%) whales examined during 1980-2009 were scarred at least once by fishing gear (Knowlton *et al.* 2012). Further research using the North Atlantic Right Whale Catalogue has indicated that, annually, between 8.6% and 33.6% of right whales have been involved in entanglements (Knowlton *et al.* 2012). Based on this information, care should be taken when interpreting entanglement data as it is likely more incidences of entanglement are occurring than observation alone indicates.

Table 21- Summary of confirmed serious injury or mortality to fin, minke, humpback, sei, and North Atlantic right whales from 2009-2013 due to fisheries entanglements.¹

Species	Total Confirmed Entanglement: Serious Injury	Total Confirmed Entanglement: Mortality	Entanglement Events: Total Annual Injury and Mortality Rate
North Atlantic Right Whale	12	6	3.4
Humpback Whale	33	8	8.4
Fin Whale	7	3	1.75
Sei Whale	0	0	0
Minke Whale	23	13	6.5

Notes:
¹*Information presented in Table 27 is based on confirmed serious injury and mortality events along the Gulf of Mexico Coast, US East Coast, and Atlantic Canadian Provinces; it is not specific to US waters only.*

Sources: Henry *et al.* 2015; Waring *et al.* 2015.

Pursuant to the MMPA, NMFS publishes a LOF annually, classifying U.S. commercial fisheries into one of three categories based on the relative frequency of incidental serious injurious and mortalities of marine mammals in each fishery. Large whales, in particular, humpback, fin, minke, and North Atlantic right whales, are known to interact with Category I and II fisheries in the (Northwest) Atlantic Ocean. As humpback, fin, and North Atlantic right whales are listed as endangered under the ESA, these species are considered strategic stocks under the MMPA (see Section 6.2.3). Section 118(f)(1) of the MMPA requires the preparation and implementation of a Take Reduction Plan (TRP) for any strategic marine mammal stock that interacts with Category I or II fisheries. In response to its obligations under the MMPA, in 1996, NMFS established the Atlantic Large Whale Take Reduction Team (ALWTRT) to develop a plan (Atlantic Large Whale Take Reduction Plan (ALWTRP or Plan)) to reduce serious injury to, or mortality of large whales, specifically, humpback, fin, and North Atlantic right whales, due to incidental entanglement in U.S. commercial fishing gear.⁴ In 1997, the ALWTRP was implemented; however, since 1997, the Plan has been modified as NMFS and the ALWTRT learn more about why whales become entangled and how fishing practices might be modified to reduce the risk of entanglement. In fact, two recent adjustments include the Sinking Groundline Rule (72 FR 57104, October 5, 2007;), and the Vertical Line Rule (79 FR 36586, June 27, 2014; 79 FR 73848, December 12, 2014; 80 FR 14345, March 19, 2015; 80 FR 30367, May 28, 2015).⁵

⁴ The measures identified in the ALWTRP are also beneficial to the survival of the minke whale, which are also known to be incidentally taken in commercial fishing gear.

⁵ The most recent Vertical Line Rule focused on trap/pot vertical line reduction as the ALWTRT determined that gillnets represent <1% of the total vertical lines on the east coast and that the impacts from this gear on large whales

The ALWTRP consists of regulatory (e.g., universal gear requirements, modifications, and requirements; area-and season- specific gear modification requirements and restrictions; time/area closures) and non-regulatory measures (e.g., gear research and development, disentanglement, education and outreach) that, in combination, seek to assist in the recovery of North Atlantic right, humpback, and fin whales by addressing and mitigating the risk of entanglement in gear employed by commercial fisheries, specifically trap/pot and gillnet fisheries (<http://www.greateratlantic.fisheries.noaa.gov/Protected/whaletrp/>; 73 FR 51228; 79 FR 36586; 79 FR 73848; 80 FR 14345; 80 FR 30367). Specifically, the Plan identifies gear modification requirements and restrictions for Category I and II gillnet and trap/pot fisheries in the Northeast, Mid-Atlantic, and Southeast regions of the U.S.; these fisheries must comply with all regulations of the Plan.⁶

Table 22 provides a brief summary of the specified gear modification requirements and restrictions under the ALWTRP for gillnet fisheries in the Northeast and Mid-Atlantic region of the U.S, and Table 23 and Figure 8 provide the Gillnet Management Areas recognized by the ALWTRP in the Northeast and Mid-Atlantic; as the monkfish fishery is not prosecuted with trap/pot gear, gear modification requirements and restrictions for trap/pot fisheries under the Plan will not be provided here. As the affected environment of the monkfish fishery will not extend into the Southeast region, those provisions of the Plan will also not be discussed further. For further details on the gear modification requirements and restrictions under the ALWTRP please see: <http://www.greateratlantic.fisheries.noaa.gov/Protected/whaletrp/>

Table 22 - Summary of gear modification requirements and restrictions for the Northeast and Mid-Atlantic Gillnet Fisheries under the Atlantic Large Whale Take Reduction Plan

Fishery	Gear Modification Requirement and Restrictions
Gillnet	<p><u>Northeast and Mid-Atlantic</u></p> <ul style="list-style-type: none"> • Gillnet Universal Requirements (including sinking groundline) • Gillnet Gear Marking Requirements • Gillnet Weak Link Requirements • Seasonal Closure Areas • Anchored Gillnet Anchoring Requirements • Drift Gillnet Night Fishing & Storage Restrictions

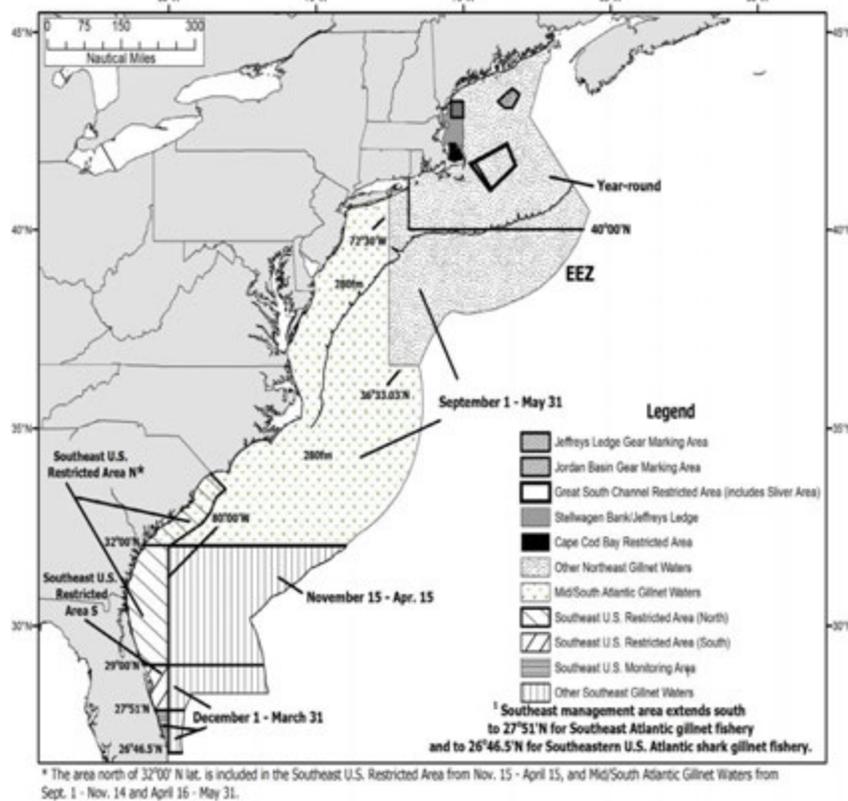
is minimal (Appendix 3A, NMFS 2014a); however, even with the new Rule, gear will still be subject to existing restrictions under the ALWTRP for gillnet gear.

⁶ The fisheries currently regulated under the ALWTRP include: Northeast/Mid-Atlantic American lobster trap/pot; Atlantic blue crab trap/pot; Atlantic mixed species trap/pot; Northeast sink gillnet; Northeast anchored float gillnet; Northeast drift gillnet; Mid-Atlantic gillnet; Southeastern U.S. Atlantic shark gillnet; and Southeast Atlantic gillnet (NMFS 2014).

Table 23 - Northeast and Mid-Atlantic Gillnet Management Areas under the Atlantic Large Whale Take Reduction Plan

Fishery	Management Areas
Northeast Gillnet	<ul style="list-style-type: none"> • Cape Cod Bay Restricted Area • Stellwagen Bank/Jeffreys Ledge Restricted Area • Great South Channel Restricted Gillnet Area • Other Northeast Gillnet Waters (Northeast)
Mid-Atlantic Gillnet	<ul style="list-style-type: none"> • Other Northeast Gillnet Waters (Mid-Atlantic) • Mid/South Atlantic Gillnet Waters

Figure 8- Summary of Gillnet Management Areas under the Atlantic Large Whale Take Reduction Plan



6.2.4.2.1 Small Cetaceans and Pinnipeds

6.2.4.2.1.1 Sink Gillnet and Bottom Trawl Gear

Northeast and Mid-Atlantic sink gillnet fisheries, followed by the Northeast and Mid-Atlantic bottom trawl fisheries (Category I and II fisheries, respectively) pose the greatest risks of serious injury and mortality to small cetaceans and pinnipeds (Table 24; Figure 9). Based on available observer data from

2008-2012 (see Table 24), approximately 84.0% of the total mean annual mortality to marine mammals (small cetaceans + seals, large whales excluded) is attributed to gillnet fisheries, followed by bottom trawl fisheries (16.0%).

As the monkfish fishery is prosecuted with both gear types, this fishery does pose interaction risks to small cetaceans and pinnipeds. Based on observer data since 2010, numerous species of small cetaceans and pinnipeds, such as those provided in Table 24, have been observed taken in sink gillnet gear on trips targeting monkfish (http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html; http://www.nefsc.noaa.gov/fsb/take_reports/asm.html). Specifically, harbor porpoise, common dolphin, gray seals, harbor seals, and to a lesser extent white sided dolphins, Risso's dolphins, and harp seals, have been observed in sink gillnet gear where the trip target species is monkfish (see North East Fisheries Observer Program (NEFOP) and At-Sea Monitoring Program (ASM) take report sites above). In fact, Hatch and Orphanides (2014) and Hatch and Orphanides (2015), reported that the majority of small cetacean and pinniped bycatch occurred on hauls targeting monkfish, with 7-12 inch mesh sizes. In terms of bottom trawl gear, few interactions with small cetacean and pinnipeds have been observed on trips targeting monkfish (see NEFOP and ASM take report sites above); however, this could be an artifact of observer coverage rate in the affected areas of the monkfish fishery. In spite of the limited observer data for trips targeting monkfish with bottom trawl gear, interaction risks to the species provided in Table 24 exists, and in fact, based on Lyssikatos (2015), the highest annual bycatch mortality in bottom trawl gear (considers all FMPs; Northeast and Mid-Atlantic combined) was observed for short beaked common dolphins, followed by Atlantic white-sided dolphins, gray seals, risso's dolphins, long-finned pilot whales, bottlenose dolphins, harbor seals, harbor porpoise, and harp seals.⁷

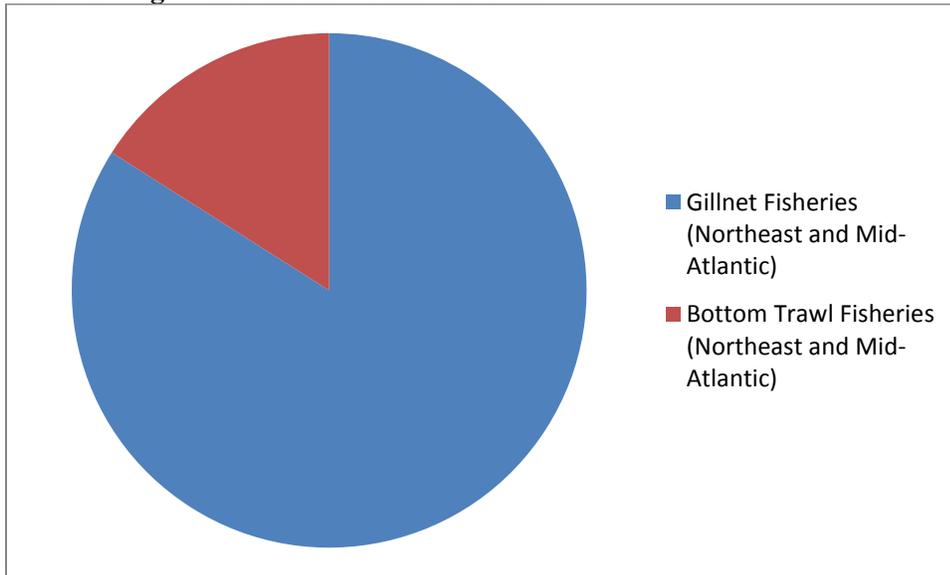
⁷ Lyssikatos (2015) defines 'bycatch mortality' as any observed interaction where the animal's condition was recorded as either fresh dead or alive with a serious injury.

Table 24 - Small cetacean and pinniped species observed from 2008-2012 seriously injured and/or killed by Category I or II sink gillnet or bottom trawl fisheries in the affected environment of the monkfish fishery

Fishery	Species Observed Injured/Killed	Mean Annual Mortality
Category I		
Northeast Sink Gillnet	Harbor porpoise	439
	Atlantic white sided dolphin	35
	Short-beaked common dolphin	56
	Long-finned pilot whale	0.6
	Risso's dolphin	1.2
	Harbor seal	378
	Gray seal	974
Mid-Atlantic Gillnet	Bottlenose dolphin (offshore)	14.1
	Harbor porpoise	199
	Short-beaked common dolphin	15
	Harbor seal	49
	Harp seal	N/A
	Gray seal	60
	Risso's dolphin	11
	Short-finned pilot whale ²	140
	Short-beaked common dolphin	1.7
Category II		
Northeast Bottom Trawl	Harp seal	N/A
	Harbor seal	2.4
	Gray seal	33
	Long -finned pilot whales	31
	Short-beaked common dolphin	55
	White-sided dolphin	77
	Harbor porpoise	2.3
	Bottlenose dolphin (offshore)	10
	Risso's dolphin	2.0
	Short-beaked common dolphin	161
Mid-Atlantic Bottom Trawl	Risso's dolphin ²	37
	Bottlenose dolphin (offshore)	21
	Gray seal	19
	Harbor seal	11.6

Sources: Waring et al. (2015); December 29, 2014, List of Fisheries (79 FR 77919).

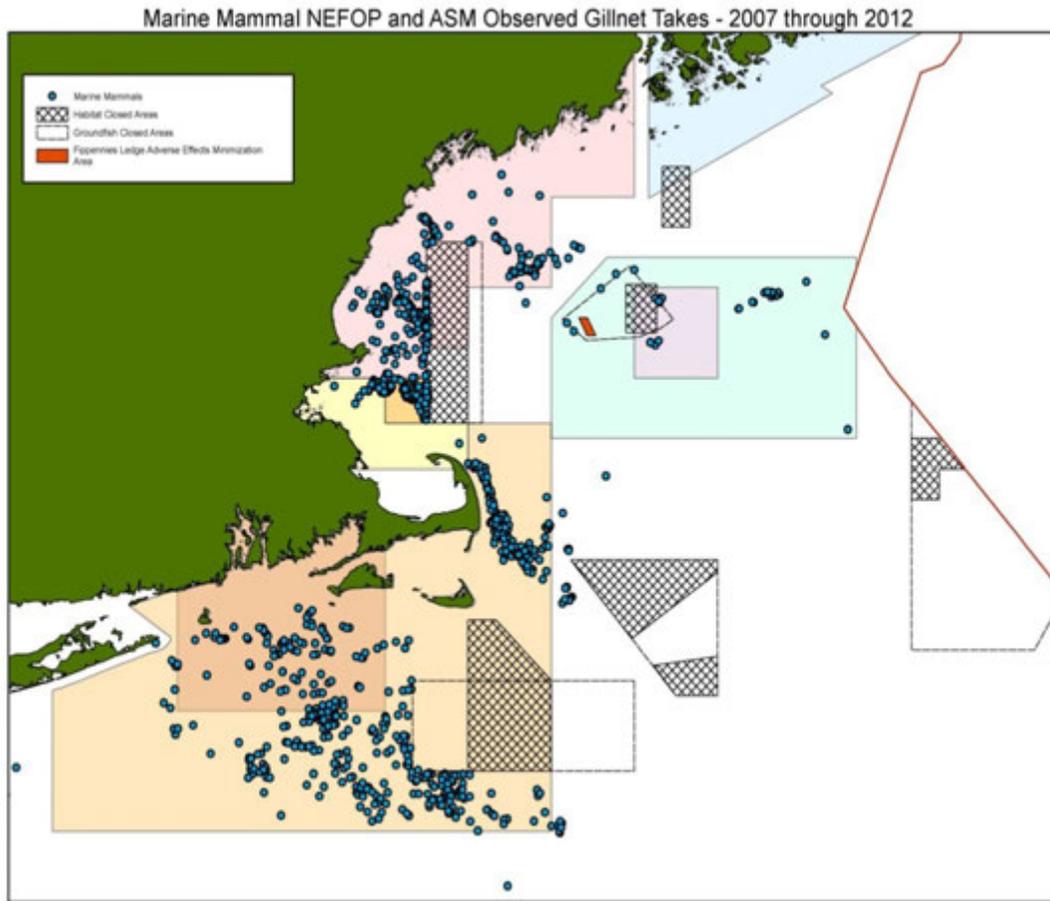
Figure 9- 2008-2012 total mean annual mortality of small cetaceans and pinnipeds by Category I and II sink gillnet or bottom trawl fisheries



The risk of an interaction with a specific fishery, such as the monkfish fishery, is affected by multiple factors, including where and when fishing effort is focused, the type of gear being used, and how effort overlaps in time and space with specific species in the affected area. For instance, the following figures (Figure 10 and Figure 11) depict observed marine mammal takes (large whales excluded) in gillnet and trawl gear in the Gulf of Maine, Georges Bank, and Southern New England sub-regions of the multispecies fisheries from 2007-2011.⁸ As depicted in Figure 10 and Figure 11, over the last 5 years, there appears to be particular areas of the Gulf of Maine, Georges Bank, and Southern New England sub-regions where fishing effort is overlapping in time and space with small cetacean or pinniped occurrence. Although uncertainties, such as shifting fishing effort patterns and data on true density (or even presence/absence) for some species, remain, the available observer data, as depicted in Figure 10 and Figure 11, does provide some insight into areas in the ocean where the likelihood of interacting with a particular species is high and therefore, provides a means to consider potential impacts of future shifts or changes in fishing effort on small cetaceans and pinnipeds.

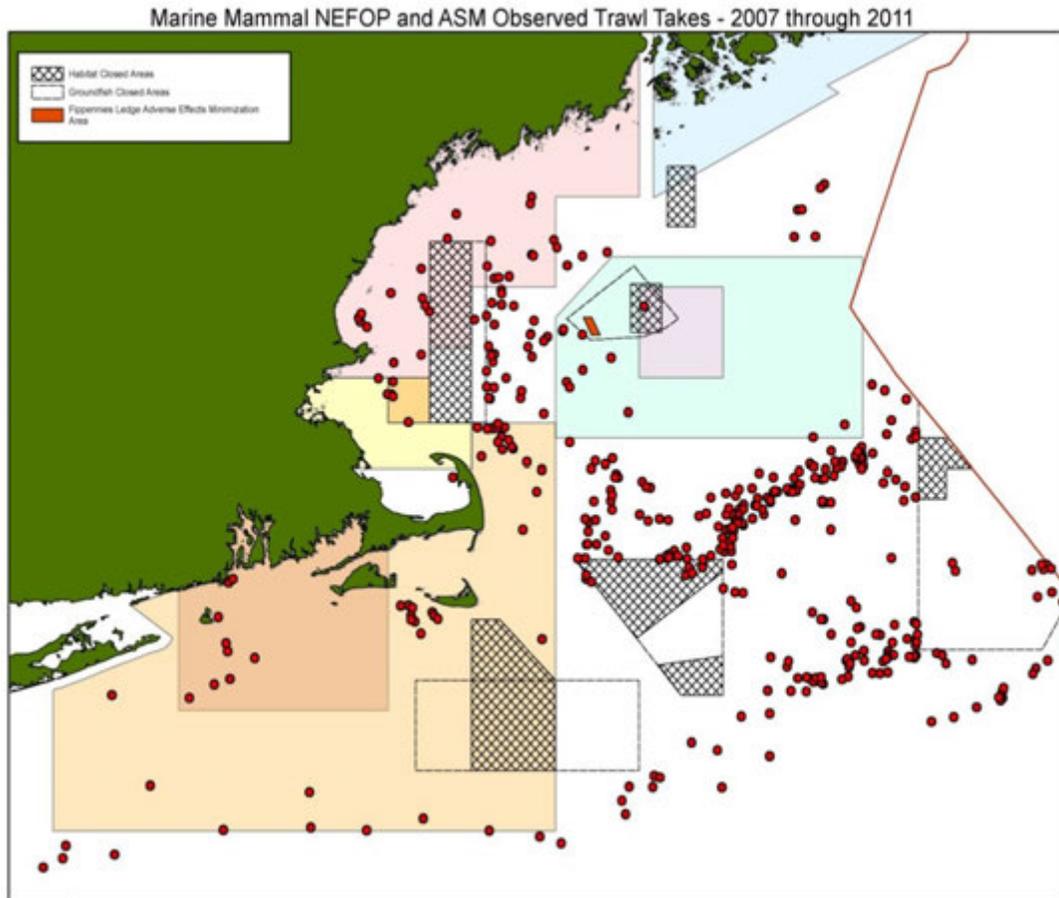
⁸ Additional maps of marine mammal takes in various fishing gear can be found in Waring *et al.* 2014.

Figure 10 - Map of marine mammals bycatch in gillnet gear in the New England region (excluding large whales) observed by traditional fishery observers and at-sea monitors between 2007 and 2011



Notes: Small cetacean and pinnipeds have been observed taken primarily in: (1) the waters west of the GOM Habitat/Groundfish closed area: Harbor seals, harp seals, and harbor porpoise; (2) off of Cape Cod, MA: Gray seals, harbor seals, and harbor porpoise; (3) west of the NLCA (Groundfish closed area): Harbor porpoise, short-beaked common dolphin, gray seals, harp seals, and harbor seals; and (4) waters off southern Massachusetts and Rhode Island: Gray seals and harbor seals, and some harbor porpoise and short-beaked common dolphin.

Figure 11 - Map of marine mammal bycatch in trawl gear in the New England region (excluding large whales) observed by traditional fishery observers and at-sea monitors between 2007 and 2011



Notes: Small cetacean and pinnipeds observed taken primarily in: (1) the waters between and around CA I and CA II (Groundfish closed areas): Short-beaked common dolphin, pilot whales, white-sided dolphins, gray seals, and some risso's dolphins and harbor porpoise; and (2) eastern side of the GOM Habitat/Groundfish closed area: White-sided dolphins, and some pilot whales and harbor seals.

As provided in Table 24, numerous species of small cetaceans and pinnipeds interact with Category I and II fisheries in the Northwest Atlantic Ocean; however, several species in Table 24 have experienced such great losses to their populations as a result of interactions with Category I and II fisheries that they are now considered strategic stocks under the MMPA.⁹ These species are the harbor porpoise, the Western North Atlantic Northern Migratory Coastal Stock of bottlenose dolphin and the Western North Atlantic Southern Migratory Coastal Stock of bottlenose dolphin. Section 118(f)(1) of the MMPA requires the preparation and implementation of a TRP for any strategic marine mammal stock that interacts with

⁹ Harbor porpoise are considered a strategic stock under the MMPA as the level of direct human-caused mortality has exceeded the PBR level for this species. Both northern and southern migratory coastal stocks of bottlenose dolphins are considered a strategic stock under the MMPA as both stocks are designated as depleted under the Act.

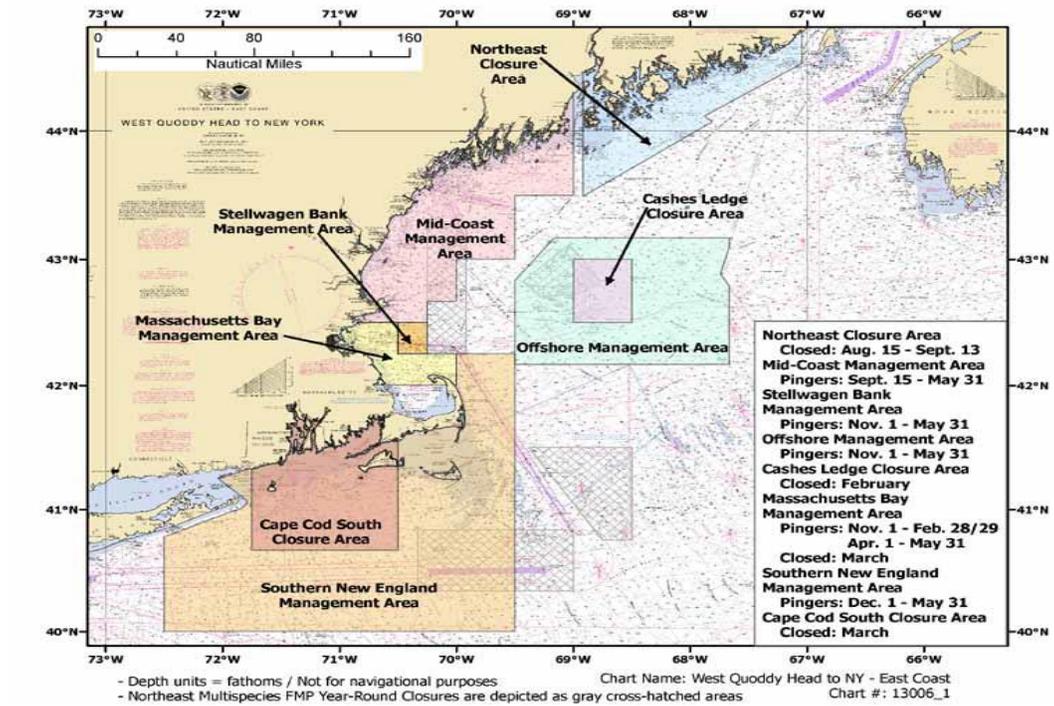
Category I or II fisheries. As a result, the Harbor Porpoise TRP (HPTRP or Plan) and the Bottlenose Dolphin TRP (BDTRP or Plan) were developed and implemented for these species. The following provides a brief overview and summary for each TRP; however, additional information on each TRP can be found at: <http://www.greateratlantic.fisheries.noaa.gov/protected/porptrp/> or <http://www.nmfs.noaa.gov/pr/interactions/trt/bdtrp.htm>. In addition to the HPTRP and BDTRP, an Atlantic Trawl Gear Take Reduction Strategy (ATGTRS) was established in 2006 to address small cetacean and pinniped interactions in trawl gear. Although voluntary, the ATGTRS does provide means and measures that can be adopted by certain trawl fishing sectors to potentially reduce the incidental capture of marine mammals. For additional details on the ATGTRS, please visit: <http://www.greateratlantic.fisheries.noaa.gov/Protected/mmp/atgtrp/>

Harbor Porpoise Take Reduction Plan (HPTRP)

To address the high levels of incidental take of harbor porpoise in the groundfish sink gillnet fishery, a Take Reduction Team was formed in 1996. A rule (63 FR 66464) to implement the Harbor Porpoise Take Reduction Plan, and therefore, to reduce harbor porpoise bycatch in U.S. Atlantic gillnets was published on December 2, 1998, and became effective on January 1, 1999; the Plan was amended on February 19, 2010 (75 FR 7383), and October 4, 2013 (78 FR 61821). Since gillnet operations differ between the New England and Mid-Atlantic regions, the follow sets of measures were devised for each region:

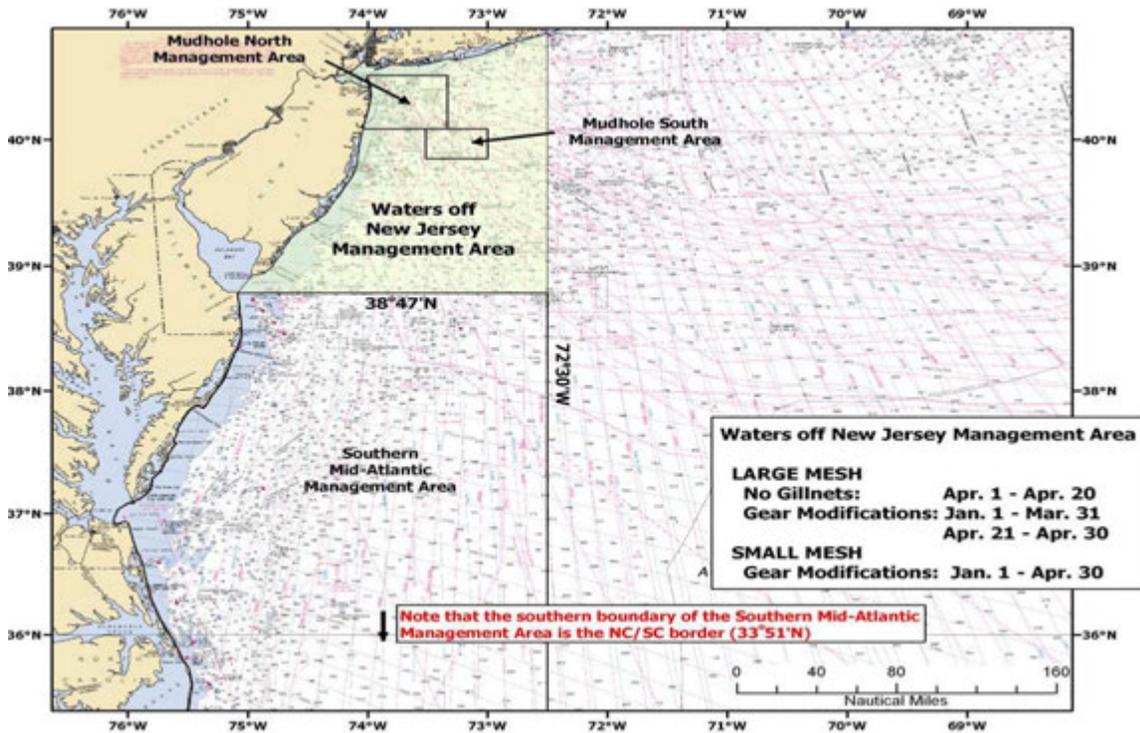
- New England Region:** The New England component of the HPTRP pertains to all fishing with sink gillnets and other gillnets capable of catching multispecies in New England waters from Maine through Rhode Island. This portion of the Plan includes time and area closures, as well as closures to multispecies gillnet fishing unless pingers are used in the manner prescribed in the TRP regulations (Figure 12). For additional details see 50 CFR 229.33 and the outreach guide at http://www.greateratlantic.fisheries.noaa.gov/prot_res/porptrp/doc/HPTRPNewEnglandGuide.pdf

Figure 12- HPTRP Management Areas for New England



- Mid-Atlantic Region:** The Mid-Atlantic portion of the HPTRP pertains to the Mid-Atlantic shoreline from the southern shoreline of Long Island, New York to the North Carolina/South Carolina border. It includes four management areas (Waters off New Jersey, Mudhole North (located in Waters off New Jersey Management Area), Mudhole South (located in Waters off New Jersey Management Area), and Southern Mid-Atlantic), each with time and area closures to gillnet fishing unless the gear meets certain specifications. Additionally, during regulated periods, gillnet fishing in each management area of the Mid-Atlantic is regulated differently for small mesh (> 5 inches to < 7 inches) and large (7-18 inches) mesh gear. The Plan also includes some time and area closures in which gillnet fishing is prohibited regardless of the gear specifications. Figure 13 and Figure 14 provide a depiction of the Mid-Atlantic Management Areas. For additional details see 50 CFR 229.34 and the outreach guide at http://www.greateratlantic.fisheries.noaa.gov/prot_res/porptrp/doc/HPTRPMidAtlanticGuide_Feb%202010.pdf

Figure 13 - HPTRP waters off New Jersey management area



Notes:

Mudhole North Management Area Small Mesh

Gear Modification: Jan. 1- Apr. 30

No Gillnet: Feb. 15-Mar. 15

Mudhole North Management Area Large Mesh

Gear Modification: Jan. 1- Apr. 30

No Gillnet: Feb. 15-Mar. 15; Apr. 1-Apr. 20

Mudhole South Management Area Small Mesh

Gear Modification: Jan. 1- Jan.31; Mar. 16-Apr.30

No Gillnet: Feb. 1-Mar.15

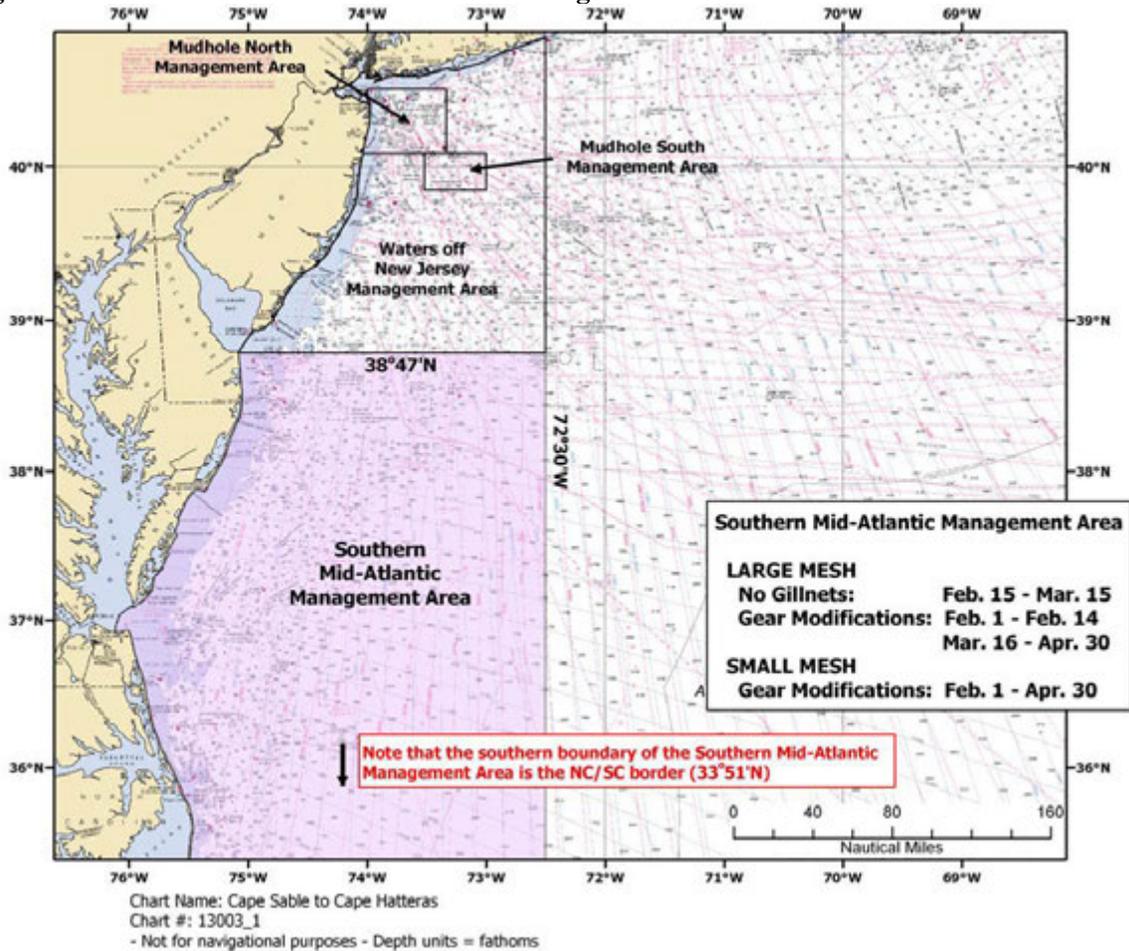
Mudhole South Management Area Large Mesh

Gear Modification: Jan. 1- Jan.31; Mar. 16-Mar. 31;

Apr. 21- Apr. 30

No Gillnet: Feb. 1-Mar.15; Apr. 1- Apr. 20

Figure 14 - HPTRP Southern Mid-Atlantic management area



Bottlenose Take Reduction Plan

In April 2006, NMFS published a final rule to implement the TRP for the WNA coastal stock of bottlenose dolphin (April 26, 2006, 71 FR 24776) to reduce the incidental mortality and serious injury in the Mid-Atlantic gillnet fishery and eight other coastal fisheries operating within the dolphin's distributional range. The other Atlantic coastal fisheries include the North Carolina inshore gillnet fishery, Southeast Atlantic gillnet fishery, Atlantic blue crab trap/pot fishery, Mid-Atlantic haul/beach seine fishery, North Carolina long haul seine fishery, North Carolina roe mullet stop net fishery, Southeastern U.S. Atlantic shark gillnet fishery, and the Virginia pound net fishery (NMFS 2002). The final rule also revised the large mesh size restriction under the Mid-Atlantic large mesh gillnet rule for conservation of endangered and threatened sea turtles to provide consistency among Federal and state management measures. The BDTRP was amended on July 31, 2012 (77 FR 45268) to permanently continue nighttime fishing restrictions of medium mesh gillnets operating in North Carolina coastal state waters. The measures contained in the Plan include gillnet effort reduction, gear proximity requirements, gear or gear deployment modifications, and outreach and educational measures to reduce dolphin bycatch below the marine mammals stock's PBR. For additional details on the BDTRP please visit: <http://www.nmfs.noaa.gov/pr/interactions/trt/bdtrp.htm>.

6.2.4.2.2 Sea Turtles

6.2.4.2.2.1 Bottom Trawl Gear

Sea turtles are known to interact with bottom trawl gear. Most of the observed sea turtle interactions with bottom trawl gear have occurred in the Mid-Atlantic, although there have been some sea turtle interactions with trawl gear observed on Georges Bank. As few sea turtle interactions have been observed outside the Mid-Atlantic, there is insufficient data available to conduct a robust model-based analysis on sea turtle interactions with trawl gear in these regions and therefore, produce a bycatch estimate for these regions. As a result, the following bycatch estimates are based on observed sea turtle interactions in trawl gear in the Mid-Atlantic.

Green, Kemp's ridley, leatherback, loggerhead, and unidentified sea turtles have been documented interacting with bottom trawl gear. However, estimates are available only for loggerhead sea turtles. Warden (2011a) estimated that from 2005-2008, the average annual loggerhead interactions in bottom trawl gear in the Mid-Atlantic (i.e., south of Cape Cod, Massachusetts, to approximately the North Carolina/South Carolina border) was 292 (CV=0.13, 95% CI=221-369), with an additional 61 loggerheads (CV=0.17, 95% CI=41-83) interacting with trawls, but released through a Turtle Excluder Device (TED; see below for details on TEDs). Of the 292 average annual observable loggerhead interactions, approximately 44 of those were adult equivalents (Warden 2011a).¹⁰ Most recently, Murray (2015) estimated that from 2009-2013, the total average annual loggerhead interactions in bottom trawl gear in the Mid-Atlantic (i.e., defined by the boundaries of the Mid-Atlantic Ecological Production; roughly waters west of 71°W to the North Carolina/South Carolina border) was 231 (CV=0.13, 95% CI=182-298). Of the 231 total average annual loggerhead interactions, approximately 33 of those were adult equivalents (Murray 2015). Bycatch estimates provided in Warden (2011a) and Murray (2015) are a decrease from the average annual loggerhead bycatch in bottom otter trawls during 1996-2004, which Murray (2008) estimated at 616 sea turtles (CV=0.23, 95% CI over the nine-year period: 367-890). This decrease is likely due to decreased fishing effort in high-interaction areas (Warden 2011a). Most recently, Murray (2015) estimated total loggerhead interactions (with bottom otter trawl gear) attributable to managed species from 2009-2013. Specifically, an estimated average annual take of one loggerhead (95% CI=1-1) was attributed to the monkfish fishery.

6.2.4.2.2.2 Sink Gillnet Gear

Similar to trawl gear, although sea turtle interactions with gillnet gear have been observed in waters from the Gulf of Maine to the Mid-Atlantic, most of the observed interactions have occurred in Southern New England and the Mid-Atlantic (i.e., observers have documented one take of a loggerhead in the Gulf of Maine). As few sea turtle interactions have been observed outside the Mid-Atlantic, there is insufficient data available to conduct a robust model-based analysis on sea turtle interactions with gillnet gear outside the Mid-Atlantic as defined by Murray (2013) and therefore, produce a bycatch estimate for these regions. As a result, the following bycatch estimates are based on observed sea turtle interactions in sink gillnet gear in the Mid-Atlantic

Observers have documented green, Kemp's ridley, leatherback, loggerhead, and unidentified sea turtles in gillnet gear. Murray (2013) conducted an assessment of loggerhead and unidentified hard-shell turtle interactions in Mid-Atlantic gillnet gear from 2007-2011. Based on Northeast Fisheries Observer Program data from 2007-2011, interactions between loggerhead and hard-shelled turtles (loggerheads plus

¹⁰ Adult equivalence considers the reproductive value (i.e., expected reproductive output) of the animal (Warden 2011, Murray 2013, Wallace et al. 2008).

unidentified hard-shelled) and commercial gillnet gear in the Mid-Atlantic averaged 95 hard-shelled turtles and 89 loggerheads (equivalent to 9 adults) annually (Murray 2013). However, average estimated interactions in large mesh gear in warm, southern Mid-Atlantic waters have declined relative to those from 1996-2006 (Murray 2009), as did the total commercial effort (Murray 2013). Murray (2013) also estimated sea turtle interactions by managed species landed in gillnet gear from 2007-2011. On average, approximately 27 loggerhead (95% CI=16-41) and two (95% CI=1-2) hard shelled (non-loggerhead) interactions were attributed to the monkfish fishery

6.2.4.2.2.3 Factors Affecting Sea Turtle Interactions

Although sea turtles have the potential to interact with multiple gear types, such as trawl or gillnet gear, the risk of an interaction is affected by multiple factors, including where and when fishing effort is focused, the type of gear being used, environmental conditions, and sea turtle occurrence and distribution. Murray and Orphanides (2013) recently evaluated fishery-independent and dependent data to identify environmental conditions associated with turtle presence and the subsequent risk of a bycatch encounter if fishing effort is present; It was concluded that fishery independent encounter rates were a function of latitude, sea surface temperature (SST), depth, and salinity. When the model was fit to fishery dependent data (gillnet, bottom trawl, and scallop dredge), Murray and Orphanides (2013) found a decreasing trend in encounter rates as latitude increases; an increasing trend as SST increases; a bimodal relationship between encounter rates and salinity; and higher encounter rates in depths between 25 and 50 m. Similarly, Murray (2013) concluded, based on 2007-2011 data obtained on loggerhead interactions in gillnet gear, that bycatch rates were associated with latitude, SST, and mesh size, with highest interaction rates in the southern mid-Atlantic in warm surface waters and in large (>7 inch mesh). Based on the above 2005-2008 data obtained on loggerhead interactions in bottom trawl gear, Warden (2011a) also found that latitude, depth and SST were associated with the interaction rate, with the rates being highest south of 37° N in waters < 50 meters deep and SST > 15°C (Table 25).

Table 25 - Mid-Atlantic trawl bycatch rates (Warden 2011a)

Latitude Zone	Depth, SST	Loggerheads/Day Fished
<37 °N	<=50 m, <=15° C	0.4
	<=50 m, >=15° C	2.06
	>50 m, <= 15° C	0.07
	>50 m, >15° C	0.09
37 - 39 °N	<=50 m, <=15° C	0.04
	<=50 m, >=15° C	0.18
	>50 m, <= 15° C	0.01
	>50 m, >15° C	0.07
>39 °N	<=50 m, <=15° C	<0.01
	<=50 m, >=15° C	0.03
	>50 m, <= 15° C	<0.01
	>50 m, >15° C	0.01

6.2.4.2.3 Atlantic Sturgeon

6.2.4.2.3.1 Bottom Trawl Gear

Atlantic sturgeon are known to interact with bottom trawl gear and in fact, have been observed over the last 10 or more years (NEFOP and ASM) in bottom otter trawl gear where the primary species being targeted was monkfish (NMFS NEFSC FSB 2015). To understand the interaction risk between bottom

otter trawls and Atlantic sturgeon, there are three documents that use data collected by the NEFOP to describe bycatch of Atlantic sturgeon: Stein *et al.* (2004b); ASMFC (2007); and Miller and Shepard (2011); None of these provide estimates of Atlantic sturgeon bycatch by DPS. Information provided in all three documents indicate that sturgeon bycatch occurs in bottom otter trawl gear, with Miller and Shepard (2011) estimating, based on fishery observer data and VTR data from 2006-2010, that annual bycatch of Atlantic sturgeon was 1,239 animals. Specifically, Miller and Shepard (2011) observed Atlantic sturgeon interactions in trawl gear with small (< 5.5 inches) and large (\geq 5.5 inches) mesh sizes.¹¹ Although Atlantic sturgeon were observed to interact with trawl gear with various mesh sizes, based on observer data, Miller and Shepard (2011) concluded that of the possible fishing gear types, in general, trawl gear posed less of a mortality risk to Atlantic sturgeon than gillnet gear (i.e., estimated mortality rates in gillnet gear were 20.0%, while those in otter trawl gear were 5.0%); similar conclusions were reached in Stein *et al.* 2004b and ASMFC 2007. However, although Atlantic sturgeon deaths have rarely been reported in otter trawl gear (ASMFC 2007; Dunton *et al.* 2015; NMFS NEFSC FSB 2015), it is important to recognize that effects of an interaction may occur long after the interaction (Davis 2002; Broadhurst *et al.* 2006; Beardsall *et al.* 2013). Based on physiological data obtained from Atlantic sturgeon captured in otter trawls, Beardsall *et al.* (2013) suggests that factors such as longer tow times (i.e., > 60 minutes), prolonged handling of sturgeon (> 10 minutes on deck), and the type of trawl gear/equipment used, may increase the risk of physiological disruption or impairment (e.g., elevated cortisol levels, immune suppression, impaired osmoregulation, exhaustion) to Atlantic sturgeon captured in otter trawls and therefore, may result in an increased risk of post-release mortality. The authors also note that post-release exhaustion, even after a 60 minute trawl capture, results in behavioral disruption to Atlantic sturgeon and caution that repeated bycatch events may compound post-release behavioral effects to Atlantic sturgeon which in turn, may effect essential life functions of Atlantic sturgeon (e.g., predator avoidance, foraging, migration to foraging or spawning sites) and therefore, Atlantic sturgeon survival (Beardsall *et al.* 2013). Although the study conducted by Beardsall *et al.* (2013) provides some initial insight into the post-release effects to Atlantic sturgeon captured in trawl gear, additional studies are needed to clearly identify the “after” effects of a trawl interaction. As it remains uncertain what the overall impacts to Atlantic sturgeon survival are from trawl interactions, trawls should not be completely discounted as a form of gear that poses a mortality risk to Atlantic sturgeon.

6.2.4.2.3.2 Sink Gillnet Gear

Based on observer (NEFOP and ASM) data over the last 10 or more years, the gear type that results in the greatest bycatch and subsequent mortality to Atlantic sturgeon is sink gillnet gear (Stein *et al.* 2004b; ASMFC 2007; ASSRT 2007; Miller and Shepard 2011; Dunton *et al.* 2015, He and Jones 2013). The greatest observed Atlantic sturgeon mortality has been observed in sink gillnets utilized for the monkfish fishery and where the primary species being targeted was monkfish. In fact, examination of just NEFOP data indicating that from 1989-2013, 62% of the observed sink gillnet bycatch is attributed to the monkfish fishery (Dunton *et al.* 2015).

To understand the interaction risk between bottom otter trawls and Atlantic sturgeon, there are three documents that use data collected by the NEFOP to describe bycatch of Atlantic sturgeon: Stein *et al.* (2004b) for 1989-2000; ASMFC (2007) for 2001-2006; and Miller and Shepard (2011) for 2006-2010; None of these provide estimates of Atlantic sturgeon bycatch by DPS. Information provided in all three documents indicate that sturgeon bycatch occurs in sink gillnet gear, with Miller and Shepard (2011) estimating, based on fishery observer data and VTR data from 2006-2010, that annual bycatch of Atlantic sturgeon is 1,342 animals. Specifically, Miller and Shepard (2011) observed Atlantic sturgeon interactions in gillnet gear with small (< 5.5 inches), large (5.5 to 8 inches), and extra-large mesh (>8 inches) sizes, with mortality rates in gillnet gear estimated to be much higher than those in bottom trawl

¹¹ The regulatory bottom otter trawl mesh size for summer flounder, scup and black sea bass is 5.5”, 5.0”, and 4.5” respectively.

gear (sink gillnet estimated mortality rate= 20.0% ; bottom trawl gear estimated mortality rate=5.0%).. Similar conclusions were reached in Stein *et al.* 2004b and ASMFC 2007 reports, in which both studies also concluded, after review of observer data from 1989-2000 and 2001-2006, that observed mortality is much higher in gillnet gear than in trawl gear. Based on the information presented in these three documents, factors thought to increase the risk of Atlantic sturgeon bycatch, and therefore death, in gillnet gear include:

- Setting gillnet gear at depths <40 meters;
- Using gillnet gear with mesh sizes >10 inches;
- Setting gillnet gear during spring, fall, and winter months;
- Long soak times (i.e., >24 hours); and
- Setting gear during warmer water temperatures

6.2.4.3 Atlantic Salmon

NEFOP and At-Sea Monitoring Programs documented a total of 15 individual salmon incidentally caught on over 60,000 observed commercial fishing trips from 1989 through August 2013 (NMFS 2013;Kocik *et al.* 2014). Specifically, Atlantic salmon were observed bycaught in gillnet (11/15) and bottom otter trawl gear (4/15), with 10 of the incidentally caught salmon listed as “discarded” and five reported as mortalities (Kocik (NEFSC), pers. comm (February 11, 2013) in NMFS 2013). The genetic identity of these captured salmon is unknown; however, the NMFS 2013 Biological Opinion considers all 15 fish to be part of the GOM Distinct Population Segment, although some may have originated from the Connecticut River restocking program (i.e., those caught south of Cape Cod, Massachusetts).

The above information, specifically the very low number of observed Atlantic salmon interactions in gillnet and trawl gear reported in the Northeast Fisheries Observer Program’s database (which includes At-Sea Monitoring data), suggests that interactions with Atlantic salmon are rare events (NMFS 2013; Kocik *et al.* 2014); however, it is important to recognize that observer program coverage is not 100 percent. As a result, it is likely that some interactions with Atlantic salmon have occurred, but have not been observed or reported.

6.3 Physical and Biological Environment

The Northeast U.S. Shelf Ecosystem has been described as including the area from the GOM south to Cape Hatteras, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream (Sherman *et al.* 1996). The continental slope includes the area east of the shelf, out to a depth of 2,000 m. Four distinct sub-regions comprise the NOAA Fisheries Greater Atlantic Region: the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope. Occasionally another sub-region, Southern New England, is described; however, we incorporated discussions of any distinctive features of this area into the sections describing Georges Bank and the Mid-Atlantic Bight.

The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types. Georges 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 Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, NC. The continental slope begins at the continental shelf break and continues eastward

with increasing depth until it becomes the continental rise. It is fairly homogenous, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley, and in areas of glacially rafted hard bottom.

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

6.3.1 Fishing Effects on EFH

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

6.3.2 Essential Fish Habitat

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

In summary, the discussion notes that monkfish EFH has been determined to only be minimally vulnerable to bottom-tending mobile gear (bottom trawls and dredges) and bottom gillnets. Therefore, the effects of the monkfish fishery and other fisheries on monkfish EFH do not require any management action. However, the monkfish trawl fishery does have more than a minimal and temporary impact on EFH for a number of other demersal species in the region. Adverse impacts that were more than minimal and not temporary in nature were identified for the following species and life stages, based on an evaluation of species life history and habitat requirements and the spatial distributions and impacts of bottom otter trawls in the region (Stevenson et al., 2004):

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

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

There are no species or life stages for which EFH is more than minimally vulnerable to bottom gillnets (Stevenson et al., 2004). Table 26 identifies the species, life stages and geographic area of their EFH, for those species whose EFH is vulnerable to bottom trawling.

Table 26 - EFH descriptions for all benthic life stages of federally-managed species in the U.S. Northeast Shelf Ecosystem with EFH vulnerable to bottom tending gear (Stevenson *et al.* 2004) [GOM = Gulf of Maine, GB = Georges Bank, SNE = Southern New England]

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 SNE 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 SNE 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
Atlantic sea scallop	juvenile	GOM, GB, SNE 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, SNE 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, GOM, 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

Affected Environment
Physical and Biological Environment

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
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	GOM, GB, SNE, and middle Atlantic south to Delaware Bay, and the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts and Cape Cod Bay	<50	Bottom habitats, generally in hard bottom sheltered nests, holes, or crevices
Ocean pout	juvenile	GOM, GB, SNE, 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	GOM, GB, SNE, 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 SNE south to Cape Hatteras, NC	170 - 350	Bottom habitats
Offshore hake	adult	Outer continental shelf of GB and SNE south to Cape Hatteras, NC	150 - 380	Bottom habitats
Pollock	juvenile	GOM, 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	GOM, GB, SNE, 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	GOM, GB, continental shelf off SNE, 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	GOM, GB, continental shelf off SNE, 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	GOM, southern edge of GB	25 - 400	Bottom habitats with a substrate of silt, mud, or hard bottom
Redfish	adult	GOM, southern edge of GB	50 - 350	Bottom habitats with a substrate of silt, mud, or hard bottom

Affected Environment
Physical and Biological Environment

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
Silver hake	juvenile	GOM, GB, continental shelf off SNE, 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, SNE, 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	GOM, outer continental shelf from GB south to Cape Hatteras	50 - 450 to 1500	Bottom habitats with fine grained substrate
Witch flounder	adult	GOM, outer continental shelf from GB south to Chesapeake Bay	25 - 300	Bottom habitats with fine grained substrate
Yellowtail flounder	adult	GB, GOM, SNE 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 GOM to Cape Hatteras, NC, also includes estuaries from Buzzards Bay to Long Island Sound; Gardiners Bay, Barnegat Bay to Chesapeake Bay; Tangier/ Pocomoke Sound, and James River	1 - 38	Rough bottom, shellfish and eelgrass beds, manmade structures in sandy-shelly areas, offshore clam beds, and shell patches may be used during wintering
Black sea bass	adult	Demersal waters over continental shelf from GOM to Cape Hatteras, NC, also includes estuaries: Buzzards Bay, Narragansett Bay, Gardiners Bay, Great South Bay, Barnegat Bay to Chesapeake Bay; Tangier/ Pocomoke Sound, and James River	20 - 50	Structured habitats (natural and manmade), sand and shell substrates preferred
Scup	juvenile	Continental shelf from GOM 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 GOM, GB, SNE, Mid-Atlantic Bight to Hudson Canyon	10 - 750, mostly < 150	Bottom habitats with mud, gravel, and sand substrates
Barndoor skate	adult	Eastern GOM, GB, SNE, Mid-Atlantic Bight to Hudson Canyon	10 - 750, mostly < 150	Bottom habitats with mud, gravel, and sand substrates
Clearnose skate	juvenile	GOM, 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

Affected Environment
Physical and Biological Environment

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
Clearnose skate	adult	GOM, along shelf to Cape Hatteras, NC; includes the estuaries from Hudson River/Raritan Bay south to the Chesapeake Bay mainstem	0 – 500, mostly < 111	Bottom habitats with substrate of soft bottom along continental shelf and rocky or gravelly bottom
Little skate	juvenile	GB through Mid-Atlantic Bight to Cape Hatteras, NC; includes the estuaries from Buzzards Bay south to the Chesapeake Bay mainstem	0 - 137, mostly 73 - 91	Bottom habitats with sandy or gravelly substrate or mud
Little skate	adult	GB through Mid-Atlantic Bight to Cape Hatteras, NC; includes the estuaries from Buzzards Bay south to the Chesapeake Bay mainstem	0 - 137, mostly 73 - 91	Bottom habitats with sandy or gravelly substrate or mud
Rosette skate	juvenile	Nantucket shoals and southern edge of GB to Cape Hatteras, NC	33 - 530, mostly 74 - 274	Bottom habitats with soft substrate, including sand/mud bottoms, mud with echinoid and ophiuroid fragments, and shell and pteropod ooze
Rosette skate	adult	Nantucket shoals and southern edge of GB to Cape Hatteras, NC	33 - 530, mostly 74 - 274	Bottom habitats with soft substrate, including sand/mud bottoms, mud with echinoid and ophiuroid fragments, and shell and pteropod ooze
Smooth skate	juvenile	Offshore banks of GOM	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 GOM	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	GOM and GB	18 - 2000, mostly 111 - 366	Bottom habitats with a substrate of sand, gravel, broken shell, pebbles, and soft mud
Thorny skate	adult	GOM and GB	18 - 2000, mostly 111 - 366	Bottom habitats with a substrate of sand, gravel, broken shell, pebbles, and soft mud
Winter skate	juvenile	Cape Cod Bay, GB, SNE 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, SNE 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

Affected Environment
Physical and Biological Environment

Species	Life Stage	Geographic Area of EFH	Depth (meters)	EFH Description
White hake	juvenile	GOM, southern edge of GB, SNE 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

6.4 Human Environment, Vessels, Ports and Communities

This section updates information provided in the annual SAFE Report for the Monkfish FMP, adding data for FY2014.

6.4.1 Vessels and Fishery Sectors

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

6.4.1.1 Permits

In 2014, there were 637 monkfish limited access permits, of which 282 were Category C permits holding limited access permits in either the multispecies (52%) or scallop (59%) fisheries, and 264 were Category D permits, primarily (98%) holding limited access multispecies permits (Table 27). Overall, 68% of monkfish limited access permit holders also hold multispecies limited access permits. Vessels in all monkfish permit categories also hold limited access permits in a number of New England and Mid-Atlantic fisheries. The number and percent of monkfish vessels has decreased slightly from the 2012 SAFE Report (NEFMC, 2014). There were seven Category H limited access permits for vessels fishing off the North Carolina/Virginia coast (Table 27).

Table 27 - Number and percent of monkfish limited access vessels also issued a limited access permit in other fisheries in 2014, by permit category

Number of monkfish vessels also issued a limited access permit for:

MONK FISH PERMIT CATEGORY	NUMBER OF MONK FISH PERMITS	NUMBER OF MONKFISH VESSELS ALSO ISSUED A LIMITED ACCESS PERMIT FOR:										
		BLACK SEA BASS	SUMMER FLOUNDER	HERRING	LAGC IFQ SCALOP	LOBSTER	MULTI-SPECIES	OCEAN QUAHOG	RED CRAB	SCALLOP	SCUP	SQUID/MACKEREL/BUTTERFISH
A	24	12	7		4	15	2				12	2
B	45	21	9		3	22	3				14	5
C	282	106	222	17	146	229	148			165	113	98
D	264	105	165	22	119	237	259			19	127	88
F	15	14	15	6	9	15	13			2	15	15
H	7	2	1		1							
TOTAL	637	260	419	45	282	518	425	0	0	186	281	208

MONK FISH PERMIT CATEGORY	NUMBER OF MONK FISH PERMITS	PERCENT OF MONKFISH VESSELS ALSO ISSUED A LIMITED ACCESS PERMIT FOR:										
		BLACK SEA BASS	SUMMER FLOUNDER	HERRING	LAGC IFQ SCALOP	LOBSTER	MULTI-SPECIES	OCEAN QUAHOG	RED CRAB	SCALLOP	SCUP	SQUID/MACKEREL/BUTTERFISH
A	24	50%	29%	0%	17%	63%	8%	0%	0%	0%	50%	8%
B	45	47%	20%	0%	7%	49%	7%	0%	0%	0%	31%	11%
C	282	38%	79%	6%	52%	81%	52%	0%	0%	59%	40%	35%
D	264	40%	63%	8%	45%	90%	98%	0%	0%	7%	48%	33%
F	15	93%	100%	40%	60%	100%	87%	0%	0%	13%	100%	100%
H	7	29%	14%	0%	14%	0%	0%	0%	0%	0%	0%	0%
TOTAL	637	41%	66%	7%	44%	81%	67%	0%	0%	29%	44%	33%

Source: NMFS-GARFO Analysis and Program Support Division, vessel permit database, accessed July, 2015.

The FMP also provides an open-access permit (Category E) for vessels that did not qualify for a limited access permit so those vessels can land monkfish caught incidentally in other fisheries. Table 28 shows an increase in the number of category E permits during the first few years of the FMP, followed by a decline since the peak in 2005, from 2,379 permits to 1,643 permits in 2014.

Table 28 - Monkfish open-access (Category E) permits issued each year since implementation of the FMP since 1999.

Fishing Year	Number of permits
1999	1466
2000	1882
2001	1991
2002	2142
2003	2120
2004	2256
2005	2379
2006	2310
2007	2265
2008	2163
2009	2066
2010	1998
2011	1827
2012	1763
2013	1713
2014	1643
TOTAL	4843

Source: NMFS-GARFO Analysis and Program Support Division, vessel permit database, accessed July, 2015.

6.4.1.2 Landings and Revenues

Table 29 shows monthly landings for FY2014 by area and gear, as well as total monthly landings for the fishing year. Landings in both areas combined peaked in FY 2003 but have since declined to reach a relatively stable level between FY2011 – 2014 (Table 30). Monkfish landings increased between FY 2002 and FY 2003, principally due to the increased trip limits in the SFMA, then declined in FY 2004 as trip limits and DAS allocations were reduced in that area. In FY 2005 total landings increased by 1,272 mt, ~ 7%, due to an increase in SFMA landings as a result of increased trip limits and DAS allocations, despite a decline of 20% in NFMA landings from the previous year (Figure 15). NFMA landings declined between FY 2001 and FY2010, although trip limits were only established in FY 2007, and in FY 2008 were about 24% of what they were at the peak. The 2013 Emergency Action removed the NFMA possession limit but did not appear to significantly increase landings on previous fishing years. The NFMA harvest was below the target TAL for FY 2014 (58%); the SFMA harvest was also below the target TAL for FY 2014 (61%).

Table 31 shows monthly landings by gear from the dealer reports for FY 2014, both as reported (landed weight) and converted to live weight. The lower landed weights reflect the fact that monkfish are landed as tails only, and as whole, gutted fish. The lower ratio of landed weight to live weight for otter trawls (0.35), compared to gillnets (0.80), is the result of a greater proportion of tails being landed by otter trawls, while gillnet vessels land mostly whole fish. Table 31 includes all landings in the dealer database, while other tables reporting landed weights are filtered by permit category, and, therefore, may not include some dealer landings for which there is no permit number associated.

Table 32 is based on fishing year and landed weights, and indicates a decreasing trend in revenues and landings. Figure 16 shows the long-term trend in landings and revenues based on a fishing year. While landings have declined since the pre-FMP peak in 1997, nominal revenues have declined to a lesser

degree since that time. According to Table 32, the monkfish market fluctuates annually with periods of increasing and decreasing landings leading to both revenue increases and decreases.

Table 29 - Monkfish landings by area, gear and month for FY2014 (converted to live weight)

	May 2014	Jun 2014	Jul 2014	Aug 2014	Sep 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May - Apr 2015		2014*	
															May - Apr FY '14 as a % of Target TAL	Target TAL
													Metric Tons	Percent of Area	Metric Tons	
Northern	187	206	186	220	252	231	170	291	328	234	553	545	3,403	39%	58%	5,854
Otter Trawl	177	142	107	121	164	158	146	279	323	234	541	518	2,910	33%	50%	
Gillnet	9	60	68	90	84	64	21	11	5	0	12	26	450	5%	8%	
Dredge	1	2	10	9	4	9	3	1	0		0	1	40	0%	1%	
Other Gears		2	1	0	0	0	0	0		0			3	0%	0%	
	27	15	9	12	16	76	205	165	87	63	84					
Southern	1,126	943	267	195	105	232	484	609	496	161	232	565	5,415	61%	61%	8,925
Otter Trawl	28	16	10	13	17	76	203	169	83	58	85	127	885	10%	10%	
Gillnet	949	713	98	18	42	136	241	405	395	92	128	379	3,596	41%	40%	
Dredge	127	182	153	162	45	18	37	31	14	9	13	31	822	9%	9%	
Other Gears	22	32	6	2	1	2	3	4	4	2	6	28	112	1%	1%	
All Areas	1,313	1,149	453	415	357	463	654	900	824	395	785	1,110	8,818	100%		
Otter Trawl	205	158	117	134	181	234	349	448	406	292	626	645	3,795	43%		
Gillnet	958	773	166	108	126	200	262	416	400	92	140	405	4,046	46%		
Dredge	128	184	163	171	49	27	40	32	14	9	13	32	862	10%		
Other Gears	22	34	7	2	1	2	3	4	4	2	6	28	115	1%		

Table 30- Monkfish landings by management area FY1999 - 2014

Year	NFMA (metric tons)	SFMA (metric tons)
1999	9,720	14,311
2000	11,859	7,960
2001	14,853	11,069
2002	14,491	7,478
2003	14,155	12,198
2004	11,750	6,193
2005	9,533	9,656
2006	6,677	5,909
2007	5,050	7,180
2008	3,528	6,751
2009	3,344	4,800
2010	2,834	4,484
2011	3,699	5,801
2012	3,920	5,184
2013	3,596	5,088
2014	3,403	5,415

Source: NMFS-GARFO Analysis and Program Support Division, cfders dealer weighout and vessel trip report databases.

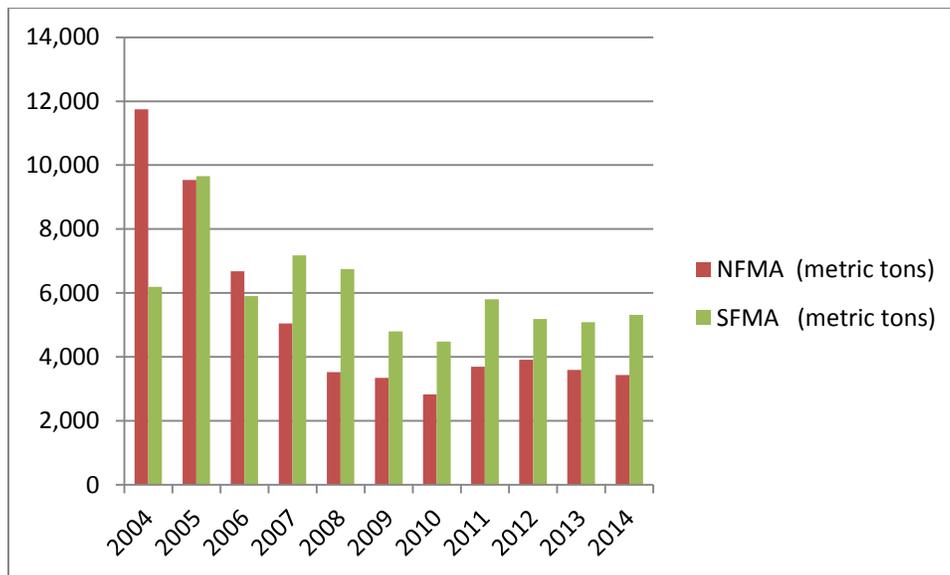


Figure 15 - NFMA and SFMA monkfish landings, FY 2004-2014

**Table 31 - FY2014 monkfish landings from dealer reports, showing live weight (top) and landed weights (bottom)
Live Weight for FY 2014**

Month	Otter Trawl	Scallop Dredge	Gillnet	Hook	Other	Total Pounds
May	431,960	109,797	1,893,742	279	419,437	2,855,215
June	255,676	164,486	1,550,773	133	475,410	2,446,478
July	173,768	186,633	324,235		322,419	1,007,055
August	187,110	182,402	213,262		327,346	910,120
September	245,590	33,553	254,784		248,333	782,260
October	320,604	34,470	360,877	13	284,299	1,000,263
November	513,354	49,609	525,495	0	348,441	1,436,899
December	661,170	32,767	784,781		502,583	1,981,301
January	579,553	4,666	814,106	0	365,073	1,763,398
February	444,401	1,437	183,716		240,111	869,665
March	972,159	7,390	289,058		425,356	1,693,963
April	1,223,850	18,482	875,368		387,826	2,505,526
TOTAL	6,009,195	825,692	8,070,197	425	4,346,634	19,252,143

Landed Weight for FY2014

Month	Otter Trawl	Scallop Dredge	Gillnet	Hook	Other	Total Pounds
May	201,241	33,355	1,472,769	228	156,426	1,864,019
June	91,918	49,576	1,187,071	40	187,718	1,516,323
July	55,091	56,219	203,302		117,019	431,631
August	62,382	55,161	121,507		104,023	343,073
September	82,579	10,107	163,939		79,154	335,779
October	114,209	11,545	271,566	4	113,266	510,590
November	185,944	16,154	446,291	105	127,274	775,768
December	229,945	10,355	657,621		208,431	1,106,352
January	204,508	1,421	683,263	97	144,352	1,033,641
February	144,973	449	154,229		85,457	385,108
March	312,592	2,226	241,718		144,336	700,872
April	398,393	5,567	719,554		153,311	1,276,825
TOTAL	2,083,775	252,135	6,322,830	474	1,620,767	10,279,981

Source: NMFS-GARFO Analysis and Program Support Division, cfders dealer weighout database, accessed July, 2015.

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

Table 32 - Total monkfish landings (landed weight) and revenues, 1995-2014

Fishing Year (May 1 - April 30)	Landings* (1,000 lbs. landed wt.)	Revenues* (\$1,000)
1995	18,416	\$24,759
1996	20,733	\$26,188
1997	21,774	\$30,127
1998	24,156	\$34,682
1999	26,077	\$48,714
2000	23,423	\$46,123
2001	30,520	\$42,354
2002	25,312	\$35,256
2003	29,321	\$37,471
2004	18,377	\$30,945
2005	22,818	\$42,640
2006	14,747	\$28,548
2007	14,225	\$29,145
2008	11,714	\$23,307
2009	9,652	\$18,599
2010	8,728	\$20,375
2011	11,350	\$28,856
2012	9,937	\$21,409
2013	9,489	\$18,209
2014	10,189	\$19,483

Source: NMFS-GARFO Analysis and Program Support Division, cfders dealer weighout database, accessed July, 2015.

* CT data may include landings from vessels without a 2006-2014 Monkfish permit

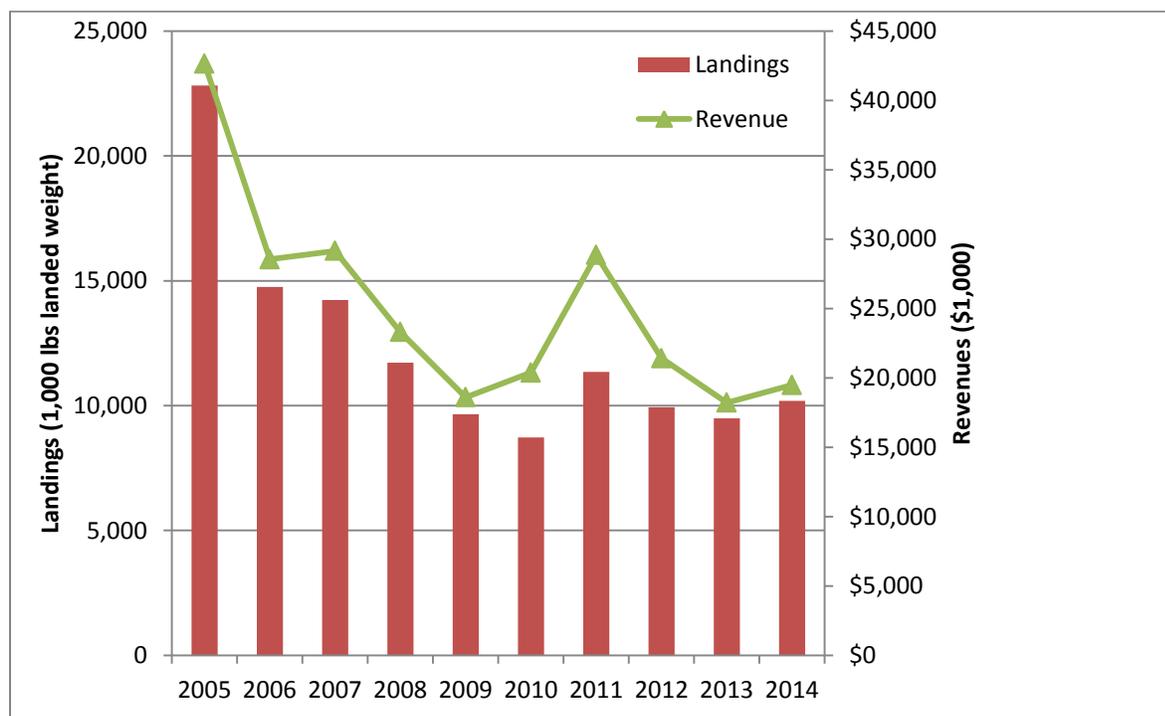


Figure 16 - Monkfish landings and revenue, 1995-2012

Figure 17 illustrates the seasonal pattern of monkfish landings in FY 2014 by month and gear type. The predominant gears are gillnet, landing approximately 1.9 million lb in May, and otter trawl landing approximately 1.2 million lb in April. A small proportion of landings occur during the winter months, but a much larger proportion during the spring/early summer months when fish are migrating from deeper water.

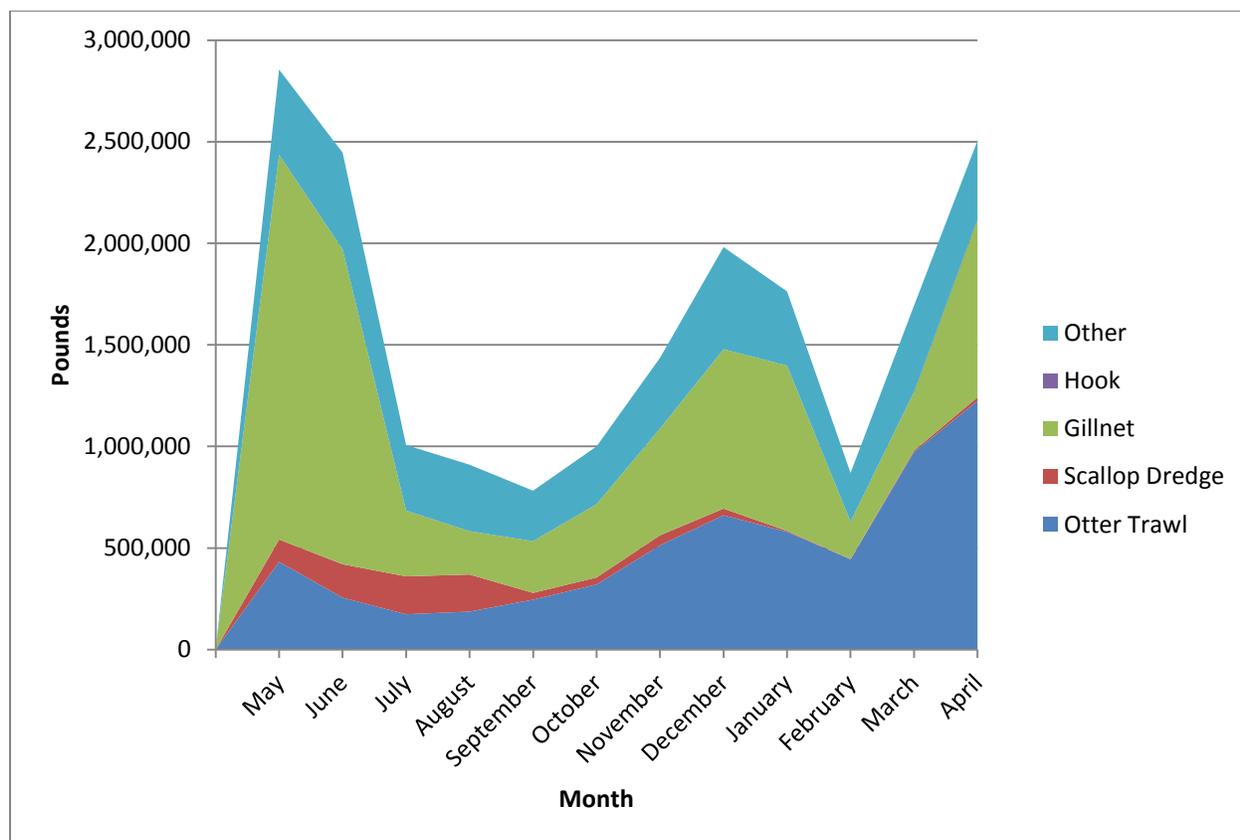


Figure 17 - Monkfish landings by gear and month (FY2014) in pounds (live weight)

While Massachusetts continues to account for the greatest proportion of all monkfish landings, all states have seen an overall decline in monkfish landings (Table 33) in recent years. The states with the largest decline have been Maine, New Hampshire and North Carolina, which used to be among the top landings ports. New Hampshire continues to show a marked decline after rising in importance through the early years of the FMP. Landings in Maine and New Hampshire are nearly entirely from the northern stock component, and the recent decline in those states' landings is reflective of the overall decline in landings from the northern stock component.

Table 34 and Table 35 show monkfish landings and revenues as a percentage of total landings and revenues by permit categories for FY 2006-2014 (data for earlier years are available in the FW7 document). Data for Connecticut is shown separately to facilitate comparison with earlier landings data summarized in previous monkfish management actions that account for different ways that Connecticut reported state landings to NMFS.

Table 33 - Total monkfish landings (landed weight), 2009-2014, by state

STATE	Thousands of Pounds of Monkfish								
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
CT*	294	315	298	410	420	457	548	801	646
MA	7,265	6,137	4,842	4,182	3,811	4,964	4,303	4,234	4,521
MD	106	158	132	48	83	98	60	95	78
ME	987	526	303	178	115	257	345	243	178
NC	99	56	55	30	26	10	3	38	47
NH	442	200	157	125	86	74	38	50	68
NJ	2,523	3,021	2,670	1,637	1,418	1,676	1,389	1,351	1,739
NY	739	1,150	842	807	766	1,057	1,183	774	749
RI	1,829	2,101	1,890	1,733	1,598	2,116	1,500	1,489	1,811
VA	463	560	524	501	404	638	567	413	352
TOTAL	14,747	14,225	11,714	9,652	8,728	11,349	9,937	9,489	10,189

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

Category A and B vessels continue to show a proportionally higher dependence on monkfish than Category C and D vessels, which also hold limited access permits in either scallops or multispecies. Category C vessels, of which 59% also hold scallop limited access permits, have seen their dependence on monkfish revenues decline steadily as revenues from scallops have increased.

Table 34 - Monkfish landings, 2006-2014, as a percentage of total landings by permit category

Monkfish Permit Category	1,000 pounds, landed weight								
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
A	631	932	992	731	775	953	932	875	965
% of Total A Landings	9.8%	8.3%	8.7%	9.1%	10.1%	7.3%	14.7%	30.9%	26.4%
B	1,204	1,627	1,555	1,118	1,209	1,579	1,429	1,253	1,440
% of Total B Landings	37.4%	43.1%	46.8%	27.4%	27.3%	27.9%	28.6%	27.4%	30.5%
C	5,567	4,949	3,786	3,272	2,951	3,800	3,267	3,035	3,410
% of Total C Landings	6.2%	5.2%	3.8%	3.3%	3.0%	3.9%	3.9%	4.0%	5.0%
D	5,830	5,348	4,497	3,736	3,182	4,282	3,535	3,562	3,709
% of Total D Landings	8.0%	7.2%	5.7%	4.3%	4.6%	4.7%	4.3%	4.4%	5.2%
H	242	202	228	217	142	297	231	161	177
% of Total H Landings	19.4%	20.0%	18.3%	21.8%	12.0%	19.7%	18.7%	14.9%	15.5%
E (Open Access)	979	905	603	422	281	340	419	531	380
% of Total E Landings	0.3%	0.3%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%
F					23	98	125	70	105
% of Total F Landings					0.7%	0.8%	0.8%	0.2%	0.3%
CT	294	262	53	156	166	0	0	0	2
% of Total CT Landings	2.8%	3.1%	1.9%	4.1%	3.5%	0.3%	25.3%	81.0%	0.3%
TOTAL MONK LANDED	14,747	14,225	11,714	9,652	8,728	11,350	9,937	9,488	10,189

Source: NMFS-NEO Analysis and Program Support Division, ciders dealer weighout database, accessed August, 2013.

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

If necessary, Category F landings have been allocated to prior permit categories to protect confidentiality

Table 35 - Monkfish revenues, 2006-2014, as a percentage of total revenues by permit category

Monkfish Permit Category	\$1,000, nominal (not discounted)								
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
A	\$1,006	\$1,296	\$1,405	\$995	\$1,344	\$1,909	\$1,640	\$1,302	\$1,477
% of Total A Revenues	36.7%	40.6%	36.2%	35.1%	27.7%	31.2%	34.2%	30.4%	30.7%
B	\$1,787	\$2,277	\$2,088	\$1,564	\$2,187	\$3,236	\$2,595	\$1,796	\$2,169
% of Total B Revenues	41.8%	45.3%	50.7%	36.6%	38.5%	40.2%	33.9%	28.9%	33.6%
C	\$11,766	\$12,250	\$8,975	\$7,667	\$8,330	\$11,264	\$7,901	\$6,640	\$7,284
% of Total C Revenues	4.6%	4.8%	3.7%	3.2%	2.6%	3.1%	2.4%	2.3%	2.9%
D	\$11,236	\$10,338	\$8,842	\$6,846	\$7,023	\$10,630	\$7,483	\$6,837	\$6,996
% of Total D Revenues	12.2%	11.6%	9.6%	8.0%	8.0%	9.3%	7.4%	7.8%	8.2%
H	\$338	\$242	\$251	\$228	\$181	\$515	\$401	\$268	\$305
% of Total H Revenues	38.1%	29.7%	28.4%	33.7%	22.1%	36.5%	39.7%	35.5%	33.8%
E (Open Access)	\$2,082	\$2,320	\$1,604	\$1,040	\$829	\$1,054	\$1,143	\$1,199	\$956
% of Total E Revenues	0.7%	0.7%	0.5%	0.3%	0.2%	0.2%	0.3%	0.3%	0.3%
F					\$73	\$247	\$246	\$166	\$292
% of Total F Revenues					2.5%	2.6%	1.7%	0.9%	1.4%
CT	\$333	\$425	\$141	\$259	\$407	\$0	\$0	\$2	\$5
% of Total CT Revenues	0.9%	1.1%	3.4%	3.1%	2.8%	0.9%	50.2%	0.2%	0.3%
TOTAL MONK REVENUE	\$28,548	\$29,148	\$23,307	\$18,599	\$20,375	\$28,856	\$21,408	\$18,209	\$19,483

Source: NMFS-NEO Analysis and Program Support Division, cfders dealer weighout database, accessed August, 2013.

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

If necessary, Category F landings have been allocated to prior permit categories to protect confidentiality

Vessel length category data (Table 36 and Table 37) indicate a decreased reliance on monkfish for all size classes except for 30-49 ft vessels, which shows consistent reliance on monkfish (data for earlier years are available in the FW7 document).

Table 36 - Monkfish landings, 2006-2014, as a percentage of total landings by vessel length

Vessel Length Category	1,000 pounds, landed weight								
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
0-29 Feet	1	2	7	3	1	1	0	0	0
% of Total 0-29 Landings	0.1%	0.4%	1.4%	0.6%	0.2%	0.1%	0.1%	0.1%	0.0%
30-49 Feet	7,558	8,305	7,158	5,873	5,113	6,720	5,650	5,519	6,180
% of Total 30-49 Landings	14.4%	15.0%	11.7%	9.1%	7.9%	9.9%	9.1%	10.6%	10.9%
50-69 Feet	2,252	2,079	1,674	1,428	1,413	1,845	1,441	1,294	1,387
% of Total 50-69 Landings	3.7%	3.5%	2.6%	1.9%	2.0%	2.2%	1.1%	1.4%	1.7%
70-89 Feet	4,240	3,079	2,498	1,933	1,837	2,506	2,539	2,575	2,511
% of Total 70-89 Landings	2.3%	1.6%	1.3%	1.1%	1.0%	1.0%	1.2%	1.4%	1.5%
90+ Feet	403	498	324	259	198	278	306	100	109
% of Total 90+ Landings	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%
CT	294	262	53	156	166	0	0	1	2
% of Total CT Landings	2.8%	3.1%	1.9%	4.1%	3.5%	0.0%	0.0%	0.2%	0.3%
TOTAL MONK LANDED	14,747	14,225	11,714	9,652	8,728	11,350	9,937	9,489	10,189

Table 37 - Monkfish revenues, 2006-2014, as a percentage of total revenues by vessel length

Vessel Length Category	\$1,000, nominal (not discounted)								
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
0-29 Feet	\$2	\$6	\$18	\$8	\$2	\$2	\$1	\$1	\$0
% of Total 0-29 Revenues	0.1%	0.4%	1.5%	0.8%	0.2%	0.1%	0.1%	0.1%	0.0%
30-49 Feet	\$12,076	\$12,407	\$11,016	\$8,782	\$9,190	\$13,722	\$10,557	\$8,382	\$9,753
% of Total 30-49 Revenues	14.1%	14.0%	12.0%	10.7%	10.4%	12.7%	11.0%	9.7%	10.4%
50-69 Feet	\$5,133	\$5,422	\$4,063	\$3,454	\$3,871	\$5,432	\$3,342	\$2,844	\$2,908
% of Total 50-69 Revenues	5.3%	5.6%	4.1%	3.8%	3.5%	4.1%	2.7%	2.7%	2.9%
70-89 Feet	\$9,978	\$9,383	\$7,178	\$5,423	\$6,262	\$8,756	\$6,733	\$6,748	\$6,557
% of Total 70-89 Revenues	2.7%	2.4%	2.1%	1.5%	1.4%	1.6%	1.4%	1.5%	1.6%
90+ Feet	\$1,024	\$1,505	\$891	\$672	\$641	\$944	\$775	\$233	\$260
% of Total 90+ Revenues	1.0%	1.4%	0.8%	0.6%	0.5%	0.6%	0.5%	0.2%	0.3%
CT	\$333	\$425	\$141	\$259	\$407	\$0	\$1	\$2	\$5
% of Total CT Revenues	0.9%	1.1%	3.4%	3.1%	2.8%	0.0%	0.0%	0.2%	0.3%
TOTAL MONK REVENUE	\$28,548	\$29,148	\$23,307	\$18,599	\$20,375	\$28,856	\$21,409	\$18,209	\$19,483

Source: NMFS-NERO Analysis and Program Support Division, cfders dealer weighout database, accessed August, 2013.
* CT data may include landings from vessels without a 2006-2012 Monkfish permit

When viewed in aggregate, vessels that hold a monkfish permit are not significantly reliant on monkfish, as monkfish has accounted for less than 3% of total landings since FY 2006 (Table 38) and less than 4.1% of total revenues in the same time period (Table 39). The proportion of monkfish in both landings and revenue has decreased between FY2006 and FY2013, however, FY2014 showed a slight increase. The proportion of most other species remained relatively constant, although the proportion of scallop and dogfish landings and revenues has decreased over the most recent 2 fishing years.

Table 38 - Landings of monkfish and other species, 2006-2014, as a percent of total landings

Species Category	1,000 pounds, landed weight								
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Dogfish	4,503	3,020	4,356	9,059	10,580	13,936	17,835	10,553	16,228
Dogfish % of Total Landings	0.9%	0.6%	0.8%	1.7%	2.1%	2.3%	3.0%	2.0%	3.4%
Fluke	10,363	7,263	7,966	9,836	14,054	12,352	11,655	9,970	9,411
Fluke % of Total Landings	2.0%	1.4%	1.4%	1.8%	2.8%	2.0%	2.0%	1.9%	2.0%
Monkfish	14,747	14,225	11,714	9,652	8,728	11,350	9,937	9,489	10,189
Monkfish % of Total Landings	2.9%	2.7%	2.1%	1.8%	1.8%	1.8%	1.7%	1.8%	2.1%
Multispecies	48,638	59,074	66,641	64,436	57,666	61,762	48,879	44,856	45,318
Multispecies % of Total Landings	9.4%	11.4%	11.8%	11.8%	11.6%	10.1%	8.3%	8.6%	9.4%
Scallops	59,383	59,025	51,593	54,739	55,226	57,643	51,889	37,712	30,239
Scallops % of Total Landings	11.5%	11.3%	9.1%	10.0%	11.1%	9.4%	8.8%	7.2%	6.3%
Skates	15,858	21,006	20,135	20,124	12,638	15,748	15,752	16,631	11,826
Skates % of Total Landings	3.1%	4.0%	3.6%	3.7%	2.5%	2.6%	2.7%	3.2%	2.5%
Other	361,340	356,853	402,589	379,618	337,716	441,249	432,443	393,142	359,082
Other % of Total Landings	70.2%	68.6%	71.3%	69.3%	68.0%	71.9%	73.5%	75.3%	74.5%
TOTAL LBS. LANDED	514,832	520,465	564,995	547,465	496,607	614,041	588,391	522,353	482,293

Source: NMFS-GARFO Analysis and Program Support Division, cfders dealer weighout database, accessed July, 2015.

* CT data may include landings from vessels without a 2006-2014 Monkfish permit

Table 39 - Revenues of monkfish and other species, 2006-2012, as a percent of total revenues

Species Category	\$1,000, nominal (not discounted)								
	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014
Dogfish	\$ 1,178	\$ 899	\$ 1,378	\$ 2,527	\$ 2,902	\$ 3,556	\$ 4,304	\$ 2,192	\$ 3,570
Dogfish % of Total Revenues	0.2%	0.1%	0.2%	0.4%	0.4%	0.4%	0.5%	0.3%	0.5%
Fluke	\$ 22,287	\$ 17,578	\$ 15,333	\$ 18,626	\$ 24,431	\$ 26,045	\$ 26,513	\$ 24,829	\$ 26,866
Fluke % of Total Revenues	3.2%	2.4%	2.3%	2.9%	3.1%	2.7%	3.1%	3.2%	3.7%
Monkfish	\$ 28,548	\$ 29,148	\$ 23,307	\$ 18,599	\$ 20,375	\$ 28,856	\$ 21,409	\$ 18,209	\$ 19,483
Monkfish % of Total Revenues	4.1%	4.1%	3.5%	2.9%	2.6%	3.0%	2.5%	2.4%	2.7%
Multispecies	\$ 74,436	\$ 81,540	\$ 82,539	\$ 77,229	\$ 81,615	\$ 89,969	\$ 72,155	\$ 60,505	\$ 61,047
Multispecies % of Total Revenues	10.7%	11.4%	12.6%	12.0%	10.2%	9.5%	8.3%	7.8%	8.5%
Scallops	\$ 379,823	\$ 389,627	\$ 353,138	\$ 358,771	\$ 476,262	\$ 574,960	\$ 520,207	\$ 440,924	\$ 376,842
Scallops % of Total Revenues	54.5%	54.2%	53.7%	55.6%	59.7%	60.6%	60.2%	57.1%	52.6%
Skates	\$ 5,460	\$ 6,507	\$ 5,458	\$ 5,660	\$ 4,760	\$ 4,616	\$ 4,566	\$ 5,266	\$ 2,777
Skates % of Total Revenues	0.8%	0.9%	0.8%	0.9%	0.6%	0.5%	0.5%	0.7%	0.4%
Other	\$ 184,798	\$ 192,952	\$ 176,521	\$ 163,510	\$ 187,135	\$ 220,757	\$ 215,169	\$ 220,038	\$ 226,127
Other % of Total Revenues	26.5%	26.9%	26.8%	25.4%	23.5%	23.3%	24.9%	28.5%	31.6%
TOTAL REVENUE	\$696,529	\$718,251	\$657,674	\$644,922	\$797,479	\$948,758	\$864,322	\$771,964	\$716,713

Source: NMFS-GARFO Analysis and Program Support Division, cfders dealer weighout database, accessed July, 2015.

* CT data may include landings from vessels without a 2006-2014 Monkfish permit

6.4.1.3 Days-at-Sea (DAS)

Starting in Year 2 of the FMP (May, 2000-April, 2001) limited access monkfish vessels (Categories A, B, C, and D) were allocated 40 monkfish DAS. By definition, Category A and B vessels do not qualify for limited access multispecies or scallop permits, and Category C and D vessels must use either a multispecies or scallop DAS while on a monkfish DAS. Beginning in FY 2005 seven vessels qualified for a permit Category H fishery under the provisions adopted in Amendment 2, for vessels fishing exclusively in the southernmost area of the fishery.

Until FW 4 which took effect in FY 2007, vessels were not required to use a monkfish DAS in the NFMA, as there were no monkfish landing limits when a limited access vessel was on a multispecies DAS. Therefore, DAS usage was well below the total DAS allocated, and primarily reflected monkfish fishing activity in the SFMA. Starting in FY 2007, vessels in both areas were required to use a monkfish DAS when exceeding the applicable incidental limit. The effect of this requirement shows the total DAS has remained reasonably the same from FY 2009-2014, with FY 2014 indicating a slight increase in DAS used compared to FY2013. DAS used by permit category since 2009 is shown in Figure 18.

As shown in Table 40, only a portion of the limited access vessels used at least one monkfish DAS in FY 2014, and the total DAS used by limited access vessels was only about 11% of the total allocated. This represents a substantial amount of latent effort in the fishery. Even among active vessels (those that used at least one monkfish DAS), not all allocated DAS are used. Only about 47% of allocated DAS were used by active vessels. Part of this latent effort can be explained by the fact that nearly one-half of the permit category C vessels, 165 vessels, are limited access scallop vessels who choose not to use a scallop DAS to target monkfish under the monkfish DAS usage requirements because of the greater profitability of using scallop DAS to target scallops (Table 27 and Table 41).

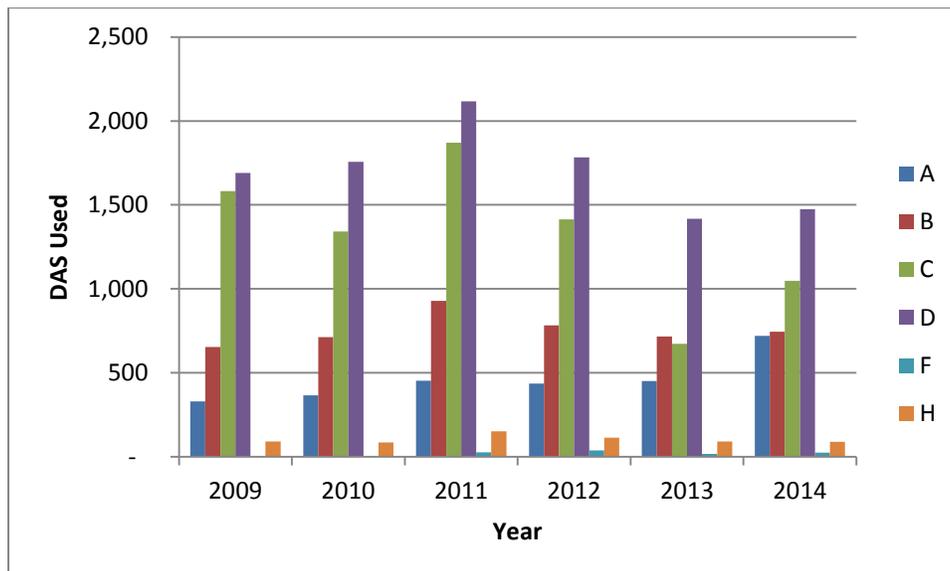


Figure 18 - DAS used by permit category, FY 2009-2012

A second reason for the unused DAS, even among active vessels, appears to be the result of the low monkfish DAS usage rate by vessels fishing in the NFMA. For active vessels, (i.e., those that used at least one DAS) in FY 2014, the DAS usage rate is distinctly different between the two management areas. Of the 56 active vessels in the NFMA, most were not constrained by the allocation of 40 DAS, plus four carryover DAS, and the average number of DAS used in the NFMA was 12 DAS (Table 41). In contrast, among the 142 active vessels in the SFMA the average number of DAS used was 24.3 of their 32 available DAS, (28 plus four carryover) (Table 41). The usage rate increase in the SFMA from an average of 20 DAS during FY 2013. The usage rate for the NFMA also increased from an average number of DAS used of 9 in the previous year.

Table 40 - Monkfish DAS usage, FY 2014

Permit Category	All Vessels			Active Vessels*		
	Total Number of Permits	DAS Allocated	DAS Used	Number of Active Vessels	DAS Allocated	DAS Used
A	24	1,039	721	18	779	721
B	45	1,949	746	31	1,342	746
C	282	12,211	1,048	50	2,165	1,048
D	264	11,431	1,474	71	3,074	1,474
F	15	151	25	3	30	25
H	7	303	90	7	303	90
TOTAL	637	27,084	4,102	180	7,694	4,102

Source: NMFS Vessel Permits and Allocation Management System (AMS) databases, accessed July, 2015.

* Active = vessels that used >0 monkfish DAS

Permit Category A active vessel NFMA DAS used not included due to confidentiality.

Table 41 - Monkfish-only, monkfish/multispecies and monkfish/scallop DAS usage by active vessels by area, FY 2014

Permit Category	Area	Number of Active Vessels	Monkfish	Monkfish/ Multispecies	Monkfish/ Scallop	DAS Used	Average DAS Usage
A	NFMA	3	3	0	0	3	1.0
B	NFMA	3	2	0	0	2	0.7
C	NFMA	27	0	368	0	368	13.6
D	NFMA	23	0	278	0	278	12.1
Total		56	5	646	0	651	12
A	SFMA	18	717	0	0	717	39.8
B	SFMA	31	744	0	0	744	24.0
C	SFMA	30	0	680	0	680	22.7
D	SFMA	53	0	1,196	0	1,196	22.6
F	SFMA	3	0	25	0	25	8.3
H	SFMA	7	0	90	0	90	12.9
Total		142	1,461	1,991	0	3,452	24.3

Source: NMFS Vessel Permits and Allocation Management System (AMS) databases, accessed July, 2015.

* Active = vessels that used >0 monkfish DAS

6.4.2 Ports and communities

This section updates information contained in the EA for Framework 8. The Monkfish FMP references Amendments 5 and 7 to the Northeast Multispecies FMP and Amendment 4 to the Sea Scallop FMP for social and cultural information about monkfish ports, including port profiles. Because of the nature of the monkfish fishery, there is significant overlap between the vessels and communities involved with the monkfish fishery and those involved with the multispecies (groundfish) and scallop fisheries. Many of the same boats that target monkfish or catch them incidentally also target groundfish or scallops. Only about six percent of the limited access monkfish permit holders do not also hold limited access permits in either the multispecies or scallop fisheries. Since 1994, Primary and Secondary monkfish ports have been defined based on data from 1994-1997. “Primary monkfish ports” have been defined as those averaging more than \$1,000,000 in monkfish revenues from 1994-1997, while “Secondary monkfish ports” have been defined as those averaging more than \$50,000 in monkfish revenues from 1994-1997.

Here we supply both: 1) updated primary and secondary ports based on \$1M and \$50k cut-offs but data from 2009-2013 and 2) primary and secondary ports based on the broader measure of monkfish engagement, based on the NMFS Community Vulnerability Indicators (sometimes called the social indicators). This approach is a more comprehensive measure of involvement in the monkfish fishery than simply landed dollars or pounds

The measure of monkfish engagement is based on multiple sources of information, averaged over five years, 2009-2013, including:

- the absolute values of pounds and value of monkfish,
- The number of monkfish permits with that community as the owner’s home, and
- The number of dealers buying monkfish in that community.

Using a principal component and single solution factor analysis, each community receives a factor score for monkfish engagement to compare to other communities (Colburn and Jepson 2012; Jacob et al. 2012). A score of 1.0 or more places the community at 1 standard deviation above the mean (or average) and is considered high engagement. Communities with scores of 0.5 to 0.99 are rated as having moderate engagement and communities with 0.0-0.49 have low engagement (Figure 19). All communities with high engagement were included as either primary or secondary ports for monkfish. A community with a score of 1 to 4.99 is listed as a secondary port, while a community with a score of 5 to 20 is considered a primary port. See text boxes, below, for a comparison of primary and secondary ports as based on the old revenue data, the new revenue data, and the engagement scores.

Primary monkfish ports based on 1994-1997 revenue data:

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

Secondary monkfish ports based on 1994-1997 revenue data:

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

Primary monkfish ports based on 2009-2013 engagement data:

- New Bedford, MA
- Gloucester, MA
- Narragansett/Point Judith, RI
- Montauk, NY
- Barnegat Light/Long Beach, NJ

Secondary monkfish ports based on 2009-2013 engagement data:

- Hampton Bays/Shinnecock, NY*
- Point Pleasant, NJ
- Chatham, MA
- Boston, MA
- Cape May, NJ
- New London, CT
- Little Compton, RI
- Portland, ME
- Newport, RI
- Chincoteague, VA
- Westport, MA
- Scituate, MA
- Portsmouth, NH
- Wanchese, NC
- Ocean City, MD
- Newport News, VA

Primary monkfish ports based on 2009-2013 revenue data:

- New Bedford, MA
- Gloucester, MA
- Barnegat Light/Long Beach, NJ
- Point Judith/Narragansett, RI
- Boston, MA

Secondary monkfish ports based on 2009-2013 revenue data:

- Montauk, NY
- Chatham, MA
- Little Compton, RI
- Hampton Bays/Shinnecock, NY*
- Chincoteague, VA
- New London, CT
- Portland, ME
- Point Pleasant, NJ
- Newport, RI
- Westport, MA
- Portsmouth, NH
- Ocean City, MD
- Waretown, NJ
- Cape May, NJ
- Tiverton, RI
- Scituate, MA
- Stonington, CT
- Port Clyde, ME
- Greenbackville, VA
- Belford, NJ
- Hampton, VA
- Barnegat, NJ
- New Shoreham, RI
- Newport News, VA

* Shinnecock is an additional port within the town of Hampton Bays.

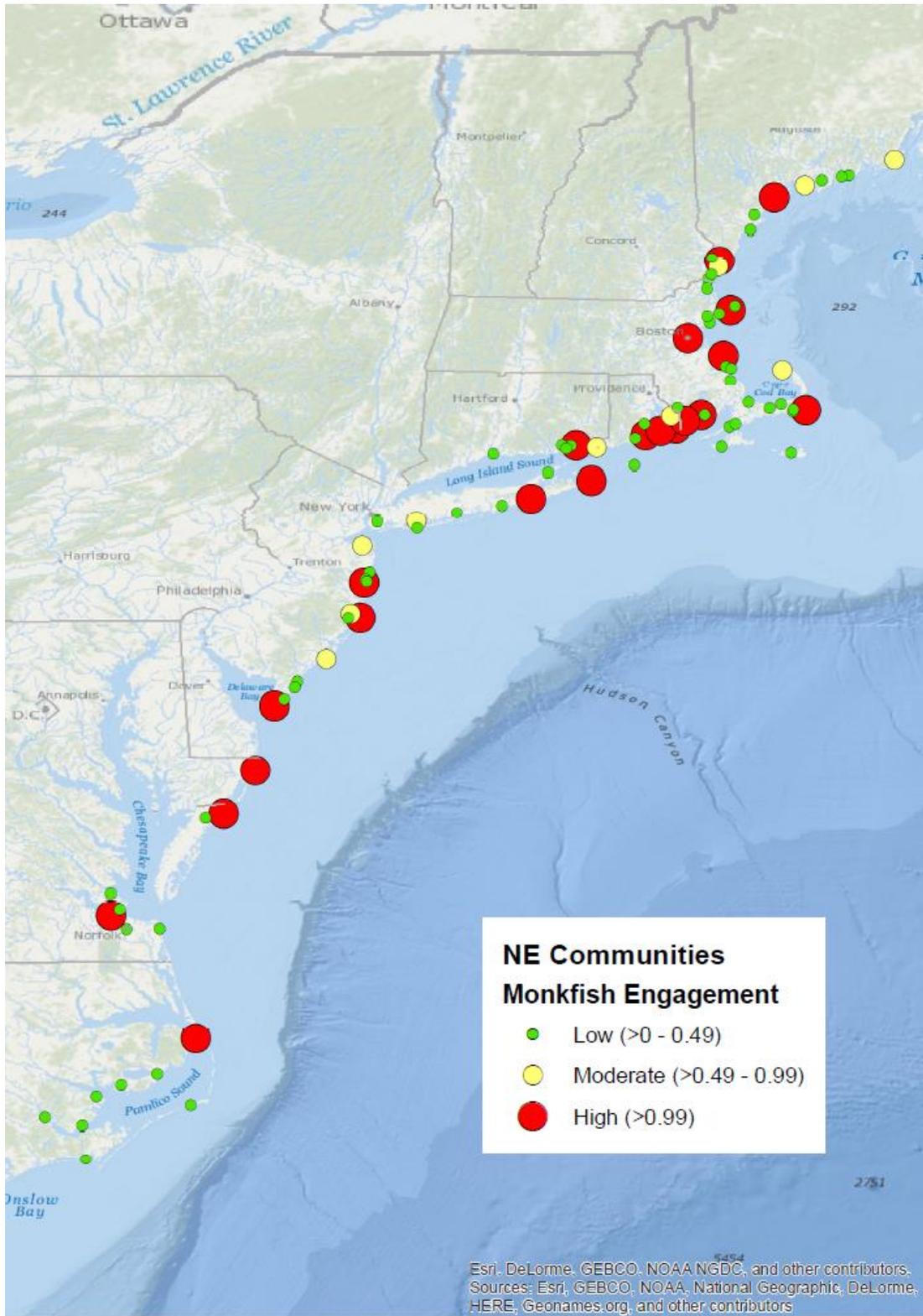


Figure 19 - Monkfish engagement level by community

An interesting additional index is fishing reliance, a per capita measure using similar data to the engagement index but divided by total population in the community. In Figure 20, all high engagement communities (here, both primary and secondary monkfish ports) are shown along with their reliance. Barnegat Light/Long Beach, NJ, for instance, is very highly reliant on monkfish while New Bedford has very low reliance on monkfish, even though New Bedford, MA has much higher engagement.

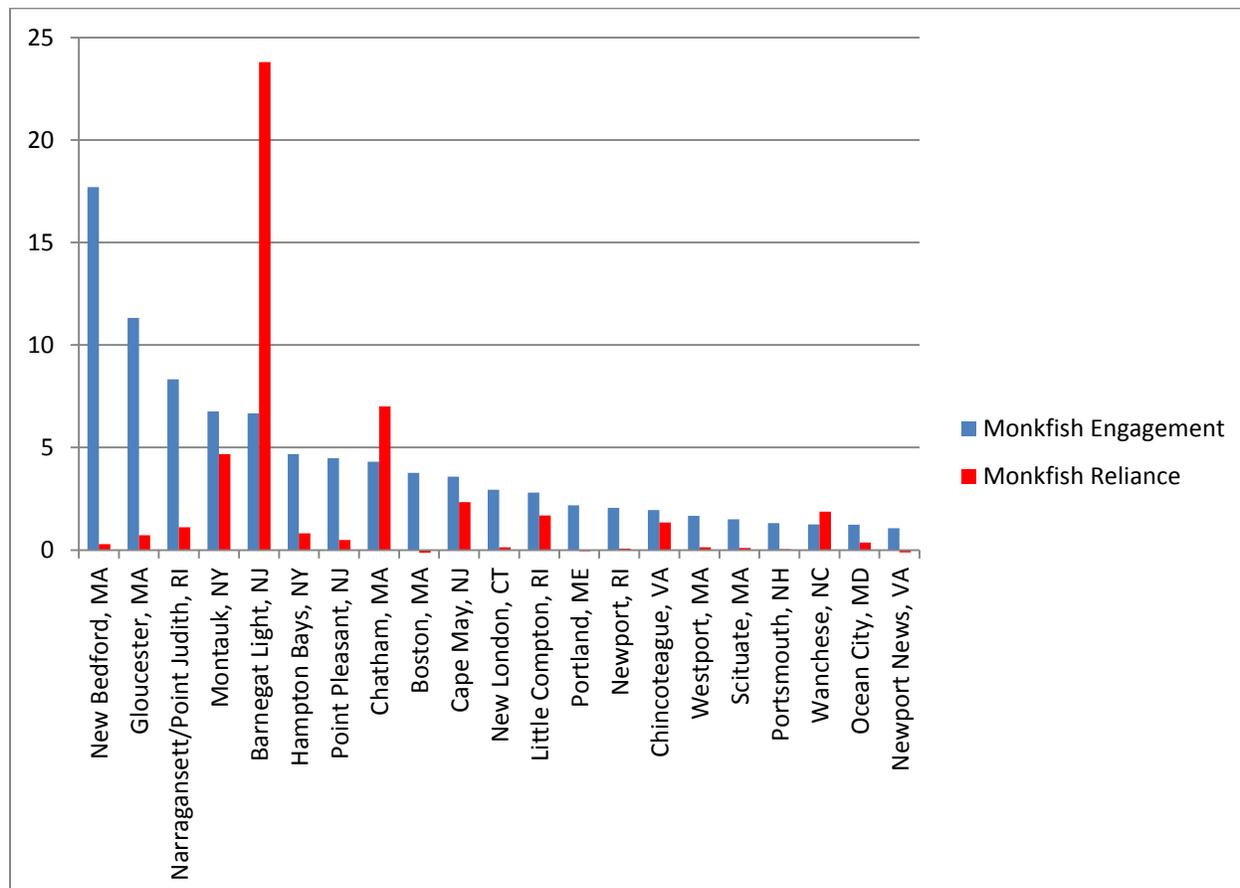


Figure 20 - All high monkfish engagement communities with both engagement and reliance scores

Further, each community with high monkfish engagement can be assessed with regard to its social vulnerability, using indices of *poverty* (percent receiving assistance, percent of families below poverty level, percent over 65 in poverty, percent under 18 in poverty), *personal disruption* (percent unemployed, crime index, percent with no diploma, percent in poverty, percent females separated) and *population composition* (percent white alone, percent female single headed households, percent population age 0-5, percent that speak English less than well). We can see in Figure 21 that several communities are at or above 0.5 or even 1.0 standard deviations above the mean (average) for all monkfish communities: New Bedford, MA; New London, CT; Newport News, VA; and Boston, MA. A few others are at or close to 0.5 for two of the three indices: Chincoteague, VA; Westport, MA; and Ocean City, MD.

Social Vulnerability in Top Monkfish Communities

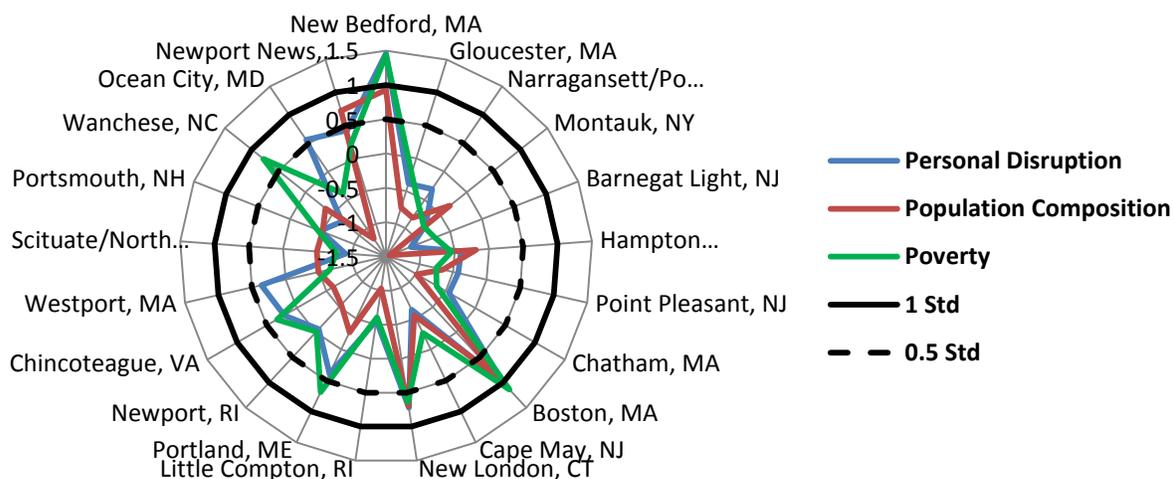


Figure 21 - Social vulnerability of communities with high monkfish engagement

Table 42 shows the distribution of monkfish permit holders by homeport and monkfish permit category for the six primary, 18 secondary, and “other” monkfish ports for FY 2006 and FY 2012. Table 43 shows monkfish landings for five of the six major ports (as reported by NMFS in their regular “Northeast Preliminary Fisheries Statistics” Report, not including Long Beach/Barneget Light, NJ) and states, broken down by management area from which landings were reported, as well as by gear type. Virtually all of the monkfish landed in Portland, Gloucester and Boston come from the NFMA, while the proportion of NFMA landings in New Bedford has declined from previous years. Nearly all of Pt. Judith landings are from the SFMA.

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

Port landings and revenue data based on the May-April fishing year is presented in Table 44 and Table 45, for primary and secondary ports (as identified in the original FMP), respectively, for FY 2010-2012.

Data is based on the vessel's homeport, but for FY 2012, on the vessel's principal port of landing as indicated on the permit application. Vessels home ported in New Bedford recorded the highest monkfish landings and revenues from 1995-1999, and, although its share has declined in recent years, it remained the top port in 2012. In FY 2010, the port of Boston, MA, emerged as the homeport with the highest landings, but declined below New Bedford in 2011 and 2012. Portland, ME, which averaged nearly 1.8 million lb from 1995-2003 has declined steadily, and since 2009 has remained between 400-500 lb, with 494 lb being landed in FY 2012.

There has been an overall decline in landings and revenues from FY 2006-2012 that is reflected in the port data. In nearly all cases, the revenues from monkfish as a percentage of total revenues by port also declined, which is prominently observed in Portsmouth, NH and Boston, MA. However, Port Clyde, ME has had an increase from 3.8% in FY 2006 to 18.9% in FY 2012 (Table 46). While some of these effects could be due to increases in revenues from other fisheries (such as scallops in New Bedford), in most cases it can be attributed to declines in monkfish landings.

Table 42 - Monkfish permits by port, FY 2014

HOMEPORT	FY 2014 by Category							TOTAL
	A	B	C	D	E	F	H	
PRIMARY PORTS	11	25	153	99	318	10	0	616
NEW BEDFORD MA	3	0	106	41	68	0	0	218
GLOUCESTER MA	0	0	22	31	109	0	0	162
NARRAGANSETT/POINT JUDITH RI	2	0	14	16	49	5	0	86
MONTAUK NY	0	4	2	7	74	5	0	92
BARNEGAT LIGHT/LONG BEACH NJ	6	21	9	4	18	0	0	58
SECONDARY PORTS	3	6	86	86	364	5	3	553
HAMPTON BAYS/SHINNECOCK NY	0	1	1	2	24	0	0	28
POINT PLEASANT NJ	0	3	4	4	46	0	0	57
CHATHAM MA	0	0	0	18	51	0	0	69
BOSTON MA	1	0	26	11	29	1	0	68
CAPE MAY NJ	0	0	26	8	91	3	0	128
NEW LONDON CT	0	1	4	6	6	1	0	18
LITTLE COMPTON RI	1	1	2	0	0	0	0	4
PORTLAND ME	0	0	9	17	17	0	0	43
CHINCOTEAGUE VA	0	0	0	0	8	0	1	9
WESTPORT MA	1	0	1	2	11	0	0	15
SCITUATE MA	0	0	2	5	17	0	0	24
PORTSMOUTH NH	0	0	0	4	17	0	0	21
WANCHESE NC	0	0	4	6	18	0	2	30
OCEAN CITY MD	0	0	0	1	16	0	0	17
NEWPORT NEWS VA	0	0	7	2	13	0	0	22
OTHER PORTS	10	14	43	79	953	0	4	1,103
TOTAL	24	45	282	264	1,635	15	7	2,272

Table 43 - FY 2012 monkfish landings by primary port (excluding Barnegat Light, NJ) and state, by gear

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

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

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

2. Landings in live weight.
3. Gear data are based on vessel trip reports.

Table 44 - Monkfish landing and revenues for monkfish primary ports, in FY 2010-2012

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

Table 45 – Monkfish landing and revenues for monkfish secondary ports in FY 2010-2012

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

Table 46 - Monkfish revenues, FY 2006-2012, as a percentage of total revenues by port

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

7.0 Environmental Consequences of the Alternatives

7.1 Biological Impacts of Alternatives on Monkfish and Non-Target Species

Both scientific and management uncertainty have been accounted for in the ACT established for both management areas in the most recent specifications framework (FW8; NEFMC 2014). Therefore the risk of negative biological impacts has been minimized. Moreover, accountability measures (AMs) would be triggered if the ACL is exceeded, further reducing the risk of overfishing and adverse impacts to the stock.

7.1.1 Modifications to current DAS/Trip Limit system

7.1.1.1 Allow vessels to declare a Northeast Multispecies DAS at sea

7.1.1.1.1 Option 1: No Action

Impacts on monkfish

Under Option 1, permit Category C and D vessels with NE multispecies permits must continue to declare a NE multispecies DAS prior to leaving the dock. Any vessels that don't declare a NE multispecies DAS before leaving would be restricted to non-DAS incidental landing limits or could not take advantage of the "monkfish option" to declare a monkfish DAS while at sea in the NFMA. This would maintain the current levels of fishing opportunities for vessels. Therefore a change in effort pattern would not be expected. Option 1 would not increase flexibility for vessels to achieve a higher portion of the TAL.

Monkfish landings in the NFMA have fluctuated between FY 2004 and 2014 but have stabilized over the last 6 fishing years (Table 47). FW 8 increased monkfish DAS allocations from 40 to 45.2 in the NFMA for FY 2014. As the fishing year is not yet complete it is impossible to know what effect this will have on total landings. However, monkfish landings in the NFMA in FY 2014 (May through March 2014) have followed similar patterns to those observed in recent years, with total NFMA monkfish landings 13% lower than that observed through March 2014 (Table 48 and Figure 22).

Table 47 - NFMA target monkfish TALs, trip limits, DAS allocations, and landings (FY 2004 - 2014).

Fishing Year	Target TAL (mt)	Trip Limits (lb)*		DAS Restrictions**	Landings (mt)	Percent of TAC
		Cat. A & C	Cat. B & D			
2004	16,968	n/a	n/a	40	11,750	69%
2005	13,160	n/a	n/a	40	9,533	72%
2006	7,737	n/a	n/a	40	6,677	86%
2007	5,000	1,250	470	31	5,050	101%
2008	5,000	1,250	470	31	3,528	71%
2009	5,000	1,250	470	31	3,344	67%
2010	5,000	1,250	470	31	2,834	57%
2011	5,854	1,250	600	40	3,699	63%
2012	5,854	1,250	600	40	3,920	67%
2013	5,854	1,250	600	40	3,596	61%
2014	5,854	1,250	600	45.2	3,441	59%

* Trip limits in pounds tail weight per DAS

** Excluding up to 10 DAS carryover, became 4 DAS carryover in FY 2007

Table 48 - NFMA monkfish total landings in FY 2014 (May - March 2014)

NFMA Landings	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Through Apr
2014	187	206	186	220	253	232	170	294	330	244	556	561	3,441
2013	178	302	267	242	257	277	212	226	322	493	500	320	3,596
% Difference compared to 2013	5	-38	-36	-10	-2	-18	-22	26	2	-68	11	55	-4

NFMA Monthly Monkfish Landings

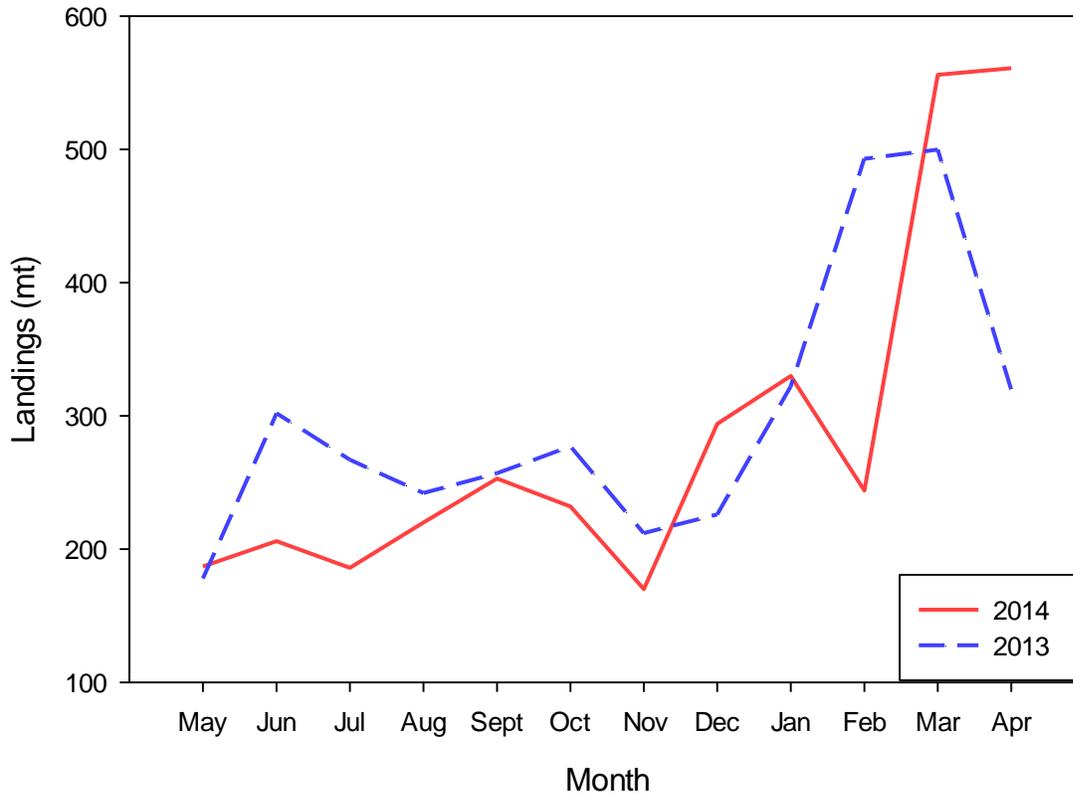


Figure 22 - NFMA monthly monkfish landings for FY 2013 and 2014.

Recent DAS usage patterns suggest that monkfish vessels operating in the NFMA have not used many of their allocated DAS in this region (Table 49). The 2013 Emergency Action temporarily removed the NFMA possession limit and may have reduced the number of DAS used in this region in FY2013. However, the Emergency Action did not appear to significantly increase landings on previous fishing years (Table 48).

Table 49 - NFMA DAS usage between FY2009 and FY 2014

Fishing year	NFMA DAS Used	% Total DAS Used in NFMA	% Total DAS allocated Used in NFMA
2009	1097	25%	4%
2010	1109	26%	5%
2011	1157	21%	4%
2012	1164	26%	4%
2013	360	11%	1%
2014	651	16%	2%
Average 2009 - 2014	923	21%	3%

Option 1 would have neutral to low positive impacts on the monkfish stock because it would not increase the ability of the fishery to achieve its TAL, leaving a portion of the TAL unharvested (or potentially

discarded). There is a low probability that expected catch under Option 1 would exceed the NFMA TAL based on the analysis conducted in FW8. This low level of catch would likely result in an Fishing mortality (F) that would continue to remain below $F_{\text{threshold}}$. Since F dropped below $F_{\text{threshold}}$ starting in FY2007 (Figure 4), monkfish biomass in the NFMA has continued to increase. Therefore if catch remains below the NFMA TAL, it is likely that biomass will continue to increase above Biomass target (B_{target}). The NFMA stock is not overfished, and overfishing is not occurring. Option 1 would have similar neutral to slightly low positive impacts on monkfish when compared to Options 2 and 3.

Impacts on non-target species

FW 2 to the Skate FMP indicates that over 8 million lb of skates (whole and wings) landed during FY 2012 were attributed to monkfish directed trips (Table 13 of NEFMC 2014b). The monkfish fishery accounted for a very small portion (<1%) of the bait fishery (whole skates) during that year, but represented approximately 44% of skate wing landings during FY 2012 in both the NFMA and SFMA combined once unmatched trips were assigned to a FMP based on the proportion of matched landings (NEFMC 2012). During both FY 2011 and 2012, very little skate landings were attributable to either the monkfish trawl or gillnet fisheries in the NFMA.

FW2 to the NE Skate Complex FMP reduced the skate ABC reflecting the recent decrease in skate survey indices. This decrease in survey indices implies a decrease in skate biomass which may reduce interactions and therefore discards from the monkfish fishery. FW3 to the NE Skate Complex FMP is currently under development, which further reduces the skate ABC based on updated skate survey indices. If approved, FW3 could modify the seasonal management of the wing fishery by apportioning a percentage of the TAL between the two seasons (May 1 – Aug 31 and Sept 1 – Apr 30). An incidental skate wing possession limit may be implemented if the in-season trigger is reached, which may reduce fishing for other species if high interactions with skate impede operations. Option 1 would have neutral to low negative impacts on the NE skate complex because no change in the current trend in skate landings and discards would be expected, unless modifications are made under the NE Skate Complex FMP.

The spiny dogfish stock is not overfished, overfishing is not occurring, and stock size has been above the biomass target since 2007 (MAFMC, 2014). The MAFMC is currently developing a specifications package for FY2016-2018, which adjusts the ABC, and associated management measures, based on updated survey indices and the application of a Kalman filter. Option 1 would have neutral impacts on the dogfish stock because no change in effort would be expected and biomass remains relatively high, resulting in no change in the current trend in dogfish landings and discards.

Because groundfish landings and discards are tightly controlled under the Northeast Multispecies FMP, Option 1 is likely to have neutral impacts on groundfish stocks. Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. The number of active NE multispecies vessels further declined in FY2013 (Murphy et al., 2015 – SSB report; Figure 23). Accordingly, effort on NE multispecies trips also declined in FY2013 (Figure 23). The number of monkfish DAS used has also decreased over the same time period. This could suggest that monkfish effort is linked to groundfish effort, which would further indicate that impacts on groundfish would be neutral as directed monkfish effort is unlikely to increase under decreasing groundfish effort. Option 1 would have similar neutral impacts on non-target species when compared to Options 2 and 3.

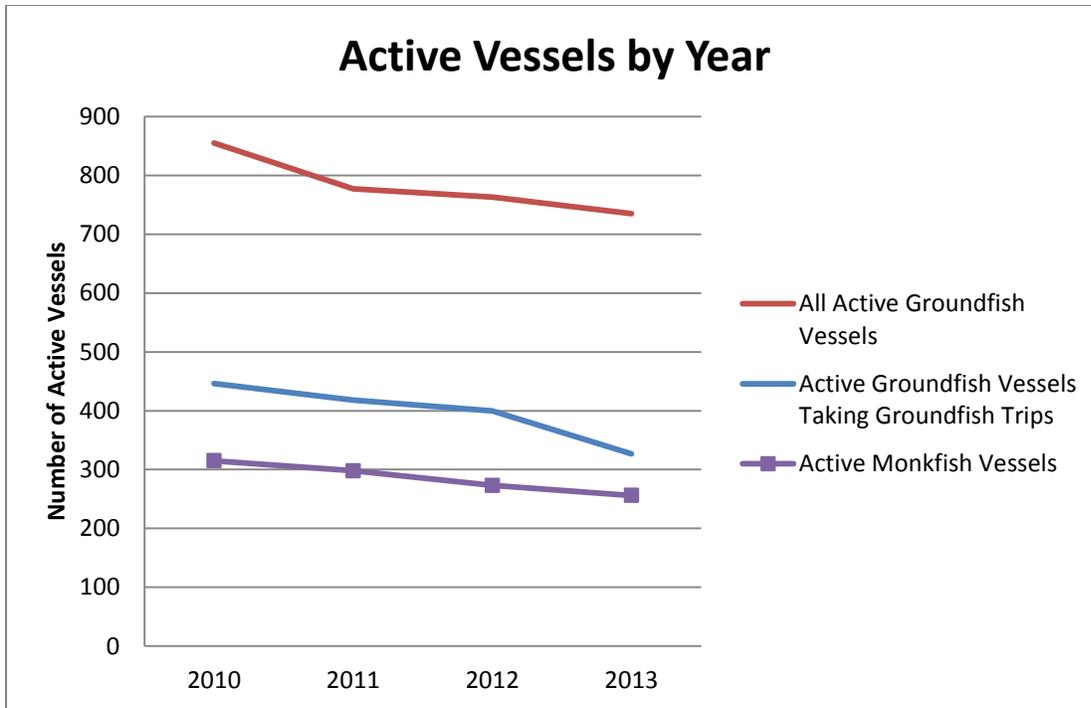


Figure 23 - Active groundfish vessels between 2010 and 2013

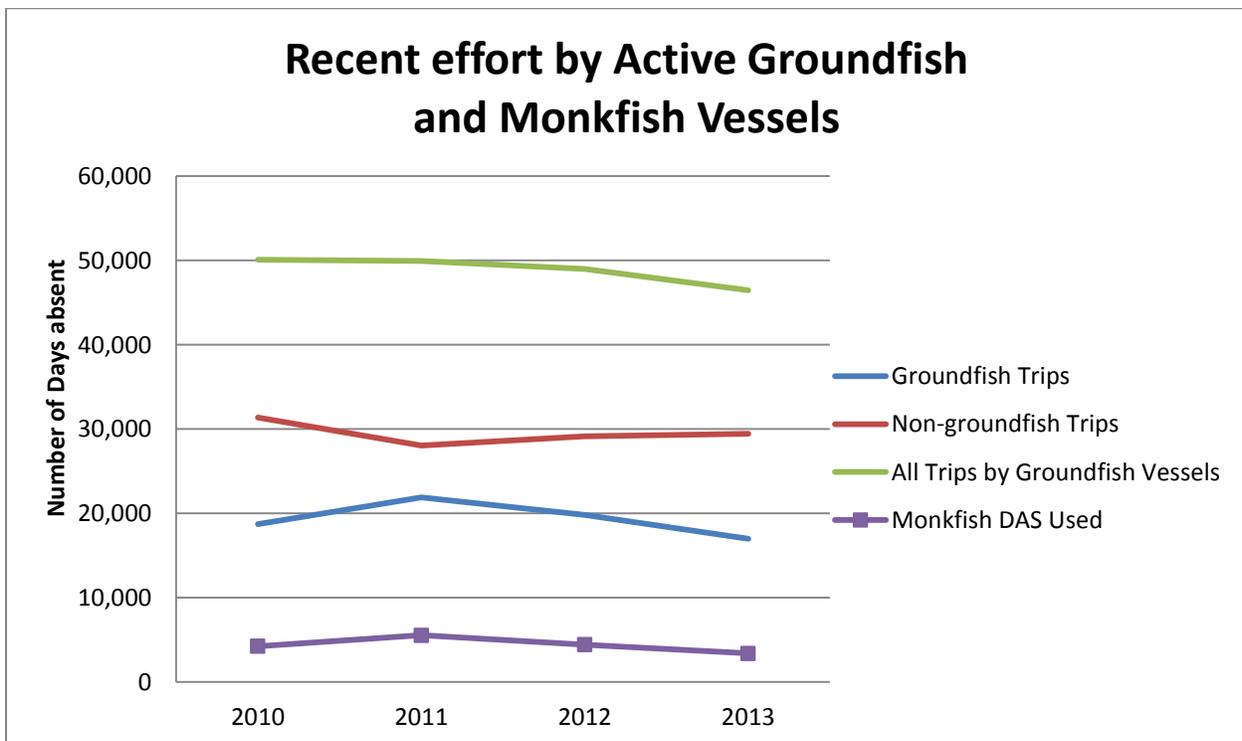


Figure 24 - Recent effort by active NE multispecies and monkfish vessels

7.1.1.1.2 Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area

Option 2 would allow Category C and D common pool and sector vessels to declare a NE multispecies DAS while at sea. This measure would not apply to vessels issued a limited access monkfish Category A or B permit, because they are not issued a limited access groundfish permit, or to those issued a Category H permit, because they cannot fish within the NFMA. This would be expected to decrease monkfish discards because it would provide these vessels with increased flexibility to land a higher incidental limit of monkfish (Table 5). Option 2 could also be combined with the “monkfish option” that allows vessels in the NFMA to declare a monkfish DAS while at sea. This would be expected to further reduce monkfish discards by allowing these vessels access to the monkfish DAS trip limit, while at sea.

Option 2 would have neutral impacts on the monkfish stock because it would be expected to help the fishery better achieve, but not exceed, the TAL, which has been under-harvested in recent years. The TAL, specified for FY2014 and FY 2015 in FW8, accounted for both scientific and management uncertainty, thus minimizing the risk of negative biological impacts. There is a low probability that expected catch under Option 2 would exceed the NFMA TAL based on recent trends in landings (Table 47). Landings and DAS usage has remained below targets since 2008, despite management actions that have increased possession limits and removed the trip limit on a NE multispecies DAS (2013 Emergency Action). Framework 8 increased the incidental possession limit when on a NE multispecies DAS in the NFMA (NEFMC, 2014). The number of trips landing various amounts of monkfish (in lbs) shows that the majority of trips are landing amounts much lower than the current incidental possession limit on the NE multispecies DAS (Figure 25). All of this indicates that increased flexibility or fewer restrictions have not resulted in landings that exceed the TAL, in recent years.

If the NFMA monkfish trip limit is not eliminated in this action (see Section 4.2.1), effort controls in the form of trip limits will further reduce the probability of exceeding the TAL. If the NFMA monkfish trip limit is eliminated in this action, this form of effort control would be removed but it is difficult to predict whether this would significantly change fishing behavior. The FY2013 Emergency Action eliminated trip limits in the NFMA for a portion of the fishing year, which is the exact measure proposed under Section 4.2.1 only without any associated time limits, but did not significantly increase landings on previous fishing years (Table 48) suggesting a low probability of exceeding the TAL even under this scenario.

Option 2 reduces the incentive to use a monkfish DAS in the NFMA. Figure 25 shows that the majority trips did not catch the incidental possession limit when on a NE multispecies DAS. If an incidental limit was not being caught then the need for the higher directed monkfish possession limit when on a monkfish DAS (Table 6) would be low in the NFMA. This low need for a monkfish DAS in the NFMA could increase the potential for these DAS to be used in the SFMA. Recent DAS usage patterns suggest that monkfish vessels operating in the NFMA have not used many of their allocated DAS in this region (Table 49) likely because catch rates are below those allowed under a NE multispecies DAS, which are also cheaper. The FY2013 Emergency Action eliminated trip limits in the NFMA for a portion of the fishing year, however, there was no concurrent increase in DAS used in the SFMA during this time (Table 52).

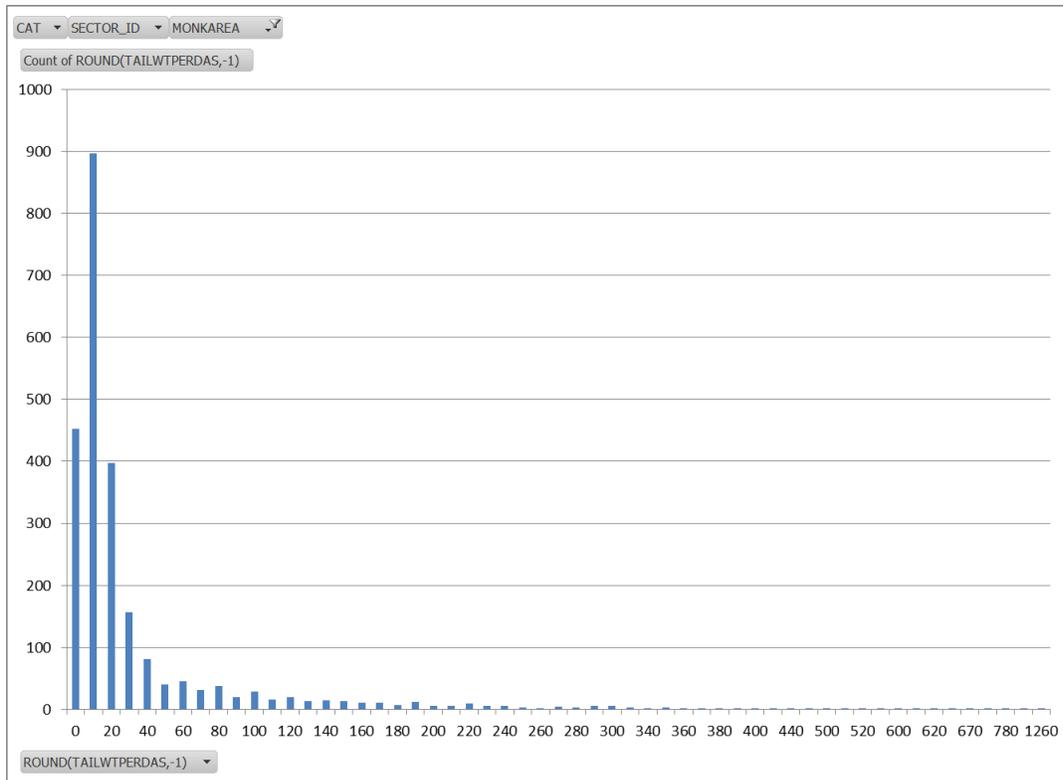


Figure 25 – Daily catch rate (monkfish tail weight/DAS fished) for all monkfish vessels fishing in the NFMA on a NE multispecies DAS during 2013. Y axis = count; x-axis=monk lb/DAS bins

To further prevent and mitigate overages, an Accountability Measure (AM) was implemented in Amendment 5. While an overage of the TAL under Option 2 would be unlikely, the AM is an adequate measure to mitigate the impacts of any potential overage and to prevent future overages from occurring. Option 2 would have similar neutral impacts on monkfish when compared to Options 1 and 3.

Impacts on non-target species

Option 2 would not be expected to increase overall fishing effort for reasons outlined above. The ability to declare a NE multispecies DAS would be expected to have low impacts on groundfish as the majority of groundfish vessels are in sectors, which don't need to use a NE multispecies DAS in order to land groundfish. Common pool vessels represent the minority of the fleet and also a low number of trips. Even if Option 2 allowed for more interactions with groundfish for common pool vessels, it would have a low impact on groundfish because overall common pool effort is low.

NE multispecies DAS are also required to land other non-target species such as dogfish and skate. Even though these trips might be targeting dogfish or skate they are also interacting with groundfish, which is restricted by sector allocations or trimester TACs, for the common pool. In addition, the number of active groundfish vessels has decreased in recent years suggesting a decrease in effort may be occurring (Figure 23). Allowing the declaration of a NE multispecies DAS at sea may increase the potential to land non-target species, however, if a vessel intends to also land non-target species in excess of incidental possession limit it is expected that a NE multispecies DAS would be declared prior to leaving the dock. If a large amount of non-target species are caught unexpectedly, then Option 2 would allow vessels to

convert discards to landings by declaring a NE multispecies DAS at sea. As noted above in Option 1, the current stock status of the NE skate complex and dogfish combined with no expected increase in effort in the monkfish fishery, Option 2 would not be expected to have any negative impacts on these stocks.

Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. Based on the analysis provided in Option 1, Option 2 is also not expected to result in increased effort over the approved monkfish specifications. Therefore, Option 2 would have neutral impacts on non-target species, similar to Options 1 and 3.

7.1.1.1.3 Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category D and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (*Preferred Alternative*)

Option 3 would allow Category C and D sector vessels to declare a NE multispecies DAS while at sea. Option 3 is very similar to Option 2 except that Option 3 includes only sector vessels. Expected impacts for Option 3 are the same as for Option 2 despite this difference, because of the low number of common pool vessels participating in the fishery, sector vessels strongly influence overall impacts. The trend in daily catch rate for only sector vessels (Figure 26) is almost identical to that for sector and common pool vessels under Option 2 (Figure 26). Option 3 would have similar neutral impacts compared to Options 1 and 2.

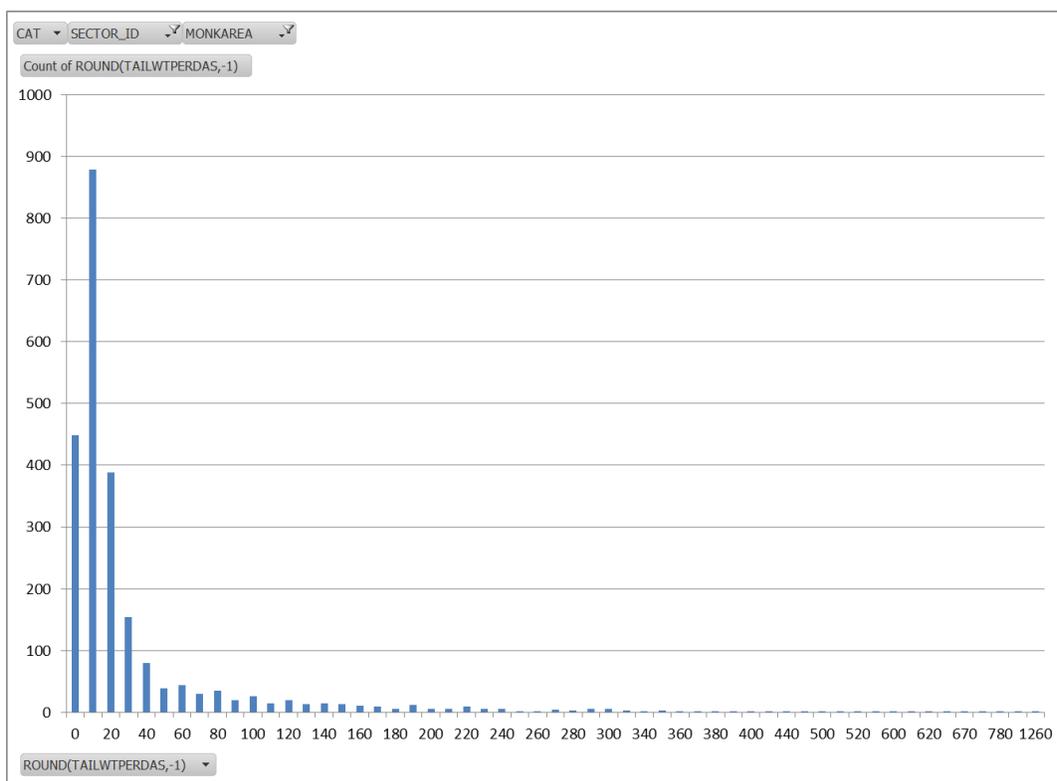


Figure 26 – Daily catch rate (monkfish tail weight/DAS fished) for sector vessels fishing in the NFMA on a NE multispecies DAS in 2013. Y-axis=count; x-axis=monk lb/DAS bins

Impacts on non-target species

As explained above, Option 3 would have similar impacts on non-target species as Option 2. Option 3 would have neutral impacts on non-target species, similar to Options 1 and 2.

7.1.1.2 Southern Management Area at-sea Monkfish DAS declaration

7.1.1.2.1 Option 1: No Action (*Preferred Alternative*)

Impacts on monkfish

Under the No Action alternative, permit Category C, D and H vessels fishing in the SFMA must declare a monkfish DAS prior to leaving the dock. Any vessels that don't declare before leaving the dock would be restricted to a NE multispecies DAS incidental landing limit. This would maintain the current levels of fishing opportunities for vessels. Therefore a change in effort pattern would not be expected. Option 1 would not increase flexibility for vessels to achieve a higher portion of the TAL.

Monkfish landings in the SFMA have fluctuated between FY 2004 and 2014 but have stabilized over the last 4 fishing years (Table 50). FW 8 increased monkfish DAS allocations from 28 to 32 in the SFMA for FY 2014. Preliminary data for FY 2014 shows that landings in the SFMA increased slightly to achieve 61% of the SFMA TAL (up from 59% in FY2013; Table 50). Monthly monkfish landings in the SFMA in FY 2014 have followed similar patterns to those in FY2013, with total SFMA monkfish landings up 4% in FY2014 compared to FY2013 (Table 51, Figure 27, and Figure 28).

Table 50 - SFMA target monkfish TALs, trip limits, DAS allocations and landings (FY 2000-2014)

Fishing Year	Target TAL (mt)	Trip Limits (lb)*		DAS Restrictions **	Landings (mt)	Percent of SFMA TAL
		Cat. A & C	Cat. B & D			
2004	6,772	550	450	28	6,223	92%
2005	9,673	700	600	39.3	9,656	100%
2006	3,667	550	450	12	5,909	161%
2007	5,100	550	450	23	7,180	141%
2008	5,100	550	450	23	6,751	132%
2009	5,100	550	450	23	4,800	94%
2010	5,100	550	450	23	4,484	88%
2011	8,925	550	450	28	5,801	65%
2012	8,925	550	450	28	5,184	58%
2013	8,925	550	450	28	5,088	59%
2014	8,925	550	450	32	5,314	61%

* Trip limits in pounds tail weight per DAS

** Excluding up to 10 DAS carryover, became 4 DAS carryover in FY 2007

Table 51 - SFMA monkfish total landings in FY 2014 (May-March 2014)

NFMA Landings	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Through Apr
2014	1082	893	260	190	104	211	469	580	500	166	233	622	5314
2013	1054	617	255	108	155	279	533	726	308	272	256	525	5088
% Difference compared to 2013	3	37	2	55	-39	-28	-13	-22	48	-48	-9	17	4

SFMA Monthly Monkfish Landings

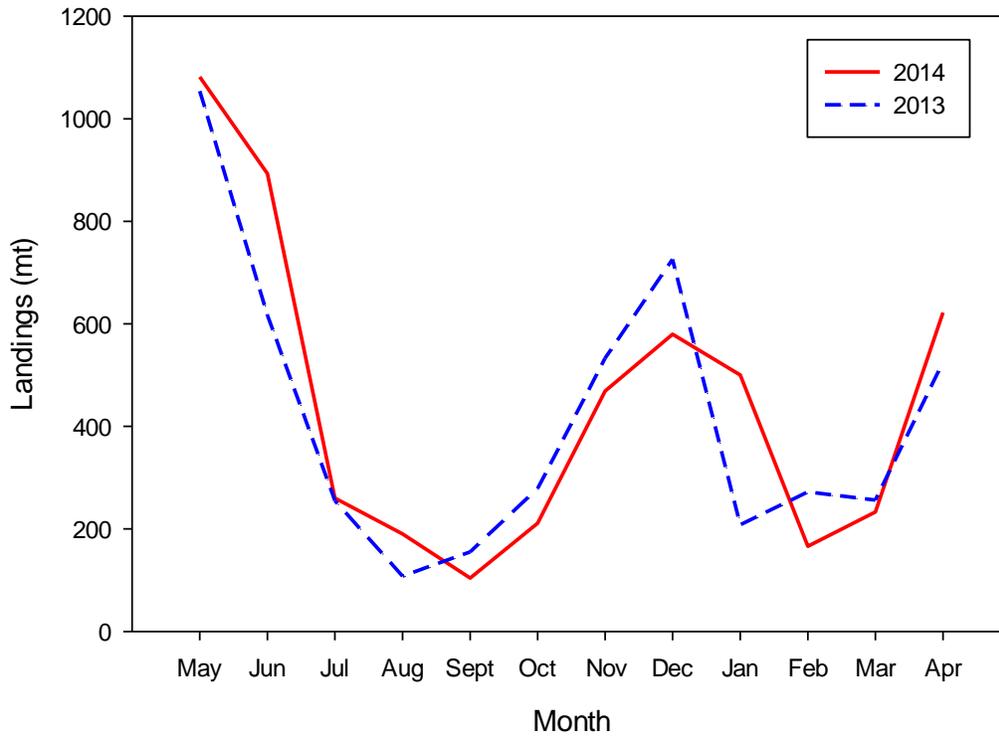


Figure 27 - Comparison of FY 2013 and FY2014 SFMA monthly monkfish landings

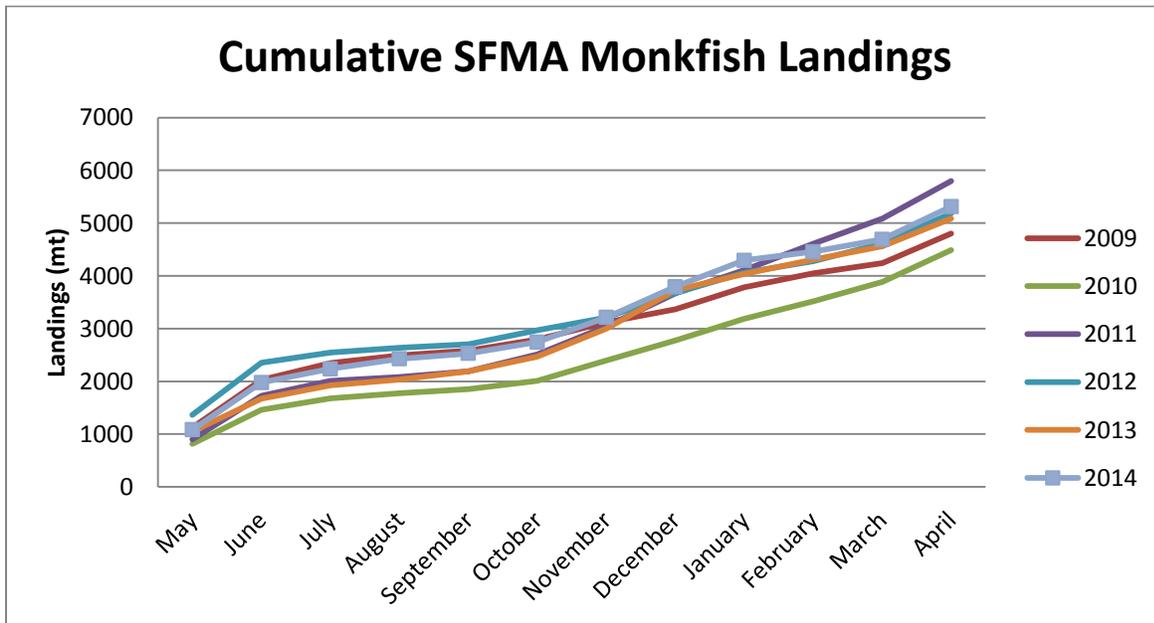


Figure 28 - Cumulative SFMA monkfish landings between 2009 and 2014

Recent DAS usage patterns suggest that monkfish vessels operating in the SFMA have not used many of their allocated DAS in this region (Table 52). As previously noted, the FY2013 emergency action reduced the need to use a monkfish DAS in the NFMA. This increased the potential for these unused NFMA monkfish DAS to be used in the SFMA. The total number of DAS used in the SFMA decreased in FY2013 when compared to FY2012 (Table 52). The percentage of total DAS used in the SFMA increased in FY2013, which may suggest an effort shift from the NFMA to the SFMA, however, the reduced number of DAS used in the NFMA may be affecting the calculation. Fewer DAS used in the NFMA reduced the total number of monkfish DAS used, resulting in the SFMA DAS dominating the total DAS used. There was an increase of approximately 13% in DAS used in the SFMA in FY2014 when compared to FY2013 (Table 52). The cause of this may be because FW8 increased the DAS allocation in this management area. It is not possible to distinguish between the effect of FW8 and any shift in effort from the NFMA to the SFMA.

Table 52 - SFMA Monkfish DAS usage between FY 2009 and FY 2014

Fishing year	SFMA DAS Used	% Total DAS Used in SFMA	% Total DAS allocated Used in SFMA
2009	3252	75%	13%
2010	3151	74%	13%
2011	4389	79%	14%
2012	3284	74%	10%
2013	3038	89%	10%
2014	3463	84%	10%
Average 2009 - 2014	3430	79%	12%

To further prevent and mitigate overages, an Accountability Measure (AM) was implemented in Amendment 5. While an overage of the TAL under Option 2 would be unlikely, the AM is an adequate measure to mitigate the impacts of any potential overage and to prevent future overages from occurring.

Option 1 would have neutral to low positive impacts on the monkfish stock because it would not increase the ability of the fishery to achieve its TAL, leaving a portion of the TAL unharvested (or potentially discarded). There is a low probability that expected catch under Option 1 would exceed the SFMA TAL.

Impacts on non-target species

Option 1 would not allow the declaration of a monkfish DAS while at sea and, therefore, would not be expected to dramatically increase effort in the SFMA. The number of SFMA DAS used in the SFMA has remained relatively stable since FY2009 despite increased specifications. FW8 set the current monkfish specifications and concluded no adverse biological impacts on non-target stocks would be expected. As the TAL is not expected to be exceeded it is unlikely that Option 1 would result in any negative biological impacts not already accounted for in existing measures and analyzed by previous actions under their respective FMPs.

The number of active monkfish vessels has fluctuated in both management areas. However, the percent active in the SFMA area increased while the number of active vessels decreased, suggesting some level of consolidation is occurring in the area (Figure 29). In recent years, the number of active vessels has decreased in the SFMA despite DAS usage showing a slight increase in FY2014 (Figure 30).

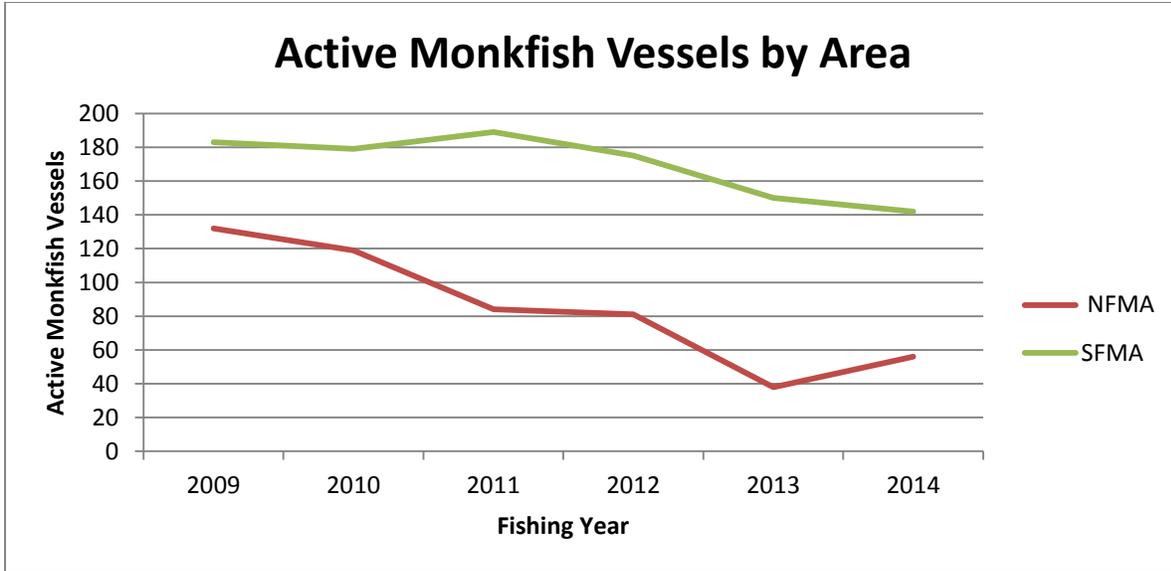


Figure 29 - Active Monkfish Vessels by Area

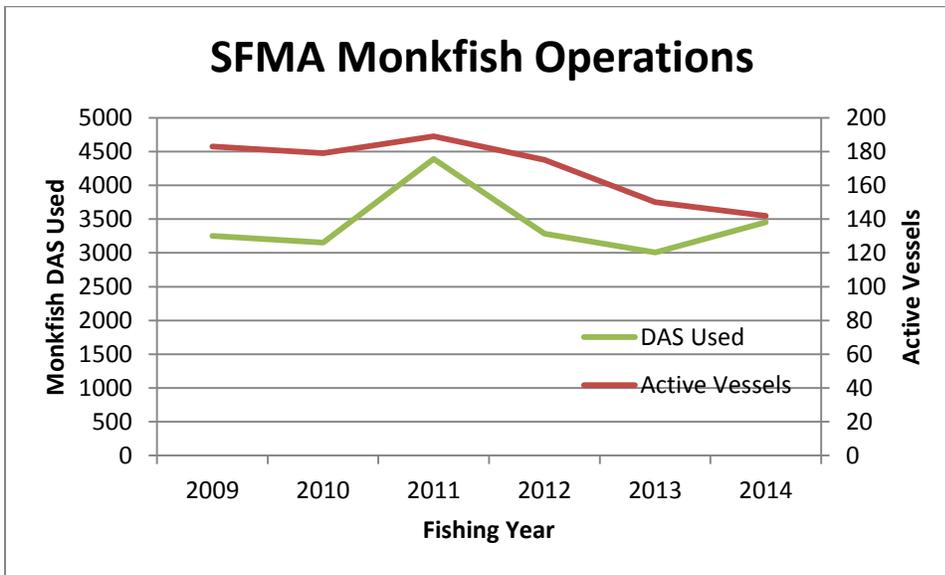


Figure 30 - SFMA monkfish Operations

FW 2 to the Skate FMP indicates that over 8 million lb of skates (whole and wings) landed during FY 2012 were attributed to monkfish directed trips (Table 13 of NEFMC 2014b). The monkfish fishery accounted for a very small portion (<1%) of the bait fishery (whole skates) during that year, but represented approximately 44% of skate wing landings during FY 2012 in both the NFMA and SFMA combined once unmatched trips were assigned to a FMP based on the proportion of matched landings (NEFMC 2012).

FW2 to the NE Skate Complex FMP reduced the skate ABC reflecting the recent decrease in skate survey indices. This decrease in survey indices implies a decrease in skate biomass which may reduce interactions and therefore discards from the monkfish fishery. The skate ABC is largely driven by little and winter skate biomass, neither of which are overfished. Overfishing was occurring on winter skate in

2013 and 2014, however, the biomass proxy remained above the biomass target. Option 1 would have neutral impacts on the NE skate complex because no change in the current trend in skate landings and discards would be expected.

The spiny dogfish stock is not overfished, overfishing is not occurring, and stock size has been above the biomass target since 2007 (MAFMC, 2014). Option 1 would have neutral impacts on the dogfish stock because no change in effort would be expected, resulting in no change in the current trend in dogfish landings and discards.

Because groundfish landings and discards are tightly controlled under the Northeast Multispecies FMP, Option 1 is likely to have neutral impacts on groundfish stocks. Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. The number of active NE multispecies vessels further declined in FY2013 (Murphy et al., 2015 – SSB report; Figure 23). Accordingly, effort on NE multispecies trips also declined in FY2013 (Figure 23). The number of monkfish DAS used has also decreased over the same time period. This could suggest that monkfish effort is linked to groundfish effort, which would further indicate that impacts on groundfish would be neutral as directed monkfish effort is unlikely to increase under decreasing groundfish effort. Option 1 would have similar neutral impacts on non-target species when compared to Option 2.

7.1.1.2.2 Option 2: Allow at-sea Monkfish DAS declaration in the SFMA

Option 2 would allow Category C, D and H vessels to declare a monkfish DAS while at sea in the SFMA. This would be expected to reduce monkfish discards in this region by allowing these vessels access to the monkfish DAS trip limit, while at sea.

Option 2 would have neutral impacts on the monkfish stock because it would be expected to help the fishery better achieve, but not exceed, the TAL, which has been under-harvested in recent years. The TAL, specified for FY2014 and FY 2015, accounted for both scientific and management uncertainty, thus minimizing the risk of negative biological impacts. There is a very low probability that expected catch under Option 2 would exceed the SFMA TAL. There are a number of trips, identified as incidental, that are landing monkfish in amounts approaching the directed monkfish DAS trip limit (Figure 31). This suggests this measure would allow these vessels to switch to a directed trip while at sea. Effort is being controlled by the possession limits as shown by the number of trips maxing out at the relevant possession limits (Figure 32).

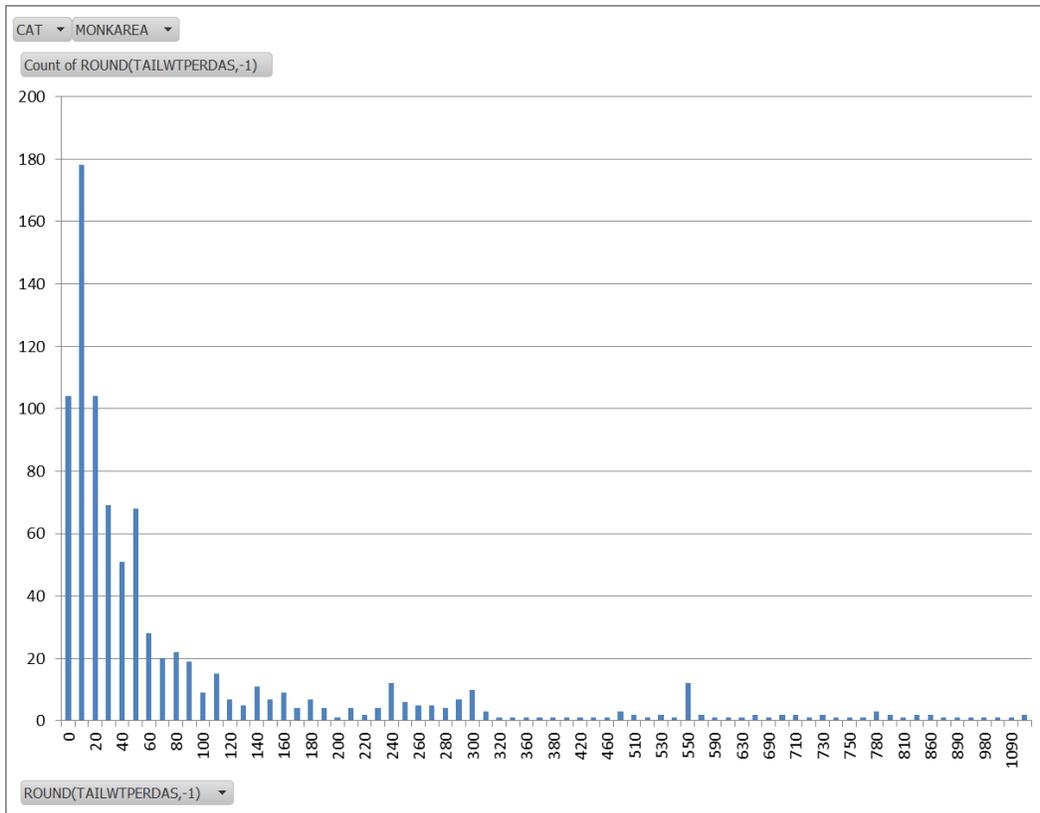


Figure 31 - Frequency of trips grouped by trip limit in SFMA in FY2013

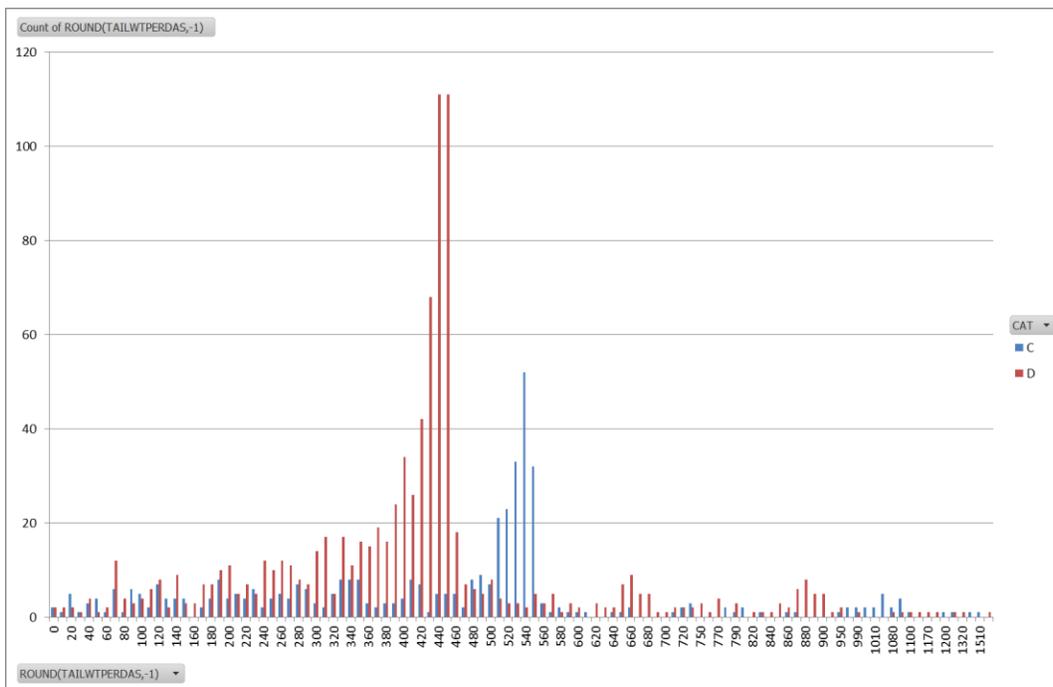


Figure 32 - Frequency of monkfish category C and D directed trips grouped by trip limit in SFMA in FY2013.

To further prevent and mitigate overages, an Accountability Measure (AM) was implemented in Amendment 5. While an overage of the TAL under Option 2 would be unlikely, the AM is an adequate measure to mitigate the impacts of any potential overage and to prevent future overages from occurring. Option 2 would have similar neutral impacts on monkfish when compared to Option 1.

Impacts on non-target species

Option 2 would not be expected to increase overall fishing effort because it would only provide vessels with increased flexibility for when to declare a monkfish DAS and does not include an increase in allocation. The majority of trips targeting monkfish in the SFMA are already fishing on a monkfish DAS suggesting the need to declare a monkfish DAS while at sea is low as vessels already intend on landing the higher possession limit when on a monkfish DAS (500 or 610 lb tail weight/DAS). Therefore, interactions with and discards of non-target species would not be expected to change.

Even though these trips might be targeting monkfish they are also interacting with dogfish or skate, which are restricted by ABCs and TALs. If an overage occurs in the skate fishery during the fishing year, the possession limit for the wing fishery would be reduced to the incidental limit of 500 lbs. If the overage is greater than 5% in any given year, the in-season possession limit trigger would be reduced 1% for every 1% of TAL overage, also, if the ACL is exceeded the buffer between the ACL and ACT would be increased from the current 25% in 1% increments for each 1% overage in ACL. Existing skate regulations ensure that overfishing does not occur and any overfished stocks continue to rebuild.

The dogfish stock is not overfished nor experiencing overfishing. Similar to the skate complex, the dogfish fishery has an established ABC and commercial quota. If an ACL overage occurs the exact amount in pounds by which the ACL was exceeded would be deducted, as soon as possible, from the subsequent single fishing year ACL.

Option 2 would have neutral impacts on non-target species, similar to Option 1.

7.1.1.3 Modify DAS/trip limit allocation for Category F (offshore) vessels

7.1.1.3.1 Option 1: No Action (*Preferred Alternative*)

Option 1 would maintain the current trip limit and DAS allocation for Category F vessels. The Category F/offshore program requires vessels to declare into this fishery annually. Option 1 would not increase incentive for vessels to opt into Category F. Only 13 permits opted into the program in FY2014 suggesting a low level of effort currently occurs under this permit category. FW8 set specifications for FY2014 and FY2015 and concluded there would be negligible impacts on monkfish. As the TAL is unlikely to be exceeded, it is reasonable to conclude no change in impacts would be expected either.

Option 1 would have neutral impacts on monkfish because no change in effort would be expected if implemented. Option 1 would have similar neutral impacts on monkfish when compared to Option 2.

Impacts on non-target species

Option 1 would not be expected to increase overall fishing effort. Therefore, interactions with and discards of non-target species would not be expected to change. As noted above in Section 7.1.1.1 Option 1, the current stock status of the NE skate complex and dogfish combined with no expected increase in effort in the monkfish fishery, Option 1 would not be expected to have any negative impacts on these stocks.

Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. Based on the analysis provided in Section 7.1.1.1 Option 1, Option 1 is also not expected to result in increased effort over the approved monkfish specifications. Therefore, Option 1 would have neutral impacts on non-target species, similar to Option 2.

7.1.1.3.2 Option 2: Increase the trip limit for Category F vessels

Option 2 would modify the trip limit. Option 3 Sub-option 1 would maintain the current DAS allocation formula. If sub-option 1 is implemented it would have negligible impacts on monkfish because the DAS allocation would decrease if the trip limit was increased roughly maintaining current effort levels. This would increase efficiency of vessels participating in the Category F program. This program restricts fishing effort of participants to the offshore area. Any increase in Category F participants would reduce effort in other areas.

Option 3 Sub-option 2 would modify the DAS allocation formula resulting in a reduced DAS allocation. Under Sub-option 2, if the trip limit is increased the potential maximum landings would also increase, however, these would remain below those under Sub-option 1. Sub-option 2 would likely have negligible impacts on the stock because this effort would be occurring elsewhere in the fishery. If the DAS allocation was reduced it may no longer be feasible for vessels to participate in this program and could shift effort back to inshore areas. However, if the number of participants remains stable then it would reduce effort and thus have a low positive impact on the stock. Although, it remains impossible to predict future fishing behavior in response to the implementation of management measures. Option 2 would have similar neutral impacts on monkfish when compared to Option 1.

Impacts on non-target species

Option 2 would not be expected to increase overall fishing effort. Therefore, interactions with and discards of non-target species would not be expected to change. As noted above in Section 7.1.1.1 Option 1, the current stock status of the NE skate complex and dogfish combined with no expected increase in effort in the monkfish fishery, Option 2 would not be expected to have any negative impacts on these stocks.

Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. Based on the analysis provided in Section 7.1.1.1 Option 1, Option 2 is also not expected to result in increased effort over the approved monkfish specifications. Therefore, Option 2 would have neutral impacts on non-target species, similar to Options 1 and 3.

7.1.1.3.3 Option 3: Adjust monkfish DAS allocations for Category F vessels

Option 3 would modify the monkfish DAS allocation for Category F vessels. Sub-Option 1 would not modify the DAS allocation; Sub-Option 2 would modify the DAS allocation formula resulting in a reduced DAS allocation. If sub-option 1 is implemented it would have negligible impacts on monkfish because the DAS allocation would not be modified. However, if Option 2 was also implemented and the trip limit increased, the DAS allocation would decrease roughly maintaining current effort levels.

Sub-option 2 would likely have negligible impacts on the stock because this effort would be occurring elsewhere in the fishery. If the DAS allocation was reduced it may no longer be feasible for vessels to

participate in this program and could shift effort back to inshore areas. However, if the number of participants remains stable then it would reduce effort and thus have a low positive impact on the stock. Although, it remains impossible to predict future fishing behavior in response to the implementation of management measures. Option 3 would have similar neutral impacts on monkfish when compared to Options 1 and 2.

Impacts on non-target species

Option 3 would not be expected to increase overall fishing effort. Therefore, interactions with and discards of non-target species would not be expected to change. As noted above in Section 7.1.1.1 Option 1, the current stock status of the NE skate complex and dogfish combined with no expected increase in effort in the monkfish fishery, Option 3 would not be expected to have any negative impacts on these stocks.

Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. Based on the analysis provided in Section 7.1.1.1 Option 1, Option 3 is also not expected to result in increased effort over the approved monkfish specifications. Therefore, Option 3 would have neutral impacts on non-target species, similar to Options 1 and 2.

7.1.1.4 DAS requirements for RSA vessels when on a monkfish DAS

7.1.1.4.1 Option 1: No Action

Option 1 would maintain current restrictions that prohibit the re-declaration from a monkfish DAS to a monkfish RSA DAS. RSA DAS has no possession limit but are limited by DAS allocation (50 DAS). While the program is open to all participants in the fishery, not all vessels take part. Option 1 would have neutral to low negative impacts on monkfish because while there would be no expected change in current fishing effort there would also not be a reduction in monkfish discards.

Impacts on non-target species

Option 1 would not be expected to increase overall fishing effort. Therefore, interactions with and discards of non-target species would not be expected to change. As noted above in Section 7.1.1.1 Option 1, the current stock status of the NE skate complex and dogfish combined with no expected increase in effort in the monkfish fishery, Option 1 would not be expected to have any negative impacts on these stocks.

Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. Based on the analysis provided in Section 7.1.1.1 Option 1, Option 1 is also not expected to result in increased effort over the approved monkfish specifications. Therefore, Option 1 would have neutral impacts on non-target species, similar to Option 2.

7.1.1.4.2 Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea

Option 2 would allow vessels to re-declare from a monkfish DAS to a monkfish RSA DAS. This would reduce discards but would have a neutral impact on the stock because the number of RSA DAS would not be increased.

Impacts on non-target species

Option 2 would not be expected to increase overall fishing effort. Therefore, interactions with and discards of non-target species would not be expected to change. As noted above in Section 7.1.1.1 Option 1, the current stock status of the NE skate complex and dogfish combined with no expected increase in effort in the monkfish fishery, Option 2 would not be expected to have any negative impacts on these stocks.

Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. Based on the analysis provided in Section 7.1.1.1 Option 1, Option 2 is also not expected to result in increased effort over the approved monkfish specifications. Therefore, Option 2 would have neutral impacts on non-target species, similar to Option 1.

7.1.2 Modifications to Monkfish Possession Limits

7.1.2.1 Northern Area Monkfish Trip Limit on a NE multispecies and monkfish DAS

7.1.2.1.1 Option 1: No Action

Option 1 would maintain the monkfish trip limit in the NFMA and therefore the need to use a monkfish DAS to land a higher possession limit of monkfish in the NFMA.

Option 1 would have neutral impacts on the monkfish stock because the majority of vessels are not restricted by the incidental trip limit (600 lb for Category C and 500 lb for Category D) while on a NE multispecies DAS (Figure 33). As noted above, monkfish landings and DAS usage has remained relatively constant in the NFMA with the exception of FY2013 when DAS usage dropped in the NFMA likely due to the Emergency Action.

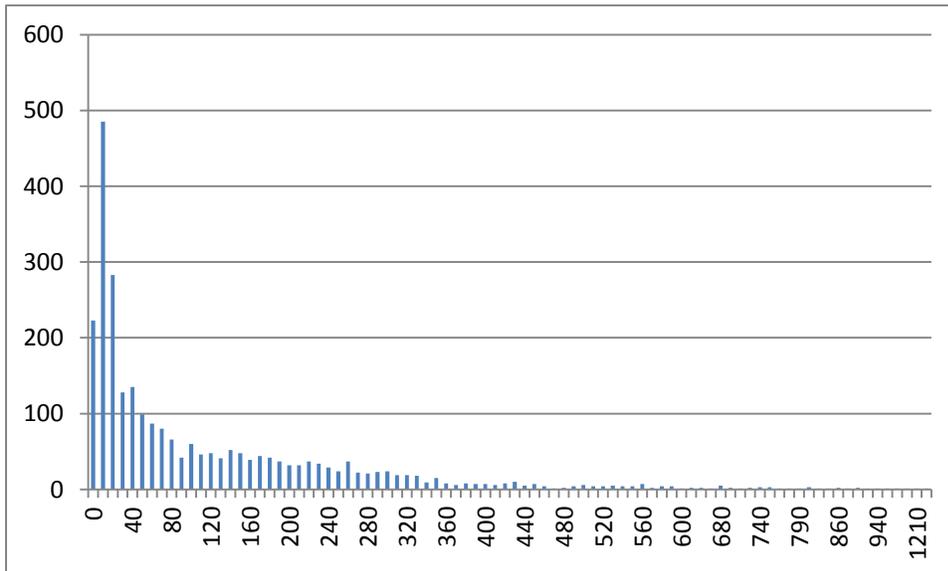


Figure 33 - Frequency of permit category C and D trips grouped by trip limit in NFMA in FY 2013

There is a low probability that expected catch under Option 1 would exceed the NFMA TAL, based on recent landings (Table 48). Based on that trend, it is unlikely that Option 1 would result in monkfish

landings exceeding the FY2015 monkfish NFMA TAL or the ACT, assuming discard rates calculated in the most recent stock assessment do not change. This level of catch has a very low risk that overfishing would occur on monkfish in the NFMA during FY2014. Given the current understanding of the status of the stock (the stock is not overfished, and overfishing is not occurring), the fact that Option 1 monkfish possession limits would not exceed the FY 2014 TAL or ACT, and that AMs would be triggered if the ACL specified for this stock was exceeded, Option 1 would have neutral biological impacts on the stock.

Impacts on non-target species

Option 1 would not be expected to increase overall fishing effort. Therefore, interactions with and discards of non-target species would not be expected to change. As noted above in Section 7.1.1.1 Option 1, the current stock status of the NE skate complex and dogfish combined with no expected increase in effort in the monkfish fishery, Option 1 would not be expected to have any negative impacts on these stocks.

Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. Based on the analysis provided in Section 7.1.1.1 Option 1, Option 1 is also not expected to result in increased effort over the approved monkfish specifications. Therefore, Option 1 would have neutral impacts on non-target species, similar to Option 2.

7.1.2.1.2 Option 2: Eliminate the trip limit on a NE multispecies and monkfish DAS (Preferred Alternative)

Option 2 would eliminate the trip limit on a NE multispecies and monkfish DAS. This would be expected to decrease monkfish discards because it would provide these vessels with increased flexibility to land a higher incidental limit of monkfish.

Option 2 would have neutral impacts on the monkfish stock because it would be expected to help the fishery better achieve, but not exceed, the TAL, which has been under-harvested in recent years. The TAL, specified for FY2014 and FY 2015, accounted for both scientific and management uncertainty, thus minimizing the risk of negative biological impacts.

The 2013 Emergency Action temporarily removed the monkfish possession limit in the NFMA and concluded that despite a likely increase in landings and potentially in effort, this measure would not substantially change the current operation of the monkfish or groundfish fisheries in the NFMA. However, this increase in landings did not appear to significantly differ from recent fishing years (Table 48) suggesting a low probability of exceeding the TAL even under this scenario. There is a very low probability that expected catch under Option 2 would exceed the NFMA TAL because this form of effort control would be removed however it is difficult to predict whether this would significantly change fishing behavior. This low level of catch would likely result in an F that would continue to remain below $F_{\text{threshold}}$. Since F dropped below $F_{\text{threshold}}$ starting in FY2007 (Figure 4), monkfish biomass in the NFMA has continued to increase. Therefore if catch remains below the NFMA TAL, it is likely that biomass will continue to increase above B_{target} . Since F dropped below The NFMA stock is not overfished, and overfishing is not occurring.

To further prevent and mitigate overages, an Accountability Measure (AM) was implemented in Amendment 5. While an overage of the TAL under Option 2 would be unlikely, the AM is an adequate measure to mitigate the impacts of any potential overage and to prevent future overages from occurring. Any overage could result in short-term low negative impacts on monkfish, however, the impact would be

expected to be mitigated over the long-term by the AM. Option 2 would have similar neutral impacts on monkfish when compared to Option 1.

Impacts on non-target species

Option 2 would not be expected to increase overall fishing effort. Therefore, interactions with and discards of non-target species would not be expected to change. As noted above in Section 7.1.1.1 Option 1, the current stock status of the NE skate complex and dogfish combined with no expected increase in effort in the monkfish fishery, Option 2 would not be expected to have any negative impacts on these stocks.

Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. Based on the analysis provided in Section 7.1.1.1 Option 1, Option 2 is also not expected to result in increased effort over the approved monkfish specifications. Therefore, Option 2 would have neutral impacts on non-target species, similar to Option 1.

7.1.3 Modifications to gear requirements while on a Monkfish DAS

7.1.3.1 Modification to mesh size requirements on monkfish DAS

7.1.3.1.1 Option 1: No Action

Option 1 would maintain the requirement for gillnet vessels to use 10” or greater mesh while on a monkfish DAS or NE multispecies/monkfish DAS. Option 1 would have negligible impacts on the monkfish stock because current regulations would be maintained resulting in no expected change in fishing patterns.

Impacts on non-target species

Option 1 would not be expected to increase overall fishing effort. Therefore, interactions with and discards of non-target species would not be expected to change. As noted above in Section 7.1.1.1 Option 1, the current stock status of the NE skate complex and dogfish combined with no expected increase in effort in the monkfish fishery, Option 2 would not be expected to have any negative impacts on these stocks.

Existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt. Based on the analysis provided in Section 7.1.1.1 Option 1, Option 2 is also not expected to result in increased effort over the approved monkfish specifications. Therefore, Option 2 would have neutral impacts on non-target species, similar to Option 1.

7.1.3.1.2 Option 2: Allow the use of 5-7” mesh in standup gillnet on monkfish-only DAS

Option 2 would allow the use of 5-7” stand-up gillnet mesh while on a monkfish or monkfish/NE multispecies DAS throughout both management areas. Based on an analysis of observer data where multiple gillnet mesh sizes were used on the same trip, smaller mesh caught more small sized monkfish (Figure 34). If implemented, Option 2 would have a low potential to negatively impact monkfish if an increased number of small monkfish were caught and discarded. However, the analysis was conducted on observed trips indicating that this has already been occurring in the fishery despite current regulations, with no negative impacts noted in the stock assessment. VTR data were examined to estimate the

magnitude of the number of trips using multiple mesh sizes when landing monkfish. The number of identified VTRs varied by year with a maximum identified in 2011 (Table 53). In all years examined, the number of observed trips recording multiple gillnet mesh sizes was higher than identified in the VTR data. The use of multiple gillnet mesh sizes was occurring in both the NFMA and SFMA between FY 2009 and 2013.

Table 53 – Number of trips from VTR data and the observer database identified as having used more than 1 gillnet mesh size when landing monkfish

FY	Number of identified VTR trips	Number of identified Observed trips
2009	1	5
2010	4	32
2011	20	23
2012	2	14
2013	1	10

The intent of using the smaller mesh size would be to target dogfish and not monkfish implying greater potential impacts to the dogfish stock rather than monkfish. Overall, Option 2 would have slightly negative impacts on monkfish compared to Option 1.

The number of observed trips using multiple mesh sizes on a trip varied by year, with a low of 18 in 2009 to a high of 139 in 2010.

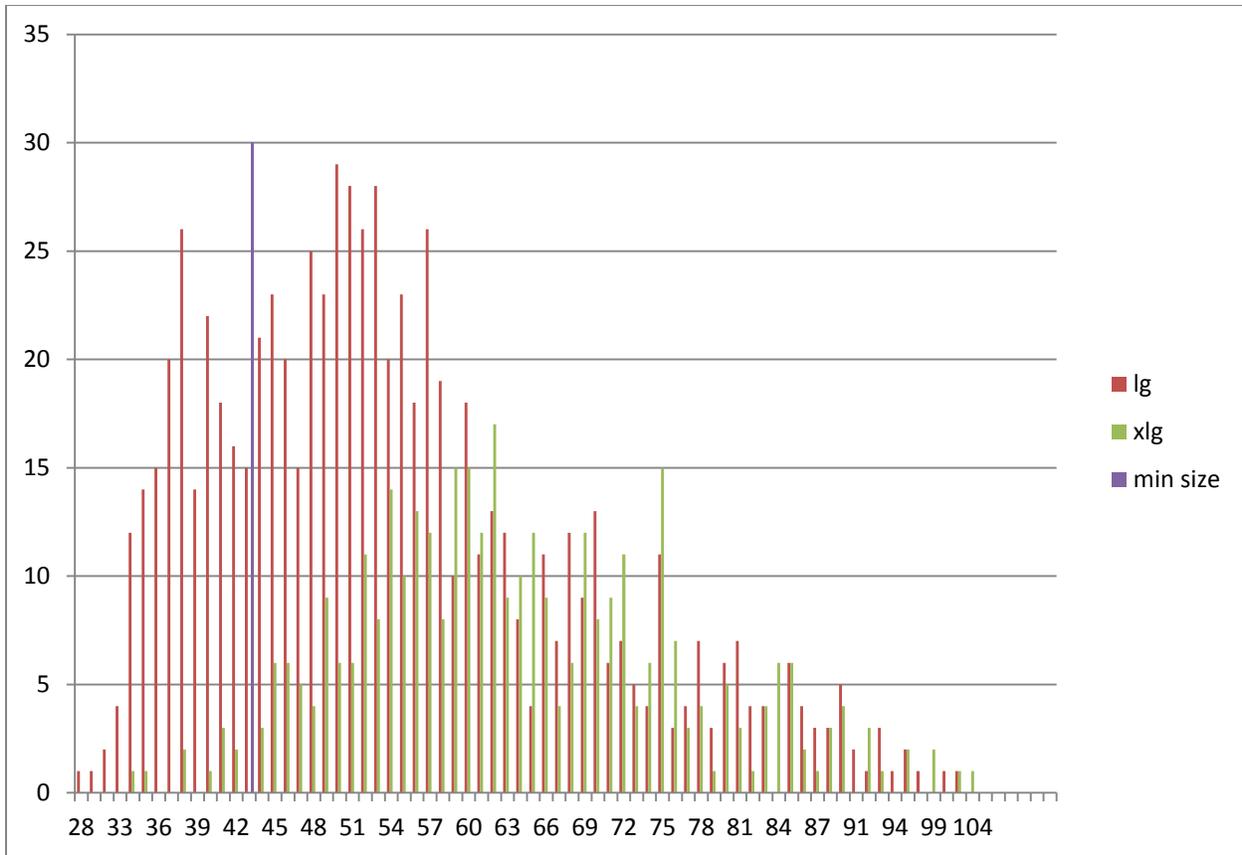


Figure 34 - Comparison of length frequencies of monkfish caught in large mesh (<8'') and extra-large mesh (>8'') with no tie downs on observed trips where both large and extra-large mesh were used on the same trip. Minimum mesh size is shown in purple. X-axis represents monkfish length (in cm); y-axis shows number of monkfish in each length category.

Impacts on non-target species

Option 2 would not be expected to increase overall fishing effort but instead would help vessels increase efficiency by using a smaller mesh size to also target dogfish. The dogfish fishery itself is restricted by an ACT and possession limits, most recently set for FY2014 and FY2014 (MAFMC, 2014).

Table 54 - Summary of spiny dogfish landings relative to the quota(s) for fishing years 2000-2012 from MAFMC 2014.

Fishing Year (May 1- Apr 30)	Quota (M lb)		Landings (M lb)
	Federal	States	
2000	4.000	n/a	8.202
2001	4.000	n/a	5.103
2002	4.000	n/a	4.777
2003	4.000	8.8	3.341
2004	4.000	4.000	1.396
2005	4.000	4.000	2.417
2006	4.000	6.000	6.596
2007	4.000	6.000	6.424
2008	4.000	8.000	9.308
2009	12.000	12.000	12.307
2010	15.000	14.4	15.022
2011	20.000	19.5	22.451*
2012	35.7	35.7	26.762

* Total CFDBS landings (20.3 M lb) plus 2.2 M lb undocumented landings discovered/reported by MADMF

Therefore, interactions with and discards of non-target species would not be expected to change. As noted above in Section 7.1.1.1 Option 1, the current stock status of the NE skate complex combined with no expected increase in effort in the monkfish fishery, Option 2 would not be expected to have any negative impacts on these stocks.

An analysis of observed data between 2000 and 2013 for standup gillnet gear of mesh sizes 4.5” to 7.5” indicated differing interactions with groundfish between the NFMA and the SFMA. Atlantic cod comprised a higher percentage of catch in the NFMA compared to the SFMA. Generally, groundfish interactions were higher in the NFMA than in the SFMA (Table 55). This would imply that Option 2 would have more negative impacts on groundfish in the NFMA than in the SFMA. However, existing groundfish measures, including ACLs and AMs established for each stock, along with sector and common pool effort controls are expected to ensure that overfishing does not occur and overfished stocks are rebuilt.

Table 55- Observed standup gillnet (4.5' to 7.5" mesh) from the NFMA and SFMA between 2000 and 2013

Species	NFMA Catch	SFMA Catch
Dogfish, Spiny	4,697,225	935,787
Pollock	3,649,230	3,237
Cod, Atlantic	3,284,242	20,831
Hake, White	694,059	842
Flounder, Yellowtail	240,864	228
Haddock	193,672	70
Monkfish	172,645	4,642
Monkfish, tails	17,774	35
Bluefish	40,234	1,033,317
Dogfish, Smooth	n/a	449,208
Croaker, Atlantic	1	72,086
Bass, Striped	4,329	69,320
Skate, Little	45,824	10,003
Skate, Winter	61,488	1,381
Skate, NK	32,730	1,763
Skate, Thorny	22,403	9

7.1.3.1.3 Option 3: Allow the use of 5-7" mesh standup gillnet on a monkfish DAS in NFMA

Impacts on monkfish

Option 3 would allow the use of 5-7" stand-up gillnet mesh while on a monkfish or monkfish/NE multispecies DAS throughout the NFMA. All the impacts discussed above would still apply to this Option.

Option 3 would have similar impacts to Options 2 and 4 but more negative impacts compared to Option 1.

Impacts on non-target species

As discussed above Option 3 would have more negative biological impacts on groundfish based on increased interactions in the NFMA. Option 3 would have the same neutral to low negative impacts on skate, dogfish and groundfish as Option 2.

7.1.3.1.4 Option 4: Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in SFMA (Preferred Alternative)

Option 4 would reduce the minimum mesh size allowed in the SFMA for standup gillnet gear when fishing on a monkfish and/or NE multispecies DAS. The minimum mesh size allowed varies within the SFMA and is outlined in Table 8. The smallest mesh size allowed would be 5" in the Mid-Atlantic Exemption area when fishing on a monkfish only DAS. The biological impacts of 5" standup gillnet mesh in the SFMA was evaluated under Option 2 and would still apply to Option 4. However, Option 4 would limit the number of standup gillnet mesh to 50 total in the Mid-Atlantic and SNE Dogfish Exemption Areas. This would further limit the impact of this gear type on the monkfish stock.

Option 4 would have similar impacts to Options 2 and 3 but more negative impacts compared to Option 1.

Impacts on non-target species

Option 4 would have lower negative biological impacts on groundfish than compared to Options 2 and 3 because of fewer observed interactions in the SFMA (Table 55). Option 4 would have the same neutral to low negative impacts on skate, dogfish and groundfish as Option 2.

7.2 Essential Fish Habitat Impacts

7.2.1 Modifications to current DAS/Trip Limit system

7.2.1.1 Requirement for vessels with groundfish permits to also use a NE multispecies DAS when on a monkfish DAS

7.2.1.1.1 Option 1: No Action

Under Option 1, there would be no change in the requirement for vessels to declare a NE multispecies DAS prior to leaving the dock. No change in fishing effort would be expected under Option 1, therefore the current trend of not achieving the monkfish TAL would be expected to continue. Therefore the impacts on EFH would be the same as those identified in the EA developed for FW8, which set the current specifications. The analysis concluded that under these specifications there would not be an adverse impact to EFH because the monkfish and NE multispecies DAS catch limits were not revised, which serve as a restraint on fishing effort in the monkfish fishery. In addition, because vessels operating in the NFMA are predominantly groundfish vessels, monkfish fishing effort would likely be largely constrained by NE multispecies DAS or ACE allocations rather than monkfish DAS allocations. The Accountability Measures also account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. Thus the No Action alternative would not modify the expected interactions of monkfish or groundfish gear with EFH. Compared to Options 2 and 3, Option 1 would have similar neutral impacts on EFH.

7.2.1.1.2 Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area

Option 2 would increase flexibility for vessels by allowing the declaration of a NE multispecies DAS while at sea. This would allow these vessels to determine, while fishing, that they are catching monkfish in excess of the no DAS incidental trip limit, and declare a NE multispecies DAS in order to land them. This alternative would be expected to better achieve, but not exceed, the specifications set in FW8. The majority of trips do not appear to be restricted by the current trip limit, which suggests that a large increase in effort would not occur if Option 2 was implemented. Fishing effort would be restricted by the specifications set in FW8, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. The analysis of impacts on EFH conducted for FW8, concluded that under these specifications there would not be an adverse impact to EFH because the monkfish and NE multispecies DAS catch limits were not revised, which serve as a restraint on fishing effort in the monkfish fishery. In addition, because vessels operating in the NFMA are predominantly groundfish vessels, monkfish fishing effort would likely be largely constrained by NE multispecies DAS or ACE allocations rather than monkfish DAS allocations. Thus Option 2 would not modify the expected interactions of monkfish or groundfish gear with EFH. Compared to Options 1 and 3, Option 2 would have similar neutral impacts on EFH.

7.2.1.1.3 Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category D and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (*Preferred Alternative*)

Option 3 would increase flexibility for vessels by allowing the declaration of a NE multispecies DAS while at sea, but this option would only be allowed for groundfish sector vessels. Similar to Option 2, this alternative would be expected to better achieve, but not exceed, the specifications set in FW8. The majority of trips do not appear to be restricted by the current trip limit, which suggests that a large increase in effort would not occur if Option 3 was implemented. Fishing effort would be restricted by the specifications set in FW8, along with AMs that account for any overage of ACLs and prevent future

fishing operations from compromising the conservation objectives of the fishery. The analysis of impacts on EFH conducted for FW8, concluded that under these specifications there would not be an adverse impact to EFH because the monkfish and NE multispecies DAS catch limits were not revised, which serve as a restraint on fishing effort in the monkfish fishery. In addition, because vessels operating in the NFMA are predominantly groundfish vessels, monkfish fishing effort would likely be largely constrained by NE multispecies DAS or ACE allocations rather than monkfish DAS allocations. Thus Option 3 would not modify the expected interactions of monkfish or groundfish gear with EFH. Compared to Options 1 and 2, Option 3 would have similar neutral impacts on EFH.

7.2.1.2 Southern Fishery Management Area at-sea Monkfish DAS declaration

7.2.1.2.1 Option 1: No Action (*Preferred Alternative*)

Under Option 1, there would be no change in the requirement for vessels to declare a monkfish DAS prior to leaving the dock. No change in fishing effort would be expected under Option 1, therefore the current trend of not achieving the monkfish TAL would be expected to continue. Therefore the impacts on EFH would be the same as those identified in the EA developed for FW8, which set the current specifications. The analysis concluded that under these specifications there would not be an adverse impact to EFH because the monkfish and NE multispecies DAS catch limits were not revised, which serve as a restraint on fishing effort in the monkfish fishery. The Accountability Measures also account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. Compared to Option 2, Option 1 would have similar neutral impacts on EFH.

7.2.1.2.2 Option 2: Allow at-sea Monkfish DAS declaration in the SFMA

Option 2 would increase flexibility for vessels by allowing the declaration of a monkfish DAS while at sea, which would allow vessels to land more monkfish per day than they are able to under incidental limits. This alternative would be expected to better achieve, but not exceed, the specifications set in FW8. The majority of trips do not appear to be restricted by the current trip limit, which suggests that a large increase in effort would not occur if Option 2 was implemented. Fishing effort would be restricted by the specifications set in FW8, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. The analysis of impacts on EFH conducted for FW8, concluded that under these specifications there would not be an adverse impact to EFH because the monkfish and NE multispecies DAS catch limits were not revised, which serve as a restraint on fishing effort in the monkfish fishery. The Accountability Measures also account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. Compared to Option 1, Option 2 would have similar neutral impacts on EFH.

7.2.1.3 Modify DAS/trip limit allocation for Category F (offshore) vessels

7.2.1.3.1 Option 1: No Action (*Preferred Alternative*)

Category F permits allow vessels to fish only in the Monkfish Offshore Program Area. Option 1 would not increase the trip limit or modify the allocation formula for the Category F fishery. No change in fishing effort would be expected under Option 1, because there would be no increased incentive to opt into the Category F fishery. Therefore the impacts on EFH would be the same as those identified in the EA developed for FW8, which set the current specifications. The analysis concluded that under these specifications there would not be an adverse impact to EFH because the monkfish and NE multispecies DAS catch limits were not revised, which serve as a restraint on fishing effort in the monkfish fishery. The Accountability Measures also account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. Compared to Option 2, Option 1 would have similar neutral impacts on EFH.

7.2.1.3.2 Option 2: Increase the trip limit for Category F vessels

Option 2 would increase the trip limit for the Category F fishery. This could create an incentive for more vessels to opt into the Category F fishery, which could shift effort offshore. If this shift in effort occurred, the impacts on inshore EFH would be reduced while those offshore would be increased. However, it is difficult to predict future fishing behavior and overall fishing is restricted by specifications set in FW8. Therefore the impacts on EFH would be the same as those identified in the EA developed for FW8, which set the current specifications. The analysis concluded that under these specifications there would not be an adverse impact to EFH because the monkfish and NE multispecies DAS catch limits were not revised, which serve as a restraint on fishing effort in the monkfish fishery. The Accountability Measures also account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. Compared to Options 1 and 3, Option 2 would have similar neutral impacts on EFH.

7.2.1.3.3 Option 3: Adjust monkfish DAS allocations for Category F vessels

Option 3 would modify the allocation formula for the Category F fishery. This could create an incentive for more vessels to opt into the Category F fishery, which could shift effort offshore. If this shift in effort occurred, the impacts on inshore EFH would be reduced while those offshore would be increased. However, it is difficult to predict future fishing behavior and overall fishing is restricted by specifications set in FW8. Therefore the impacts on EFH would be the same as those identified in the EA developed for FW8, which set the current specifications. The analysis concluded that under these specifications there would not be an adverse impact to EFH because the monkfish and NE multispecies DAS catch limits were not revised, which serve as a restraint on fishing effort in the monkfish fishery. The Accountability Measures also account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. Compared to Options 1 and 2, Option 3 would have similar neutral impacts on EFH.

7.2.1.4 DAS requirements for RSA vessels when on a monkfish DAS

7.2.1.4.1 Option 1: No Action (*Preferred Alternative*)

Under Option 1, there would be no change in the requirement for vessels to declare a monkfish RSA DAS prior to leaving the dock. No change in fishing effort would be expected under Option 1, therefore the current trend of not achieving the monkfish TAL would be expected to continue. Therefore the impacts on EFH would be the same as those identified in the EA developed for FW8, which set the current specifications. The analysis concluded that under these specifications there would not be an adverse impact to EFH because the monkfish and NE multispecies DAS catch limits were not revised, which serve as a restraint on fishing effort in the monkfish fishery. The Accountability Measures also account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. Compared to Option 2, Option 1 would have similar neutral impacts on EFH.

7.2.1.4.2 Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea

Option 2 would increase flexibility for vessels by allowing the declaration of a monkfish RSA DAS while at sea, which has an unlimited possession limit. The possession limit on a monkfish DAS is restricted to 500 or 610 lb tail weight/DAS depending on the applicable limited access permit. This alternative would be expected to better achieve, but not exceed, the specifications set in FW8. The majority of trips do not appear to be restricted by the current trip limit, which suggests that a large increase in effort would not

occur if Option 2 was implemented. Fishing effort would be restricted by the specifications set in FW8, along with AMs that account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. The analysis of impacts on EFH conducted for FW8 concluded that under these specifications there would not be an adverse impact to EFH because the monkfish and NE multispecies DAS catch limits were not revised, which serve as a restraint on fishing effort in the monkfish fishery. The Accountability Measures also account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. Compared to Option 1, Option 2 would have similar neutral impacts on EFH.

7.2.2 Modifications to Monkfish Possession Limits

7.2.2.1 Northern Area Monkfish Trip Limit on a NE multispecies and monkfish DAS

7.2.2.1.1 Option 1: No Action

Under Option 1, there would be no change to the monkfish possession limits in the NFMA. The No Action possession limits are consistent with the measures implemented under FW8 to achieve, but not exceed, the TAL and ACT specified in that action. The NFMA TAL and ACT would not change under Option 1, 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 FW8. That analysis concluded that because the monkfish DAS allocation, the primary metric used to evaluate habitat impacts would be set at 42.5 DAS, there would not be an adverse impact on EFH because the monkfish and NE multispecies DAS catch limits were not revised, which serve as a restraint on fishing effort in the monkfish fishery. The Accountability Measures also account for any overage of ACLs and prevent future fishing operations from compromising the conservation objectives of the fishery. In addition, because vessels operating in the NFMA are predominantly groundfish vessels, monkfish fishing effort would likely be largely constrained by NE multispecies DAS or ACE allocations rather than monkfish DAS allocations. Thus, Option 1 would have neutral impacts on EFH. Option 1 would have similar neutral impacts on EFH as Option 2.

7.2.2.1.2 Option 2: Eliminate the trip limit on a NE multispecies and monkfish DAS (Preferred Alternative)

Option 2 would eliminate the monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing under a NE multispecies and monkfish DAS in the NFMA. 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 Option 2 mirror those described above for Option 1 with the exception of scale. It is likely that Alternative 2 would increase monkfish landings and fishing effort beyond levels expected from Option 1. This would result in greater potential impacts to EFH compared to Option 1. However, as stated above for Option 1, increases in fishing effort are constrained by existing catch limits, effort controls, or AMs in both fisheries. Option 2 is not expected to create incentives that would affect gear usage in either the monkfish or groundfish fisheries. Therefore, compared to Option 1, Option 2 would result in slightly greater impacts to EFH, although the overall impacts are expected to be negligible and neutral overall.

7.2.3 Modifications to gear requirements while on a Monkfish DAS

7.2.3.1 Modification to mesh size requirements on monkfish only DAS

7.2.3.1.1 Option 1: No Action

Option 1 would maintain the requirement for gillnet vessels to use 10" or greater mesh while on a monkfish DAS or NE multispecies/monkfish DAS. Option 1 would have neutral impacts on EFH because EFH is not as vulnerable to fixed gear like gillnet gear. Based on how gillnets are operated they do not sweep along the bottom as much as mobile bottom tending gear would and therefore have less of an impact. Option 1 would have similar neutral impacts on EFH compared to Options 2, 3, and 4.

7.2.3.1.2 Option 2: Allow the use of 5-7" mesh in standup gillnet on monkfish-only DAS

Option 2 would allow the use of 5-7" stand-up gillnet mesh while on a monkfish or monkfish/NE multispecies DAS. Option 2 would have neutral impacts on EFH because a change in mesh size would not affect the vulnerability of EFH to the gillnet gear. Option 2 would have similar neutral impacts on EFH compared to Options 1, 3, and 4.

7.2.3.1.3 Option 3: Allow the use of 5-7" mesh in standup gillnet on monkfish DAS in NFMA

Option 3 would allow the use of 5-7" stand-up gillnet mesh while on a monkfish or monkfish/NE multispecies DAS in the NFMA only. Option 3 would have neutral impacts on EFH because a change in mesh size would not affect the vulnerability of EFH in the NFMA to the gillnet gear. Option 3 would have similar neutral impacts on EFH compared to Options 1, 2, and 4.

7.2.3.1.4 Option 4: Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in SFMA (*Preferred Alternative*)

Option 4 would allow the use of 5-7" stand-up gillnet mesh while on a monkfish or monkfish/NE multispecies DAS in the SFMA only. Option 4 would have neutral impacts on EFH because a change in mesh size would not affect the vulnerability of EFH in the SFMA to the gillnet gear. Option 4 would have similar neutral impacts on EFH compared to Options 1, 2, and 3.

7.3 Impacts on Endangered and Other Protected Species

7.3.1 Modifications to current DAS/Trip Limit system

7.3.1.1 Requirement for vessels with groundfish permits to also use a NE multispecies DAS when on a monkfish DAS

7.3.1.1.1 Option 1: No Action

Under Option 1, permit Category C and D vessels with NE multispecies permits must continue to declare a NE multispecies DAS prior to leaving the dock. Any vessels that don't declare a NE multispecies DAS before leaving would be restricted to non-DAS incidental landing limits or could not take advantage of the "monkfish option" to declare a monkfish DAS while at sea in the NFMA. This would maintain the current levels of fishing opportunities for vessels. Therefore a change in effort pattern would not be expected.

Non-ESA Listed Species Impacts

Impacts of the No Action on non-ESA listed species, which consist of species of cetaceans and pinnipeds (marine mammals), are somewhat uncertain, as quantitative analysis has not been performed. However, we have considered, to the best of our ability, available information on marine mammal interactions with commercial fisheries, including the monkfish fishery (Waring *et al.* 2014). Aside from harbor porpoise and several stocks of bottlenose dolphin, there has been no indication that takes of non-ESA listed species of marine mammals in commercial fisheries has gone above and beyond levels which would result in the inability of each species population to sustain itself over the last 5 years (Waring *et al.* 2014).

Specifically, aside from harbor porpoise and several stocks of bottlenose dolphin, potential biological removal (PBR) has not been exceeded for any of the non-ESA listed marine mammal species identified in section 6.5 (Waring *et al.* 2014). Although harbor porpoise and several stocks of bottlenose dolphin have experienced levels of take that have resulted in the exceedance of each species PBR, take reduction plans have been implemented to reduce bycatch in the fisheries affecting these species (Harbor Porpoise Take Reduction Plan (HPTRP), effective January 1, 1999 (63 FR 71041); Bottlenose Dolphin Take Reduction Plan (BDTRP), effective April 26, 2006 (71 FR 24776)). These plans are still in place and are continuing to assist in decreasing bycatch levels for these species. Although the information presented is a collective representation of commercial fisheries interactions with non-ESA listed species of marine mammals, and does not address the effects of the monkfish FMP specifically, the information does demonstrate that to date, operation of the monkfish FMP, or any other fishery, has not resulted in a collective level of take that threatens the continued existence of non-ESA listed marine mammal populations.

Based on this information, and the fact that the monkfish fishery must comply with specific take reduction plans (i.e., HPTRP, the BDTRP, ALWTRP); and that voluntary measures exist that reduce serious injury and mortality to marine mammal species incidentally caught in trawl fisheries (see the Atlantic Trawl Gear Take Reduction Team), it is not expected that the No Action, which will maintain status quo conditions, will result in levels of take that will affect the continued existence of non-ESA listed species of marine mammals. For these reasons, the No Action is expected to have low negative to neutral impacts on non-ESA listed species of marine mammals.

ESA Listed Species

Although the impacts to ESA listed species from the No Action are somewhat uncertain, as quantitative analysis has not been performed, we have considered, to the best of our ability, how the fishery has operated in regards to listed species from 2011, when substantial changes to the FMP had been experienced from the recent adoption of Amendment 5 on May 25, 2011, to the present. During this time, NMFS issued a biological opinion (Opinion) on the monkfish fishery in 2010 (NMFS 2010), with a subsequent replacement of this Opinion in 2013 (NMFS 2013). The Opinion issued on October 29, 2010, concluded that the fishery may affect, but would not jeopardize the continued existence of any ESA listed species of sea turtles or whales. An incidental take statement authorizing the take of specific numbers of ESA listed species of sea turtles was included in the 2010 Opinion. Until December 16, 2013, when NMFS issued a new biological opinion on the operation of seven commercial fisheries, including the monkfish fishery, the monkfish fishery had been covered by the incidental take statement authorized and issued with the 2010 Opinion. It should be noted that the 2010 biological opinion did not authorize the incidental take of ESA listed:

- Atlantic salmon: take of Atlantic salmon in the monkfish fishery was not expected; however, analysis of information since the 2010 Opinion was completed changed this determination and as a result, in NMFS most recent batched biological opinion issued on December 16, 2013, incidental take of Atlantic salmon is authorized (see NMFS 2013);
- Atlantic sturgeon: Atlantic sturgeon was not listed at the time the 2010 biological opinion was written. As a result, this species was not considered in the 2010 Opinion; however, since this species listing in 2012 (77 FR 5880 and 77 FR 5914, February 6, 2012), it has been included in the 2013 Opinion; and
- North Atlantic right, humpback, fin, and sei whales: NMFS could not include an incidental take authorization for large whales because (1) an incidental take statement cannot be lawfully issued under the ESA for a marine mammal unless incidental take authorization exists for that marine mammal under the MMPA (see 16 U.S.C. § 1536(b)(4)(C)), and (2) the incidental take of ESA-listed whales by the monkfish fishery has not been authorized under section 101(a)(5) of the MMPA. Because no ITS was included in either the 2010 Opinion, no incidental take by the monkfish fishery is authorized under the ESA.

As noted above, NMFS issued a new Opinion on the operation of seven commercial fisheries, including the monkfish FMP on December 16, 2013 (NMFS 2013). The 2013 Opinion concluded that the seven fisheries, including the monkfish fishery, may affect, but would not jeopardize the continued existence of any ESA listed species of sea turtles, whales, or fish (NMFS 2013). An incidental take statement authorizing the take of specific numbers of ESA listed species of sea turtles, Atlantic salmon, and Atlantic sturgeon was included in the 2013 Opinion; for reasons described above, take of ESA listed species of whales is not authorized. To date, the monkfish FMP is covered by the incidental take statement authorized in NMFS 2013 Opinion.

The No Action would retain status quo operating conditions in the monkfish FMP and therefore, changes in fishing effort or behavior above and beyond that which has been considered since 2010 would not be expected. As a result, the No Action is not expected to result in the introduction of any new risks or additional takes to ESA listed species that have not already been considered and authorized by NMFS to date (NMFS 2013). Further, the monkfish FMP has not resulted in the exceedance of NMFS authorized take of any ESA listed species from 2010 to the present. The No Action Alternative, therefore, is not, as concluded in the NMFS 2013 Opinion, expected to result in levels of take that would jeopardize the continued existence of ESA listed species. For these reasons, and due to the fact that this alternative would still require compliance with the ALWTRP and sea turtle resuscitation guidelines, the No Action is expected to have low negative to neutral impacts on ESA-listed species.

7.3.1.1.2 Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area

Option 2 would increase flexibility for vessels by allowing the declaration of a NE multispecies DAS while at sea. This would affect monkfish Category C and D vessels operating on a non-DAS trip, as well as vessels operating under a monkfish-only DAS, which are restricted to fishing within the GOM/GB monkfish gillnet exemption area and must comply with regulations within this area (e.g., only monkfish and lobster can be possessed, restricted to 10" gillnet, July 1-September 14 seasonal window of operation). For those vessels on a non-DAS trip, declaring a NE multispecies DAS at sea is not expected to result in significant changes in fishing behavior (e.g., effort, amount of gear used, time gear is in water) as these vessels are expected to primarily use this option to avoid exceeding their monkfish possession limits and therefore, avoid discarding available monkfish. As a result, we do not expect vessels that go from a non-DAS trip to a NE multispecies DAS trip to necessarily increase fishing effort above and beyond current operating conditions. In fact, based on available data, although Category C and D vessels under a NE multispecies DAS have a 600 or 500 lb monkfish landing limit, respectively, a low percentage of trips occurring on a NE multispecies DAS have monkfish landings that exceed 50 lb monkfish tail weight/DAS.

Option 2 would also provide operational flexibility to vessels on a monkfish-only DAS by enabling these vessels to participate and land other species. Should this option be declared at sea, fishing behavior may change as these vessels are no longer restricted by gear requirements (i.e., 10" gillnet), species of fish landed (i.e., can catch other groundfish species), or season that is required while fishing on a monkfish-only DAS in the GOM/GB gillnet exemption area. Although the potential exists for effort to increase and/or shift, this is unlikely. As vessels on a monkfish-only DAS initially began a trip with the intention to fish within the GOM/GB monkfish gillnet exemption area, these vessels are equipped to steam within the boundaries of this area (see Figure 3). As a result, should a vessel decide to declare a NE multispecies DAS at sea, it is unlikely that that vessel would have the ability, at the time of declaration, to steam farther offshore (e.g. into GB waters). Therefore, vessels are likely to remain in the same waters delineated under the GOM/GB gillnet exemption area (e.g., waters of the GOM). As regulations put forth in FW53 (80 FR 25109) are expected to constrain fishing effort in the GOM, any potential changes in fishing that could be incurred by Option 2 are also likely to be constrained by measures in this Framework. Based on this, even if vessels on a monkfish-only DAS declare a NE multispecies DAS at sea, it is unlikely that this will result in substantial changes in effort above and beyond what the fishery has already experienced.

Based on the information above, fishing effort and distribution (by trawl or gillnet vessels) is not expected to significantly change from how the fishery currently operates. As Option 2 is not expected to result in any significant changes in fishing behavior in the NFMA, the potential for protected species interactions with gillnet or trawl gear and therefore, serious injury or mortality, are not expected to go above and beyond that which has been considered in the fishery to date (NMFS 2013, Waring *et al.* 2014). Specifically, since the adoption of Amendment 5 on May 25, 2011, to the present, the monkfish fishery has not introduced any new risks or additional takes to protected species that have not already been considered and/or authorized by NMFS to date (NMFS 2013; Waring *et al.* 2014). In fact, since the adoption of Amendment 5, the monkfish fishery has not resulted in the exceedance of NMFS authorized take of any ESA listed species, or resulted in levels of take that threaten the continued existence of non-ESA listed marine mammal populations (see exception in section 7.3.1.1.1) and therefore, jeopardize the continued existence of any ESA listed or non-listed species of marine mammal, fish, or sea turtle (NMFS 2013; Waring *et al.* 2014). Based on this information, Option 2 would not be expected to result in a level of ESA-listed species take above that which has been authorized by NMFS (NMFS 2013), or result in levels of take that threatens the continued existence of non-ESA listed marine mammal populations (Waring *et al.* 2014). As a result, the continued existence of any ESA listed or non-listed species of

marine mammal, fish, or sea turtle is not expected to be jeopardized by Option 2 (NMFS 2013; Waring *et al.* 2014). In addition, Option 2 will still require compliance with protected species take reduction plans (e.g., ALWTRP, BDTRP, HPTRP). For these reasons, impacts of Option 2 on non-ESA listed species and ESA listed species would be expected to be low negative to neutral. Relative to option 1 and 3, we would expect Option 2 to have similar low negative to neutral impacts to protected species.

7.3.1.1.3 Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category D and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (*Preferred Alternative*)

Option 3 would increase flexibility for sector vessels by allowing the declaration of a NE multispecies DAS while at sea. Although this option is specific to sectors, the expected effects to fishing behavior and the resultant effects to protected resources are expected to be the same as those described in Option 2 (see Section 7.3.1.1.2. Relative to option 1 and 2, we would expect Option 3 to have similar low negative to neutral impacts to protected species.

7.3.1.2 Southern Management Area at-sea Monkfish DAS declaration

7.3.1.2.1 Option 1: No Action (*Preferred Alternative*)

Under Option 1, there would be no change in the requirement for vessels to declare a monkfish DAS prior to leaving the dock. Any vessel that did not declare a monkfish DAS prior to leaving the dock would be restricted to the NE multispecies DAS incidental possession limits of monkfish in the SFMA. This would maintain the current levels of fishing opportunities for vessels. Therefore, no change in fishing effort would be expected under Option 1, and the current trend of not achieving the monkfish TAL would be expected to continue. Based on this information, Option 1 (status quo conditions) would not be expected to introduce any new risks or additional takes to protected species that have not already been considered and/or authorized by NMFS to date (NMFS 2013; Waring *et al.* 2014) and expect impacts of Option 1 on non-ESA listed species and ESA listed species to be similar to those described in Section 7.3.1.1.1 (i.e., low negative to neutral impacts). Compared to Option 2, Option 1 would have similar low negative to neutral impacts on protected resources.

7.3.1.2.2 Option 2: Allow at-sea Monkfish DAS declaration in the SFMA

Option 2 would increase flexibility for vessels fishing in the SFMA by allowing the declaration of a monkfish DAS while at sea. However, the monkfish fishery in the SFMA is largely a directed fishery and therefore, the majority of trips (91%) occurring in the SFMA are already occurring on a monkfish DAS (prosecuted primarily with gillnet gear). Only a small percentage of the vessels in the SFMA operate on NE multispecies DAS (prosecuted primarily with trawl gear). In fact, an analysis of landings by trip from 2009 to 2013, indicate only a small number of trips were occurring in the SFMA strictly on a NE multispecies DAS, and on these trips, landings were approaching, but never exceeding, the incidental monkfish possession limit (see Table 53).

Based on the above information, although this alternative would provide vessels with the opportunity to declare a monkfish DAS at sea, due to the fact that the majority of vessels in the SFMA are already using a monkfish DAS to prosecute the fishery, it is not expected that significant changes in fishing behavior above and beyond current operating conditions would occur if Option 2 was implemented. Further, based on the small percentage of vessels that do operate under a NE multispecies DAS (i.e., 9%) and the relatively consistent pattern for these vessels to not exceed their incidental monkfish possession limit, the likelihood that a monkfish DAS would need to be declared by these vessels, and therefore potentially

increase effort, is unlikely. Should an occasion arise that a vessel on NE multispecies DAS needs to declare a monkfish DAS, there is the potential for effort to increase and therefore, the potential for interactions to increase with protected species. Any effort increase in the SFMA; however, would be expected to be small, and likely undetectable relative to monkfish fishing operations as a whole in this area. As noted previously, the fishery in the SFMA is predominantly (91%) prosecuted by vessels already operating under a monkfish DAS. As a result, the small number of vessels that this option would apply to, should the need arise, would result in extremely small increases in effort relative to status quo operating conditions. Based on this, should a monkfish DAS need to be declared, gear (trawl or gillnet) interactions with protected resources, albeit possible, are not expected to go above and beyond that which has been considered and/or authorized by NMFS (NMFS 2013; Waring *et al.* 2014) and therefore, the continued existence of any ESA listed or non-listed species of marine mammal, fish, or sea turtle is not expected to be jeopardized by Option 2 (NMFS 2013; Waring *et al.* 2014; rational behind determination similar to that presented in Section 7.3.1.1.2). Further, even under Option 2, the monkfish fishery must still comply with specific take reduction plans (i.e., HPTRP, the BDTRP, ALWTRP). For these reasons, and the fact that fishing effort would be restricted by the specifications set in FW8, along with AMs that account for any overage of ACLs, we expect effects to protected species to be low negative to neutral. Compared to Option 1, Option 2 would have similar low negative to neutral impacts on protected resources.

7.3.1.3 Modify DAS/trip limit allocation for Category F (offshore) vessels

7.3.1.3.1 Option 1: No Action (*Preferred Alternative*)

Option 1 would maintain status quo conditions and therefore, would not increase the trip limit or modify the allocation formula for the Category F fishery. No change in fishing effort would be expected under Option 1, because there would be no increased incentive to opt into the Category F fishery. Based on this, we do not expect Option 1 (status quo conditions) to introduce any new risks to protected species that have not already been considered and/or authorized by NMFS to date (NMFS 2013; Waring *et al.* 2014) and expect impacts of Option 1 on non-ESA listed species and ESA listed species to be similar to those described in Section 7.3.1.1.1 (i.e., low negative to neutral impacts). Compared to Option 2, Option 1 would have low negative impacts on protected resources. Relative to Option 3, Option 1 would have more of a negative impact on protected species.

7.3.1.3.2 Option 2: Increase the trip limit for Category F vessels

Option 2 would increase the trip limit, and if combined with Option 3 would decrease the allocated number of DAS for the Category F fishery, if combined with Option 3. Currently, per DAS, Category F vessels, due to catch efficiency, are able to catch more than their allotted possession limit/DAS (e.g., ≥ 1600 lbs/DAS) and therefore, have been catching their maximum potential landings in fewer DAS than their authorized allocation. As a result, vessels have to spend extra time at sea (not fishing) until they've used the requisite number of DAS. Option 2, would in essence, reflect current operating conditions and therefore, would not necessarily change fishing behavior. That is, the current time spent fishing (i.e., time gear is in the water), the amount of poundage landed per day, and the necessary days at sea for a vessel to attain its maximum landings would now be reflected in Option 2, and therefore, would not truly be changed under Option 2; Option 2, would instead, officially put into place current fishing behavior and practices, enabling the Category F fishery to work more efficiently (e.g., reduce unnecessary DAS). As a result, we do not expect fishing behavior or effort to change for vessels currently operating in the Category F fishery. However, for vessels not currently participating in the Category F fishery, Option 2 could create an incentive for more vessels to opt into the Category F fishery, which could shift effort from inshore, continental shelf waters to the offshore area.

Based on the above information, Option 2 may result in direct and indirect effects to protected resources. Direct effects would be incurred from vessels currently operating in the Category F fishery. For these vessels, fishing behavior is not expected to significantly change under Option 2. As a result, gear (trawl or gillnet) interactions with protected resources are not expected to go above and beyond that which has been considered and/or authorized by NMFS (NMFS 2013; Waring *et al.* 2014) and therefore, the continued existence of any ESA listed or non-listed species of marine mammal, fish, or sea turtle is not expected to be jeopardized by Option 2 (NMFS 2013; Waring *et al.* 2014; rationale behind determination similar to that presented in Section 7.3.1.1.1).

Indirectly, Option 2 could also result in more vessels opting into the Category F fishery, which may result in a shift in effort from inshore to offshore waters. As provided in Section 6.2, gillnet interactions pose one of the greatest risks to serious injury and mortality to many protected species. Based on observer data, significant numbers of gillnet interactions occur in inshore waters of the continental shelf due to the high co-occurrence of protected species and fisheries. If a shift in effort occurred as a result of vessels opting into the Category F fishery, there would be some reduction in the number of gillnets in inshore waters and therefore, some reduced interaction risks to protected species in this area. Although interaction risks may decrease in inshore waters, the shift in effort into offshore waters could result in opposite effects to protected species in these waters. With more vessels directing effort into the offshore area, there is more gear present than under status quo conditions, and therefore, an increased risk to protected species that may occur, or migrate through these offshore waters. As observer data is limited for category F vessels, it is unclear what the interaction history and therefore, risk to protected species from gillnet or trawl interactions are in this area of the ocean. As a result, although interactions are possible with increased effort in the offshore waters, at this time we cannot predict the degree of risk to protected species in the offshore waters should this Option result in more vessels in the Category F fishery and redirected effort into the offshore area. However, even in the face of this uncertainty, it is important to recognize the potential for changes in the fishery and take into consideration the potential effects to protected species from these changes under this option.

Taking into consideration the potential direct and indirect effects of Option 2 on fishing behavior in the Category F fishery, and the fact that all Category F vessels would still need to comply with all take reduction plan regulations (i.e., HPTRP, BDTRP, ALWTRP), Option 2 is expected to have low negative to low positive effects on protected resources.

In regards to the other options under this Alternative, relative to Option 1, Option 2 may afford some low positive impacts to protected species; however, due to potential indirect effects under Option 2, these positive effects could be offset. As a result, cumulatively, Option 2 may have more similar impacts to Option 1. Relative to Option 3, Option 2 would have less of a positive impact on protected species because under Option 3, the incentive to join the Category F fishery would decrease. Potentially fewer vessels participating in the fishery would equate to less gear in water and therefore, reduced interaction risks to protected resources. Option 2 could also be implemented with Option 3. If combined the maximum potential landings would decrease while the possession limit increased. This would reduce the time needed to catch an allocation and therefore reduce the time spent on the water, which could reduce the potential number of interactions with protected resources having a low positive impact.

7.3.1.3.3 Option 3: Adjust monkfish DAS allocation for Category F vessels

Option 3 would modify the DAS allocation formula for the Category F fishery. This would potentially decrease the potential maximum landings for the Category F fishery, which would decrease the incentive for vessels to participate in this fishery. With fewer vessels participating in the fishery, less gear would be present in the offshore area and therefore, interaction risks to protected resources would decrease. For

vessels continuing to participate, a change in fishing behavior would not be expected as these vessels would continue to operate as described in Option 1 and essentially, Option 2 (see first paragraph). Further, as of 2012, there were only 6 permits in the Category F fishery; if any of these vessels under these permits decide to opt out of the fishery as a result of Option 3, overall effort in the Category F fishery, and therefore, amount of gear in the water, would decrease, reducing interaction risks to protected resources. This would result in positive impacts to protected species.

Based on the above, Option 3 may result in low positive to low negative impacts to protected species. With the potential for vessels to opt out of the Category F fishery, fishing effort in the offshore area would decrease and subsequently, so would the amount of fishing gear in the offshore waters. With a decrease in effort and gear in the offshore area, gear interaction risks to protected species would also decrease. However, Option 3 could also result in a shift in effort from the offshore area of the Category F fishery to more inshore waters. With a decrease in maximum landings under Option 3, vessels may opt out of the Category F fishery to take advantage of better opportunities under a different fishery (or monkfish permit Category). This could result in a shift and increase in effort in the inshore waters where these alternative fisheries (or monkfish permit Category) operate. As noted in previous sections, gillnet and trawl interactions occur frequently in inshore, continental shelf waters. Any increase in effort in these waters has the potential to increase interactions with protected species. However, with only 6 permits issued to the Category F fishery, any shift in effort and thus, increase in effort in the inshore waters would be small and likely undetectable when taken into consideration, cumulatively, with the other current fisheries operating in these inshore waters. As a result, under this scenario, although we would not expect gear interactions to go above and beyond what has been considered and authorized by NMFS to date (NMFS 2013; Waring *et al.* 2014), interactions are still possible and therefore, Option 3 may also result in low negative impacts to protected resources; however, regardless of whether vessels are fishing inshore or offshore, all vessels must comply with take reduction regulations, so any shift in effort will still be under these mandates to reduce interactions (i.e., ALWTRP; BDTRP; HPTRP).

Based on this information, Option 3 is not expected to result in a level of ESA-listed species take above that which has been authorized, or result in levels of take that threaten the continued existence of non-ESA listed marine mammal populations (NMFS 2013; Waring *et al.* 2014). As such, the continued existence of any ESA listed or non-listed species of marine mammal, fish, or sea turtle are not expected to be jeopardized by Option 3 (NMFS 2013; Waring *et al.* 2014). For these reasons, we conclude that adoption of Option 3 would result in low positive to low negative impacts to protected resources..

Relative to Option 1 and 2, Option 3 would have more of a positive impact on protected species due to the potential for fewer vessels to participate in the Category F fishery. Option 3 could also be implemented with Option 2. If combined the maximum potential landings would increase with increasing possession limit. The overall potential maximum landings would be lower than if Option 2 was implemented on its own, which could decrease participation in this fishery and therefore, result in low positive impacts to protected species (e.g., fewer vessels, less gear in the water, less potential for an interaction).

7.3.1.4 DAS requirements for RSA vessels when on a monkfish DAS

7.3.1.4.1 Option 1: No Action (*Preferred Alternative*)

Under Option 1, there would be no change in the requirement for vessels to declare a monkfish RSA DAS prior to leaving the dock. Any vessel that did not declare a monkfish RSA DAS prior to leaving the dock would be restricted to the monkfish DAS possession limit. This would maintain the current levels of fishing opportunities for vessels participating in the RSA program.

Therefore no change in fishing effort would be expected under Option 1, and the current trend of not achieving the monkfish TAL would be expected to continue. Based on this information, Option 1 (status

quo conditions) would not be expected to introduce any new risks to protected species that have not already been considered and/or authorized by NMFS to date (NMFS 2013; Waring *et al.* 2014) and therefore, expect impacts of Option 1 on non-ESA listed species and ESA listed species to be similar to those described in Section 7.3.1.1.1. Compared to Option 2, Option 1 would have similar low negative to neutral impacts on protected resources.

7.3.1.4.2 Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea

Option 2 would increase flexibility for vessels by allowing the declaration of a monkfish RSA DAS while at sea. This alternative would provide vessels with the flexibility to choose to land a higher limit of monkfish on a RSA DAS based on what they are catching. However, there are a number of vessels that have used a RSA DAS when it could be considered unnecessary from not achieving the monkfish DAS possession limit. In fact, a trip level analysis indicates that just over half of the trips made by vessels participating in the RSA program, and on an RSA trip, achieved 90% of the monkfish DAS possession limit. As a result, for some vessels, this Option would enable a vessel to observe what they are catching for the day and decide whether exceedance of the possession limit is possible and if so, rather than discard, use a monkfish RSA DAS to retain these additional fish. In this later instance, this does not necessarily equate to an increase in effort. However, as described previously, we cannot discount the possibility that for some vessels, this option could, depending on the profitability of the situation, be used to land more monkfish and therefore, result in some effort increase. However, the overall effort allowed under the RSA program is limited by the poundage allocated to each RSA project.

Option 2 would not be expected to introduce any new risks or additional takes to protected species that have not already been considered and/or authorized by NMFS to date (NMFS 2013; Waring *et al.* 2014). Based on this, we expect effects to protected species to be low negative to neutral. Compared to Option 1, Option 2 would have similar low negative to neutral impacts on protected resources.

7.3.2 Modifications to Monkfish Possession Limits

7.3.2.1 Northern Area Monkfish Trip Limit on a NE multispecies DAS

7.3.2.1.1 Option 1: No Action

Under Option 1, there would be no change to the monkfish possession limits in the NFMA. The NFMA TAL and ACT would not change under Option 1, and neither fishing opportunities, nor effort would be changed by this action. Based on this, we do not expect Option 1 (status quo conditions) to introduce any new risks to protected species that have not already been considered and/or authorized by NMFS to date (NMFS 2013; Waring *et al.* 2014) and expect impacts of Option 1 on non-ESA listed species and ESA listed species to be similar to those described in Section 7.3.1.1.1 (i.e., low negative to neutral impacts). Relative to Option 2, Option 1 would have low negative to neutral impacts on protected resources.

7.3.2.1.2 Option 2: Eliminate the trip limit on a NE multispecies and Monkfish DAS (Preferred Alternative)

Option 2 would eliminate the monkfish possession limits for vessels issued a Federal limited access monkfish Category C or D permit fishing under a NE multispecies and monkfish DAS in the NFMA and therefore, would create an incentive for vessels to remain in the NFMA instead of potentially shifting effort into the SFMA. Although the possession limit would be eliminated under Option 2, monkfish and groundfish effort controls (e.g. DAS allocations and groundfish ACLs), in addition to accountability

measures, would not be revised and would continue to serve as restraints on fishing effort in both fisheries.

Eliminating the monkfish possession limit under Option 2 has the potential to increase monkfish landings and therefore, potentially increase fishing effort in the NFMA. However, based on monkfish fishing trends from FY 2009-2013, it is unlikely that under Option 2, landings of monkfish would increase to levels significantly above and beyond what the fishery currently experiences. As shown in Figure 24, the majority of trips occurring in the NFMA are catching less than 90% of the monkfish incidental possession limit for a NE multispecies DAS. As possession limits are not being fully attained under current operating conditions, it is unlikely that significant changes in this trend would be experienced under Option 2. As a result, we do not expect significant changes in fishing behavior or effort in the NFMA under Option 2. Instead, it is likely that most of the increased landings would likely come from converting discards into landings, not newly directed effort.

Based on the information above, fishing effort and distribution is not expected to significantly change from how the fishery currently operates. As Option 2 is not expected to result in any significant changes in fishing behavior in the NFMA, the potential for protected species interactions with gillnet or trawl gear and therefore, serious injury or mortality, are not expected to go above and beyond that which has been considered in the fishery to date (NMFS 2013, Waring *et al.* 2014). As a result, we do not expect Option 2 to result in a level of ESA-listed species take above that which has been authorized by NMFS, or result in levels of take that threatens the continued existence of non-ESA listed marine mammal populations and therefore, we do not expect the continued existence of any ESA listed or non-listed species of marine mammal, fish, or sea turtle is not expected to be jeopardized by Option 2 (NMFS 2013; Waring *et al.* 2014). In addition, Option 2 will still require compliance with protected species take reduction plans (i.e., ALWTRP, HPTRP), as well as MSA fishery regulations to restrain fishing effort (e.g., catch limits, DAS allocations, AMs). For these reasons, we expect impacts of Option 2 on non-ESA listed species and ESA listed species to be low negative to neutral. Relative to Option 1, Option 2 could afford slightly more negative impacts to protected species if the full potential of Option 2 is recognized (e.g., increased lands=increased effort=increased protected species interactions).

7.3.3 Modifications to gear requirements while on a Monkfish DAS

7.3.3.1 Modification to mesh size requirements on monkfish DAS

7.3.3.1.1 Option 1: No Action

Option 1 would maintain the requirement for gillnet vessels to use 10” or greater mesh while on a monkfish DAS or NE multispecies/monkfish DAS. Based on this, we do not expect Option 1 (status quo conditions) to introduce any new risks to protected species that have not already been considered and/or authorized by NMFS to date (NMFS 2013; Waring *et al.* 2014) and therefore, expect impacts of Option 1 on non-ESA listed species and ESA listed species to be similar to those described in Section 7.3.1.1.1 (i.e., low negative to neutral impacts). Relative to Option 2 and 3, Option 1 would have less of a negative impact on protected species. Option 1 and 4 would have similar impacts to one another.

7.3.3.1.2 Option 2: Allow the use of 5-7” mesh in standup gillnet on monkfish-only DAS

Option 2 would allow the use of 5-7” stand-up gillnet mesh while on a monkfish or monkfish/NE multispecies DAS. It is unclear at this time to what extent fishing behavior and effort would change under Option 2; however, given the opportunity to catch other fish species in addition to monkfish on the same trip, in addition to the fact that there are no limits on the number of 5-7” mesh stand-up gillnets that can be set while on a monkfish or monkfish/NE multispecies DAS, there is the potential for fishing effort to increase should vessels be given the opportunity to fish in the manner afforded under Option 2.

Specifically, given the unlimited amount of 5-7" mesh stand-up gillnet gear, combined the regulated number of 10" mesh gillnet gear that can be set to catch monkfish, effort could change such that the amount of gear in the water increases, as does gear soak time. Interactions with protected species are strongly associated with gear soak time (longer soak time=increased interactions) and quantity of gear in the water. Under Option 2, conditions conducive to increased protected species interactions may be met. As a result, there is the potential for Option 2 to result in negative impacts to protected species. However, as fishing in this manner has already been occurring in the monkfish fishery, relative to status quo conditions, there is also the potential that this Option will not significantly change fishing behavior/effort and therefore, result in elevated levels of interactions above and beyond that which has been observed and considered by NMFS to date (Waring *et al.* 2014; Waring *et al.* 2015; NMFS 2013). Under the latter scenario, impacts to protected species are expected to be low negative.

Based on the above considerations, and the fact that predicting future fishing trends in the monkfish fishery is difficult, Option 2 has the potential to result in low negative to negative impacts to protected species. Relative to Option 1 and 4, Option 2 would have more of a negative impact on protected species. Relative to Option 3, Option 2 would have neutral impacts to protected species.

7.3.3.1.3 Option 3: Allow the use of 5-7" mesh in standup gillnet on monkfish DAS in NFMA

Option 3 would allow the use of 5-7" stand-up gillnet mesh while on a monkfish or monkfish/NE multispecies DAS in the NFMA. Although this option is specific to the NFMA, the expected effects to fishing behavior and the resultant effects to protected resources are expected to be the same as those described in Option 2 (see section 7.3.3.1.2). Relative to option 1 and 4, we would expect Option 3 to have more of a negative impact on protected species.

7.3.3.1.4 Option 4: Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in SFMA (*Preferred Alternative*)

Option 4 would modify the minimum mesh size requirements for stand-up gillnet mesh while on a monkfish or monkfish/NE multispecies DAS as outlined in Table 8. This would allow the use of less than 10" standup gillnet gear when on a monkfish DAS in the SFMA and allow both dogfish and monkfish to be retained on the same trip.

It is unclear at this time to what extent fishing behavior and effort would change under Option 4; however, despite the opportunity to catch other fish species in addition to monkfish on the same trip, the amount of gear in the water is not expected to increase because the regulations limiting the total number of gillnets fished would not be modified. Option 4 also limits the total number of standup nets when fishing on a monkfish DAS to 50 when fishing in the Mid-Atlantic exemption area and the SNE dogfish exemption area. Interactions with protected species are strongly associated with gear soak time (longer soak time=increased interactions) and quantity of gear in the water. Under Option 4, the limitation of total number of gillnets fished may be sufficient to limit protected species interactions. However, as fishing in this manner has already been occurring in the monkfish fishery, relative to status quo conditions, there is also the potential that this Option would not significantly change fishing behavior/effort and therefore, result in elevated levels of interactions above and beyond that which has been observed and considered by NMFS to date (Waring *et al.* 2014; Waring *et al.* 2015; NMFS 2013). Under the latter scenario, impacts to protected species are expected to be low negative.

Environmental Consequences of the Alternatives
Endangered and Other Protected Species Impacts

Based on the above considerations, and the fact that predicting future fishing trends in the monkfish fishery is difficult, Option 4 has the potential to result in low negative impacts to protected species. Relative to Options 2 and 3, Option 4 would have less of a negative impact on protected species. Relative to Option 1, Option 4 would have similar low negative impacts to protected species.

7.4 Economic Impacts

The realized economic impacts of this action will depend upon, in large part, the actual monkfish landings that occur following implementation. Landings of other stocks, including groundfish, along with associated ex-vessel prices, will also factor into realized impacts. Due to the strong relationship between groundfish and monkfish catches in the monkfish Northern Fishery Management Area (NFMA), the change in monkfish landings from the implementation of FW9 will be influenced by the catch rates of groundfish stocks. An increase in catch per unit effort of groundfish may allow for longer fishing trips and higher monkfish catch. The value of monkfish landings realized will depend upon the market category landed, due to price variation among the various market categories, and the volume of monkfish in the market at the time of landing.

Trends in the monkfish fishery over fishing years (FYs) 2009-2013 are summarized by the tables presented in this section. Table 56 gives average ex-vessel prices across all monkfish market categories during FYs 2009-2013. Table 57, Table 58, and Table 59 show the numbers of active vessels landing monkfish, monkfish landings, and monkfish revenues, respectively, broken down by monkfish permit category.

Table 56- Average monkfish ex-vessel price per landed pound, dealer data, fishing years 2009-2013.

Fishing Year	Landings in 1,000 lbs. (landed weight)	Revenue (nominal)	(\$1,000, nominal)	Average Price per landed lb.
2009	9,432	\$17,607		\$1.87
2010	8,343	\$19,201		\$2.28
2011	10,898	\$28,092		\$2.58
2012	9,776	\$20,684		\$2.12
2013	8,913	\$16,772		\$1.88

Table 57- Number of vessels with monkfish landings>0lbs., by monkfish permit category and fishing year.

Monkfish Permit Category	Number of vessels w/monkfish landings				
	FY2009	FY2010	FY2011	FY2012	FY2013
A	17	19	20	21	19
B	36	37	39	39	35
C	269	236	221	222	214
D	228	199	191	189	174
E	474	389	363	361	331
F	N/A	4	6	9	13
H	6	6	8	8	7

Table 58- Monkfish landings and percent of all species landings derived from monkfish by permit category.

Monkfish Permit Category	Monkfish Landings, (1,000 landed pounds)				
	FY2009	FY2010	FY2011	FY2012	FY2013
Cat A	812	767	925	896	822
% of Total A Landings	9.9%	8.8%	7.1%	13.9%	28.5%
Cat B	1,147	1,138	1,491	1,343	1,161
% of Total B Landings	24.5%	25.0%	25.7%	26.0%	24.8%
Cat C	3,356	2,870	3,594	3,146	2,826
% of Total C Landings	3.2%	2.7%	3.5%	3.7%	3.7%
Cat D	3,820	3,238	4,170	3,385	3,213
% of Total D Landings	4.1%	4.3%	4.5%	4.0%	4.0%
Cat E	478	295	329	405	422
% of Total E Landings	0.1%	0.1%	0.1%	0.1%	0.1%
Cat F	N/A	18	90	119	56
% of Total F Landings	N/A	0.7%	0.9%	0.7%	0.2%
Cat H	215	147	307	239	162
% of Total H Landings	18.5%	11.8%	22.6%	18.1%	13.1%

Table 59- Monkfish and percent of all species revenue derived from monkfish by permit category.

Monkfish Permit Category	Monkfish Revenue, (nominal \$1,000)				
	FY2009	FY2010	FY2011	FY2012	FY2013
Cat A	\$1,013	\$1,230	\$1,795	\$1,519	\$1,148
% of Total A Revenues	34.6%	28.4%	30.9%	31.8%	27.5%
Cat B	\$1,498	\$1,934	\$3,004	\$2,401	\$1,608
% of Total B Revenues	33.4%	35.8%	37.6%	29.4%	26.3%
Cat C	\$7,451	\$7,922	\$10,853	\$7,401	\$6,137
% of Total C Revenues	2.9%	2.4%	2.9%	2.2%	2.1%
Cat D	\$6,699	\$6,862	\$10,380	\$7,020	\$6,035
% of Total D Revenues	7.3%	7.3%	8.9%	7.0%	7.0%
Cat E	\$1,128	\$836	\$1,030	\$1,086	\$1,048
% of Total E Revenues	0.4%	0.2%	0.2%	0.3%	0.3%
Cat F	N/A	\$58	\$225	\$224	\$131
% of Total F Revenues	N/A	2.6%	2.5%	1.6%	0.7%
Cat H	\$226	\$192	\$529	\$411	\$270
% of Total H Revenues	28.9%	21.4%	39.5%	34.9%	31.4%

7.4.1 Modifications to current DAS/Trip Limit system

The economic impacts of modifying DAS usage/trip limits in the monkfish fishery were estimated by identifying the number of potentially impacted trips during FYs 2009-2013. Potentially impacted trips were defined to be trips with monkfish landings per DAS that approached or “bumped-up” against the

applicable landing limit. These trips were considered the most likely to be discarding monkfish to avoid exceeding the given trip limit. For an incidental trip limit of 50 lbs. of monkfish tail weight per DAS, the chosen bump-up amount was 10 lbs. (i.e., trips landing between 40-50 lbs. of monkfish tail weight per DAS were identified to be those trips most likely to be impacted by modifications to the current DAS/trip limit system). This bump-up value of 10 lbs. was also applied for trawl vessels fishing under NE multispecies DAS in the monkfish Southern Fishery Management Area (SFMA). For vessels on a NE Multispecies, or groundfish, DAS in the Northern Fishery Management Area (NFMA) or on a monkfish DAS in either area, the chosen bump-up amount was 10% of the applicable trip limit.

After identifying the “bump-up” trips for the various alternatives, observed trips were identified so as to calculate regulatory discards of monkfish. For the remainder of the economic impacts section, regulatory discards refer to discards identified in the observer data as occurring due to the trip limit (quota) being filled.

Revenue projections, such as those employed in FW8 to the monkfish FMP (NEFMC, 2014), were considered but ultimately deemed inappropriate for most alternatives in this action for a variety of reasons. First, the number of trips approaching the incidental trip limit for some alternatives was minor, and the ability of vessels making these trips to have a higher trip limit through a DAS declaration would likely result in a negligible increase in monkfish landings across the fleet. Second, for trips approaching a trip limit, there was little to no regulatory discarding of monkfish in many cases. Third, for Section 7.4.1.4, concerning declaration of a monkfish RSA DAS while at sea, the nature of the trip limit is quite different. A vessel may be operating under a monkfish DAS and reach the daily trip limit, but the ability to increase that trip limit through declaration of an RSA DAS is a costly one, with RSA DAS being leased for roughly \$600 per DAS. Fourth, the increased monkfish landings predicted in FW8 for FY2014 did not materialize. Factors affecting the monkfish fishery outside of FW9, including the level of fishing effort in the groundfish fishery, may have a greater influence on future monkfish landings and revenue than these FW alternatives.

The realized benefits of FW9 will also depend on the ability to monitor and enforce the existing trip limits. Existing trip limits may be exceeded for a variety of reasons, including fishermen’s misunderstanding of the regulations or deliberate non-compliance for expected financial gain. Across the range of alternatives, trips that exceeded the applicable trip limit were detected for FYs 2009-2013. For example, out of the 2,153 trips identified in Section 7.4.1.1.2 that were operating under a 50 lb. tail weight per DAS trip limit, 129 (6%) of these trips exceeded the trip limit. Trips exceeding the trip limit were not included in the figures for that section and any trips exceeding the trip limit in other sections also were not included in any figures or tables unless explicitly stated. The fact that trips exceeding a trip limit are occurring may highlight an enforcement issue present in the monkfish fishery or a lack of understanding of the regulations. If enforcement challenges are significant, the ability to receive a higher trip limit through a DAS declaration would be most likely to benefit vessels that are currently bumping up against the existing applicable trip limit, and are compliant with the existing trip limit regardless of the level of enforcement. However, for vessels that were identified as exceeding the current trip limit under Option 1, there would be little to no additional economic benefit associated with receiving a higher trip limit through a DAS declaration since these vessels were operating as if a higher trip limit was already in place and existing enforcement was inadequate to prevent this from occurring.

7.4.1.1 Requirement for vessels with groundfish permits to also use a NE multispecies DAS when on a monkfish DAS

7.4.1.1.1 Option 1: No Action

The economic impacts of Option 1 would be neutral, assuming other factors external to this action that may influence monkfish landings and revenues remain constant. Vessel operators would continue to not be permitted to declare a NE multispecies DAS while at sea. Options 2 and 3 would have similar or slightly more positive economic impacts compared to Option 1.

7.4.1.1.2 Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area

The economic impacts of Option 2 would likely be neutral, but possibly low positive, relative to Option 1, the No-Action Alternative. The current monkfish possession limit for Category C and D vessels that are not on a monkfish or NE multispecies DAS is 5% of the total weight of fish on board, not to exceed 50 lbs. tail weight per DAS or 150 lbs. tail weight per trip (Table 60). As common pool vessels must be operating under a DAS to make a fishing trip, the potential positive impacts of Option 2 mainly apply to sector vessels making non-DAS trips. Under a non-DAS trip, sector vessels have lower possession limits for certain species outside of the groundfish FMP (monkfish, dogfish, skates) than if they were operating under a NE multispecies DAS. If a sector vessel has no intention of landings these species outside the groundfish FMP, then they may wish to operate under a non-DAS trip. Sector vessels opt into a non-DAS trip or a DAS trip through a VMS declaration, and Option 2 would allow sector vessels to switch from a non-DAS trip to a NE Multispecies DAS trip while at sea if they are able to land more monkfish, dogfish or skates than permitted for a non-DAS trip. However, the distinction between the two trip types is only distinguishable in the VMS declaration code starting in FY2012. Consequently there are two years of data (FYs 2012-2013) used in analyzing Option 2, rather than the five years of data (FYs 2009-2013) used for later alternatives in the economic impacts section.

For sector vessels on a non-DAS trip, declaring a NE multispecies DAS in the NFMA increases the landing limit for Category C vessels up to 600 lbs. (tail weight) per DAS and up to 500 lbs. (tail weight) per DAS for Category D vessels. If a monkfish DAS is used in conjunction with the NE multispecies DAS, then the limits go up to 1,250 lbs. for Category C vessels and 600 lbs. for Category D vessels (Table 60).

Table 60- Monkfish daily trip limits under different DAS programs.

Monkfish Permit Category	Operating under no DAS (lbs. in t.w. per DAS)	Operating under a NE Multispecies-only DAS (lbs. in t.w. per DAS)	Operating under a NE Multispecies DAS or a combined monkfish/NE Multispecies DAS (lbs. in t.w. per DAS)
C	5% of the total weight of fish on board, not to exceed 50 lbs. or 150 lbs. per trip	600 lbs.	1,250 lbs.
D	5% of the total weight of fish on board, not to exceed 50 lbs. or 150 lbs. per trip	500 lbs.	600 lbs.

Figure 35 and Figure 36 show the distribution of monkfish landings by Category C and D vessels on sector non-DAS trips in the NFMA during FYs 2012-2013. Of the 2,153 trips in these distributions, 1,531(71.1%) had either no monkfish landings or 1-10 lbs. t.w. per DAS. In contrast, only 34 trips (1.6%) occurred in the “bump-up” range of 40-50 lbs. tail weight per DAS. Of these 34 trips, 3 were observed, and there were no regulatory discards of monkfish on any of these trips. The number of vessels that had at

least one sector non-DAS trip approaching 50 lbs. of monkfish tails per DAS is also given in Table 61. It should be noted that Figure 35 and Figure 36 do not include trips that exceeded the 50 lb. daily monkfish possession limit but were restricted by the 150 lb. limit for the entire trip. However, these trips also did not have any regulatory discards of monkfish.

Given these results, there were few trips, if any that would have yielded additional monkfish landings in recent fishing years had the NE multispecies DAS at-sea declaration of Option 2 been in place. These numbers could be interpreted as sector vessels that are operating under no DAS, generally, have little or no intention of landing monkfish. Alternatively, because NE multispecies DAS are currently inexpensive, vessel operators may be erring on the side of caution by utilizing their NE multispecies DAS in case they run into a significant catch of monkfish (or dogfish, and skates, which also require a NE multispecies DAS declaration for a higher possession limit for sector vessels). In other words, the opportunity cost of not being under a NE multispecies DAS for sector vessel trips will, in some cases, greatly exceed the cost of leasing in a NE multispecies DAS.

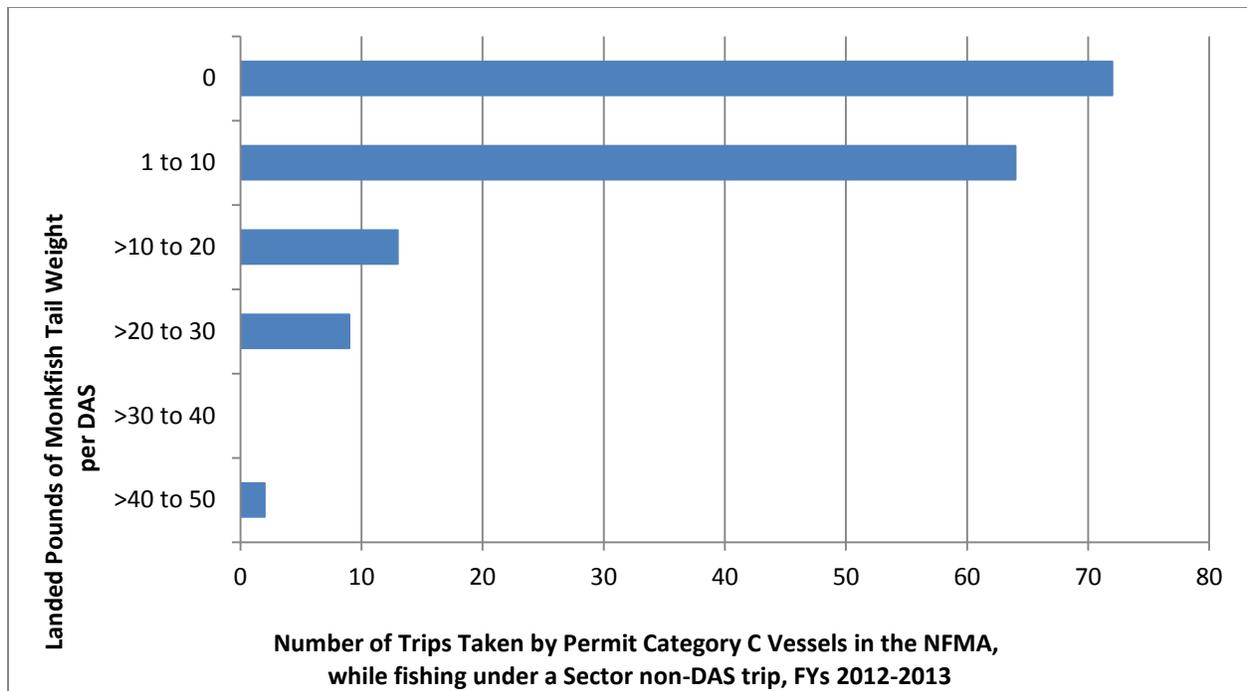


Figure 35- Number of trips, by monkfish tail weight per DAS, for trips taken in the NFMA by Category C vessels while fishing under a sector non-DAS trip, fishing years 2012-2013.

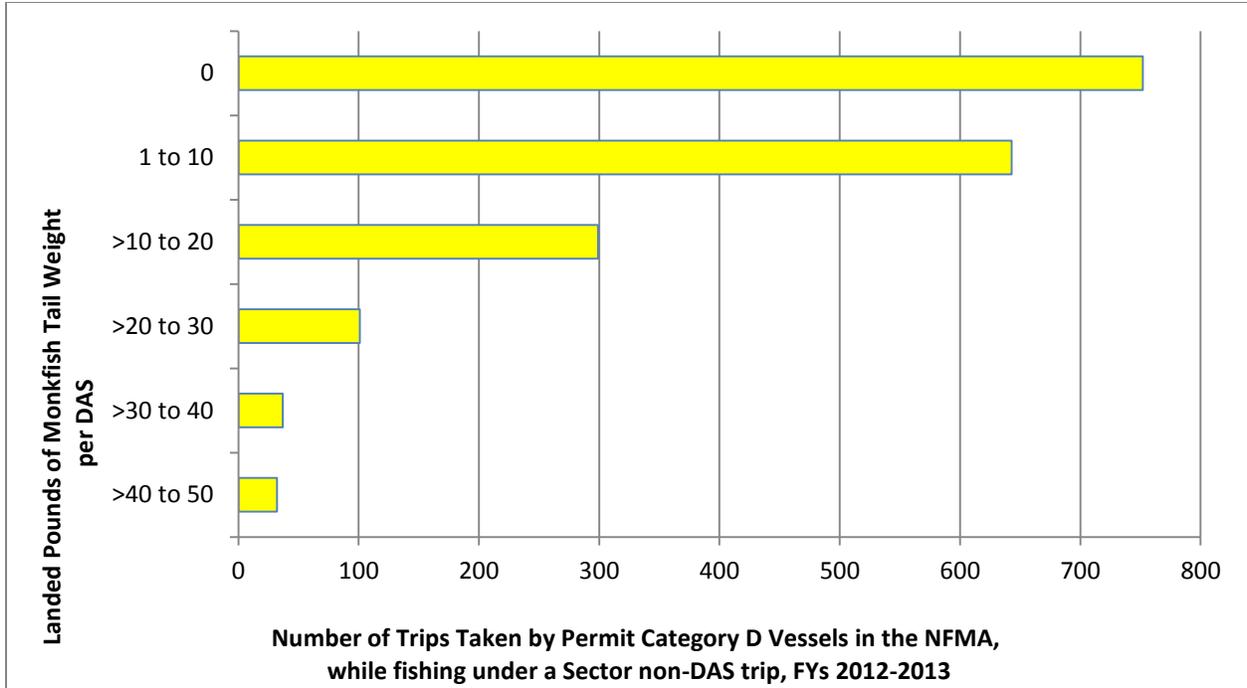


Figure 36- Number of trips, by monkfish tail weight per DAS, for trips taken in the NFMA by Category D vessels while fishing under a sector non-DAS trip, fishing years 2012-2013.

Table 61- Number of monkfish Category C and D Vessels with at least one sector non-DAS trip of 41-50 lbs. monkfish t.w. per DAS, fishing years 2012-2013.

Fishing Year	Category C and D Vessels with at least one sector non-DAS trip of 41-50 lbs. monkfish t.w. per DAS
2012	6
2013	7

As Option 2 would allow declaration of a NE multispecies DAS while at sea, any NE multispecies DAS declared by sector vessels prior to leaving the dock that ended up being unnecessary (i.e. a sector non-DAS trip would have been sufficient for the resulting catch portfolio from that trip) could be a source of inefficiency. Figure 37 shows the distribution of sector groundfish-only DAS trips taken by Category C and D vessels in the NFMA in relation to the incidental trip limit (50 lbs. monkfish t.w. per DAS) during FYs 2012-2013. While the majority of these trips resulted in monkfish catch below the incidental limit, a preliminary look at other species landed on these trips suggests many cases where dogfish or skate catch exceed incidental limits. However, even in cases where the usage of a NE multispecies DAS may not have been necessary, a decrease in fishery production would only materialize if that permit holder would eventually run out of NE multispecies DAS before the end of the fishing year and they were unable to lease in more DAS. It is far more likely that the permit holder would be able to lease in additional NE multispecies DAS, preventing a loss in production for the individual or the fishery as a whole, and the net result would simply be a transfer payment from one permit holder to another.

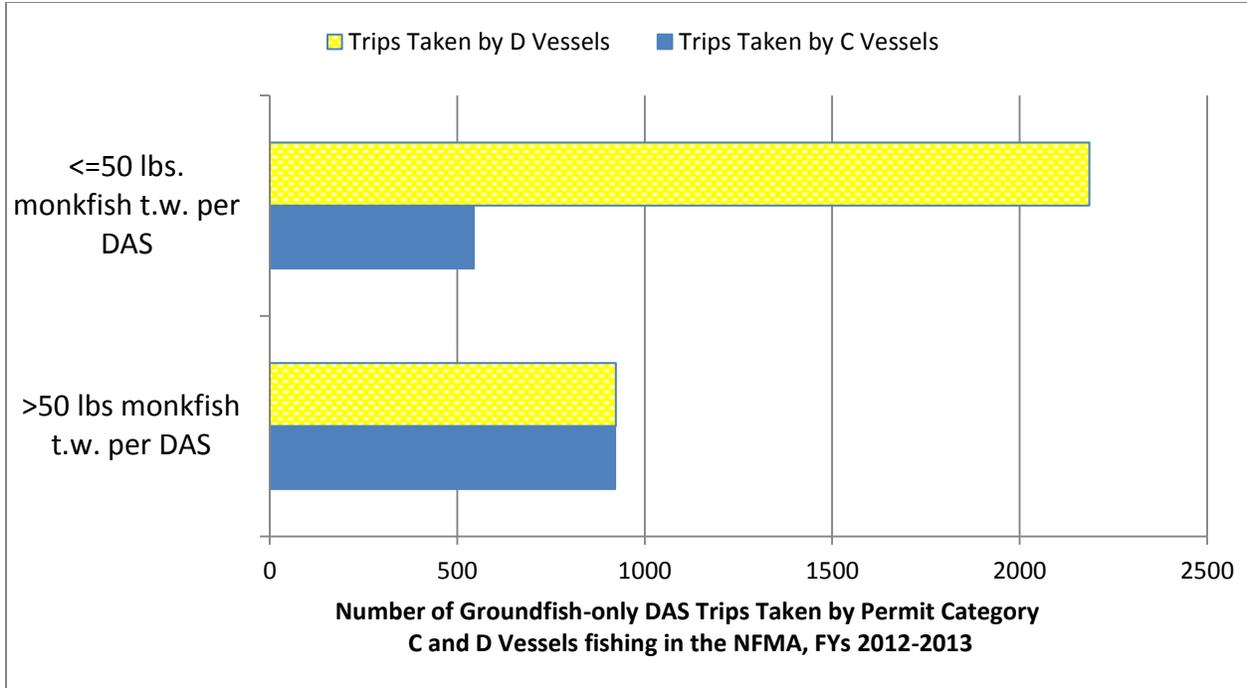


Figure 37- Sector groundfish-only DAS (no monkfish DAS) trips taken by monkfish permit Category C and D vessels while fishing in the NFMA, fishing years 2012-2013.

Option 2 would also apply to Category C and D common pool vessels. Since these vessels are required to use a NE multispecies DAS when fishing for groundfish, Option 2 would not increase the operational flexibility of common pool vessels in the same manner as it would for sector vessels. The potential benefit of Option 2 to common pool vessels is for those which operate in the GOM/GB Monkfish Gillnet Exemption on a monkfish-only DAS. By having the option to declare a NE multispecies DAS at sea, these vessels could then switch from a monkfish-only DAS to a NE multispecies DAS and proceed to fish outside of the exemption area without having to return to port. However, there is extremely limited evidence of Category C and D common pool vessels fishing in the GOM/GB Monkfish Gillnet Exemption Area. During FYs 2009-2013, only 2 of such trips occurred, with both happening in FY2010 by the same vessel. The level of fishing effort by common pool C and D vessels in the NFMA is also very low outside of the exemption area, as shown in Table 62. Note that vessels being counted in this table are those that took at least one NE multispecies DAS trip.

Option 2 would have similar impacts compared to Option 3, and would have neutral or slightly more positive impacts compared to Option 1, No Action.

Table 62- Number of Category C and D monkfish permits that took at least one NE multispecies DAS trip in the NFMA, fishing years 2012-2013.

Fishing Year	Category C and D sector vessels taking a trip under a GF DAS	Category C and D common pool vessels taking a trip under a GF DAS
2012	105	0
2013	108	2

7.4.1.1.3 Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category D and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (*Preferred Alternative*)

The economic impacts of Option 3 would likely be neutral relative to Option 2. Relative to No Action, the impacts of Option 3 would likely be neutral as well, but possibly low positive. The opportunity for monkfish permit Category C and D sector vessels to increase their possession limit (Table 60) through a NE multispecies DAS declaration at sea in Option 3 would be the same as Option 2. Option 3 would not allow common pool vessels the flexibility of fishing in the GOM/GB Monkfish Gillnet Exemption Area and then declaring a NE multispecies DAS. However, as mentioned in the Option 2 analysis, there is very little evidence of monkfish permit Category C and D common pool vessels fishing in this exemption area. For this reason, the impacts of Option 3 will not deviate much from Option 2, regardless of the magnitude of positive impacts these two options provide relative to No Action.

7.4.1.2 Southern Fishery Management Area at-sea Monkfish DAS declaration

7.4.1.2.1 Option 1: No Action (*Preferred Alternative*)

The economic impacts of Option 1 would be neutral, assuming other factors external to this action that may influence monkfish landings and revenues remain constant. Vessel operators would continue to not be permitted to declare a monkfish DAS while at sea in the SFMA. Option 2 would likely have neutral or low positive impacts compared to Option 1, the No-Action Alternative.

7.4.1.2.2 Option 2: Allow at-sea Monkfish DAS declaration in the SFMA

The economic impacts of Option 2, relative to Option 1, the No Action Alternative, would likely be neutral, but possibly low positive. The current monkfish possession limit for Category C and D vessels using non-trawl gear that are on a NE multispecies DAS in the SFMA, but not on a monkfish DAS, is 50 lbs. tail weight per DAS. By declaring a monkfish DAS, the monkfish possession limits would be increased for C and D vessels to 610 and 500 lbs. tail weight per DAS, respectively (Table 63).

Table 63- Monkfish trip limits for vessels fishing in the SFMA on a NE multispecies DAS and trip limit fishing on a monkfish DAS, as well as the potential gain from switching.

Monkfish Permit Category	Gear Type	Limit for NE multispecies DAS (lbs. in t.w./DAS)	Limit for monkfish DAS (lbs. in t.w./DAS)	Potential Gain (lbs. in t.w./DAS)
C	Non-trawl	50	610	560
C	Trawl	300	610	310
D	Non-trawl	50	500	450
D	Trawl	300	500	200

Figure 38 shows the distribution of monkfish landings by permit Category C and D vessels fishing with non-trawl gear on a NE multispecies DAS in the SFMA. Of the 743 trips represented, 492 had no monkfish landings. A total of 123 trips (78 trips by C vessels and 45 trips by D vessels) occurred in the “bump-up” range of 40-50 lbs. of monkfish tail weight per DAS during FYs 2009-2013. These trips were deemed the most likely to have regulatory discards since they met or approached the incidental monkfish catch limit. However, out of these 123 trips, 16 carried an observer onboard and only 2 (8%) of these observed trips had regulatory discards of legal sized monkfish. These 2 trips had a total of 21 monkfish discarded, with an average length of 62.8 cm or 24.7 inches. The minimum legal size for monkfish is 17 inches total length. Based on the length to weight formula provided in the 2010 stock assessment for

monkfish, the discarded fish occurring in the SFMA, for which the sex was not provided in the observer data, would have weighed an average of 8.51 pounds (NEFSC, 2010). Based on the average price per live pound (\$1.08) during FYs 2009-2013, each discarded monkfish would have generated \$9.20 in revenue. If the lowest annual price from the time series was used (\$0.88), each discarded monkfish would have generated \$7.49 in revenue, and if the highest annual price was used (\$1.33), the revenue generated would be \$11.31 per fish.

Based on the 21 monkfish regulatory discards on observed trips bumping up against the trip limit, there were 1.3 (21 monkfish discarded/16 trips) monkfish discarded on average on such trips. Multiplying this figure by the 107 unobserved trips gives a total of 140 monkfish. Adding this total to the 21 observed discards gives 161 monkfish discarded so as to avoid the 50 lb. trip limit during FYs 2009-2013. At a price of \$9.20 per fish, an estimated \$1,486 could have been generated from converting these regulatory discards into landings over the course of 5 years across all Category C and D non-trawl vessels participating in the fishery within the SFMA. This yields an annual estimate of \$297. Based on the lower and upper bound prices, additional revenue generated from Option 2 would range from \$1,153 to \$1,742 or from \$242 to \$365 annually across all non-trawl vessels in the SFMA. If this revenue were to be distributed across all non-trawl vessels in the SFMA that had at least one “bump-up” trip or landed any monkfish at all (*Breakdown between sector and common pool reflects FY2010 vessel enrollment), the revenue generated per vessel would be extremely low. These numbers, of course, represent past fishing activity and may not represent future activity. Furthermore, these extrapolated numbers are derived from a relatively small group of observed trips. Nevertheless, these five years of data do suggest that the volume of regulatory discards occurring from the 50lb. trip limit to be minor, and a major shift in regulatory discarding would be unexpected.

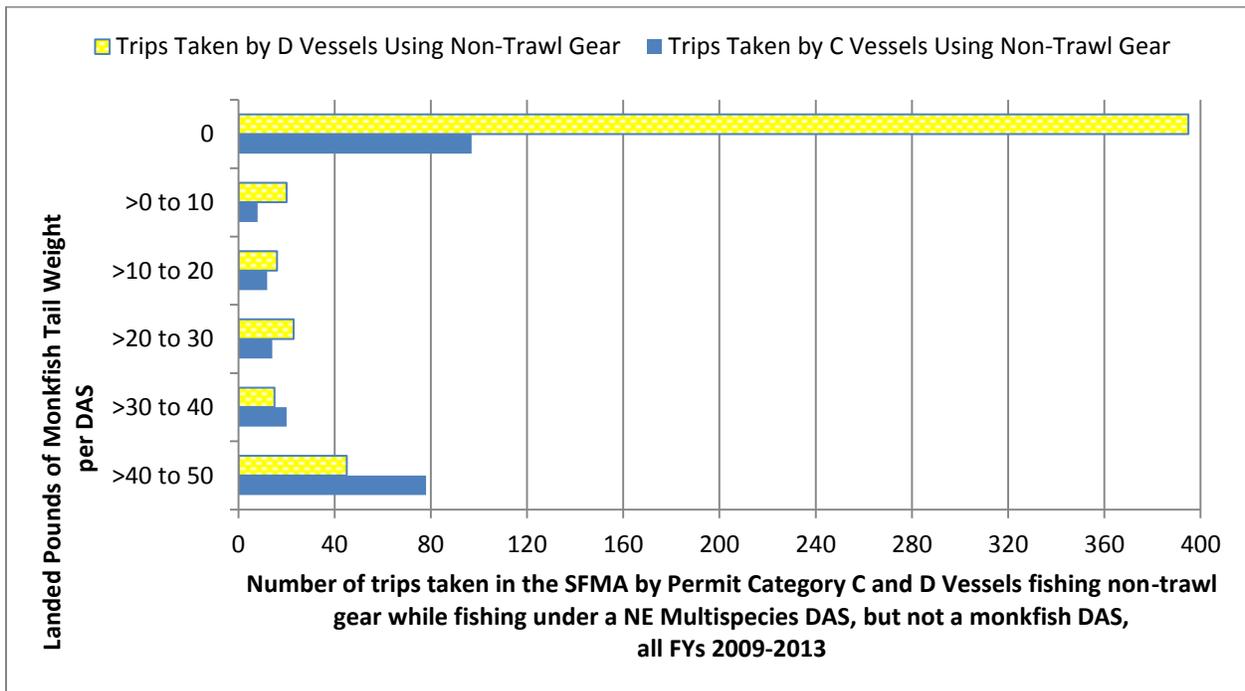


Figure 38- Number of trips, by monkfish tail weight per DAS, for trips taken in the SFMA by monkfish permit category C and D vessels while fishing non-trawl gear under a NE Multispecies DAS, but not a monkfish DAS, fishing years 2009-2013.

Table 64- Number of monkfish permit Category C and D vessels that had at least one trip of 41-50 lbs. and 1-50 lbs. monkfish tail weight per DAS while using non-trawl gear in the SFMA, fishing under a NE Multispecies only DAS .

Fishing Year	Vessels with at least one trip of 41-50 lbs. monkfish tail weight per DAS (# in common pool)	Vessels with at least one trip of 0-50 lbs. of monkfish tail weight per DAS (# in common pool)	Percentage of vessels having at least one trip of 41-50 lbs. monkfish tail weight per DAS
2009*	5 (2)	72 (11)	6.9%
2010	4 (1)	12 (3)	33.3%
2011	7 (2)	22 (5)	31.8%
2012	11 (3)	19 (5)	57.9%
2013	9 (3)	26 (7)	34.6%

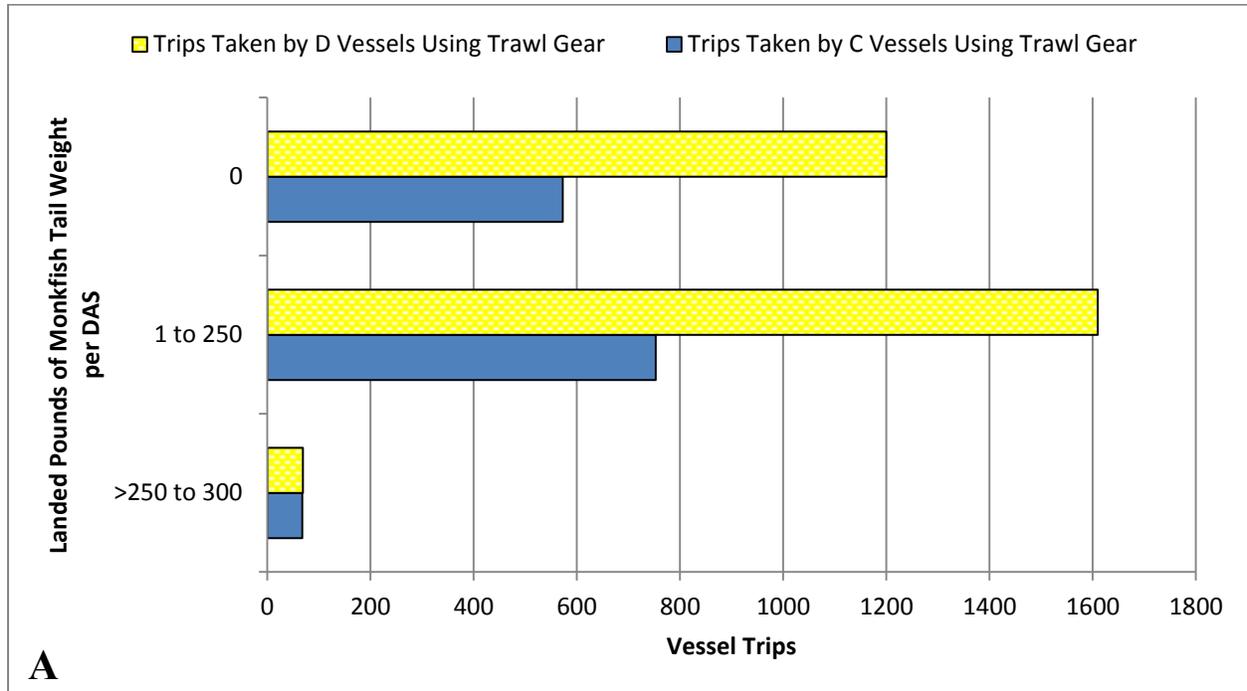
*Breakdown between sector and common pool reflects FY2010 vessel enrollment

For Category C and D vessels using trawl gear in the SFMA, the incidental trip limit is 300 lbs. monkfish tail weight per DAS. These vessels would be able to increase their landing limit to 610 and 500 lbs. tail weight per DAS respectively by declaring a monkfish DAS in the SFMA (Table 63). Figure 39 shows the distribution of monkfish landings by vessels fishing with trawl gear in the SFMA on a NE multispecies DAS, with only 137 of 4,273 trips (3.2%) having landings greater than 250 lbs. up to the 300 lb. trip limit. Of these 137 trips, 59 trips (1.4% of all trips having landings > 250 lbs. to 300 lbs.) occurred in the selected “bump-up” range of within 10lbs. of the trip limit (>290 to 300 lbs.). There were 17 of these 59 trips carrying an observer onboard and only 2 of these observed trips (11.8%) had regulatory discards of legal sized monkfish, with 54 being discarded between the trips. These discarded monkfish had an average length of 54.8 cm or 21.6 inches. Based on the length to weight formula provided in the 2010 stock assessment for monkfish, the discarded fish occurring in the SFMA, for which the sex was not provided in the observer data, would have weighed an average of 5.7 pounds (NEFSC, 2010). Based on the average price per live pound (\$1.08) during FYs 2009-2013, each discarded monkfish would have generated \$5.51 in revenue. If the lowest annual price from the time series was used (\$0.88), each discarded monkfish would have generated \$4.48 in revenue, and if the highest annual price was used (\$1.33), the revenue generated would be \$6.78 per fish.

Based on the 54 monkfish regulatory discards on observed trips bumping up against the trip limit, there were on average 3.18 monkfish discarded per trip on such trips (54 monkfish discarded/17 trips). Multiplying this figure by the 42 unobserved trips gives a total of 134 monkfish discarded. Adding this total to the 54 observed discards gives 188 monkfish discarded so as to avoid exceeding the 300 lb. trip limit during FYs 2009-2013. At a price of \$5.51 per fish, an estimated \$1,034 could have been generated from converting these regulatory discards into landings over the course of 5 years across all Category C and D trawl vessels participating in the fishery within the SFMA. This yields an annual estimate of \$207. Based on the lower and upper bound prices, additional revenue generated from Option 2 would range from \$1,153 to \$1,742 or from \$168 to \$254 annually across all trawl vessels in the SFMA. If this revenue were to be distributed across all trawl vessels in the SFMA that had at least one “bump-up” trip or landed any monkfish at all (***Breakdown between sector and common pool reflects FY2010 vessel enrollment**

), the revenue generated per vessel would be extremely low. These numbers, of course, represent past fishing activity and may not represent future activity. Furthermore, these extrapolated numbers are derived from a relatively small group of observed trips. Nevertheless, these five years of data do suggest that the volume of regulatory discards occurring from the 300lb. trip limit to be minor, and a major shift in regulatory discarding would be unexpected.

When adding across the estimates for non-trawl vessels and trawl vessels, the estimated average annual revenue that could have been generated from converting monkfish discards into landings is \$504. The lower bound estimate is \$410 per year and the upper bound estimate is \$619 per year.



Note: Figure 5A includes the full distribution of trips by monkfish landings, and Figure 5B includes only trips with >250 lbs. tail weight per DAS. Notice the difference in scale for the X-axis between the figures.

Figure 39 (A & B)- Number of trips, by monkfish tail weight per DAS, for trips taken in the SFMA by permit Category C and D vessels while fishing trawl gear under a NE Multispecies DAS, but not a monkfish DAS, fishing years 2009-2013.

Table 65- Number of monkfish permit Category C and D vessels that had a least one trip of >290-300 lbs. monkfish tail weight per DAS while using trawl gear in the SFMA, fishing under a NE Multispecies DAS, but not a monkfish DAS.

Fishing Year	Vessels with at least one trip of >290-300 lbs. monkfish tail weight per DAS*	Vessels with at least one trip of 0-300 lbs. monkfish tail weight per DAS (# in common pool)	Percentage of vessels having at least one trip of >290-300 lbs. monkfish tail weight per DAS
2009**	4	165 (9)	2.4%
2010	10	75 (6)	13.3%
2011	9	83 (7)	10.8%
2012	7	71 (6)	9.9%
2013	7	64 (9)	10.9%

*All Permit Category C and D vessels that had at least one trip landing >290-300 lbs. of monkfish tail weight per DAS in each of the fishing years from 2009-2013 were sector vessels.

**Breakdown between sector and common pool reflects FY2010 vessel enrollment

As Option 2 would allow declaration of a monkfish DAS while at sea, any monkfish DAS declared prior to leaving the dock that ended up being unnecessary (i.e. a NE multispecies DAS trip would have been sufficient for the resulting catch portfolio from that trip) could also be a source of inefficiency.

Table 66 and Table 67 show the landings of Category C and D vessels on a monkfish DAS in the SFMA relative to the applicable incidental limits while on a NE multispecies DAS. The vast majority (91.1%) of non-trawl trips exceeded their 50 lbs. t.w. per DAS incidental (NE multispecies DAS) limit, and a smaller majority (65.5%) of trawl trips exceeded their incidental limit of 300 lbs. t.w. per DAS. For those vessel trips that did not exceed their incidental limit while operating under a monkfish DAS, the declaration of a monkfish DAS rather than a NE multispecies DAS could be viewed as an inefficient use or “waste” of a monkfish DAS. However, if the vessel permit holder would not have a reason to use the monkfish DAS later in the season, then there is no opportunity cost to the vessel owner to use the monkfish DAS since they cannot be leased to other vessel owners.

Table 47 in the Biological Impacts section shows that monkfish DAS usage is low compared to allocation, although usage is higher in the SFMA. It is possible that some vessel owners may not be fully aware of how few monkfish DAS they are using and they may end up at sea on an incidental trip that could have been avoided. Option 2 would help prevent this situation from occurring, though the data suggest this is likely not a major issue.

Option 2 is not expected to result in a major shift in effort from the NFMA to the SFMA relative to the status quo, though a definitive statement cannot be made. Table 49 in the Biological Impacts Section shows that during FY2013, although there was no monkfish catch limit in the NFMA under a NE Multispecies DAS from October 28, 2013 to the end of the fishing year, monkfish DAS usage in the SFMA decreased from previous years. While this is a single data point, it suggests that vessels homeported in the north that are actively involved in the groundfish fishery may not wish to steam far south to catch monkfish. Furthermore, the monkfish trip limit (500lbs.) for Category D using trawl or non-trawl gear in the NFMA under a NE multispecies DAS (Table 60) is the same as the limit they would be under fishing in the SFMA under a monkfish DAS (Table 63). Category C vessels have a slightly higher trip limit in the SFMA on a monkfish DAS (610 lbs.) vs. their limit in the NFMA on a NE multispecies DAS (600 lbs.).

Option 2 would have similar neutral impacts compared to Option 1.

Table 66- Trips taken in the SFMA by monkfish permit Category C and D vessels fishing with non-trawl gear while under a monkfish DAS, fishing years 2009-2013.

	FY09	FY10	FY11	FY12	FY13	Total
Number of trips taken by Category C Vessels	583	435	641	466	390	2,515
No. of trips where monkfish landings exceeded incidental limit*	491	370	594	431	368	2,254
No. of trips where monkfish landings did not exceed incidental limit	92	65	47	35	22	261
% Trips by C Vessels w/ excess monkfish landings	84.2%	85.1%	92.7%	92.5%	94.4%	89.6%
Number of trips taken by Category D Vessels	1,301	1,107	1,301	1,115	895	5,719
No. of trips where monkfish landings exceeded incidental limit*	1,147	997	1,214	1,050	840	5,248
No. of trips where monkfish landings did not exceed incidental limit	154	110	87	65	55	471
% Trips by C Vessels w/ excess monkfish landings	88.2%	90.1%	93.3%	94.2%	93.9%	91.7%
Total number of trips taken by C and D Vessels	1,884	1,542	1,942	1,581	1,285	8,234
Number of trips where monkfish landings exceeded incidental limit*	1,638	1,367	1,808	1,481	1,208	7,502
% Total Trips by C and D Vessels w/ excess monkfish landings	86.9%	88.7%	93.1%	93.7%	94.0%	91.1%

* The incidental limit is assumed to be 50 lbs. monkfish tails per DAS.

Table 67- Trips taken in the SFMA by monkfish permit Category C and D vessels fishing with trawl gear while under a monkfish DAS, fishing years 2009-2013.

	FY09	FY10	FY11	FY12	FY13	Total
Number of trips taken by Category C Vessels	92	115	143	89	49	488
No. of trips where monkfish landings exceeded incidental limit*	68	93	118	57	21	357
No. of trips where monkfish landings did not exceed incidental limit	24	22	25	32	28	131
% Trips by C Vessels w/ excess monkfish landings	73.9%	80.9%	82.5%	64.0%	42.9%	73.2%
Number of trips taken by Category D Vessels	71	108	147	74	64	464
No. of trips where monkfish landings exceeded incidental limit*	42	69	74	44	38	267
No. of trips where monkfish landings did not exceed incidental limit	29	39	73	30	27	198
% Trips by C Vessels w/ excess monkfish landings	59.2%	63.9%	50.3%	59.5%	58.4%	57.5%
Total number of trips taken by C and D Vessels	163	223	290	163	113	952
Number of trips where monkfish landings exceeded incidental limit*	110	162	192	101	59	624
% Total Trips by C and D Vessels w/ excess monkfish landings	67.5%	72.6%	66.2%	62.0%	52.2%	65.5%

*The incidental limit while on a NE multispecies DAS only is assumed to be 300 lbs. monkfish tails per DAS.

7.4.1.3 Modify DAS/trip limit allocation for Category F (offshore) vessels –

7.4.1.3.1 Option 1: No Action (*Preferred Alternative*)

The economic impacts of Option 1 would be neutral, assuming other factors external to this action that may influence monkfish landings and revenues remain constant. Category F Vessel operators would continue to have a monkfish trip limit of 1,600 lbs. in tail weight, and their DAS use would continue to be prorated. Option 1 would have less positive impacts compared to Option 2, Sub-Option 1 but more positive impacts compared to Option 2, Sub-Option 2.

7.4.1.3.2 Option 2: Increase the trip limit and adjust monkfish DAS allocations accordingly

The economic impacts of Option 2 would be uncertain relative to No Action, as the DAS calculation chosen will determine the direction and magnitude of impacts. Economic impacts are further discussed under the sub-options below. This analysis combines Options 2 (Section 4.1.3.2) and 3 (Section 4.1.3.3) in order to simplify the analysis.

Sub-Option 1: Existing DAS allocation

The economic impacts of Sub-Option 1 would likely be neutral relative to No Action, but possibly low positive. Increasing the trip limit and adjusting DAS according to the current DAS allocation formula may allow Category F vessels to increase efficiency by allowing monkfish permit Category F vessels to catch slightly higher amounts of monkfish per DAS. Table 2 in Section 4.1.3 shows that the potential maximum landings of monkfish would not be affected by the trip limit in place under the current allocation formula, as the DAS allocation is decreased proportionally to any increase in the trip limit. However, there are two possible benefits to a higher trip limit and increased efficiency. First, by reducing the time that offshore vessels spend at sea, all else held equal, it is expected to reduce the safety risks associated with vessels remaining at sea until sufficient time has elapsed to account for the amount of monkfish landed. Second, the action may increase profitability for these vessels if they are able to reduce their costs associated with remaining at sea.

1800 lbs. tail weight

If the trip limit for Category F vessels is raised to 1,800 pounds, these vessels would be able to land an additional 200 pounds of monkfish tail weight per DAS. Category F vessels that were considered the most likely to be impacted by this higher trip limit were those that had trips approaching the current 1,600 lb. trip limit during FYs 2009-2013. During this time period, there were 3 different vessels with a total of 4 trips landing 1,500-1,600 pounds of monkfish tail weight per DAS. When considering a broader catch range, there were 4 different vessels with a total of 10 trips landing 1,000-1,600 pounds of monkfish tail weight per DAS during FYs 2009-2013.

Given these results, the 1,600 lb. trip limit in place is likely only forcing a small group of vessels to spend additional time at sea so as to remain under the current limit. Additionally, of the 10 trips landing 1,000-1,600 pounds of monkfish t.w. per DAS, 3 of these trips were observed, and there were no regulatory discards of monkfish on any of these trips. All monkfish discards on these trips were identified as below market sized fish in the observer data. There is no means of knowing if regulatory discards occurred on unobserved trips, but the presumption, absent the documentation of an explicit observer effect, is that similar behavior occurred on unobserved trips. Therefore, the expected impacts associated with decreased safety risks and increased profitability are expected to be neutral, but possibly low positive compared to No Action.

2200 lbs. tail weight

If the trip limit for Category F vessels is raised to 2,200 pounds, these vessels would be able to land an additional 600 pounds of monkfish tail weight per DAS compared to the current trip limit. As mentioned above, there have been few trips approaching the current trip limit, so it is likely that time lost at sea is an issue for only a small group of vessels. Again, there might be some low positive impacts to safety and profitability on such trips by raising the trip limit, but overall impacts are more likely neutral.

Regardless of the trip limit specified, Sub-Option 1 would have positive impacts relative to Sub-Option 2. Relative to No Action, Sub-Option 1 would likely have neutral impacts, regardless of the trip limit specified, but low positive impacts are possible.

Sub-Option 2: Revised DAS allocation

The economic impacts of Sub-Option 2 would be low negative to negative compared to Option 1, the No Action Alternative, as the maximum potential landings per vessel would decrease due to a smaller DAS allocation. Table 2 in Section 4.1.3 gives the maximum potential landings for Category A, B, C, and D vessels under the current DAS allocation formula and Table 3 in Section 4.1.3 gives the maximum potential landings for these vessel categories under the revised formula. The largest decrease in maximum

potential landings under a revised formula would be if the current 1,600 lb. daily trip limit was retained. Under this scenario, Category A & C vessels would see a decrease in maximum potential landings from 21,960 lbs. per vessel per fishing year to 4,197 lbs. per vessel per fishing year. At \$2.58 per landed pound (the highest average price observed in recent years from Table 2), the maximum potential reduction in revenue for these vessels from Sub-Option 2 would be \$45,829 (17,763*\$2.58) annually. However, such a large reduction in revenue would be highly unlikely as during FY2013 there were a total of 13 active Category F vessels (Table 57) landing 56,000 pounds of monkfish (Table 58), or just over 4,300 pounds per vessel, which is just above maximum potential landings per vessel per fishing year (4,197 lbs.) if the revised formula were implemented under the current 1,600 lb. daily trip limit.

1600 lbs. in tail weight

Under the current trip limit and Sub-Option 2, Category F vessels could be negatively impacted, given that the maximum potential landings per vessel per fishing year would decrease because of a smaller DAS allocation relative to Sub-Option 1, the existing DAS allocation formula (Table 2 in Section 4.1.3). Under the revised formula, the DAS allocation would be increased proportionally to any increase in the trip limit. However, among the three trip limit alternatives presented, the current DAS allocation formula presents considerably higher potential landings.

Under the revised formula, Category F vessels that intend to make a small number (1-3) of offshore trips would likely not be made worse off, as they would not be constrained by the lower DAS allocation. Those vessels that intend to make a larger number of trips would likely be worse off, as they would not have the necessary DAS to cover these trips.

1800 lbs. in tail weight

If the trip limit for Category F vessels is raised to 1,800 pounds, these vessels would be able to land an additional 200 pounds of monkfish tail weight per DAS. Category F vessels that were considered the most likely to be impacted by this higher trip limit were those that had trips approaching the current 1,600 lb. trip limit during FYs 2009-2013. During this time period, there were 3 different vessels with a total of 4 trips landing 1,500-1,600 pounds of monkfish tail weight per DAS. When considering a broader catch range, there were 4 different vessels with a total of 10 trips landing 1,000-1,600 pounds of monkfish tail weight per DAS during FYs 2009-2013.

Given these results, the 1,600 lb. trip limit in place is likely only forcing a small group of vessels to spend additional time at sea so as to remain under the current limit. Additionally, of the 10 trips landing 1,000-1,600 pounds of monkfish t.w. per DAS, 3 of these trips were observed, and there were no regulatory discards of monkfish on any of these trips. All monkfish discards on these trips were identified as below market sized fish in the observer data. There is no means of knowing if regulatory discards occurred on unobserved trips, but the presumption, absent the documentation of an explicit observer effect, is that similar behavior occurred on unobserved trips. Therefore, the expected impacts associated with decreased safety risks and increased profitability are expected to be neutral, but possibly low positive compared to No Action.

Under a trip limit of 1,800 lbs. of monkfish tails per DAS and the revised DAS allocation formula, the maximum potential landings would still decrease relative to the status quo trip limit of 1,600 lbs. of monkfish tail weight per DAS and the existing DAS allocation formula. The decrease would not be as large as with the 1,600 lbs. trip limit and revised DAS allocation formula. Nevertheless, the potential negative impacts arising from decreased landings likely outweigh the possible benefits of having a small number of trips avoiding extra time at sea. Therefore, the expected impacts associated with decreased

safety risks and increased profitability for an 1,800 lb. trip limit in Sub-Option 2 are expected to be low negative to negative compared to No Action and Sub-Option 1.

2200 lbs. in tail weight

If the trip limit for Category F vessels is raised to 2,200 pounds of monkfish tail weight per DAS, these vessels would be able to land an additional 600 pounds of monkfish tails per DAS. As mentioned, there have been few trips approaching the current trip limit, so it is unlikely that there are a sizable number of trips wasting time at sea.

Under a trip limit of 2,200 lbs. of monkfish tails per DAS and the revised DAS allocation, the maximum potential landings would still decrease relative to the status quo trip limit and the existing DAS allocation formula. The decrease would not be as large as with the 1,600 or 1,800 lbs. per DAS trip limits. Nevertheless, the potential negative impacts arising from decreased landings remain likely to outweigh the possible benefits of having a few trips avoiding extra time at sea. Therefore, the expected impacts associated with decreased safety risks and increased profitability for an 2,200 lb. trip limit in Sub-Option 2 are expected to be low negative to negative compared to No Action and Sub-Option 1.

7.4.1.4 DAS requirements for RSA vessels when on a monkfish DAS

7.4.1.4.1 Option 1: No Action (*Preferred Alternative*)

The economic impacts of Option 1 would be neutral, assuming other factors external to this action that may influence monkfish landings and revenues remain constant. Vessels participating in the RSA program would continue to be required to declare their intent to use a monkfish RSA DAS prior to leaving the dock. The relative net economic impacts of Option 1 and Option 2 are uncertain.

7.4.1.4.2 Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea

The net economic impacts of Option 2 relative to Option 1, the No Action Alternative, are uncertain. For vessels enrolled in the RSA program, the economic impacts of Option 2 would likely be positive, however, these economic benefits must be weighed against the possible negative impacts of decreased participation in the RSA monkfish program. The benefits of the RSA program to the monkfish fishery cannot be quantified. The impacts of Option 2 were analyzed in two ways:

- 1) Identification of trips taken under a monkfish DAS declaration by vessels that participate in the RSA program and may have benefitted from the flexibility to declare a monkfish RSA DAS while at sea, thereby allowing the vessel to land additional monkfish (Table 68)

and by

- 2) Identification of monkfish RSA days that were “unnecessarily” declared in terms of the volume of monkfish landed by determining how many vessels in the RSA program used monkfish RSA DAS on trips where their monkfish landings were within the allowed trip limit for trips on a monkfish DAS (Table 69).

Table 68 shows that there were nearly 4,000 monkfish non-RSA trips made by vessels enrolled in the RSA program during FYs 2009-2013. Of these trips, over half (54.0%) caught at least 90% of the monkfish trip limit associated with their fishing year/permit/monkfish management area. This suggests that these trips could have potentially benefitted from the ability to switch to a monkfish RSA DAS while

at sea to increase monkfish landings. Option 2 could reduce discarding behavior, as vessel owners would have the flexibility to land monkfish in excess of the directed trip limit by converting to a monkfish RSA DAS while at sea. However, there is extremely limited evidence of regulatory discarding of monkfish occurring on directed monkfish trips. Of the 2,144 trips that bumped up against the trip limit during FYs 2009-2013, 184 of these trips were observed and only one observed trip had regulatory discards of monkfish. It should be noted that the landing limits in FY2013 for this analysis are from the original specifications for that fishing year. The limits do not take into account the emergency action that eliminated the NFMA trip limit for Category C and D vessels on a combined monkfish/NE Multispecies DAS from the start of FY2013. Monkfish RSA trips in the NFMA are rare, with only 8 occurring during FYs 2009-2013 vs. 1,402 in the SFMA.

The positive impacts of Option 2 from increased profitability would depend on whether the revenue earned by additional monkfish landings would offset the cost of a monkfish RSA DAS and any other costs (fuel, ice, etc.) associated with the increase in monkfish landings. The estimated cost associated with leasing a RSA day is \$600/day. The amount of additional revenue earned by increased landings of monkfish would depend on the vessel's ability to catch and sell the additional monkfish, as well as any changes in the market price of monkfish that may occur due to changes in supply or demand.

Table 68- Number of non-RSA trips using monkfish DAS by vessels enrolled in the RSA program, fishing years 2009-2013.

	FY09	FY10	FY11	FY12	FY13	Total
Number of non-RSA trips by A & C vessels in the Monkfish RSA program while on a monkfish DAS	307	299	473	377	345	1,801
No. of trips that bumped up against existing trip limit*	160	149	212	167	155	843
No. of trips that did not bump up against existing trip limit	147	150	261	210	190	958
Number of non-RSA trips by B & D vessels in the Monkfish RSA program while on a monkfish DAS	140	205	701	630	496	2,172
No. of trips that bumped up against existing trip limit*	111	134	343	406	307	1,301
No. of trips that did not bump up against existing trip limit	29	71	358	224	189	871
Total number of non-RSA trips by A, B, C & D vessels in the Monkfish RSA program while on a monkfish DAS	447	504	1,174	1,007	841	3,973
No. of trips that bumped up against existing trip limit*	271	283	555	573	462	2,144
Percentage of trips by vessels in the RSA program while on a monkfish DAS that bumped up against the existing trip limit	60.6%	56.2%	47.3%	56.9%	54.9%	54.0%

*The bump up amount is equal to 90% of the applicable trip limit based on the fishing year, permit, and management area.

For the second component of Option 2, all RSA trips during FYs 2009-2013 were retrieved so as to identify those that that did not exceed the directed monkfish trip limit. Table 69 shows that over half (51.4%) of these RSA trips did not exceed the monkfish trip limit associated with the fishing year/permit/monkfish management area. In essence, these RSA trips were unnecessary in terms of monkfish landings, as a monkfish DAS would have allowed for a high enough daily catch limit for that trip. It should be noted that the landing limits in FY2013 for this analysis are from the original specifications for that fishing year, and do not take into account the emergency action that eliminated the NFMA trip limit for Category C and D vessels. However, as previously mentioned, monkfish RSA trips in the NFMA are rare; the analysis provided for Option 2 is minimally impacted by not accounting for the emergency action.

Table 69- Number of RSA trips by monkfish permit Category A, B, C, and D vessels, fishing years 2009-2013.

	FY09	FY10	FY11	FY12	FY13	Total
Number of Monkfish RSA trips by A & C vessels	176	121	175	159	168	799
No. of trips that exceeded directed monkfish trip limit	77	64	64	42	70	317
No. of trips that did not exceed directed monkfish trip limit	99	57	111	117	98	482
Number of Monkfish RSA trips by B & D vessels	190	55	276	143	136	800
No. of trips that exceeded directed monkfish trip limit	122	38	194	59	92	505
No. of trips that did not exceed directed monkfish trip limit	68	17	82	84	44	295
Total number of Monkfish RSA trips by A, B, C & D vessels	366	176	451	302	304	1599
No. of trips that exceeded directed monkfish trip limit	199	102	258	101	162	822
% of Monkfish RSA trips by A, B, C, and D vessels that exceeded directed monkfish trip limit	54.4%	58.0%	57.2%	33.4%	53.3%	51.4%

Option 2 could potentially decrease participation in the RSA program, as vessels would be able to use their RSA days more strategically given the flexibility to declare an RSA day while at sea. Vessel owners may opt to purchase fewer RSA days upfront if they have the option to fish under a monkfish DAS, evaluate conditions while at sea, and opt to convert to a monkfish RSA DAS while at sea if conditions present an opportunity to profitably land a higher volume of monkfish. Again, the estimated cost associated with leasing an RSA day is \$600/day.

A vessel's participation in the monkfish RSA program does result in benefits beyond the direct benefit to the participating vessel owner to land monkfish in excess of the directed trip limit. Vessel participation in the monkfish RSA program is essential to enhancing the state of knowledge for the monkfish fishery resource and contributes to the body of information used to inform management decisions. The needs and priorities for the 2014 Monkfish RSA Program include research on monkfish life history, migration patterns, trophic interactions of monkfish with other species and monkfish cannibalism, and bycatch and discard mortality¹².

Some industry members expressed concern about the mechanism by which a vessel owner would convert from a monkfish DAS to a monkfish RSA DAS while at sea. This would likely require an action by the vessel owner via the vessel's VMS system or by IVR (Interactive Voice Response). While many of the vessels participating in the RSA program are likely to already have a VMS in place due to the requirements of other fisheries, the costs associated with the initial purchase of a VMS and the associated service plan are not negligible. Estimates for the purchase of a VMS range from \$1,600-\$3,000, with monthly service plan costs ranging from \$22-\$74 per month. If it were permissible for vessels to convert

¹² <http://www.federalgrants.com/Fiscal-Year-2014-Monkfish-Research-Set-Aside-43900.html>

from a monkfish DAS to a monkfish RSA DAS while at sea via the IVR system, the vessel owner would have to be in the range of their cellular phone or Internet service, or possess a satellite phone. Nevertheless, if the ability to declare a monkfish RSA DAS results in increases in revenues in excess of the onboard technology purchases made and the cost of leasing an RSA DAS, the individual vessel owner would benefit from an increase in profits, assuming other costs and the ex-vessel price of monkfish remained constant.

Overall, the net impact of Option 2 to the monkfish fishery involves weighing the benefits that may accrue to vessels in the RSA program from using their monkfish RSA days more effectively and the impacts of possible decreased participation in the program. Table 70 shows that in recent fishing years, monkfish catch rates have typically been higher for vessels on an RSA DAS than for vessels on a monkfish DAS. This has not always been the case however. For example, vessels fishing in the SFMA in FY2010 as a whole had higher catch rates on a monkfish DAS. This highlights that, regardless of the trip limit that vessels are operating under, the ability to target monkfish is subject to variability. Option 2 would help to counter this variability by allowing the vessel operator to hold off on declaring a monkfish RSA DAS until it is apparent that the trip would be landing a large volume of monkfish. Furthermore, a slim majority (51.6%) of RSA trips landed monkfish in excess of existing limits during FYs 2009-2013 (Table 69), meaning nearly half of monkfish RSA DAS have been unnecessarily declared. However, such a decrease in RSA days used would come at a cost of possibly reducing funding available to support research that could increase available information to improve stock assessments, reduce biological uncertainty, and, in turn, potentially increase total allowable landings for the fishery. These benefits cannot be quantified at this time, and in turn, the net impacts of Option 2 to the monkfish fishery as a whole cannot be quantified. Given the caveats outlined above, the net economic impacts of Option 2 would be uncertain relative to those of Option 1.

Table 70- Monkfish catch rates for Category A, B, C, & D vessels on a monkfish DAS and a monkfish-RSA DAS for the Northern Fishery Management Area and Southern Fishery Management Area, fishing years 2009-2013.

Fishing Year	Monkfish catch rates per day (total tail weight landed/total trip duration* for all Category A, B, C, & D vessels)			
	Northern Fishery Management Area		Southern Fishery Management Area	
	Monkfish DAS	Monk-RSA DAS**	Monkfish DAS	Monk-RSA DAS
2009	509	1,137	678	966
2010	512	N/A	645	608
2011	571	1,064	676	1,028
2012	515	905	747	775
2013	658	N/A	796	974

*Includes all time at sea. Monkfish DAS charges are made only during time actively fishing.

**There were a total of 8 monkfish-RSA trips made in the NFMA during FYs 2009-2013, FY09:1 trip, FY11: 5 trips, & FY12: 2 trips

7.4.2 Modifications to Monkfish Possession Limits

7.4.2.1 Northern Area Monkfish Trip Limit on a NE multispecies DAS

7.4.2.1.1 Option 1: No Action

The economic impacts of Option 1 would be neutral, assuming other factors external to this action that may influence monkfish landings and revenues remain constant. Vessels fishing in the NFMA on NE

multispecies DAS would continue to be subjected to the existing incidental catch limits for monkfish. Option 2 would have more positive impacts than Option 1, the No-Action Alternative.

7.4.2.1.2 Option 2: Eliminate the trip limit on a NE multispecies DAS and monkfish DAS (Preferred Alternative)

The economic impacts of Option 2 relative to Option 1, the No Action Alternative, would be low positive to positive. The elimination of the monkfish trip limit for vessels on a combined monkfish/NE Multispecies DAS in the NFMA would revert back to the regulatory environment of the emergency action for the monkfish FMP during FY2013.

Using FY2013 as a reference point, there was no monkfish trip limit for Category C and D monkfish permit holders fishing on a combined monkfish/NE Multispecies from May 1, 2013 through October 27, 2013. Table 71 shows the breakdown of landings by such trips during this time period, with roughly 90% of trips by C and D vessels resulting in monkfish landings of less than 90% of the FY2015 trip limit. From October 28, 2013 through April 30, 2014, Category C and D vessels operating under a groundfish-only DAS were not subject to a monkfish trip limit. Table 72 shows the breakdown of landings by such trips during this time period, with roughly 98% of trips by C and D vessels resulting in monkfish landings of less than 90% of the FY2015 trip limit. Notice that the percentage of trips not “bumping-up” against the trip limit in Table 71 is lower than the percentage in Table 72 . This is a function of, at least to a certain extent, vessels operating under a combined monkfish/NE Multispecies DAS only when they intend to land some monkfish. Vessels operating under a NE Multispecies-only DAS may have little to no intention of landing monkfish and may be targeting groundfish only or skates or dogfish. The number of NE Multispecies-only DAS trips captured in Table 72 is also much greater than the number of combined monkfish/NE Multispecies DAS trips in Table 71.

Table 71- Breakdown of monkfish landings on trips taken under a combined monkfish/NE Multispecies DAS in the NFMA when there was no monkfish trip limit on such trips (May 1, 2013 through October 27, 2013)

C Vessels	Trips
Daily monkfish landings >100% of FY15 limit (1,250 lbs. tail weight per DAS)	0
Daily monkfish landings 90-100% of FY15 limit	0
Daily monkfish landings <90% of FY15 limit	71
D Vessels	
Daily monkfish landings >100% of FY15 limit (600 lbs. tail weight per DAS)	17
Daily monkfish landings 90-100% of FY15 limit	7
Daily monkfish landings <90% of FY15 limit	151
C and D Vessels	
Total Trips	246
Daily monkfish landings <90% of FY15 limit for respective permit category	222
% of trips with daily monkfish landings <90% of FY15 limit for respective permit category	90.24%

Table 72- Breakdown of monkfish landings on trips taken under a NE multispecies DAS in the NFMA when there was no monkfish trip limit on such trips (October 28, 2013 through April 30, 2014)

C Vessels	Trips
>100% of 2015 limit	0
90-100% of 2015 limit	0
<90% of 2015 limit	536
D Vessels	
>100% of 2015 limit	18
90-100% of 2015 limit	8
<90% of 2015 limit	664
C and D Vessels	
Total Trips	1,226
<90% of 2015 limit	1,200
% <90% of 2015 limit	97.88%

While it is beneficial to analyze FY2013, given the removal of monkfish trip limits during that fishing year, a larger time series gives a better picture of the distribution of landings on combined monkfish/NE Multispecies DAS trips. Figure 40 illustrates this distribution for Category C vessels in the NFMA on such trips during FYs 2009-2013. Figure 41 shows the distribution for Category D vessels on such trips in the NFMA during FYs 2009-2013.

A small portion of the distribution for both permit categories approached the existing trip limit, with 1.3% (10/760) of trips made by Category C vessels and 3.0% (33/1,110) of trips made by Category D vessels during FYs 2009-2013 having monkfish landings of 90-100% of the FY2015 trip limits. Between the two categories there were 43 “bump-up” trips for the five year period, with 13 of these trips observed and no regulatory discards of monkfish occurring on any of these observed trips. In terms of trips exceeding the FY2015 trip limits, 0.5% (4/760) of Category C vessel trips and 4.1% (46/1,110) of Category D vessel trips during FYs 2009-2013 had monkfish landings at such a level. These results suggest that the elimination of the trip limit for vessels on a combined monkfish/NE Multispecies DAS in the NFMA would likely have minimal positive impacts for Category C vessel owners, but potentially larger positive impacts for Category D vessel owners. Option 2 would have slightly positive impacts compared to No Action.

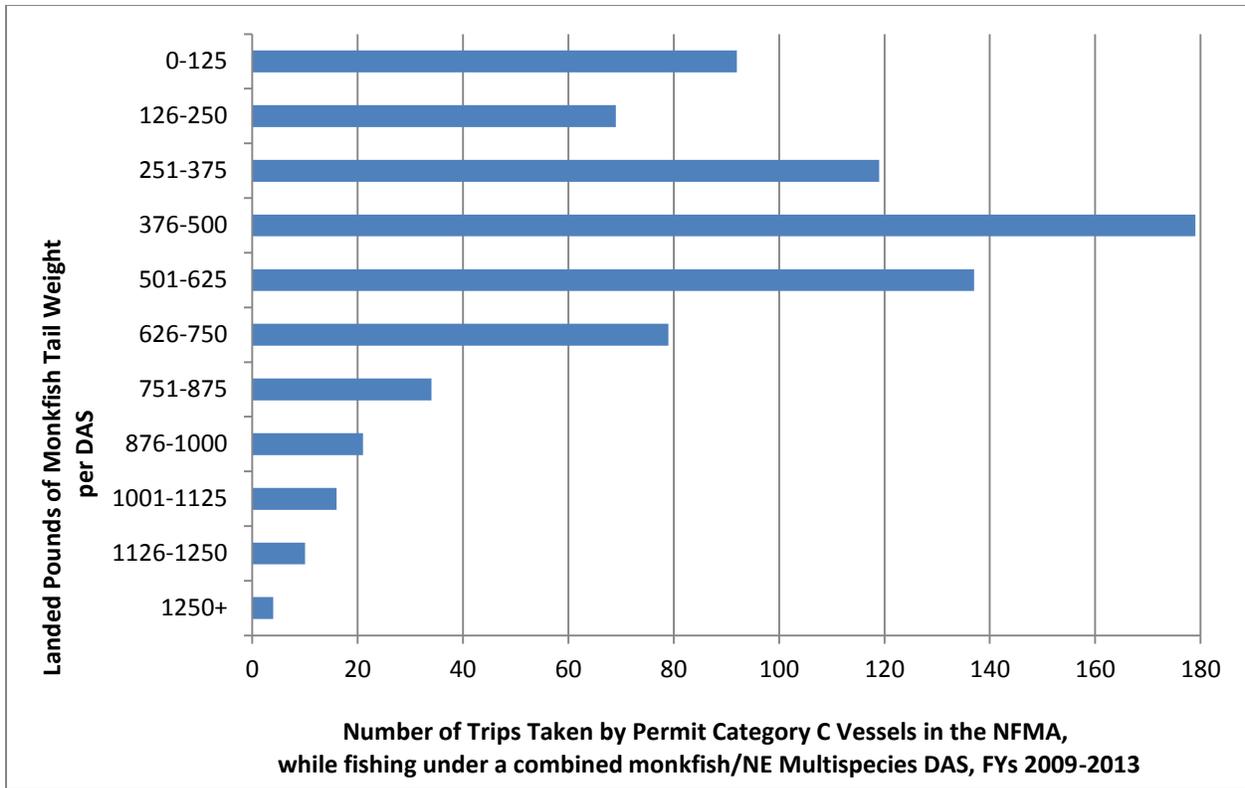


Figure 40- Number of trips, by monkfish tail weight per DAS, for Category C vessel trips taken in the NFMA while fishing under a combined monkfish/NE Multispecies DAS, fishing years 2009-2013.

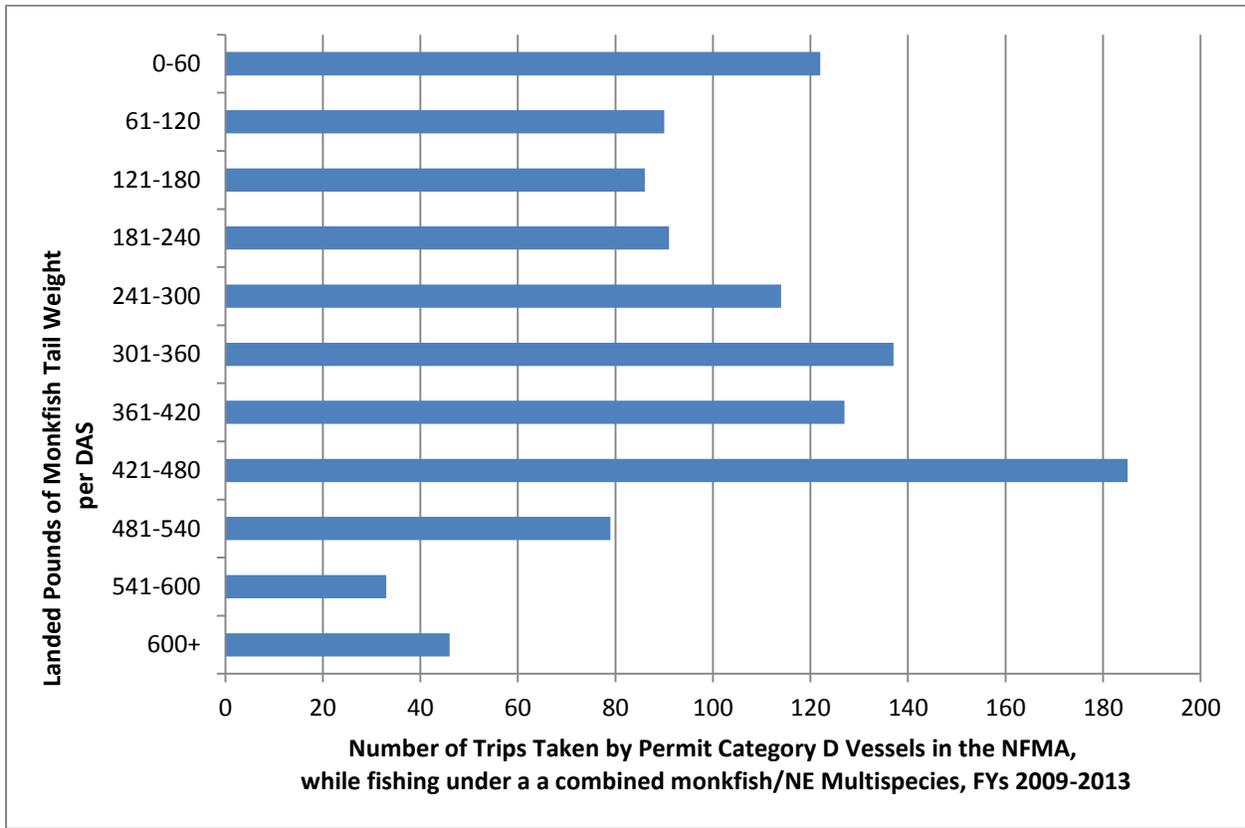


Figure 41- Number of trips, by monkfish tail weight per DAS, for Category D vessel trips taken in the NFMA while fishing under a combined monkfish/NE Multispecies DAS, fishing years 2009-2013.

7.4.3 Modifications to gear requirements while on a Monkfish DAS

7.4.3.1 Modification to mesh size requirements on monkfish only DAS

Vessels fishing with trawls under a monkfish-only DAS must fish with mesh no smaller than 10-inches square or 12-inches diamond in the codend, unless the vessel has a Category C or D permit and is also fishing under a NE Multispecies DAS. If a vessel is fishing under both a monkfish and NE Multispecies DAS, a trawl must use a mesh size that conforms to the regulations for the NE Multispecies FMP.

Vessels fishing with gillnets while on a monkfish DAS must use gillnets with mesh no smaller than 10 inches diamond. Vessels may have smaller mesh on board if it is stowed so that it is not available for immediate use. Gillnet vessels with monkfish permits in Categories A and B may not fish with, haul, possess, or set more than 160 gillnets at one time. Gillnet vessels with monkfish permits in Categories C, D and H may not fish with, haul, possess, or set more than 150 gillnets at one time. However, vessels with C and D monkfish permits also have limited access NE Multispecies permits. When these vessels are fishing on a combined monkfish/NE Multispecies DAS, they must adhere to the more restrictive net limits of the NE Multispecies Regulated Mesh Areas.

7.4.3.1.1 Option 1: No Action

The economic impacts of Option 1 would be neutral. Mesh size requirements on a monkfish-only DAS would not be modified. In addition, there would be no changes to the number of gillnets that can be fished at one time. As noted in the biological impacts section, Option 1 is expected to have negligible impacts on the status of monkfish because current regulations would be maintained, resulting in no expected change in fishing patterns. Assuming demand for monkfish and monkfish ex-vessel price remain constant, Option 1 would have negligible impact on monkfish landings and revenues. While future conditions in the domestic and world markets for monkfish and in the markets for other fish, particularly groundfish, may result in changes to monkfish landings and revenues in future fishing years, these changes would not be a direct result of Option 1.

Baseline Conditions for the FY2010-FY2013 period

To analyze the potential economic impacts of each of the three action alternatives (Options 2, 3, 4) relative to the No-action Alternative (Option 1) for this measure, data are presented on trends for FYs 2009-2013 in the portion of the monkfish fishery that uses sink gillnets, the gear type to which the proposed modifications apply.

The numbers of permits that took at least one trip on a monkfish-only DAS or on a combined monkfish/NE Multispecies DAS that used sink gillnets (gear code GNS) in either the NFMA or SFMA during each of FYs 2009-2013 were identified (Figure 42). The number of monkfish permits taking at least one of these trips peaked at 154 permits in FY2009 and was at its lowest point in FY2013, 126 permits. In FY2013, Category D permits accounted for 40.5% (51 permits) of the total monkfish permits taking such trips, followed by Category B permits at 24.6% (31 permits), Category C permits at 15.1% (19 permits), and Category A permits at 14.3% (18 permits). Category H permits accounted for 5.6% (7 permits) of all monkfish permits taking such trips.

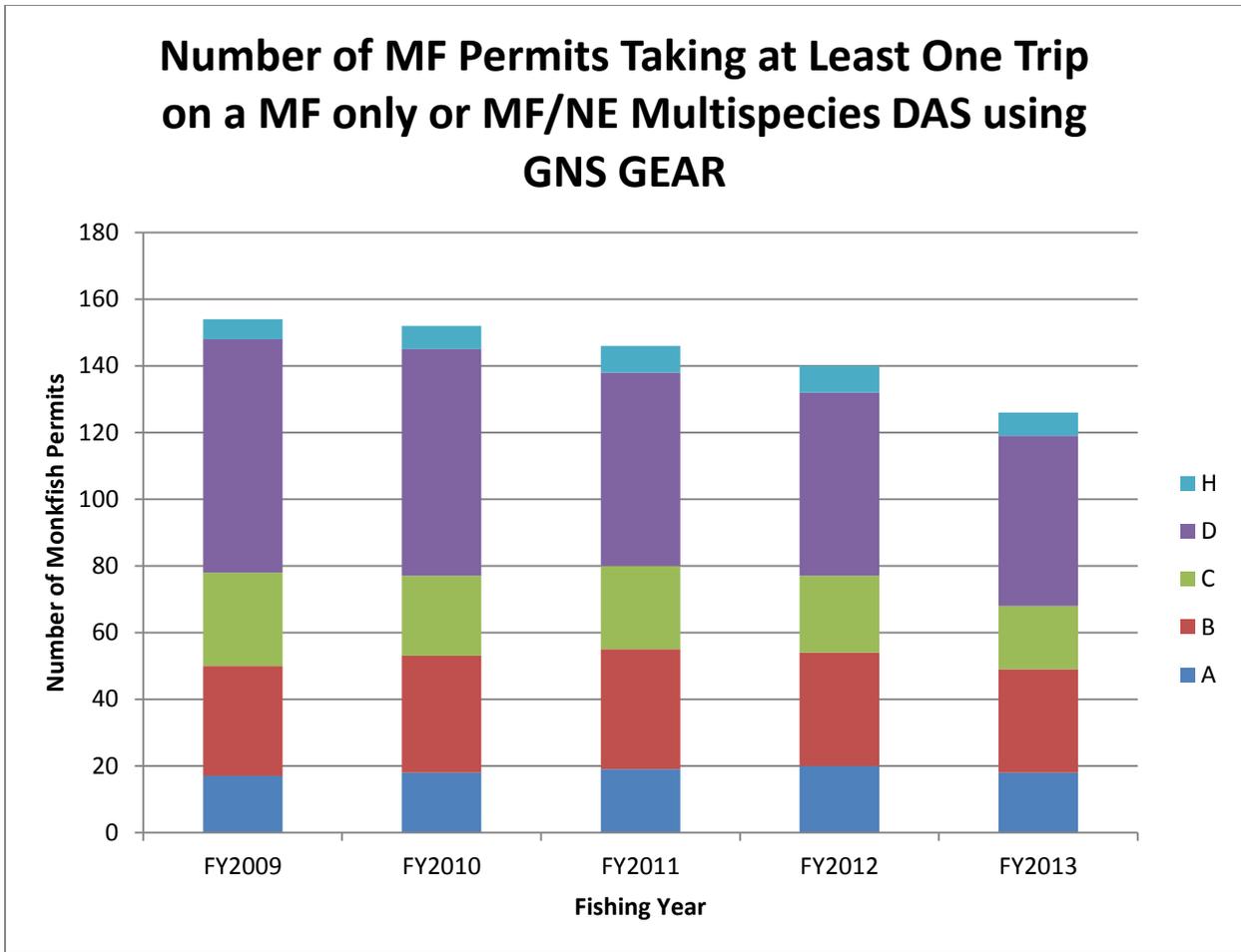


Figure 42 – Number of monkfish permits that took at least one trip on a monkfish-only or monkfish/NE multispecies DAS using sink gillnet gear (in either fishery management area), FY2009-FY2013.

Monkfish permits in Categories A and B do not have limited access NE Multispecies permits, and therefore target monkfish under a monkfish- only DAS. Vessels with monkfish permits in Category H are restricted to fishing under a monkfish-only DAS in the SFMA. Vessels with monkfish permits in Categories C and D have both limited access monkfish and limited access NE Multispecies permits, and must use a NE Multispecies DAS whenever they use a monkfish DAS. However, if the permit’s initial allocation of NE Multispecies DAS is less than its monkfish DAS allocation, the permit receives an allocation of monkfish-only DAS equal to the difference. These monkfish-only DAS may only be fished in an exempted area.

Table 73 contains the numbers of trips on either a monkfish-only or a combined monkfish/NE Multispecies DAS that used sink gillnets for each fishing year, by fishery management area and by monkfish permit category. As previous analysis has indicated, trips fishing under a monkfish- only or monkfish/NE Multispecies DAS using sink gillnets are more common in the SFMA, with trips taken in the SFMA area accounting for 91.9% of all such trips. In FY2013, the total number of trips taken in the NFMA increased relative to FY2012, but trips taken in the SFMA decreased relative to FY2012.

Table 73 – Number of trips taken under a monkfish-only or a combined monkfish/NE Multispecies DAS using sink gillnets in each fishing year 2009-2013, by monkfish permit category and fishery management area.

MF Permit Category	2009	2010	2011	2012	2013	TOTAL
NFMA						
A	36	43	2	4	1	86
B	39	65	11	30	2	147
C	98	53	59	53	62	325
D	152	260	143	60	173	788
Sub-Total for NFMA	325	421	215	147	238	1,346
SFMA						
A	368	351	526	521	507	2,273
B	726	741	1,063	899	809	4,238
C	582	433	640	465	390	2,520
D	1,300	1,106	1,301	1,114	887	5,706
H	96	90	175	117	100	578
Sub-Total for SFMA	3,072	2,721	3,705	3,116	2,693	15,315
Grand Total	3,397	3,142	3,920	3,263	2,931	16,661

Table 74 contains the average total nominal revenues earned per trip taken by monkfish permit category and fishery management area for permits in Categories A, B and H. Average total nominal revenues are presented for FY2013, as well as averaged over the period from FY2009 to FY2013. Average total revenues are broken down into average revenues earned from monkfish and from species other than monkfish. Vessels with monkfish permits in categories A, B or H cannot land groundfish on a monkfish only DAS. Data from FY2013 suggest that revenues earned from species other than monkfish may be becoming relatively more important over time for gillnetters. With the exception of Category B vessels

taking gillnet trips in the NFMA, the percentage of average total nominal per trip derived from species other than monkfish was higher in FY2013 than on average for the FY2009-FY2013 period. This is especially notable for vessels in permit categories A, B and H taking gillnet trips in the SFMA.

Table 75 presents the average total nominal revenues earned per trip taken under a monkfish-only or combined monkfish/NE Multispecies DAS by fishery management area for vessels in monkfish permit categories C and D. Average total nominal revenues are presented for FY2013, as well as averaged over the period from FY2009 to FY2013. Average total revenues are broken down into average revenues earned from monkfish, from groundfish and from other species other than monkfish and groundfish. In the NFMA, on average from FY2009 to FY2013, vessels with Category C and D permits taking gillnet trips did not derive much of their total nominal revenue from species other than monkfish and groundfish. Vessels with C and D permits fishing in the SFMA using sink gillnets derive a larger percentage of their total nominal revenue per trip from species other than monkfish or groundfish. These vessels are also less dependent on revenue from groundfish than those gillnet vessels fishing in the NFMA.

Table 74 – Average nominal revenues per trip earned by monkfish permits in Categories A, B, and H under a monkfish-only DAS using sink gillnets, for FY2013 and averaged over FYs 2009-2013, by monkfish permit category and fishery management area.

MF Permit Category	Average Value for FY2013			Average Value over FY2009-FY2013		
	Average MF Revenue (per trip)	Average Other Species Revenue (per trip)	Average Total All Species Revenue (per trip)	Average MF Revenue (per trip)	Average Other Species Revenue (per trip)	Average Total All Species Revenue (per trip)
NFMA						
A	\$1,656	\$673	\$2,329	\$2,850	\$560	\$3,431
B	\$2,666	\$636	\$3,311	\$1,874	\$628	\$ 2,481
SFMA						
A	\$2,303	\$917	\$3,239	\$2,829	\$652	\$3,489
B	\$2,055	\$676	\$2,734	\$2,496	\$551	\$3,030
H	\$2,777	\$298	\$3,087	\$2,817	\$225	\$3,038

Table 75 – Average nominal revenue per trip earned by monkfish permits in Categories C and D under a monkfish-only or combined monkfish/NE Multispecies DAS using sink gillnets, for FY2013 and averaged over FYs 2009-2013, by monkfish permit category and fishery management area.

MF Permit Category	Average Value for FY2013				Average Value over FY2009-F2013			
	Average MF Revenue (per trip)	Average GF Revenue (per trip)	Average Other Species Revenue (per trip)	Average Total All Species Revenue (per trip)	Average MF Revenue (per trip)	Average GF Revenue (per trip)	Average Other Species Revenue (per trip)	Average Total All Species Revenue (per trip)
NFMA								
C	\$3,303	\$2,196	\$290	\$5,718	\$3,139	\$1,247	\$273	\$4,496
D	\$1,433	\$1,024	\$163	\$2,524	\$1,751	\$1,045	\$369	\$3,007
SFMA								
C	\$2,492	\$542	\$749	\$3,279	\$2,849	\$119	\$710	\$3,570
D	\$2,446	\$66	\$1,059	\$3,536	\$2,788	\$109	\$786	\$3,581

Over the FY2009-FY2013 time period, the majority of sink gillnet trips taken on a monkfish-only or combined monkfish/NE Multispecies DAS used one mesh size for the trip's duration. Currently, the Monkfish FMP requires gillnetters to use a minimum 10" diamond mesh. Gillnet vessels are permitted to use multiple mesh sizes on the same trips if all mesh sizes used are a minimum of 10". In addition, gillnet vessels with either a Category C, D, or H permit and a NE Multispecies permit can begin a trip on a NE Multispecies DAS with the option to later declare a monkfish DAS and then opt to switch at sea to also use a monkfish DAS, and continue to use gillnet gear with less than 10" diamond mesh as long as the vessel adheres to the more restrictive mesh sizes in the NE Multispecies FMP.

The purpose of the proposed gear modifications is to allow gillnetters to use mesh less than 10" minimum while fishing under a monkfish-only or combined monkfish/NE Multispecies DAS when targeting other species using stand-up gillnet gear. Gillnet vessels fishing in the SFMA currently do not have an option to fish one mesh at least 10" and a second mesh less than 10" on the same trip.

The gear mesh modification options are designed to increase operational flexibility for gillnetters, allowing them to target monkfish in 10" minimum mesh and other species such as dogfish and skates in less than 10" mesh on the same trip. Industry advisors have suggested that some gillnetters fishing in the SFMA have already been using multiple mesh sizes (minimum 10" and less than 10" mesh) to target both monkfish and dogfish on the same trip.

Table 76 identifies the number of trips that used at least one additional mesh size less than 10". In the NFMA, nearly 12% of all monkfish trips used two mesh sizes during a trip and there were no trips using more than two mesh sizes. In the SFMA, only just over 1% of all trips used multiple mesh sizes during the trip and only one trip, taken in FY2010, used three distinct mesh sizes on the same trip. Over the entire FY2009-FY2013 period, there were 148 trips taken in the NFMA using one mesh at least 10" and a second mesh less than 10". Some of these trips occurred because the vessel's VMS declaration was changed from a NE Multispecies to a NE Multispecies and monkfish declaration while at sea, in which case the use of less than 10" mesh is permitted. When more than one mesh size was used on a single trip in the NFMA, the three most frequently used combinations were 12" & 6.5" mesh, 12" & 7" mesh, and 10" & 7" inch mesh – combinations currently allowed under existing regulations. There were 108 trips taken in the SFMA over FYs 2009-2013 that used both mesh at least 10" mesh and mesh less than 10" on the same trip, with 40 of these trips occurring in FY2013. When more than one mesh size was used on a single trip in the SFMA, the three most frequently used combinations were 12" & 10" mesh (currently permitted), 12" & 7" mesh, and 12" & 8.5" mesh.

Table 76 – Number of trips using combinations of mesh sizes for trips fishing with sink gillnet gear with at least two distinct mesh sizes under a monkfish-only or combined monkfish/NE Multispecies DAS, by fishing year and fishery management area.

Combination of mesh sizes used in gillnets during the same trip	Number of trips per fishing year					Grand Total Number of Trips for all FYs 2009-2013
	FY2009	FY2010	FY2011	FY2012	FY2013	
NFMA						
All mesh used ≥ 10"	0	3	3	0	0	6
Mesh ≥10" and Mesh < 10"	26	19	28	18	57	148
Sub-total for NFMA	26	22	31	18	57	154
SFMA						
All mesh used ≥ 10"	14	1	15	6	8	44
Mesh ≥10" and Mesh < 10"	7	10	31	20	40	108
Sub-total for SFMA	21	11	46	26	48	152
Grand Total for the NFMA and SFMA	47	33	77	44	105	306

Information collected from VTR and dealer data do not allow for the determination of how many of the total number of sink gillnet trips taken on a monkfish-only or combined monkfish/NE Multispecies DAS used stand-up gillnets (i.e. sink gillnets without tie-downs). However, data collected by both NEFOP and ASM observers on observed trips of this type provide some information about the use of tie-downs in sink gillnets. Over the FY2009-FY2013 period, a total of 16,661 trips were taken in the NFMA and SFMA that used sink gillnet gear and were fishing under a monkfish-only or combined monkfish/NE Multispecies DAS, with 1,346 trips taken in the NFMA and 15,315 trips taken in the SFMA (Table 73). Of these trips, a total of 981 trips (nearly 6.0% of all such trips) were observed. Observer trip coverage over FYs 2009-2013 was 13.6% for trips in the NFMA and 6.4% for trips in the SFMA; trips in the NFMA have greater coverage rates due to the monkfish fishery's overlap with the NE Multispecies Fishery. Of the observed trips, 19% (183 observed trips) were taken in the NFMA and 81% (798 observed trips) were taken in the SFMA.

Table 77 further summarizes information about the number of observed trips taken under a monkfish-only or a combined monkfish/NE Multispecies DAS using sink gillnets in each fishing year 2009-2013, by monkfish permit category and fishery management area. Note that the main numbers for each cell in this table represent the total numbers of observed sink gillnet trips fishing on a monkfish-only or a combined monkfish/NE Multispecies DAS for a particular cell, whereas the numbers in parentheses beneath represent the number of these trips where observer data indicated that no tie-downs were used for any portion of the trip; these numbers reflect the numbers of trips that used stand-up gillnets only. For both fishery management areas, most of the observed sink gillnet trips used tie-downs for at least some portion of the trip; only 10% of observed trips taken in the NFMA and 1.5% of the observed trips taken in the SFMA used exclusively stand-up gillnets (sink gillnets with no tie-downs) throughout the entire trip.

Compared to Option 1, the No Action Alternative, Options 2, 3 and 4 would all have neutral to positive net economic impacts. Option 4 likely would have greater positive net impacts than Options 2 and 3.

Table 77 – Number of observed trips taken fishing with sink gillnet gear under a monkfish-only or a combined monkfish/NE Multispecies DAS in each fishing year 2009-2013, by monkfish permit category and fishery management area.

MF Permit Category	FY2009	FY2010	FY2011	FY2012	FY2013	TOTAL
NFMA						
A	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
B	3 (1)	2 (0)	0 (0)	0 (0)	0 (0)	5 (1)
C	2 (0)	9 (2)	15 (1)	10 (0)	6 (0)	41 (2)
D	8 (3)	67 (9)	27 (1)	10 (0)	25 (2)	137 (15)
Sub-total for NFMA	14 (4)	78 (11)	42 (2)	20 (0)	31 (2)	183 (18)
SFMA						
A	12 (0)	12 (0)	13 (1)	10 (0)	11 (0)	58 (1)
B	31 (0)	30 (0)	13 (1)	5 (2)	16 (1)	95 (4)
C	10 (0)	38 (0)	64 (1)	47 (0)	21 (0)	180 (1)
D	39 (0)	111 (3)	139 (1)	116 (1)	43 (1)	448 (6)
H	5 (0)	6 (0)	5 (0)	0 (0)	1 (0)	17 (0)
Sub-total for SFMA	97 (0)	197 (3)	234 (4)	178 (3)	92 (2)	798 (12)
Grand Total	110 (4)	275 (14)	276 (6)	198 (3)	123 (4)	981 (30)

Note: The numbers in parentheses reflect the number of observed trips from above where no tie-downs were used for any part of the trip – i.e. the trip used stand-up gillnets exclusively.

7.4.3.1.2 Option 2: Allow the use of 5"-7" mesh in standup gillnet on a monkfish DAS

Option 2 would allow all limited access Category C and D monkfish vessels (sector and common pool vessels) to target other species using mesh size between 5" and 7", inclusive, in stand-up gillnets (i.e., sink gillnets with no tie-downs), while also retaining legal size monkfish on the same trip when fishing under a monkfish-only or a combined monkfish/NE Multispecies DAS. This would be permitted while fishing in both the NFMA and the SFMA.

The net economic impacts of Option 2 are expected to be neutral to low positive, compared to Option 1, the No Action Alternative. Possible economic gains from increased profits to gillnet vessel, owners and crew, must be weighed against possible impacts from increased catch in the groundfish and dogfish fisheries. However, the expected positive economic impacts of increased profits to gillnet vessels, owner and crew, are expected to offset or slightly exceed any possible negative impacts, therefore leading to net economic impacts that are neutral or low positive compared to those of Option 1. Option 2 would likely have greater positive net economic impacts than Option 3, but less positive net economic impacts than Option 4.

Impacts to Gillnet Vessels

By increasing operational flexibility, the action may increase the expected short run profits of gillnet fishermen by allowing them to target species other than monkfish, particularly dogfish, while on the same trip. The primary economic benefit expected is decreased operating or trip costs (e.g. labor, fuel, etc.) since the vessel would no longer be required to make separate trips to target monkfish in 10" minimum mesh and other species in less than 10" minimum mesh. In addition, total landings of monkfish and species targeted in less than 10" mesh may increase slightly, although large increases in landings are not expected.

The ultimate net impact on profits from Option 2 would depend on market conditions in the monkfish and related fisheries, including demand for monkfish, dogfish and skates, as well as cost savings from no longer needing separate trips to target monkfish and species that are caught in less than 10" minimum mesh. If landings of monkfish and other species, such as dogfish, either remain stable or increase, and trip costs (operating costs) decrease, gillnet vessels should see increases in net revenues (total gross revenues less trip costs). This assumes that the ex-vessel prices earned by vessels for monkfish and other species remain constant; any increases in landings are expected to be small enough so as not to drive down ex-vessel prices through increases in supply. In addition, demand for these species is assumed to be constant. Increases in total net revenues should benefit not only the vessel owner, but also vessel crew. Assuming fixed costs (non-trip or non-operating costs) remain constant, increases in total net revenues should bring increases in profits.

Based on FY2013 data, approximately 70 monkfish permits may benefit from increased profits if they adopt use of a second mesh-size (5" to 7") in standup-gillnets. The majority of monkfish trips likely to be impacted by this measure are taken in the SFMA. The overall net economic impact of this gear modification on gillnet vessel owners and crew will depend on modifications in fishing behavior that gillnet vessel owners with monkfish permits in Categories A-D may make. It is difficult to predict these changes. The additional operational flexibility this mesh modification would provide may induce gillnet vessels with monkfish permits in Categories A-D to increase the number of monkfish trips that they make, since they will now be able to target both monkfish and dogfish on the same trip, though limits on the number of gillnets that can be used in a single trip would not be altered by this action. At the same time, vessel owners would no longer need to make separate trips to target dogfish and other species in less than 10" minimum mesh.

The likelihood that a vessel would adopt use of a second mesh size would depend on weighing 1) the perceived costs associated with using a second mesh size on the same trip and 2) the perceived benefits associated with retained catch (landed species) from use of the smaller mesh size. The costs associated with using the second, smaller mesh size would depend, in part, on whether or not the vessel already owned nets with 5"-7" mesh. If a vessel does not already own nets with 5"-7" mesh, purchase of nets with this mesh represents an upfront cost to the vessel owner. The cost of this netting can range from \$50-\$100 per net depending on the height and length of the net (New England Marine and Industrial).

In addition, it is possible that inactive monkfish permits could opt to become active partially as a result of the increased flexibility this action would offer. These decisions would depend in part on market conditions in the monkfish and dogfish fisheries, including the ex-vessel prices for each of these species.

Option 2 is expected to have neutral to low negative impacts on the monkfish stock relative to Option 1, the No-Action Alternative. The Biological Impacts section, 7.1, demonstrated that observer data suggest that when multiple mesh sizes are used on the same trip, smaller mesh caught more small sized monkfish (Figure 36). If implementation of Option 2 leads to an increase in the number of small monkfish that are caught and discarded, this could affect the long-term health of the stock, and eventually, the long-run profits of gillnetters that target monkfish. However, observer data suggest that the use of 5"-7" mesh has already been occurring, with no effect yet noted for the status of the monkfish stock. Table 78 summarizes information about the numbers of Category C and D monkfish permits using sink gillnet gear that took at least one trip under a monkfish-only or combined monkfish/NE Multispecies DAS during the FY2009-FY2013 period, and the total numbers of such trips taken by these permits.

Table 78 – Numbers of Category C and D monkfish permits that took at least one trip fishing with sink gillnet gear under a monkfish-only or combined monkfish/NE Multispecies DAS, and total number of trips taken by these permits, by monkfish permit category, for FY2009-FY2013, in both fishery management areas.

MF Permit Category		Fishing Year				
		2009	2010	2011	2012	2013
Category C	No. of permits	28	24	25	23	19
	No. of trips	680	486	699	518	452
Category D	No. of permits	70	68	58	55	51
	No. of trips	1,452	1,366	1,444	1,174	1,060
Grand Total	No. of permits	98	92	83	78	70
	No. of trips	2,132	1,852	2,143	1,692	1,512

Based on FY2013 data, this measure would impact approximately 70 monkfish permits, 19 of which are Category C permits and 51 of which are Category D permits. The estimation of the number of monkfish permits likely to be impacted is based on the assumption that the proposed measure would not provide an incentive for inactive Category C and D permits to fish for monkfish in 10"-12" mesh and other species in 5"-7" mesh in sink gillnets.

Vessels with Category C permits took a total of 452 trips using sink gillnet gear on a monkfish-only or a combined monkfish/NE Multispecies DAS in FY2013, with 62 trips (13.7%) in the NFMA and 390 trips (86.3%) in the SFMA. Vessels with Category D permits took a total of 1,060 such trips, with 173 trips (16.3%) in the NFMA and 887 trips (83.7%) in the SFMA (Table 73). Both the number of permits in Categories C and D making these trips and total number of trips were at 5 year lows in FY2013.

Table 79 contains information about Category C and D permits that took trips on a monkfish-only or combined monkfish/NE Multispecies DAS in FYs 2009-2013 using sink gillnet gear, with one mesh between 10" and 12" (inclusive), and another mesh between 5" to 7" (inclusive). Note that because VTR

data do not distinguish between landings obtained with sink gillnet gear with and without the use of tie-downs, Table 79 reflects the number of permits that used these mesh sizes in sink gillnet gear both with and without tie-downs. In the entire FY2009-FY2013 period, there were 4 unique permits in Category C and 7 unique permits in Category D that used 5” to 7” mesh while fishing in the NFMA, and 5 unique permits in Category C and 9 unique permits in Category D that used 5” to 7” mesh while fishing in the SFMA.

Table 79 – Numbers of Category C and D monkfish permits that took at least one trip fishing with sink gillnet gear under a monkfish-only or combined monkfish/NE Multispecies DAS with a second mesh between 5” to 7”, inclusive, by monkfish permit category, for FY2009-FY2013, in both fishery management areas.

MF Permit Category	Fishing Year					Grand Total Unique Permits*
	2009	2010	2011	2012	2013	
NFMA						
C	<3	<3	<3	<3	<3	4
D	<3	4	6	3	3	7
SFMA						
C	<3	<3	0	<3	<3	5
D	<3	<3	<3	3	<3	9

*Note: The grand total of unique permits for the entire period, FYs 2009-2013, may not equal the sum of the total for each fishing year because some permits took trips of this type in more than one fishing year.

Landings data from vessels with monkfish permits in Category C and D that used sink gillnets trips on a combined monkfish/NE Multispecies DAS with mesh sizes between 10” to 12” and 5” to 7” are limited. Table 80 presents summary information for FY2013 on landings values from catch obtained in mesh ranging from 5” to 7” in the NFMA, by mesh size used. Note that these landings were earned by less than six unique permits fishing in the NFMA (Table 79). Within the NFMA, three mesh sizes within the 5” to 7” range were used in addition to 10”-12” mesh – 6”, 6.5” and 7” mesh. Gillnet vessels with monkfish permits in Category C took a total of 8 sector vessel trips in FY2013 that used sink gillnet gear with 5”-7” mesh as a second mesh in the NFMA; all of these vessels fished in the Gulf of Maine. NE Multispecies trips that used 12” and 6.5” mesh during July and August accounted for 7 of these trips. One trip in August 2013 declared the monkfish option, and fished with 11” and 6.5” mesh. Gillnet vessels with monkfish permits in Category D took a total of 28 trips in the NFMA during FY2013 that used 5”-7” mesh as a second mesh size; all these trips were taken in the GOM. All but one of these trips were sector trips in the GOM that declared the monkfish option. The remaining trip was a groundfish trip taken in the GOM during September by a sector vessel. All of these trips fished with 12” and 6.5” mesh.

A total of \$142,301 was earned in FY2013 by vessels with Category C and Category D monkfish permits from landings obtained from 5” to 7” mesh in sink gillnets while fishing on a combined monkfish/NE Multispecies DAS in the NFMA. Table 80 indicates that nearly all revenue (99.5%) obtained from landings using the smaller mesh size can be attributed to 6.5” mesh.

Table 80 –Value of landings obtained by Category C and D vessels from fishing 5” to 7” mesh using sink gillnets while on a combined monkfish/NE Multispecies DAS in the Northern Fishery Management Area, by mesh size used, FY2013.

Mesh Size Used	Landings Revenues for NFMA Trips FY2013 (nominal \$USD)
6”	\$0
6.5”	\$141,617
7”	\$684
Grand Total	\$142,301

Table 81 lists the species caught by Category C and D permits using 5” to 7” mesh on sink gillnets trips, while fishing on combined monkfish/NE Multispecies DAS in the NFMA in FY2013, for those species that have total revenues greater than \$1,000. Seven species caught in 5” to 7” mesh each had total revenues for FY2013 of \$1,000 or greater, four of which are allocated Northeast Multispecies stocks. From highest to lowest total value, these species are pollock, cod, white hake, monkfish, spiny dogfish, silver hake and haddock. These seven species yielded a total of \$139,569 in FY2013, which accounted for 98% of the total revenue earned from landings obtained through the use of 5” to 7” mesh.

Table 81 – Top species, by value, obtained by Category C and D vessels from fishing 5” to 7” mesh using sink gillnets while fishing on a combined monkfish/NE Multispecies DAS in the Northern Fishery Management Area, FY2013.

Species Name	Landed Pounds for NFMA Trips, FY2013	Revenues for NFMA Trips, FY2013 (nominal \$USD)
Pollock*	34,461	\$49,898
Cod*	9,153	\$31,321
White Hake*	14,707	\$30,630
Monkfish	5,744	\$18,339
Spiny Dogfish	36,717	\$5,465
Silver Hake	2,617	\$2,534
Haddock*	491	\$1,382
Other	-	\$2,732
Total	-	\$142,301

Note: An asterisk (*) indicates an allocated Northeast Multispecies stock.

In the SFMA, revenues earned by monkfish permit Category C and D vessels from the use of 5” to 7” mesh as a second mesh size were much smaller than in the NFMA. In FY2013, there were less than 3 Category C vessels fishing with mesh between 5” – 7” on SFMA trips. Category D also had less than 3 vessels fishing with this mesh size in the SFMA (Table 79).

Category C vessels took a total of 7 trips in the SFMA during FY2013 that used mesh between 5”-7” in addition to mesh greater than or equal to 10” on the same trip. These trips were all taken in the SNE Monkfish, Skate, and Dogfish Exemption Area during the month of June, using 12” and 7” mesh on the same trip. These trips landed monkfish and skates caught in 12” mesh, and monkfish and spiny dogfish caught in 7” mesh. Landing of dogfish, monkfish and skates from the same trip is not permitted under the existing regulations (represented by Option 1). These seven trips are representative of the type of trips the proposed measure seeks to address.

Category D vessels took a total of 10 trips in the SFMA during FY2013 that used mesh between 5”-7” in addition to mesh greater than or equal to 10” on the same trip. Common pool vessels took 7 of these trips, which all fished in the SNE Monkfish, Skate, and Dogfish Exemption Area during May and June

2013, using both 7” and 12” mesh on the same trip. These trips landed monkfish and skates caught in 12” mesh, and monkfish and spiny dogfish caught in 7” mesh. Landing of dogfish, monkfish and skates from the same trip is not permitted under the existing regulations (represented by Option 1). These 10 trips, like those taken by Category C vessels that were described above in the preceding paragraph, are representative of the type of trips the proposed measure seeks to address. The existence of these trips that landed monkfish, dogfish, and skates caught in the SNE Monkfish, Skate, and Dogfish Exemption Area supports industry advisor statements that some fishermen have already been targeting monkfish and dogfish, using both 10” minimum mesh and less than 10” mesh on the same trip.

Table 82 presents summary information for FY2013 on landings values earned by Category C and D vessels from fishing with mesh ranging from 5” to 7” in the SFMA, by mesh size that was used on the trip. In the SFMA, a broader range of mesh sizes within 5” to 7” (ranging from 5.5” to 7”) was used in addition to 10”-12” mesh than was used in the NFMA. A total of \$16,531 in nominal revenue was earned in FY2013 from landings obtained from 5” to 7” mesh while fishing with sink gillnets on a monkfish only or combined monkfish/NE Multispecies DAS in the SFMA; 6” mesh accounted for 43% of this revenue, followed by 7” mesh at 33%.

Table 82 – Value of landings obtained by Category C and D vessels from fishing 5” to 7” mesh in sink gillnets while fishing on a monkfish only or combined monkfish/NE Multispecies DAS in the Southern Fishery Management Area, by mesh size used, FY2013.

Mesh Size Used	Landings Revenues for SFMA Trips FY2013 (nominal \$USD)
5.5”	\$1,433
5.8”	\$512
6”	\$7,181
6.5”	\$1,992
7”	\$5,413
Grand Total	\$16,531

Table 83 lists the species that were caught by Category C and D permits using 5” to 7” mesh in sink gillnets trips, while fishing under a monkfish-only or combined monkfish/NE Multispecies DAS in the SFMA during FY2013, that had total revenues greater than \$1,000. Four species caught in 5” to 7” mesh each had total nominal revenues for FY2013 of \$1,000 or greater: spiny dogfish, monkfish, smooth dogfish, and skates. These four species yielded a total of \$15,801 in FY2013, which accounted for 96% of the total revenue earned from landings obtained by Category C and D vessels through the use of 5” to 7” mesh while fishing in the SFMA.

Table 83 – Top species, by value, obtained by Category C and D vessels from fishing 5” to 7” mesh in sink gillnets while fishing on a monkfish-only or combined monkfish/NE Multispecies DAS in the Southern Fishery Management Area, FY2013.

Species Name	Landed Pounds for SFMA Trips, FY2013	Revenues for SFMA Trips, FY2013
Spiny Dogfish	60,159	\$10,315
Monkfish	1,366	\$3,216
Smooth Dogfish	1,563	\$1,142
Skates	3,129	\$1,128
Other	-	\$730
Total	-	\$16,531

Limited information about catch obtained from the use of 5” to 7” mesh in stand up sink gillnets is available from observed trips of this type. Table 84 presents summary information on the numbers of observed trips on a monkfish-only or a combined/NE Multispecies DAS that used 5”-7” while fishing with stand-up sink gillnets. In the NFMA, all of the 16 observed trips in the FY2009-FY2013 period used either 6.5” or 7” mesh, and most of these trips were taken by vessels with monkfish permits in Category D. In the SFMA, there were no observed trips by Category C using 5”-7” mesh in stand-up gillnets, and only 6 trips of this type taken by Category D vessels over the entire FY2009-FY2013 period. One of these trips used 6” mesh, one used 6.5” and the remaining 4 trips used 7” mesh.

Table 84 – Number of observed trips by Category C and D vessels that fished 5”-7” mesh in stand-up gillnets, for FY2009-FY2013, in both fishery management areas.

	Fishing Year					Grand Total Number of Trips
	2009	2010	2011	2012	2013	
MF Permit Category						
			NFMA			
C	0	0	2	0	0	2
D	1	1	6	2	4	14
Sub-total for NFMA	1	1	8	2	4	16
			SFMA			
C	0	0	0	0	0	0
D	0	0	4	1	1	6
Sub-total for SFMA	0	0	4	1	1	6
Grand Total	1	1	12	3	5	22

Table 85 summarizes the very limited data on landings and revenue from species caught on observed trips in the NFMA while fishing 5”-7” mesh with stand-up gillnets for species where the revenue earning from landing the species was greater than or equal to \$100 nominal dollars. No species met these criteria for FY2009 and FY2010; therefore, species-level landings and revenues data are presented by mesh size used for FYs 2011-2013 only. Because there is so little data on species caught with the use of 5” to 7” mesh in stand-up gillnets, Table 85 should be viewed with caution. However, the limited amount of data available does suggest that this gear type and range of mesh sizes would be most likely to result in some increased revenues from landings of monkfish and spiny dogfish, as well as three types of groundfish – cod, white hake, and pollock. The amount by which these revenues would increase under the proposed modification cannot be predicted because we cannot determine how many gillnet fishermen would opt to fish a second mesh size between 5” – 7” in order to target species other than monkfish. In addition, possible revenue increases would depend on market conditions in the fisheries. It is possible that ex-vessel price for a species could fall if supply of these species increased significantly and demand for the species did not change or fell. The ability to earn increased revenues from allocated groundfish species would also be impacted by quota for those species, which affects domestic supply, and consumer acceptance of foreign supplies of groundfish as a viable substitute for locally-caught groundfish.

Table 85 – Total landings and total revenues (where total revenues \geq \$100 nominal \$USD) from species landed in 5”-7” mesh in stand-up gillnets from observed trips taken in the NFMA by Category C and D vessels, for each fishing year in FY2011-FY2013.

Observed Trips in NFMA		Fishing Year					
Mesh Size	Species	FY2011		FY2012		FY2013	
		Landings (landed lbs.)	Revenue (nominal \$)	Landings (landed lbs.)	Revenue (nominal \$)	Landings (landed lbs.)	Revenue (nominal \$)
6.5”	Monkfish			102	\$240	152	\$309
	Cod*			255	\$715	62	\$167
	White Hake*			273	\$700	382	\$707
	Pollock*			1,128	\$1,650	36	\$59
	Spiny Dogfish			3,000	\$810	571	\$114
7”	Monkfish	222	\$861				
	Cod*	1,553	\$3,898				
	White Hake*	537	\$609				
	Pollock*	3,400	\$2,752				
	Spiny Dogfish	6,461	\$1,293				
	Lobster	53	\$191				

Note: An asterisk (*) indicates an allocated Northeast Multispecies stock.

In the SFMA, the species-level revenue earned from landings obtained from 5” to 7” mesh was greater than or equal to \$100 nominal dollars per fishing year for spiny dogfish only, and this occurred only in FY2011 and FY2013 (Table 86). Based on this very limited data, use of 5”-7” mesh in standup gillnets while fishing on a monkfish DAS in the SFMA appears to be successful in targeting spiny dogfish.

Table 86 – Total landings and total revenues (where total revenue \geq \$100 nominal \$USD) from species landed in 5”-7” mesh in stand-up gillnets from observed trips taken in the SFMA by Category C* and D vessels, for each fishing year in FY2011-FY2013.

Observed Trips in SFMA		Fishing Year					
Mesh Size	Species	FY2011		FY2012		FY2013	
		Landings (landed lbs.)	Revenue (nominal \$)	Landings (landed lbs.)	Revenue (nominal \$)	Landings (landed lbs.)	Revenue (nominal \$)
6.5”	Spiny Dogfish					3,600	\$576
7”	Spiny Dogfish	5,740	\$1,551				

*Note: No trips of this type taken by Category C vessels were observed.

Impacts to Other Species

The data presented above suggests that the proposed measure may result in increased landings of spiny dogfish, skates, some groundfish species and monkfish on fishing trips under a monkfish-only or combined monkfish/NE Multispecies DAS relative to that under Option 1, the No Action Alternative. In the NFMA, use of 5” to 7” mesh in sink gillnets is associated not only with spiny dogfish catch, but also with catch of some allocated NE Multispecies (primarily pollock, cod, and white hake) and monkfish (Table 81). In the SFMA, use of 5” to 7” mesh in sink gillnets is associated with catch of spiny dogfish, monkfish, smooth dogfish and skates (Table 83).

7.4.3.1.3 Option 3: Allow the use of 5-7” mesh in standup gillnet on a monkfish DAS in NFMA

Option 3 would allow vessels with limited access monkfish permits in Categories A, B, C, and D to target other species using mesh size between 5” and 7”, inclusive in standup gillnets (i.e. sink gillnets not using tie-downs) while also retaining legal size monkfish on the same trip when fishing under a monkfish-only or a combined monkfish/NE Multispecies DAS. This would be permitted while fishing in the NFMA only.

The overall economic impacts of Option 3 would be neutral to slightly low positive as compared to Option 1, the No Action Alternative. Option 3 would yield less positive net economic impacts compared

to Option 2 or Option 4. Option 3 would likely benefit fewer gillnetters with monkfish permits than Option 2, since Option 3 is limited to monkfish permits that fish in the NFMA. Possible negative impacts to the monkfish, groundfish, and spiny dogfish species are similar to those described for Option 2, although negative impacts to the spiny dogfish and monkfish stocks may be lessened by exclusion of the SFMA from Option 3.

Many limited access monkfish vessels using gillnet gear did not fish in the NFMA in FY2013, and therefore would not likely be impacted by this modification. To identify how many monkfish permit holders and monkfish trips would be likely to be impacted by Option 3, Table 87 presents data on the numbers of monkfish permits that took at least one trip in the NFMA and the total number of trips taken by these permits, by monkfish permit category, for FY2009-2013. In FY2013, the numbers of permits using sink gillnet gear and fishing in the NFMA were at a five year low across permit categories.

A small percentage of all sink gillnet trips on monkfish-only or combined monkfish/NE Multispecies DAS take place in the NFMA (approximately 8% over FY2009-FY2013; Table 73). In FY2013, there was only one sink gillnet trip in the NFMA by a vessel with a monkfish permit in Category A and only two such trips by permits in Category B. Category C vessels took a total of 62 trips in the NFMA in FY2013, while Category D Vessels took 173 such trips in the NFMA (Table 87). We cannot determine from the available VTR data how many of these trips used standup gillnets; whether or not a gillnet vessel used tie-downs is only known for those trips that were observed.

Table 87 – Number of permits that took at least one trip in the NFMA, fishing under a monkfish-only or combined monkfish/NE Multispecies DAS with sink gillnet gear, and total number of trips taken by these permits, by monkfish permit category, for FY2009-FY2013.

MF Permit Category		Fishing Year				
		2009	2010	2011	2012	2013
Category A	No. of permits	10	11	2	4	1
	No. of trips	36	43	2	4	1
Category B	No. of permits	21	15	6	5	2
	No. of trips	39	65	11	30	2
Category C	No. of permits	12	8	6	9	6
	No. of trips	98	53	59	53	62
Category D	No. of permits	25	29	18	13	12
	No. of trips	152	260	143	60	173
Grand Total	No. of permits	68	63	32	31	21
	No. of trips	325	421	215	147	238

Based on FY2013 data, approximately 21 monkfish permits are most likely to benefit from increased profits if they adopt use of a second mesh-size (5” to 7”) in stand-up gillnets while targeting monkfish in the NFMA. Option 3 would allow Category A and B gillnetters, which do not have limited access NE Multispecies permits and therefore would not be fishing under a NE Multispecies DAS, to use a second mesh size of 5” to 7” in stand-up gillnets while fishing in the NFMA under a monkfish DAS. However, based on FY2013 data, there is only 1 monkfish permit in Category A that fished on a monkfish DAS using sink gillnets in the NFMA, and only 2 such monkfish permits in Category B. FY2013 data also indicates there are 6 permits in Category C and 12 permits in Category D that would likely be impacted by Option 3 (Table 87). The estimation of the number of monkfish permits most likely to be impacted is based on the assumption that Option 3 will not provide an incentive for inactive permits to fish for monkfish in 10-12” mesh and other species in 5”-7” mesh in sink gillnets in the NFMA. It also assumes that Option 3 would not provide an incentive for monkfish permits in Categories A-D that have traditionally fished exclusively in the SFMA to redirect effort to the NFMA.

As noted for Option 2, possible economic gains from increased profits to gillnet vessel owners must be weighed against possible negative impacts from increased groundfish catch. Groundfish catch (both landings and discards) by Category C and D vessels, which have limited access NE Multispecies permits, will be accounted for as described above for Option 2. Vessel owners with monkfish permits in Category A and B may hold open access NE Multispecies permits (permits in Categories I or K, or a Hand Gear B permit), but would not be subject to the same catch monitoring requirements that limited access groundfish vessels are. However, only 3 permits in Categories A and B fished with sink gillnets under a monkfish-only DAS in FY2013.

By increasing operational flexibility, Option 3 may increase the expected short run profits of gillnet fishermen that fish in the NFMA by allowing them to target species other than monkfish while on the same trip, thereby decreasing the operating costs (e.g., fuel, labor, etc.) that would be necessary if a separate trip to target species other than monkfish is required. In addition, total landings of monkfish and species caught in 5" to 7" mesh may increase slightly, although large increases in landings are not expected. The additional operational flexibility this mesh modification would provide may induce gillnet vessels with permits in Categories A-D to increase the number of monkfish trips that they make since they will now be able to target both monkfish and dogfish on the same trip. However, they would no longer require separate trips to target monkfish in 10" minimum mesh and other species in 5" to 7" mesh; the possible efficiency of trips is increased by both Options 2 and 3 relative to Option 1.

The ultimate net impact on profits from Option 3 would depend on market conditions in the monkfish and related fisheries, including demand for monkfish and dogfish, as well as cost savings from no longer needing separate trips to target monkfish and species that are caught in 5"-7" mesh. If landings of monkfish and other species, such as dogfish, either remain stable or increase, and trip costs (operating costs) decrease, gillnets vessels should see increases in net revenues (total gross revenues less trip costs). This assumes that the ex-vessel prices earned by vessels for monkfish and other species remain constant; any increases in landings are expected to be small enough so as not to drive down ex-vessel prices through increases in supply. In addition, demand for these species is assumed to be constant. Increases in total net revenues should benefit not only the vessel owner, but also vessel crew. Assuming fixed costs (non-trip or non-operating costs) remain constant, increases in total net revenues should bring increases in profits.

The likelihood that a vessel would adopt use of a second mesh size would depend on weighing 1) the perceived costs associated with using a second mesh size on the same trip and 2) the perceived benefits associated with retained catch (landed species) from use of the smaller mesh size. Note that under Option 3, the vessel owner would be able to use this 5" to 7" mesh while targeting monkfish in larger mesh on the same trip only in the NFMA. The costs associated with using the second, smaller mesh size would depend, in part, on whether or not the vessel already owned 5"-7" mesh. If a vessel does not already own a 5"-7" mesh size, purchase of this mesh represents an upfront cost to the vessel owner. The cost of this netting can range from \$50-\$100 per net depending on the height and length of the net (New England Marine and Industrial).

In addition, it is possible that inactive permits could opt to become active in the NFMA partially as a result of this measure. These decisions would depend in part on market conditions in the monkfish and dogfish fisheries, including the ex-vessel prices for each of these species.

Table 88 contains information about the numbers of monkfish permits that took trips on a monkfish-only or combined monkfish/NE Multispecies DAS in FY2009-FY2013 with sink gillnet gear while fishing in the NFMA, and used one mesh between 10" and 12" (inclusive), and another mesh between 5" to 7" (inclusive). Note that because VTR data do not distinguish between landings obtained with sink gillnet gear with and without the use of tie-downs, Table 88 reflects the number of permits that have used these

mesh sizes in sink gillnet gear over the FY2009-FY2013 period, including both stand-up gillnets and gillnets using tie-downs.

Table 88 – Numbers of monkfish permits in Categories A, B, C, and D that took at least one trip fishing under a monkfish-only or combined monkfish/NE Multispecies DAS in the NFMA using sink gillnet gear with a second mesh between 5” to 7”, inclusive, for FY2009-FY2013.

MF Permit Category	Fishing Year					Grand Total Unique Permits*
	2009	2010	2011	2012	2013	
	NFMA					
A	0	0	0	0	0	0
B	0	<3	0	<3	0	3
C	<3	<3	<3	<3	<3	4
D	<3	4	6	3	3	7

*Note: The grand total of unique permits for the entire period, FY2009-2013, may not equal the sum of the total for each fishing year because some permits took trips of this type in more than one fishing year.

In the entire FY2009-FY2013 period, there were no unique monkfish permits in Category A that used 5” to 7” mesh in sink gillnets while fishing in the NFMA on a monkfish DAS. For Categories B, C, and D there were 3, 4, and 7 unique monkfish permits, respectively, that used 5” to 7” mesh, in addition to 10” minimum mesh, while fishing with sink gillnets in the NFMA on a monkfish-only or combined monkfish/NE Multispecies DAS sometime during the FY2009-FY2013 period.

Landings data from vessels with monkfish permits in Categories A-D that used sink gillnets trips on a monkfish only or combined monkfish/NE Multispecies DAS in the NFMA with mesh size between 10” to 12” and 5” to 7” are limited, and this is especially true for monkfish trips using two mesh sizes taken by Category A and B. There is very little activity using both 10-12” mesh and 5”-7” mesh on the same trip in the NFMA by Category A and B gillnetters (Table 88). In FY2013, all revenues from all landings in 5”-7” mesh were earned by less than 6 unique permits fishing in the NFMA, all of which were Category C and D vessels. For this reason, landings and revenues for vessels in monkfish permit Categories A-D on trips that used 5”-7” while fishing on a monkfish-only or combined monkfish/NE Multispecies DAS in the NFMA will not be repeated here. They are nearly identical to those presented for Option 2 and cannot be presented here due to confidentiality concerns.

7.4.3.1.4 Option 4: Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in the SFMA (Preferred Alternative)

Option 4 would reduce the minimum mesh size allowed in the SFMA for vessels fishing with stand-up gillnet gear under a monkfish-only or combined monkfish/NE Multispecies DAS, depending on area fished. The smallest mesh size that would be permitted is 5” and use of 5” minimum mesh would be restricted to stand-up gillnets while fishing in the Mid-Atlantic Exemption Area. The overall net economic impacts of Option 4 are likely to be neutral to positive relative to Option 1, the No Action Alternative. Option 4 is likely to result in higher levels of positive net impacts than Options 2 or 3 for three reasons. First, most gillnet trips under a monkfish-only or combined monkfish/NE Multispecies DAS occur in the SFMA (Option 3 is restricted to the NFMA). Second, portions of Option 4 would apply to vessels with monkfish permits in Categories A and B, as well as those with monkfish permits in Categories C and D (Option 2 is limited to monkfish permits in Categories C and D). Finally, Option 4 provides greater flexibility as to mesh size used, and would allow for the use of mesh between 7” and less than 10”, which does appear to be used by gillnetters in the SFMA.

Impacts to Gillnet Vessels

By increasing operational flexibility, the action may increase the expected short run profits of monkfish fishermen that use gillnets in the SFMA by allowing them to target species in less than 10" mesh and monkfish in 10" minimum mesh on the same trip. The primary benefit of this flexibility is that the ability to land both monkfish and other species on the same trip would likely decrease trip-related or operating costs (e.g. fuel, labor, etc.) that would be necessary if separate trips to target monkfish and other species (such as dogfish) are required. Landings of monkfish, dogfish and skates may also increase, which could increase gross revenues if the ex-vessel prices of these species remain constant. Since Option 4 has the potential both to increase gross revenues and decrease trip or operating costs, net revenues (total gross revenues less trip costs) would likely increase. Assuming fixed costs (non-trip costs) remain constant, we would expect to see increases in short-run profits. Increases in profit would likely benefit not only the vessel owner, but also the vessel crew.

The likelihood that a vessel would adopt use of a second mesh size would depend on weighing 1) the perceived costs associated with using a second mesh size on the same trip and 2) the perceived benefits associated with retained catch (landed species) from use of the smaller mesh size. The costs associated with using the second, smaller mesh size would depend, in part, on whether or not the vessel already owned less than 10" minimum mesh. If a vessel does not already own the smaller mesh size, purchase of this mesh represents an upfront cost to the vessel owner. The cost of this netting can range from \$50-\$100 per net depending on the height and length of the net (New England Marine and Industrial).

Option 4 may change incentives for monkfish permit holders. The additional operational flexibility this mesh modification would provide may induce gillnet vessels with permits in Categories A-D to increase the number of monkfish trips that they make since they will now be able to target both monkfish and species that are caught in less than 10" mesh on the same trip. However, separate trips to target species other than monkfish would no longer be required. In addition, it is possible that inactive monkfish permits could opt to become active partially as a result of this measure. These decisions would depend in part on market conditions in the monkfish, dogfish and skate fisheries, including the ex-vessel prices for each of these species.

Option 4 is expected to have neutral to low negative impacts on the monkfish stock relative to Option 1, the No-Action Alternative. It is expected that Option 4 would have less negative impact on the monkfish stock than Option 2 because Option 4 limits the number of standup gillnets fished to a total of 50 in the Mid-Atlantic and SNE Dogfish Exemption Areas. As noted earlier in the discussion of the Biological Impacts section, Section 7.1, observer data suggest that when multiple mesh sizes are used on the same trip, smaller mesh caught more small sized monkfish (Figure 34). If implementation of Options 2 or 4 leads to an increase in the number of small monkfish that are caught and discarded in the SFMA, this could negatively affect the long-term health of the stock, and eventually, the long-run profits of gillnetters that target monkfish in the SFMA. However, because observer data suggest that the use of less than 10" minimum mesh has already been occurring with no apparent effects noted in the monkfish stock assessment, this potential negative impact is expected to be minimal.

Impacts to Other Species

Option 4 may result in increased landings of species caught in less than 10" mesh, including dogfish and skates, on fishing trips under a monkfish-only or combined monkfish/NE Multispecies DAS in the SFMA, compared to impacts on these species relative to Option 1, the No Action Alternative. The expected impacts on landings of species other than monkfish and groundfish are similar to those described in Option 2. The net effect of an increased supply of a species on total revenues earned from that species will depend on market conditions, including the responsiveness of both quantity supplied and quantity demanded of the species to the ex-vessel price of the species (the price elasticity of supply and demand) and whether or not demand for the species changes.

Option 4 is expected to result in less negative impacts to groundfish stocks than Option 2 because encounters with groundfish are more limited in the SFMA. As shown earlier, in the SFMA, use of less than 10" mesh in sink gillnets is associated with catch of spiny dogfish, monkfish, smooth dogfish and skates (Table 83).

The expected positive economic impacts of increased profits to gillnetters are expected to offset or slightly exceed any possible negative impacts, therefore leading to net economic impacts that are neutral or positive.

Option 4 consists of several components, which will be addressed separately.

Vessels holding limited access monkfish permits in Categories C and D and fishing on a combined monkfish/NE Multispecies DAS would be allowed to use a minimum of 6.5" mesh in stand-up gillnets (i.e. sink gillnets without tie-downs) in the SFMA.

Based on FY2013 data, the total number of permits most likely to be impacted by this measure is 70 permits, 19 of which are Category C permits and 51 of which are Category D permits (Table 78). Vessels with Category C permits took a total of 390 trips in the SFMA. Vessels with Category D permits took 887 trips in the SFMA (Table 73). For both permit categories, total numbers of trips in the SFMA were at a 5 year low in FY2013. Eighteen of these permits (6 in Category C and 12 in Category D) took at least one trip on a monkfish-only or combined monkfish/NE Multispecies DAS in the NFMA, but this does not necessarily mean that these permit holders will always choose to fish in the NFMA, particularly if Option 4 increases the incentive to fish in the SFMA and adverse conditions in the NE Multispecies Fishery continue.

The estimation of the number of monkfish permits likely to be impacted is based on the assumption that the proposed measure will not provide enough of an incentive to motivate currently inactive Category C and D permits to begin fishing for monkfish in 10-12" mesh and other species in smaller mesh in the SFMA.

Table 89 contains information about Category C and D permits that took trips on a monkfish-only or combined monkfish/NE Multispecies DAS during FYs 2009-2013 in the SFMA, using sink gillnet gear with mesh size between 6.5" to less than 10". Note that because VTR data do not distinguish between landings obtained with sink gillnet gear with and without the use of tie-downs, Table 89 reflects the number of permits that used mesh size within this range in sink gillnet gear, including both stand-up gillnets and gillnets using tie-downs.

In the entire FY2009-FY2013 period, there were 6 unique permits in Category C that used mesh between 6.5" to less than 10" in sink gillnets while fishing in the SFMA. The mesh sizes used were: 6.5", 7.0", 8.0" and 8.5". Twelve unique permits in Category D used 6.5" to less than 10" in sink gillnets while fishing in the SFMA over FY2009-FY2013. There was slightly more variety in the mesh sizes used by Category D permits: 6.5", 7", 7.5", 8", 8.5", 9", 8.8", 9.3", and 9.5".

Table 89 – Numbers of Category C and D monkfish permits that took at least one trip fishing under a monkfish only or combined monkfish/NE Multispecies DAS that used sink gillnet gear with a mesh size between 6.5” to less than 10”, by monkfish permit category, for FY2009-FY2013, in the SFMA.

MF Permit Category	Fishing Year					Grand Total Unique Permits for FY2009-FY2013*
	2009	2010	2011	2012	2013	
	SFMA					
C	<3	<3	0	3	4	6
D	3	4	<3	4	4	12
Grand Total for the FY	<6	<7	<3	7	8	18

*Note: The grand total of unique permits for the entire period, FY2009-FY2013 does not equal the sum of the total for each fishing year because some permits took trips of this type in more than one fishing year.

Landings data from vessels with monkfish permits in Category C and D that used sink gillnets trips on a monkfish only or combined monkfish/NE Multispecies DAS in the SFMA with mesh size between 6.5” to less than 10” are presented in Table 91 for FY2013, by mesh size used. Note that these landings were earned by 8 unique permits fishing in the SFMA in FY2013 – 4 permits in Category C and 4 permits in Category D (Table 89). A total of \$13,847 was earned in FY2013 from landings obtained from 6.5” to less than 10” mesh in sink gillnets.

Table 90 – Value of landings obtained by Category C and D vessels from fishing 6.5” less than 10” mesh in sink gillnets while on a monkfish only or combined monkfish/NE Multispecies DS in the Southern Fishery Management Area, by mesh size used, FY2013.

Mesh Size Used (inches)	Landings Revenues for SFMA Trips FY2013 (nominal \$USD)
6.5	\$1,992
7	\$5,412
7.5	\$128
8	\$3,525
9.5	\$2,789
Grand Total	\$13,847

Table 91 lists the species landed by Category C and D permits using 6.5” to less than 10” mesh in sink gillnets trips on combined monkfish/NE Multispecies DAS in the SFMA for FY2013 for species that have revenues greater than \$1,000 per year. Again, it should be noted that these landings and revenues were earned by 8 unique permits fishing in the SFMA in FY2013 – 4 permits in each of Categories C and D (Table 89). Four species that were caught in 6.5” to less than 10” mesh in the SFMA by Category C and D gillnetters had revenues that surpassed \$1,000 in FY2013; in order of landed value, these were spiny dogfish (\$5,489), monkfish (\$2,828), summer flounder (\$2,880) and skates (\$1,326) (Table 91). These four species accounted for 90% of the landed value of fish caught in the SFMA by Category C and D vessels using 6.5” to less than 10” mesh in sink gillnets. Landings and revenues in Table 91 reflect landed species caught in 6.5” to less than 10” mesh in both stand-up gillnets and gillnets that used tie-downs. In the SFMA, we do not see significant landings of groundfish species from the use of 6.5” to less than 10” mesh in gillnets.

Table 91 – Top species, by value, obtained by Category C and D vessels from fishing 6.5” to less than 10” mesh in sink gillnets while fishing on a monkfish-only or combined monkfish/NE Multispecies DAS in the Southern Fishery Management Area, FY2013.

Species Name	Landings from 6.5” to less than 10” mesh, FY2013 (landed lbs.)	Revenues for SFMA Trips, FY2013 (nominal \$USD)
Spiny Dogfish	31,318	\$5,489
Monkfish	2,380	\$2,828
Summer Flounder/Fluke	767	\$2,880
Skates	3,739	\$1,326
Other	-	\$1,324
Grand Total	-	\$18,847

Very limited information about the use of 6.5” to less than 10” mesh in stand up sink gillnets specifically is available from observed trips of this type. Table 92 presents summary information on the numbers of observed trips on a monkfish-only or a combined/NE Multi-species DAS that used 6.5” to less than 10” mesh in stand-up sink gillnets while fishing in the SFMA. Less than 10 observed trips used 6.5” to less than 10” mesh in stand-up gillnets over the entire FY2009-2013 period; these trips were all taken by Category D vessels.

Table 92 – Number of observed trips by Category C and D vessels that fished 6.5” to less than 10” mesh in stand-up gillnets while on a monkfish-only or combined monkfish/NE Multispecies DAS, for FY2009-FY2013, in the Southern Fishery Management Area.

MF Permit Category	Fishing Year					Grand Total Number of Trips
	2009	2010	2011	2012	2013	
	SFMA					
C	0	0	0	0	0	0
D	0	0	4	<3	<3	<10
Grand Total	0	0	4	<3	<3	<10

Table 93 summarizes the very limited data on landings and revenue from species caught on observed trips in the SFMA while fishing 6.5” to less than 10” mesh in stand-up gillnets for species where the revenue earned from landing the species was greater than or equal to \$100 nominal dollars per fishing year. No species met these criteria for FY2009 and FY2010; therefore, species-level landings and revenues are presented by mesh size used for FYs 2011-2013 only.

Table 93 – Total landings and total revenues (where total revenue ≥\$100 nominal \$USD per fishing year) from species landed in 6.5” to less than 10” mesh in stand-up gillnets from observed trips taken in the SFMA by Category C* and D vessels, for each fishing year in FY2011-FY2013.

Observed Trips in SFMA		Fishing Year					
Mesh Size (in inches)	Species	FY2011		FY2012		FY2013	
		Landings (landed lbs.)	Revenue (nominal \$)	Landings (landed lbs.)	Revenue (nominal \$)	Landings (landed lbs.)	Revenue (nominal \$)
6.5	Spiny Dogfish					3,600	\$576
7	Spiny Dogfish	5,740	\$1,551				
9.5	Monkfish	2,355	\$4,078				

*Note: No trips of this type taken by Category C vessels in FY2011-FY2013 were observed.

In the SFMA, the species-level revenue earned from landings obtained from 6.5” to less than 10” mesh in stand-up gillnets was greater than or equal to \$100 nominal dollars per fishing year for spiny dogfish in 6.5” and 7” mesh, and for monkfish in 9.5” mesh. This limited data should be viewed with extreme care, but supports the argument that the use of 6.5” to less than 10” mesh in standup gillnets while fishing on a monkfish DAS in the SFMA successfully targets spiny dogfish. The amount by which these revenues for spiny dogfish and monkfish would increase under the proposed modification cannot be predicted because we cannot determine how many gillnet fishermen would opt to fish a second mesh size between 6.5” and less than 10” to target spiny dogfish if the proposed modification were implemented, thereby making use of a second mesh less than 10” on the same trip permissible. In addition, possible revenue increases would depend on market conditions for spiny dogfish. It is possible that ex-vessel price for the species could fall if supply of spiny dogfish increased significantly and demand did not change.

Vessels holding limited access monkfish permits in Categories A, B, C, and D that are fishing on a monkfish DAS or a combined monkfish/NE multispecies DAS within the Mid-Atlantic Exemption Area would be allowed to use a minimum of 5” mesh in stand-up gillnets (i.e. sink gillnets without tie-downs) and could retain both monkfish and dogfish on the same trip. While the regulations for the total number of gillnets fished (which) based on monkfish permit category would not be altered by this component of Option 4, the option does limit the number of stand-up gillnets fished to 50.

All vessels with monkfish permits in Categories A, B, C, and D that fish with gillnets on a monkfish-only or combined monkfish/NE Multispecies DAS have the potential to be impacted by this portion of the option; based on FY2013 data, this would be a total of 126 permits – 18, 31, 19, and 51 in Categories A, B, C, and D, respectively (Figure 42). Although the owners of these permits may not have historically fished in the SFMA or in the Mid-Atlantic Exemption Area, it is possible that they could opt to do so. Vessels fishing in the Mid-Atlantic Exemption area are exempt from the 5-percent bycatch criteria specifications and can fish outside of a NE Multispecies DAS, provided that the vessel does not possess or land regulated NE Multispecies finfish. To estimate which permits are most likely to be impacted by this action, Table 94 summarizes information about the numbers of permits, by permit category, that took at least one trip in the Mid-Atlantic Exemption area, fishing under a monkfish-only or combined monkfish/NE Multispecies DAS, using sink gillnet gear during the FY2009-FY2013 period. The total numbers of sink gillnet trips by permit category and fishing year are also indicated in Table 94.

Table 94 – Number of permits that took at least one trip in the Mid-Atlantic Exemption Area, fishing under a monkfish-only or combined monkfish/NE Multispecies DAS using sink gillnet gear, and total number of trips taken by these permits in the Mid-Atlantic Exemption Area, by monkfish permit category, for FY2009-FY2013.

MF Permit Category		Fishing Year				
		2009	2010	2011	2012	2013
Category A	No. of permits	7	7	9	8	8
	No. of trips	127	150	198	187	191
Category B	No. of permits	23	24	25	24	22
	No. of trips	517	511	687	607	540
Category C	No. of permits	7	5	6	5	5
	No. of trips	121	85	106	75	56
Category D	No. of permits	25	21	15	8	5
	No. of trips	434	356	277	117	107
Grand Total	No. of permits	62	57	55	45	40
	No. of trips	1,199	1,102	1,268	986	984

Based on FY2013 data, 40 monkfish permits are most likely to be impacted by the flexibility offered by this portion of Option 4 since these permits took at least one trip in the Mid-Atlantic Exemption Area in FY2013. This group of 40 permits was comprised of 8 permits in Category A, 22 permits in Category B, 5 permits in Category C and 5 permits in Category D. Together, these permits took a total of 984 trips from FY2009-FY2013 on a monkfish-only or combined monkfish/NE Multispecies DAS in the Mid-Atlantic Exemption Area that fished with sink gillnets. We cannot determine from the available VTR data how many of these trips used standup gillnets; whether or not a gillnet vessel used tie-downs is only known for those trips that were observed.

The number of monkfish permits that are actually impacted by this portion of the measure could be greater than 40 since the measure could provide an incentive for more permits to fish in the Mid-Atlantic Exemption Area. In addition, it is possible, should the proposed action be implemented, that previously inactive permits may opt to fish in the Mid-Atlantic Exemption Area, since they would then be able to target monkfish in 10” and larger mesh, and dogfish in 5” to less than 10” mesh on the same trip.

Table 95 contains information about monkfish permits in Categories A-D that took trips on a monkfish-only or combined monkfish/NE Multispecies DAS during FY2009-FY2013 in the Mid-Atlantic Exemption Area, using sink gillnet gear with mesh size between 5” to less than 10”. Note that because VTR data do not distinguish between landings obtained with sink gillnet gear with and without the use of tie-downs, Table 95 reflects the number of permits that used mesh size within this range, including both stand-up gillnets and gillnets using tie-downs.

Table 95 – Number of permits fishing under a monkfish only or combined monkfish/NE Multispecies DAS that used sink gillnet gear with, a mesh size between 5” to less than 10”, by monkfish permit category, for FY2009-FY2013, in the Mid-Atlantic Exemption Area.

	Fishing Year					Grand Total Unique Permits for FY2009-FY2013*
	2009	2010	2011	2012	2013	
MF Permit Category						
Mid-Atlantic Exemption Area						
A	0	0	<3	0	0	<3
B	4	<3	5	3	6	12
C	0	<3	<3	0	<3	<3
D	0	<3	<3	3	<3	5
Grand Total for the FY	4	5	8	6	9	19

*Note: The grand total of unique permits for the entire period, FY2009-FY2013 does not equal the sum of the total for each fishing year because some permits took trips of this type in more than one fishing year.

In the entire FY2009-FY2013 period, 19 unique permits fished in sink gillnets in the Mid-Atlantic Exemption Area with mesh between 5” and less than 10”; 12 unique permits in Category B, 5 unique permits in Category D and less than 3 unique permits in each of Categories A and C. Table 96 presents a frequency chart for the number of trips in the Mid-Atlantic Exemption Area that used mesh sizes between 5” and less than 10” in sink gillnets (both stand-up and with tie-downs). For mesh less than 10”, 6.0” and 5.5” mesh were the most frequent mesh sizes observed.

Table 96 – Numbers of trips by mesh size and fishing year for trips taken in the Mid-Atlantic Exemption Area using 5” to less than 10” in sink gillnets while fishing under a monkfish-only or combined monkfish/NE Multispecies DAS.

Mid-Atlantic Exemption Area	Fishing Year					Grand Total of Trips for FY2009-FY2013
	2009	2010	2011	2012	2013	
Mesh Size (inches)						
5.5	5	2	5	4	2	18
5.8	0	0	1	0	1	2
6.0	1	6	7	5	10	29
6.5	0	0	2	3	3	8
7.0	0	0	1	0	0	1
8.0	0	2	0	0	0	2
9.0	0	0	0	0	1	1
Grand Total for the FY	6	10	16	12	17	61

Landings data from vessels with monkfish permits in Categories B-D that used sink gillnets trips on a monkfish-only or combined monkfish/NE Multispecies DAS in the Mid-Atlantic Exemption Area with mesh size between 5” to less than 10” are presented in Table 97 for FY2013, by mesh size used. These landings were earned by 9 unique permits fishing in the Mid-Atlantic Exemption Area in FY2013 – 6 permits in Category B, and less than 3 unique permits in each of Categories C and D (Table 95). A total of \$11,894 was earned in FY2013 from landings obtained from 5” to less than 10” mesh in sink gillnets while fishing in the Mid-Atlantic Exemption Area. During FY2013, no permits in Category A fished with less than 10” mesh in the Mid-Atlantic Exemption Area. Of this total revenue, \$1,945 (just over 16%) was derived from use of 5” to less than 6” mesh, which suggests there is some economic benefit to be gained from allowing the use of 5” to less than 6” mesh in the Mid-Atlantic Exemption area, where fishermen are less likely to encounter groundfish than they are in the NFMA.

Table 97 – Value of landings obtained by Category A-D* vessels from fishing 5” to less than 10” mesh using sink gillnets while on a monkfish-only or combined monkfish/NE multispecies DAS in the Mid-Atlantic Exemption Area, by mesh size used, FY2013.

Mesh Size Used (inches)	Landings Revenues for NFMA Trips FY2013 (nominal \$USD)
5.5	\$1,433
5.8	\$512
6	\$7,181
6.5	\$1,430
9	\$1,338
Grand Total	\$11,894

*Note that no vessels in Category A fished with 5” to less than 10” mesh in the Mid-Atlantic Exemption Area in FY2013.

Table 98 lists the species that were landed by monkfish permits in Categories A-D using 5” to less than 10” mesh in sink gillnet trips on monkfish-only or combined monkfish/NE Multispecies DAS in the Mid-Atlantic Exemption Area for FY2013 for species that have total revenues greater than \$1,000 from landings obtained through the use of 5” to <10” mesh. These landings and revenues were earned by 9 unique permits fishing in the Mid-Atlantic Exemption Area with less than 10” mesh in FY2013 (Table 95). Three species caught in 5” to less than 10” mesh in the Mid-Atlantic Exemption Area by gillnetters with permits in Categories A-D had landings that exceeded \$1,000 in FY2013; in order of landed value,

these were spiny dogfish (\$7,223), monkfish (\$2,606), and smooth dogfish (\$1,105) (Table 98). These three species accounted for 92% of the landed value of fish caught in the Mid-Atlantic Exemption Area by Category A-D gillnet vessels using 5” to less than 10” mesh while fishing on a monkfish-only or combined monkfish/NE Multispecies DAS. These landings and revenues reflect species caught in 5” to less than 10” mesh in both stand-up gillnets and gillnets that used tie-downs.

Table 98 – Top species, by value, obtained by Categories A-D* vessels from fishing 5” to less than 10” mesh in sink gillnets while fishing on a monkfish only or combined monkfish/NE Multispecies DAS in the Mid-Atlantic Exemption Area, FY2013.

Species Name	Landings from 5” to less than 10” mesh, FY2013 (landed lbs.)	Revenues for Mid-Atlantic Exemption Area Trips, FY2013 (nominal \$USD)
Spiny Dogfish	43,435	\$7,223
Monkfish	1,092	\$2,606
Smooth Dogfish	1,489	\$1,105
Other		\$960
Grand Total		\$11,894

*Note that no vessels in Category A fished with 5” to less than 10” mesh in the Mid-Atlantic Exemption Area in FY2013.

Data on usage of 5” to less than 10” mesh while fishing in the Mid-Atlantic Exemption Area with sink gillnets using tie-downs versus stand-up gillnets is extremely limited, since the distinction between gillnets with tie-downs and stand-up gillnets is made only for observed trips. There was only 1 observed trip in the entire FY2009-FY2013 period that fished with a mesh size between 5” and less than 10” in a stand-up gillnet in the Mid-Atlantic Exemption Area while on a monkfish-only or combined monkfish/NE Multispecies DAS. This trip was taken in FY2013 by a Category D vessel, and used 6.5” mesh with no tie-downs. The only catch landed from use of this mesh size was spiny dogfish. There was also only 1 observed trip in the entire FY2009-FY2013 period that fished in the Mid-Atlantic Exemption Area with a mesh size between 5” and less than 10” in sink gillnets using tie-downs. This trip was also taken by a Category D vessel in FY2013, and no catch was retained while fishing with 6.5” mesh. The lack of landings and revenue data specific to the use of 5” to less than 10” mesh in stand-up gillnets versus in gillnets with tie-downs while fishing in the Mid-Atlantic Exemption Area means that no conclusions about the economic impacts of restricting use of 6” to less than 10” to stand-up gillnets can be drawn.

SNE Monkfish, Skate, and Dogfish Gillnet Exemption Areas

The remaining portions of Option 4 pertain to the SNE Dogfish, and the SNE Monkfish and Skate, Gillnet Exempted Areas. These areas are the same area geographically. However, the applicable regulations depend on which species the gillnet vessel is targeting.

Option 4 would allow vessels holding limited access monkfish permits in Categories A, B, C, and D that are fishing on a monkfish DAS or a combined monkfish/NE multispecies DAS within the Southern New England (SNE) Dogfish Exemption Area to use a minimum of 6” mesh in stand-up gillnets (i.e. sink gillnets without tie-downs) and retain both monkfish and dogfish on the same trip if the trip occurs during the designated exemption season (May 1 to October 31). While the regulations for the total number of gillnets fished would not be altered by this component of Option 4, Option 4 does limit the number of stand-up gillnets fished in the Southern New England (SNE) Dogfish Gillnet Exempted Fishery during May 1 to October 31 to 50 stand-up gillnets.

Option 4 would also allow vessels holding limited access monkfish permits in Categories A, B, C, and D that are fishing on a monkfish DAS or a combined monkfish/NE multispecies DAS within the Southern New England Monkfish and Skate Exemption Area to use a minimum of 10” mesh in all gillnets, and

retain both monkfish and dogfish on the same trip. This would be permitted year round. The regulations for the total number of gillnets fished would not be altered by this component of Option 4.

All vessels with monkfish permits in Categories A, B, C, and D that fish with gillnets on a monkfish-only or combined monkfish/NE Multispecies DAS have the potential to be impacted by the portion of the option that applies to the SNE Monkfish, Skate and Dogfish Gillnet Exemption Area. Based on FY2013 data, this would be a total of 126 active permits – 18, 31, 19, and 51 in Categories A, B, C, and D, respectively (Figure 42). While some permits may not have fished in the SNE Monkfish, Skate and Dogfish Exemption Area traditionally, they could opt to in the future and therefore could potentially be impacted by the gear mesh modification.

To identify the permits mostly likely to be positively impacted by the flexibility to retain monkfish while targeting dogfish in the SNE Dogfish Exempted Fishery, Table 99 summarizes the numbers of monkfish permits that took at least one trip in the SNE Dogfish Exemption Area during May 1-October 31 that used 6” to less than 10” minimum mesh in gillnet gear, by monkfish permit category for each of FYs 2009-2013. In addition, Table 99 indicates the total number of trips taken that used 6” to less than 10” mesh in gillnets during the exemption season in the SNE Dogfish Exemption Area for each of FYs 2009-2013, by permit category. By definition, these trips could not have been fishing in the SNE Monkfish and Skate Exempted Fishery, since that exempted fishery requires 10” minimum mesh. Note that no monkfish permit in Category A took this type of trip in any of the FYs 2009-2013. In FY2013, less than 9 permits (less than 3 permits in each of Categories B-D) fished with mesh between 6” to less than 10” in the SNE Dogfish Exempted Fishery during May 1-October 31 of the fishing year. Under Option 1, the No Action Alternative, monkfish should not have been landed on these trips. The economic impacts of this part of Option 4 stem from allowing these permits to land monkfish caught while fishing with 6” minimum mesh in the SNE Dogfish Exempted Fishery. Additional economic impacts would be expected if the modification encourages more permits to fish with 6” minimum mesh in stand-up gillnets in the SNE Dogfish Exemption Area during May 1 – October 31 because they will now be able to retain monkfish while targeting dogfish.

Table 99 – Number of monkfish permits that took at least one trip in SNE Dogfish Exemption Area during May1-October 31, fishing with sink gillnet gear under a monkfish-only or combined monkfish/NE Multispecies DAS using 6” to less than 10”, and total number of trips taken by these permits in the SNE Dogfish Exemption Area, by monkfish permit category, for FY2009-FY2013.

MF Permit Category		Fishing Year				
		2009	2010	2011	2012	2013
Category A	No. of permits	0	0	0	0	0
	No. of trips	0	0	0	0	0
Category B	No. of permits	0	<3	<3	<3	<3
	No. of trips	0	3	<3	3	<3
Category C	No. of permits	<3	<3	0	<3	<3
	No. of trips	<3	3	0	<3	22
Category D	No. of permits	<3	4	<3	3	<3
	No. of trips	<3	5	28	14	10
Grand Total for the FY	No. of permits	3	8	3	<9	<9
	No. of trips	3	11	<31	<21	<35

Table 100 summarizes the landings and revenues of the permits for the May 1 – October 31 period of FY2013 from fishing in the SNE Dogfish Exemption Area with mesh between 6” to less than 10” in sink gillnets for species with total nominal revenues \$100 or greater. Note that these landings and revenues

were earned by fewer than 9 unique permits on fewer than 35 trips (Table 95). Spiny dogfish accounted for 35% of the total nominal revenue earned from landings in 6” to less than 10” mesh. Although gillnet vessels are not permitted to retain monkfish while fishing 6” to less than 10” minimum mesh in the SNE Dogfish Exempted Fishery during May 1-October 31, monkfish was the third most valuable species landed in 6” to less than 10” mesh. This supports observations by industry advisors that some gillnet vessels have been using less than 10” minimum mesh in the SFMA while on a monkfish DAS. It also suggests that if Option 4 is implemented, there would be opportunity for gillnetters to retain monkfish that are landed while they are targeting dogfish in 6” minimum mesh. Net revenues (total gross revenues less trip costs) would increase because gillnetters would earn revenues from the landed monkfish (assuming they could sell it), rather than discarding it. Increases in net revenue would occur both due to increased landings of monkfish (assuming the ex-vessel price of monkfish remained constant) and reduced operational costs, since a separate trip to target monkfish would not be required. Assuming fixed cost remain constant, increases in net revenue should translate into an increase in profits.

Table 100 – Top species, by value, obtained by Categories A-D* vessels from fishing 6” to less than 10” mesh in sink gillnets while fishing on a monkfish-only or combined monkfish/NE Multispecies DAS in the SNE Dogfish Exemption Area, May 1-October 31 FY2013.**

Species Name	Landings from 6” to less than 10” mesh, FY2013 (landed lbs.)	Revenues for SNE Dogfish Exemption Area Trips, FY2013 (nominal \$USD)
Spiny Dogfish	20,309	\$3,790
Summer Flounder	904	\$3,350
Monkfish	1,621	\$1,475
Skates	1,995	\$960
Channeled Whelk	83	\$583
Monkfish Heads	1,231	\$308
Cod	61	\$188
Other	-	\$202
Grand Total		\$10,856

*Note that no vessels in Category A fished with 6” to less than 10” mesh in the SNE Dogfish Exemption Area in May 1 – October 31 FY2013.

**Note that all of these trips took place during the months of May and June in FY2013.

Monkfish permits that take trips in the SNE Monkfish and Skate Gillnet Exemption Area using 10” minimum mesh are also likely to be positively impacted by this portion of the measure, since they would gain the ability to retain dogfish. Table 101 summarizes the numbers of monkfish permits that took at least one trip in the SNE Monkfish and Skate Gillnet Exemption Area using 10” minimum mesh, by monkfish permit category, in any month for FYs 2009-2013. In addition, Table 101 indicates the total number of trips taken during the fishing year in the SNE Monkfish and Skate Gillnet Exemption Area using 10” minimum mesh for each of FYs 2009-2013, by permit category. Based on FY2013 data, 64 monkfish permits are fishing in the SNE Monkfish and Skate Exemption Area using a minimum of 10” mesh in gillnets, and could benefit from the flexibility to retain dogfish that are caught. As noted above in the discussion for Table 99 in FY2013 less than 9 of these permits (less than 3 permits in each of Categories B-D) also fished with mesh between 6” to less than 10” in this area, under the SNE Dogfish Exempted Fishery, during May 1-October 31 of the fishing year.

Table 101 – Number of monkfish permits that took at least one trip in SNE Monkfish and Skate Exemption Area, at any point in the FY, fishing under a monkfish-only or combined monkfish/NE Multispecies DAS, using 10” minimum mesh in sink gillnet gear, and total number of these trips taken, by monkfish permit category, for FY2009-FY2013.

MF Permit Category		Fishing Year				
		2009	2010	2011	2012	2013
Category A	No. of permits	10	11	11	11	10
	No. of trips	220	185	284	302	298
Category B	No. of permits	10	11	13	11	10
	No. of trips	149	240	345	291	234
Category C	No. of permits	20	17	20	19	14
	No. of trips	426	351	522	364	311
Category D	No. of permits	42	38	44	44	30
	No. of trips	686	682	934	853	564
Grand Total for the FY	No. of permits	82	77	88	85	64
	No. of trips	1,481	1,458	2,085	1,810	1,407

Table 102 summarizes the landings and revenues of the 64 permits, as reported, that were obtained while fishing in the SNE Monkfish and Skate Exempted Fishery during FY2013 with 10” minimum mesh in sink gillnets for species with total nominal revenues of \$1,000 or greater. The top five species, by value, landed in 10” mesh or larger in FY2013 were monkfish (\$3.1 million), skates (\$1.4 million), monkfish heads (\$40,758), summer flounder (fluke) (\$29,400) and spiny dogfish (\$23,278). Note that some of the trips taken by these permits may have been using mesh in the 6” to less than 10” inch size range and operating under the SNE Dogfish Exempted Fishery since a vessel is permitted to use 6” minimum mesh in that fishery from May 1 to October 31 and land dogfish under that exemption. Some of the landings reported as being caught in 10” minimum mesh may have been caught in the smaller mesh. This could be one explanation for the large presence of spiny dogfish in Table 102. Vessels may fish in both the monkfish and skate, and dogfish, exempted fisheries during the same time period, provided they land only dogfish and bycatch species; or land only monkfish, skate, and bycatch species, for each individual fishing trip. To adjust for dogfish that may have been landed from May 1-October 31 while fishing under the SNE Dogfish Exempted Fishery, Table 103 summarizes landings from 10” mesh or larger while fishing in the Exemption Area outside of the season for the SNE Dogfish Exempted Fishery (i.e. in the months of January-April, November and December). A total of just over \$2.0 million in nominal revenues (44% of total nominal revenues for the entire FY2103) was earned by gillnet vessels fishing with 10” minimum mesh in the Monkfish and Skate Exemption Area outside of the season for the SNE Dogfish Exempted Fishery.

Table 102 – Top species, by value, obtained by Categories A-D vessels from fishing 10” or larger mesh in sink gillnets while fishing on a monkfish only or combined monkfish/NE Multispecies DAS in the SNE Monkfish and Skate Exempted Area, all month, FY2013.

Species Name	Landings from 10” or larger mesh, FY2013 (landed lbs.)	Revenues for SNE Monkfish, Skate, and Dogfish Exemption Area Trips FY2013 (nominal \$USD)
Monkfish	2,202,079	\$3,086,830
Skates	2,246,273	\$1,379,837
Monkfish Heads	103,402	\$40,758
Summer Flounder	8,033	\$29,400
Spiny Dogfish	117,152	\$23,278
Striped Bass	4,694	\$16,578
Cod	3,406	\$11,678
Lobster	1,562	\$7,460
Black Sea Bass	1,892	\$6,879
Bluefish	4,473	\$3,570
Jonah Crab	3,490	\$2,699
Tilefish	392	\$1,256
Scup	1,459	\$1,116
Tautog	298	\$1,083
Other	-	\$4,012
Grand Total		\$4,616,432

Table 103 – Top species, by value, obtained by Categories A-D vessels from fishing 10” minimum mesh in sink gillnets while fishing on a monkfish-only or combined monkfish/NE Multispecies DAS in the SNE Monkfish and Skate Exempted Area, from January 1-April 30 and November 1-December 31, FY2013.

Species Name	Landings from 10” minimum mesh, FY2013 (landed lbs.)	Revenues for SNE Monkfish and Skate Exemption Area Trips FY2013 (nominal \$USD)
Monkfish	791,856	\$1,258,752
Skates	984,676	\$750,515
Monkfish Heads	30,107	\$11,635
Cod	1,115	\$3,310
Summer Flounder	1,136	\$3,012
Lobster	492	\$2,374
Spiny Dogfish	7,207	\$1,028
Striped Bass	179	\$803
Tilefish	221	\$714
Bluefish	358	\$271
Black Sea Bass	58	\$218
Rock Crab	400	\$188
Other	-	\$250
Grand Total	-	\$2,033,070

A comparison of Table 102 and Table 103 shows that the amount of spiny dogfish being landed drops dramatically once we restrict dogfish landings and revenues from catch that was reported as being obtained from 10” minimum mesh to the period outside of the season for the SNE Dogfish Exempted Fishery. Table 102 and Table 103 make two things clear. Some spiny dogfish can be caught while targeting monkfish and skates in the SNE Monkfish and Skate Exempted Fishery outside the season that allows for targeting dogfish in the SNE Dogfish Exempted Fishery. In addition, Table 102 provides insight into the landings and revenues that occurred for the few vessels that appeared to be operating as if the proposed modification were already in place since these vessels landed monkfish and dogfish on the same trip while fishing in the SNE Monkfish, Skate and Dogfish Exemption Area. The proposed modification could benefit gillnet vessels by making it permissible for the vessel to retain these legal size dogfish on a trip targeting monkfish and skates, provided that they can sell them. Net economic impacts for gillnet vessels would depend on how much revenues increase from landed spiny dogfish, which would depend on market conditions in the dogfish fishery at the time of landing, including ex-vessel price of dogfish.

7.5 Social Impacts

When reviewing the data below, please keep in mind the updated primary and secondary ports (Table 104; Section 6.4.2). To facilitate this, all primary ports will be in bold and secondary ports in bold and italics. The previous primary and secondary ports were based on revenue data for FY1994-1997. Primary and secondary ports are now based on fishing engagement indicators that account for absolute values of pounds and value of monkfish, number of monkfish permits (both active and inactive) with the community listed as the owner’s home, and number of dealers buying monkfish in that community. This captures involvement in monkfish more holistically than pounds and value alone. The current indicators are based on a five-year average from FY2009-2013. All vessels that caught at least one pound of monkfish in the 5-year period of fishing years 2009 to 2013 (FY2009-2013) are included.

An additional measure, monkfish reliance, is a per capita measure using similar data to the engagement index but divided by total population in the community. Figure 43 shows the relationship of high engagement to reliance. Barnegat Light/Long Beach, NJ, for instance, is very highly reliant on monkfish while New Bedford has very low reliance on monkfish, even though New Bedford, MA has much higher engagement. Of these highly engaged communities, then, Barnegat Light/Long Beach is far and away the most reliant on monkfish, followed by Chatham and Montauk. Very low reliance communities include Boston, Portsmouth, Scituate, Westport, Newport, and New London.

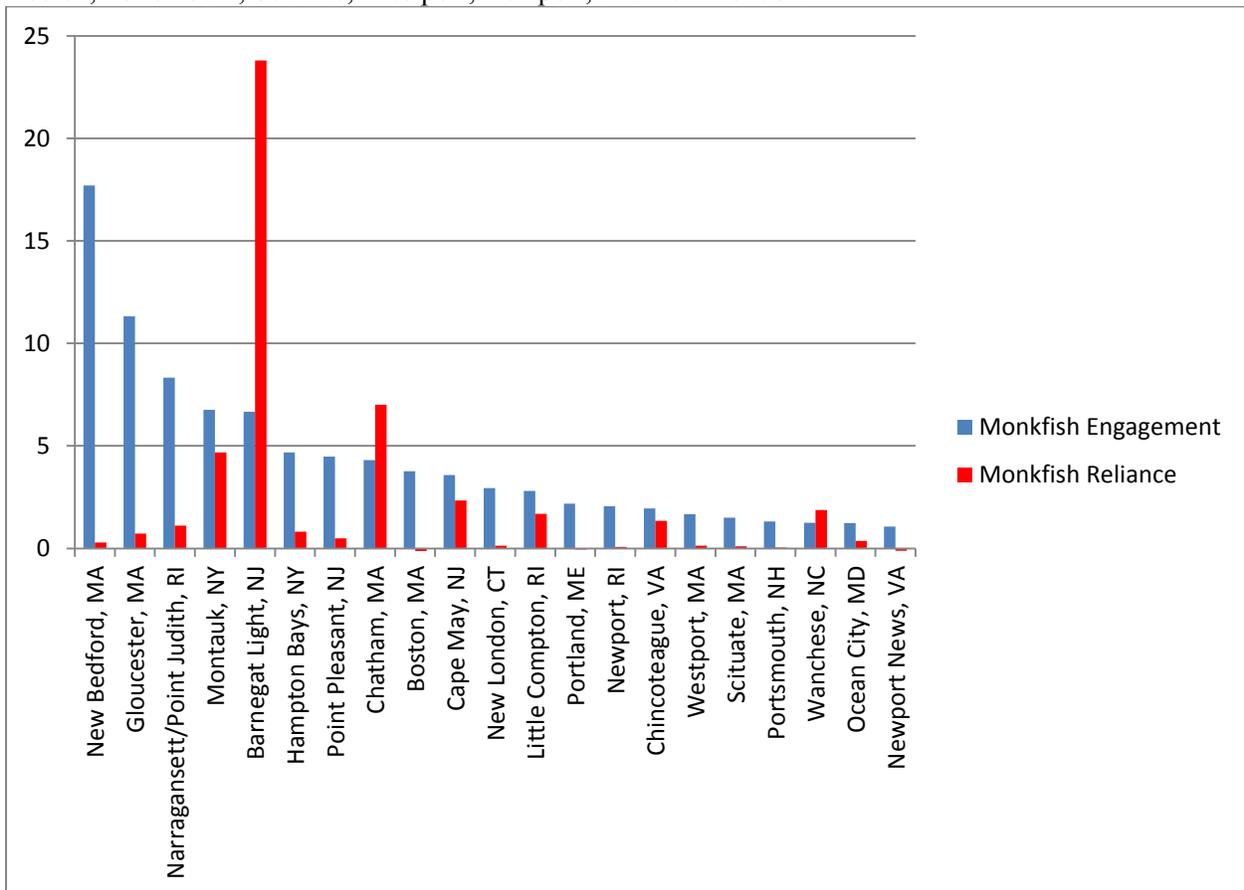


Figure 43 - All high monkfish engagement communities with both engagement and reliance scores.

Further, New Bedford, Boston, New London, Portland, Newport News, Wanchese, Chincoteague, Westport, and Ocean City show high social vulnerability in one or more areas (e.g., personal disruption, population composition, poverty). See section 6.4.2 in the Human Environment for more details on engagement, reliance, and social vulnerability.

Table 104 - All primary and secondary monkfish ports

PRIMARY PORTS		SECONDARY PORTS	
MA	New Bedford	NY	Hampton Bays/Shinnecock
MA	Gloucester	NJ	Point Pleasant/Point Pleasant Beach
RI	Point Judith/Narragansett	MA	Chatham
NY	Montauk	MA	Boston
NJ	Barnegat Light/Long Beach	NJ	Cape May
		CT	New London
		RI	Little Compton
		ME	Portland
		RI	Newport
		VA	Chincoteague
		MA	Westport
		MA	Scituate
		NH	Portsmouth
		NC	Wanchese
		MD	Ocean City
		VA	Newport News

7.5.1 Modifications to current Days-at-Sea and Trip Limits

For the vessels involved in the 6% of trips identified as exceeding the current trip limit over the course of FY2009-2013, there would be no economic benefit for a higher trip limit through additional landings. However, there might be a benefit in no longer being out of compliance. There is still some possibility of being apprehended and fined under the current trip limits and there may be social benefits to being seen as law-abiding.

7.5.1.1 Allow vessels to declare a Northeast Multispecies Day-at-Sea at sea

7.5.1.1.1 Option 1: No Action

Under Option 1, current conditions would continue, i.e. permit Category C and D vessels with NE multispecies permits must continue to declare a NE multispecies DAS prior to leaving the dock. Impacts would be neutral, given that proposed changes seem to impact very few vessels and therefore very few communities. Option 1 has less positive impacts when compared to Options 2 and 3.

7.5.1.1.2 Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area

Option 2 would allow Category C and D common pool and sector vessels to declare a NE multispecies DAS while at sea. Given the extremely small number of vessels likely to be impacted economically by this measure, per the Economic Impacts section, social impacts are also expected to be low to positive. As

common pool vessels must be operating under a DAS to make a fishing trip, the potential positive impacts of Option 2 mainly apply to sector vessels making non-DAS trips.

Communities with 30-50 C/D permits that are in sectors are: New Bedford, Gloucester, Boston and Point Judith/Narragansett (Table 105). All but Boston are primary monkfish ports; Boston is a secondary monkfish port. New Bedford has very high monkfish engagement but comparatively low monkfish reliance. Boston, to a lesser degree, has high social vulnerability and low monkfish reliance. These will tug in opposite directions when thinking about what makes impacts more or less important.

Table 105 - Combined C/D permits associated with a sector: ports with at least 3 permits in all years with permits and 5-year average of at least 3 permits

ST	CITY	2009	2010	2011	2012	2013	sum	avg
MA	NEW BEDFORD	58	43	47	46	45	239	47.8
MA	GLOUCESTER	40	39	37	35	33	184	36.8
MA	BOSTON	38	32	34	29	27	160	32
RI	POINT JUDITH/NARRAGANSETT	31	31	31	29	25	147	29.4
MA	CHATHAM	14	13	15	15	14	71	14.2
ME	PORTLAND	13	13	12	12	13	63	12.6
NH	PORTSMOUTH	7	7	7	6	5	32	6.4
NC	WANCHESE	6	6	6	6	6	30	6
NY	MONTAUK	10	6	4	3	3	26	5.2
ME	SOUTH BRISTOL	7	7	5	4	3	26	5.2
MA	SCITUATE	6	4	6	5	5	26	5.2
NH	RYE	6	5	5	5	5	26	5.2
ME	PORT CLYDE	4	3	4	4	4	19	3.8
RI	WAKEFIELD	4	4	3	3	3	17	3.4
NJ	CAPE MAY	3		3	5	5	16	3.2

More likely to be affected by those measure are those communities where potentially affected vessels currently fish in the NFMA: primarily New Bedford with a 5-year average of 106 permits, but secondarily Gloucester and Boston with 30+ permits, followed by Cape May, Portland, Point Judith and Chatham which all have a 5-year average of at least 10 permits (Table 106). However, since vessels need not declare areas, vessels who normally fish in the NFMA could switch at will to the SFMA.

Table 106 - Combined C/D permits who fished in the NFMA, FY2009-2013: ports with at least 3 permits in all years with permits and 5-year average of at least 3 permits

ST	CITY	2009	2010	2011	2012	2013	sum	avg
MA	NEW BEDFORD	114	78	115	116	107	530	106
MA	GLOUCESTER	42	41	38	34	35	190	38
MA	BOSTON	42	34	37	29	26	168	33.6
NJ	CAPE MAY	13	4	22	25	19	83	16.6
ME	PORTLAND	14	14	14	15	13	70	14
RI	POINT JUDITH/NARRAGANSETT	19	16	10	8	7	60	12
MA	CHATHAM	13	12	12	11	12	60	12
NH	PORTSMOUTH	7	7	6	6	5	31	6.2
CT	NEW LONDON	7	5	6	4	5	27	5.4
NH	RYE	6	5	5	5	5	26	5.2
MA	SCITUATE	6	3	6	5	4	24	4.8
ME	SOUTH BRISTOL	7	7	5		4	23	4.6
ME	PORT CLYDE	4	3	4	4	4	19	3.8
VA	NEWPORT NEWS			6	6	5	17	3.4
NC	WANCHESE	4		4	5	4	17	3.4
ME	CUNDYS HARBOR	3	3	3	3	4	16	3.2

There is a potential for common pool vessels with C or D permits fishing in the GOM/GB Monkfish Gillnet Exemption to also be affected. However, given that only one vessel made any trips over the period FY2009-2013, and that vessel made only two trips, this is not expected to be an issue. Should more gillnet vessels make this choice, see Table 7 for distribution of monkfish permits fishing with gillnet gear. Option 2 has similar low to positive impacts as Option 3, but more positive impacts when compared to Option 1.

7.5.1.1.3 Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category C and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (*Preferred Alternative*)

Option 3 would allow Category C and D sector vessels to declare a NE multispecies DAS while at sea. As noted in Section 7.4, the economic impacts to active C and D vessels belonging to sectors would be neutral relative to Option 2, i.e. similar low to positive social impacts. In theory common pool vessels which operate in the GOM/GB Monkfish Gillnet Exemption on a monkfish-only DAS would have slightly more flexibility than under Option 2, but common pool vessels seem not to be taking trips that would be affected by this option. Were conditions to change, communities with larger numbers of active C and D permits or that operate within the common pool would be more impacted (Table 107).

Table 107 - Common pool combined C/D permits: ports with at least 3 permits in all years with permits and 5-year average of at least 3 permits

CITY	ST	2009	2010	2011	2012	2013	sum	avg
NEW BEDFORD	MA	84	84	83	80	79	410	82.0
CAPE MAY	NJ	24	25	24	24	22	119	23.8
BARNEGAT LIGHT/LONG BEACH	NJ	21	17	15	13	12	78	15.6
NEWPORT NEWS	VA	7	8	9	9	8	41	8.2
POINT PLEASANT/PT PLEASANT BEACH	NJ	6	10	8	8	9	41	8.2
NEWPORT	RI	5	6	7	7	5	30	6.0
MONTAUK	NY	5	5	7	7	6	30	6.0
NEW LONDON	CT	7	7	5	4	5	28	5.6
BOSTON	MA	6	7	4	4	4	25	5.0
WANCHESE	NC	4	4	4	4	4	20	4.0
TIVERTON	RI	3	3	3	4	4	17	3.4
FAIRHAVEN	MA	4	3	3	3	4	17	3.4
BEAUFORT	NC	3	4	3	3	3	16	3.2
HAMPTON BAYS/SHINNECOCK	NY	3	4	4		3	14	2.8
NEW BERN	NC	3		3	3	3	12	2.4
POINT JUDITH/NARRAGANSETT	RI	4	4			3	11	2.2
PHILADELPHIA	PA	4	4	3			11	2.2
GLOUCESTER	MA	3	4	3			10	2.0

New Bedford’s high social vulnerability ranking and high monkfish engagement would likely make any negative impacts hit harder, though relative to other monkfish ports its monkfish reliance is low. New London and Wanchese also show social vulnerability. Meanwhile, Barnegat Light/Long Beach’s heavy monkfish reliance magnifies impacts for that community. Montauk is also relatively highly reliant on monkfish. Option 3 has similar low to positive impacts as Option 2, but more positive impacts when compared to Option 1.

7.5.1.2 Southern Fishery Management Area at-sea Monkfish DAS declaration

7.5.1.2.1 Option 1: No Action (*Preferred Alternative*)

Under Option 1, permit Category C, D, and H vessels fishing in the SFMA must declare a monkfish DAS prior to leaving the dock. This may be having negative impacts on a very small number of fishermen, but overall economic and social impacts are neutral. Option 1 would have less positive social impacts when compared to Option 2.

7.5.1.2.2 Option 2: Allow at-sea Monkfish DAS declaration in the Southern Fishery Management Area

Option 2 would allow Category C, D, and H vessels to declare a monkfish DAS while at sea in the SFMA. Given that this provides more flexibility it may help some active C and D vessels and thus have low positive economic and social impacts. New Bedford has the most C/D permitted vessels fishing in the SFMA (128), followed by Point Judith/Narragansett, Boston, Cape May and Gloucester (all with around

30 vessels). These are all either primary or secondary monkfish ports (Table 108). Option 2 would have more low positive social impacts when compared to Option 1.

New Bedford has high social vulnerability and high monkfish engagement, but relatively low reliance on monkfish, as compared with other primary and secondary ports.

Table 108 - Combined C/D permits who fished in the SFMA, FY2009-2013: ports with at least 3 permits in all years with permits and 5-year average of at least 3 permits

ST	CITY	2009	2010	2011	2012	2013	sum	avg
MA	NEW BEDFORD	140	126	128	124	123	641	128.2
RI	POINT JUDITH/NARRAGANSETT	35	34	32	30	28	159	31.8
MA	BOSTON	39	36	32	26	25	158	31.6
NJ	CAPE MAY	27	27	27	30	27	138	27.6
MA	GLOUCESTER	36	30	22	22	20	130	26
NJ	BARNEGAT LIGHT/LONG BEACH	21	17	15	13	13	79	15.8
ME	PORTLAND	13	11	14	12	12	62	12.4
MA	CHATHAM	14	12	12	11	12	61	12.2
NY	MONTAUK	15	11	12	11	9	58	11.6
NC	WANCHESE	10	10	10	10	10	50	10
VA	NEWPORT NEWS	9	10	10	9	8	46	9.2
NJ	POINT PLEASANT/PT PLEASANT BEACH	6	10	9	9	9	43	8.6
RI	NEWPORT	9	8	8	8	8	41	8.2
CT	NEW LONDON	8	8	7	7		30	6
MA	SCITUATE	6	4	6	6	5	27	5.4
NH	PORTSMOUTH	7	6	7	3	3	26	5.2
ME	SOUTH BRISTOL	7	7	5	3	3	25	5
NH	RYE	5	5	4	4	4	22	4.4
MA	FAIRHAVEN	4	4	4	4	5	21	4.2
PA	PHILADELPHIA	5	5	4	3	3	20	4
RI	TIVERTON	3	3	3	4	4	17	3.4
RI	WAKEFIELD	4	4	3	3	3	17	3.4
NY	HAMPTON BAYS/SHINNECOCK	3	4	4	3	3	17	3.4
CT	STONINGTON	4	3	3	3	3	16	3.2
NC	BEAUFORT	3	4	3	3	3	16	3.2

7.5.1.3 Modify DAS/trip limit allocation for Category F (offshore) vessels

7.5.1.3.1 Option 1: No Action (*Preferred Alternative*)

Option 1 would maintain the current trip limit and DAS allocation for Category F vessels. Neutral impacts are expected for the No Action alternative because this would maintain current regulations and

therefore monkfish landings and revenues would not be expected to change. Option 1 would have similar neutral impacts as Option 2 but less negative impacts compared to Option 3.

7.5.1.3.2 Option 2: Increase the trip limit for Category F vessels

Option 2 would increase the trip limit for the Category F fishery. Though active category F permits are highly concentrated, primarily in Montauk but also in New London, Point Judith/Narragansett, and Cape May, only Montauk averages 3 or more active permits over FY2009-2013. Still, any measure specifically for category F permits affects this handful of ports more than others. Of these communities, only Montauk shows moderately high reliance as well as high engagement, meaning it is more susceptible to impacts – whether positive or negative. Due to reducing time at sea required for a given economic return, increasing the trip limit might have a low positive effect. This is because it could allow either 1) more leisure time and/or time with family or 2) the option to spend more time in another fishery or onshore occupation earning additional income, or 3) more time at leisure or with family and friends. However, existing evidence shows that very few vessels are likely to be impacted under either the 1800 or 2200 pound limit, so neutral social as well as economic impacts are more likely. Option 2 would have similar neutral impacts as Option 1 but less negative impacts compared to Option 3.

7.5.1.3.3 Option 3: Adjust monkfish DAS allocations for Category F vessels

Though active category F permits are highly concentrated, primarily in Montauk but also in New London, Point Judith/Narragansett, and Cape May, only Montauk averages 3 or more active permits over FY2009-2013. Still, any measure specifically for category F permits affects this handful of ports more than others. Of these communities, only Montauk shows moderately high reliance as well as high engagement, meaning it is more susceptible to impacts – whether positive or negative.

Due to reducing time at sea required for a given economic return, the existing DAS allocation might have a low positive effect. This is because it could allow either 1) more leisure time and/or time with family or 2) the option to spend more time in another fishery or onshore occupation earning additional income, or 3) more time at leisure or with family and friends. However, existing evidence shows that very few vessels are likely to be impacted under either the 1800 or 2200 pound limit, so neutral social as well as economic impacts are more likely.

Depending on the final revised allocation, impacts will vary. But at 1,600 lbs A and C vessels are likely to receive larger negative impacts than F vessels that would have only small negative impacts. Option 3 would have low negative impacts compared to Options 1 and 2.

The only port with more than 3 active A vessels in any years of the 5-year period FY2009-2013 is Barnegat Light/Long Beach, NJ, with permits in 2009 and 2012 only and a 5-year average of 5.6 active vessels. This port has far and away the greatest concentration of A permits. However, New Bedford, MA, Little Compton, RI, and Block Island, RI fall next in terms of number of A permits. Barnegat Light/Long Beach is a primary port for monkfish and the most reliant on monkfish of all primary communities. Of these, Block Island is the only port that is neither a primary nor a secondary community for monkfish.

For C permits, New Bedford has by a large margin the largest concentration (even with Fairhaven treated as a separate city; Table 109). Given New Bedford's large number of C permits and its social vulnerability, monkfishermen there are likely feel strongly any negative impacts, though the New Bedford's low reliance on monkfish would mitigate impacts to the port as a whole.

Table 109 - C Permits: ports with at least 3 permits in all years with permits and 5-year average of at least 3 permits

CITY	ST	2009	2010	2011	2012	2013	sum	Avg
NEW BEDFORD	MA	107	101	103	99	99	509	101.8
BOSTON	MA	29	28	27	24	22	130	26
CAPE MAY	NJ	22	23	23	24	24	116	23.2
GLOUCESTER	MA	15	16	17	15	14	77	15.4
POINT JUDITH	RI	17	17	15	13	12	74	14.8
BARNEGAT LIGHT/LONG BEACH	NJ	11	9	9	9	9	47	9.4
NEWPORT NEWS	VA	8	9	9	8	7	41	8.2
PORTLAND	ME	7	7	8	7	7	36	7.2
NEW LONDON	CT	5	5	4	4	4	22	4.4
FAIRHAVEN	MA	3	4	4	4	5	20	4
WANCHESE	NC	4	4	4	4	4	20	4
MONTAUK	NY	6	6	5			17	3.4

Category F permits are highly concentrated, primarily in Montauk but there are also small clusters in New London, Point Judith/Narragansett, and Cape May. Only Montauk, however, has 3 or more active permits per year over FY2009-2013, with that beginning in 2010, giving Montauk an average of 5.0 over FY2009-2013. So, impact to F vessels should be minimal at a port level.

7.5.1.4 DAS requirements for RSA vessels when on a monkfish DAS

7.5.1.4.1 Option 1: No Action (*Preferred Alternative*)

Option 1 would maintain current restrictions that prohibit the re-declaration from a monkfish DAS to a monkfish RSA DAS. Neutral impacts are expected because this would maintain current regulations and therefore monkfish landings and revenues would not be expected to change. Option 1 would have less positive impacts compared to Option 2.

7.5.1.4.2 Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea

Option 2 would allow vessels to re-declare from a monkfish DAS to a monkfish RSA DAS. RSA DAS usage concentrated in the communities listed in Table 110, meaning measures affecting vessels with RSA DAS are most important to those communities. Given the economic analysis, communities are expected to benefit from this measure in proportion to the number of monkfish RSA DAS used in their communities. Of the listed communities, a number are neither primary nor secondary monkfish communities and thus not highly engaged in the monkfish fishery. Only New Bedford, Gloucester and Montauk are primary monkfish communities, and they have among the lowest average number of days. However, several secondary monkfish communities are among those with highest average monkfish RSA day usage: Newport, Boston, Scituate, Point Judith/Narragansett, and Hampton Bays/Shinnecock.

However, these benefits may not actually be widespread within the communities, as average numbers of permits possessing monkfish RSA DAS are quite low in most communities. Only nine communities have

monkfish RSA days associated with 3 or more permits in any year FY2009-2013 that they possess monkfish RSA DAS. Of these, only one comes close to a 5-year average of 3 (having an average of 2.6). And in no year FY2009-2013 do permits associated with monkfish RSA DAS total more than 4 in any community.

Option 2 would be expected to have low positive impact because of limited distribution of monkfish RSA DAS among communities. Option 2 would have low positive social impacts compared to Option 1.

Table 110 - Ports with a 5-year average of 5 or more monkfish RSA DAS used, FY2009-2013

CITY	ST	2009	2010	2011	2012	2013	sum	avg
NEWPORT	RI	88.8	20.0	67.4	48.7	40.5	265.4	53.1
BOSTON	MA	23.3	40.6	34.8	61.7	48.8	209.1	41.8
FAIRHAVEN	MA	17.9	129.9	17.0	23.2	8.9	196.9	39.4
SCITUATE	MA	27.8	25.0	66.8	33.6	22.1	175.3	35.1
POINT	RI					130.9	130.9	26.2
JUDITH/NARRAGANSETT								
HAMPTON	NY	34.3	4.8	16.6	25.7	38.1	119.5	23.9
BAYS/SHINNECOCK								
BLOCK ISLAND	RI	28.5	14.3	27.4	22.0	8.4	100.7	20.1
LEWES	DE	9.5	18.5	35.3	6.3	22.5	92.0	18.4
WESTPORT	MA	20.3	9.9	58.3	3.2		91.7	18.3
CENTER MORICHES	NY	16.4		14.6	26.1	34.3	91.4	18.3
NEW BEDFORD	MA	51.4	6.2	21.4	4.2	0.8	84.1	16.8
NEW LONDON	CT			13.9	15.6	35.4	64.9	13.0
GLOUCESTER	MA			15.7	25.9	11.6	53.2	10.6
MONTAUK	NY	0.5			44.8		45.3	9.1
SAKONNET POINT	RI	5.9	20.1	1.2			27.2	5.4

7.5.2 Modifications to Monkfish Possession Limits

7.5.2.1 Northern Area Monkfish Trip Limit on a NE multispecies DAS and monkfish DAS

7.5.2.1.1 Option 1: No Action

Option 1 would maintain the monkfish trip limit in the NFMA and therefore the need to use a monkfish DAS to land a higher possession limit of monkfish in the NFMA. The status quo would have neutral impacts because this would maintain current regulations and therefore monkfish landings and revenues would not be expected to change. Option 1 would have less positive social impacts compared to Option 2.

7.5.2.1.2 Option 2: Eliminate the trip limit on a NE multispecies DAS and monkfish DAS (Preferred Alternative)

Option 2 would eliminate the trip limit on a NE multispecies and monkfish DAS. The increased flexibility is a positive social benefit, even though it may not lead to greater profitability. Option 2 would have positive social impacts compared to Option 1.

7.5.3 Modifications to gear requirements while on a Monkfish DAS

Table 111 represents all vessels using gillnet gear during FY2009-2013. When broken out by port, the most impacted communities are Barnegat Light/Long Beach, Gloucester, Chatham and Montauk. All are either primary or secondary monkfish communities. Barnegat Light/Long Beach is the most highly reliant on monkfish of all the primary and secondary communities. Permit categories A, B, C, D, and H may all potentially be impacted. However, breaking out gillnet vessels by permit category would likely result, for many permit categories, in results that could not be reported due to confidentiality issues. Thus all monkfish vessels using gillnets are reported together in the table below.

Table 111 - Gillnets: ports with at least 3 permits using gillnets in all years with permits and a 5-year average of at least 3 permits

ST	CITY	2009	2010	2011	2012	2013	sum	avg
NJ	BARNEGAT LIGHT/LONG BEACH	35	32	32	27	23	149	29.8
MA	GLOUCESTER	38	32	26	24	14	134	26.8
MA	CHATHAM	16	16	17	15	15	79	15.8
NY	MONTAUK	13	11	15	10	10	59	11.8
MA	BOSTON	11	10	9	8	8	46	9.2
MD	OCEAN CITY	7	8	8	6	6	35	7
MA	NEW BEDFORD	6	7	6	6	5	30	6
MA	SCITUATE	9	5	5	6	4	29	5.8
RI	NEWPORT	5	6	6	6	6	29	5.8
NH	PORTSMOUTH	7	6	5	5	5	28	5.6
RI	SAKONNET POINT	7	6	6	5	4	28	5.6
NH	RYE	5	5	6	6	5	27	5.4
NY	HAMPTON BAYS/SHINNECOCK	5	4	7	3	6	25	5
RI	LITTLE COMPTON	5	5	4	5	5	24	4.8
NC	WANCHESE	5	5	6	4	3	23	4.6
CT	NEW LONDON	4	4	5	4	5	22	4.4
NY	NEW YORK	5	5	3	3	5	21	4.2
RI	TIVERTON	4	4	4	5	4	21	4.2
ME	PORTLAND	4	4	4	4	4	20	4
RI	POINT JUDITH/NARRAGANSETT	5	4	5	3	3	20	4
NJ	POINT PLEASANT/PT PLEASANT BEACH	4	4	4	3	4	19	3.8
MA	WESTPORT	3	3	3	5	3	17	3.4
ME	CUNDYS HARBOR	5	3	4	4		16	3.2

7.5.3.1 Modification to mesh size requirements on a monkfish DAS

7.5.3.1.1 Option 1: No Action

Option 1 would maintain the requirement for gillnet vessels to use 10" or greater mesh while on a monkfish DAS or NE multispecies/monkfish DAS. No new impacts are expected from this option. Option 1 would therefore have neutral impacts, if demand for monkfish and monkfish ex-vessel price remain constant. Option 1 would have more negative impacts compared to Options 2, 3, and 4.

7.5.3.1.2 Option 2: Allow the use of 5-7" mesh in standup gillnet on a monkfish DAS

Option 2 would allow the use of 5-7" mesh stand-up gillnet mesh while on a monkfish or monkfish/NE multispecies DAS throughout both management areas. Slightly increased operational flexibility is a positive social impact, and the expected low positive economic impacts are also a positive social impact. Option 2 would have similar positive social impacts as Options 3 and 4 but more positive impacts compared to Option 1.

7.5.3.1.3 Option 3: Allow the use of 5-7" mesh in standup gillnet on a monkfish DAS in NFMA

Option 3 would allow the use of 5-7" stand-up gillnet mesh while on a monkfish or monkfish/NE multispecies DAS throughout the NFMA. Slightly increased operational flexibility is a positive social impact, and expected slightly low positive economic impacts have a slight positive social impact as well. Option 3 would have similar positive social impacts as Options 2 and 4 but more positive impacts compared to Option 1.

7.5.3.1.4 Option 4: Allow the use of 5-7" mesh in standup gillnet on a monkfish DAS in SFMA (*Preferred Alternative*)

Option 4 would reduce the minimum mesh size allowed in the SFMA for standup gillnet gear when fishing on a monkfish and/or NE multispecies DAS. Slightly increased operational flexibility is a positive social impact, and expected neutral to low positive economic impacts would have similar social impacts. Option 4 would have similar positive social impacts as Options 2 and 3 but more positive impacts compared to Option 1.

7.6 Cumulative Effects Analysis

7.6.1 Introduction

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

7.6.1.1 Valued Ecosystem Components (VEC)

As noted in Section 6.0 (Affected Environment), the VECs that exist within the monkfish fishery are identified and include the following:

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

Temporal Scope of the VECs

While the effects of historical fisheries are considered, the temporal scope of past and present actions on monkfish stocks, other stocks, habitat/EFH and the human environment is primarily focused on actions that have taken place since implementation of the initial Monkfish FMP in 1999. An assessment using this timeframe demonstrates the changes to resources and the human environment that have resulted through management under the Council process. For endangered and other protected species, the context is largely focused on the 1980s and 1990s, when NMFS began generating stock assessments for marine mammals and turtles that inhabit waters of the U.S. EEZ. The CEA examines future actions through April 30, 2021. The temporal scope of the analysis was set at 5 years as this was a reasonable time period to be examined, beyond that, further analysis would be considered speculative. Therefore, the cumulative effects will need to be reassessed as part of the NEPA action taken for FY 2020 and beyond, as necessary.

Geographic Scope of the VECs

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

Because the potential exists for far-reaching social or economic impacts on U.S. citizens who may not be directly involved in fishing for the managed resources, the overall geographic scope for human communities is defined as all U.S. human communities. Limitations on the availability of information needed to measure social and economic impacts at such a broad level necessitate the delineation of core

boundaries for the human communities. Therefore, the geographic range for the human environment is defined as those primary and secondary ports bordering the range of the monkfish fishery from the U.S.-Canada border to, and including, North Carolina.

7.6.1.2 Evaluation Criteria

This EA evaluates the potential impacts of past, present, and reasonably foreseeable future actions using the criteria outlined in Table 112. Impacts from all alternatives are judged relative to the baseline conditions, as described in Section 7.0 and compared to each other.

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

Table 112 - 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		

7.6.2 Past, Present and Reasonably Foreseeable Future Actions

A summary of past, present and reasonably foreseeable future actions is presented in Table 113. 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 114 summarizes the combined effects of other past, present and reasonably foreseeable future actions that affect the VECs (i.e., actions other than those alternatives under development in this document from 2014 onward). Most of the actions affecting this EA and considered in Table 114 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 from climate change such as increased water temperature or acidification, salinity, dissolved oxygen, and suspended sediment into the marine environment. These activities pose a risk to the all of the identified VECs in the long term. Human induced non-fishing activities that affect the VECs under consideration in this document are those that tend to be concentrated in near shore areas. Examples of these activities include, but are not limited to agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and, as such, may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources. Decreased habitat suitability would tend to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that would reduce fishing effort could then negatively impact human communities.

Summary of Past Monkfish Management Actions

The Monkfish FMP was initially implemented in 1999, and has been amended several times, most recently in 2011 with the implementation of Amendment 5 and FW 8 in 2014. Amendment 6 is currently under development, with the intent to consider catch share management in the monkfish fishery, among other measures. The documents pertaining to previous management actions are available on the NEFMC website, www.nefmc.org. A synoptic discussion, focusing on the science and management aspects of the FMP up to FW 4 (2007) is also contained in an article “*The monkfish fishery and its management in the Northeastern USA*”, (Haring and Maguire 2008), which is available on the NEFMC website. Below is a summary of recent management actions beginning with FW 4.

For management purposes, the monkfish fishery is divided into two areas; the NFMA and SFMA (see Figure 1). While scientific evidence for two biological stocks is uncertain, and additional research, including archival tagging, is ongoing, fisheries in the two areas are clearly distinct. As a result, stock assessments are completed for the two areas separately to be able to support the management plan. The NFMA monkfish fishery is closely integrated with the multispecies fishery, and is primarily a trawl fishery, while the SFMA fishery is primarily a gillnet fishery targeting monkfish almost exclusively. These differences have resulted in some differences in management measures, such as landing limits and DAS allocations, between the two areas.

FW4 was implemented on October 22, 2007 and set target total allowable catch levels (TTACs) at 5,000 mt and 5,100 mt for the NFMA and SFMA, respectively. FW 4 also established the requirement that vessels that exceeded the monkfish incidental catch limit while fishing in the NFMA on a multispecies DAS, must declare they were using a monkfish DAS, which could be done by Vessel Monitoring Systems (VMS) any time prior to returning to port. Vessels in the SFMA were already required to declare a

monkfish DAS when exceeding the incidental limit. FW 4 also reduced the monkfish incidental limit in the NFMA from 400 lb tail weight/DAS or 50% of the weight of fish on board, whichever is less, to 300 lb tail weight/DAS or 25% of the total weight of fish on board, whichever is less.

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

FW 5, which was implemented prior to the start of the 2008 fishing year (73 *Federal Register* 22831, April 28, 2008), reduced the number of unused DAS that could be carried over to the next fishing year from 10 to 4; revised the DAS accounting method for gillnet vessels such that all trips less than 15 hours would be counted as 15 hours, eliminating the provision that trips less than 3 hours would be counted as time used; and, revised the monkfish incidental catch allowance applicable to vessels in the Southern New England Regulated Mesh Area (SNE RMA) fishing with large mesh but not on a monkfish, scallop or multispecies DAS, from 5% of the total weight of fish on board (with no landings cap) to 5% of total weight of fish on board not to exceed 50 lb per day, up to 150 lb maximum, and also applied this revision to all vessels fishing under a Skate Bait Letter of Authorization (LOA) east of 74°00'W. In addition, FW 5 modified the Monkfish LOA requirement for vessels fishing under the less restrictive measures for the NFMA such that vessels using a VMS would no longer be required to obtain the LOA, but could make the declaration via the VMS.

With the adoption of new biological reference points and revised stock status as a result of the DPWG assessment, as well as the measures adopted in FW 5 designed to reduce the likelihood of TTAC overages, the Councils concluded that the backstop provision, established in FW4, was no longer necessary. They submitted the regulatory change in FW 6 in April 2008, and the final rule became effective on October 10, 2008, approximately seven months before the start of FY 2009 (73 *Federal Register* 52635, September 10, 2008). This was the only action taken in FW 6.

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

were implemented to ensure that sufficient protections are in place to prevent overfishing. Amendment 5 also established biological and management reference points consistent with NS1 guidelines using the most recent scientific information available at the time it was developed, from the 2007 DPWG assessment.

Given the timing of SAW 50 (July 2010) and the Councils' final action on Amendment 5 in June 2010, Amendment 5 provided new biomass reference points, recalculated the fishing mortality rate (F) corresponding to the overfishing threshold, F_{\max} , and concluded that the stock status would not change, even under the new reference points. Furthermore, the Councils addressed two primary purposes regarding Amendment 5: 1) to implement the MSA mandated ACLs and accountability measures (AMs), and 2) to set the specifications of DAS, landing limits and other management measures to replace those adopted in FW 4. The Councils also proposed modifications to the FMP to improve the Research Set Aside (RSA) Program, to minimize bycatch resulting from trip limit overages, and to allow the landing of monkfish heads.

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

Framework 8 became effective on July 18, 2014 (79 *Federal Register* 41918). It increased monkfish day-at-sea allocations and landing limits, allowed vessels issued a limited access monkfish Category H permit to fish throughout the Southern Fishery Management Area, enabled vessels to use an allocated monkfish-only day-at-sea time throughout the fishing year and revised biological reference points for the monkfish stocks in the Northern and Southern Fishery Management Areas.

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

Table 113- Summary of effects on VECs from past, present, and reasonably foreseeable FMP and other fishery-related actions.

Action	Description	Impacts on Regulated Monkfish Stocks	Impacts on Non-target species	Impacts on Endangered and Other Protected Species	Impacts on Habitat – Including Non-fishing Effects	Impacts on Human Communities
MONKFISH FISHERY-RELATED ACTIONS						
Framework 8	Set specifications for FY2014 and FY2015 based on stock assessment	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 Increased probability of long term sustainability
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
Scallop FW 27	Set specifications for scallop FY 016 ad 2017. It is also considering proactive accountability measures for windowpane flounder	Negl to L+	Negl to L+	Negl	Negl	- To +
Groundfish FMP – a series of amendment and framework actions	Implementation of the NE Multispecies FMP and continued management of the	Direct Positive Multispecies FMP effort controls and reductions have	Indirect Positive Effort reductions and gear controls taken over time	Indirect Positive Reducing effort and other measures reduced	Indirect Positive Reducing effort and other measures reduced	Indirect Positive Reducing effort has created a sustainable fishery

Environmental Consequences of the Alternatives
Cumulative Effects Analysis

from implementation of the FMP in 1977 through the present	fishery, primarily through effort controls, and, recently also through sectors	resulted in a fishery that is no longer overfished, nor is overfishing occurring	also reduced bycatch	opportunities for interactions with protected species	opportunities for habitat interactions	for some stocks, although ACL reductions have led to economic and social impacts and increased discards
FW55 to the NE multispecies FMP	Set specifications for FY 2015, revised cod spawning and mortality closures, allowed rollover of groundfish specifications and modified sector ACE carryover provisions	Mixed	Mixed	Negl	Negl	Mixed
Omnibus Essential Fish Habitat Amendment	Phase 2 would consider effects of fishing gear on EFH and move to minimize, mitigate or avoid impacts that are more than minimal and temporary in nature. Further, Phase 2 would reconsider measures in place to protect EFH in the Northeast Region.	Indirect positive Protecting EFH would have indirect positive impacts on monkfish	Indirect positive	Negligible	Direct positive Protecting EFH would have indirect positive impacts on monkfish EFH	Unknown Possible negative impacts for vessels using trawl gear
Skate FMP FW3	Actions to end overfishing, rebuild overfished stocks, establish ACLs/AMs, and landing limits to achieve catch levels	Minor Negative Lower skate possession limits and closures may cause vessels to use DAS for monkfish	Mixed Actions taken to reduce skate mortality; they could lead to increased targeting of non-monkfish species	Unknown If actions taken to reduce skate mortality, could impact protected species by shifting effort into other fisheries with interactions with protected species	Unknown If actions are taken to reduce skate mortality, they could impact habitat	Minor negative Actions taken to reduce skate mortality negatively impact human communities by reducing fishing opportunities and revenue

Environmental Consequences of the Alternatives
Cumulative Effects Analysis

<p>Spiny Dogfish FMP 2016-2018 specifications</p>	<p>Implements quotas, possession limits and ACLs to regulate spiny dogfish catch; many groundfish regulations also control effort in this fishery</p>	<p>Minor positive Lower spiny dogfish quotas may result in lower indirect catch of monkfish that may have minor positive impact on monkfish</p>	<p>Indirect positive Gear requirements in the groundfish fishery help minimize bycatch of non-target species</p>	<p>Mixed Measures affecting spiny dogfish fishing in the groundfish fishery and gear regulations implemented under the ESA and MMPA should also help minimize impacts to protected species, although increased effort from higher quotas may increase interactions; both trawl gear and gillnets are used in this fishery</p>	<p>Indirect positive Measures affecting spiny dogfish fishing in the groundfish fishery should also help minimize impacts to habitat</p>	<p>Mixed Short-term reductions in landings resulted in negative impact, but recent increases in yearly quotas likely mitigated those impacts</p>
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Action	Description	Impacts on Regulated Monkfish Stocks	Impacts on Non-target species	Impacts on Endangered and Other Protected Species	Impacts on Habitat – Including Non-fishing Effects	Impacts on Human Communities
OTHER FISHERY-RELATED ACTIONS CONTINUED						
Atlantic Large Whale Take Reduction Plan Amendment (2008)	Removed the DAM program, implemented sinking ground lines for lobster gear, includes more trap/pot and gillnet fisheries, and requires additional markings on gear for information on entanglements ; future actions will minimize impact of vertical lines	Negligible Changes implemented through the amendment are not expected to have substantial changes on groundfish	Negligible Changes implemented through the amendment are not expected to have substantial changes on non-groundfish species	Direct Positive New regulations implemented to protect large whales are expected to have a positive impact on large whales by reducing incidental takes	Negligible Changes implemented through the amendment are not expected to have substantial changes to habitat	Indirect Negative Changes implemented through the amendment require some gear changes for gillnet fisheries which have minor negative economic impacts
Harbor Porpoise Take Reduction Plan Amendment (2010)	Actions to reduce takes of harbor porpoise toward the long-term zero mortality rate goal.	Unknown If current measures such as closure areas and the use of pingers are expanded upon or modified, it could impact groundfish	Unknown If current measures such as closure areas and the use of pingers are expanded upon or modified, it could impact non-groundfish species	Direct Positive Changes to protect harbor porpoise have a positive impact on protected species	Unknown If current measures such as closure areas and the use of pingers are expanded upon or modified, it could impact habitat	Unknown If current measures such as closure areas and the use of pingers are expanded upon or modified, it could impact human communities

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

Environmental Consequences of the Alternatives
Cumulative Effects Analysis

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

Table 114 - Summary effects of past, present, and reasonably foreseeable future actions on the VECs.

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

Impact Definitions:

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

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

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

7.6.3 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 115 illustrates the baseline conditions found as part of the FW 8 cumulative effects analysis (NEFMC 2013). These conditions remain timely and relevant.

Table 115 - Summary of baseline conditions for each VEC

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

7.6.4 Summary of the Impacts from the Preferred Alternatives

The preferred alternative for allowing vessels to declare a NE multispecies DAS at sea would allow only groundfish sector vessels holding a limited access Monkfish Category C or D permits to declare a NE multispecies DAS while at sea in the NFMA. The impacts analyses indicate that the majority of trips are landing below the incidental limit when on a NE multispecies DAS, accordingly, effort would not be expected to increase under the preferred alternative. This combined with the under harvesting of the TAL in this management area indicates neutral impacts on the monkfish stock. The preferred alternative is not expected to modify interactions of monkfish or groundfish gear with EFH and would therefore have neutral impacts. Allowing monkfish Category C and D sector vessels to declare a NE multispecies DAS at sea in the NFMA would have neutral to possibly low positive economic impacts because the analysis identified few trips that would have yielded additional monkfish landings had this option been in place.

The preferred alternative for the SFMA at sea monkfish declaration was the No Action alternative. As this represent status quo, neutral impacts would be expected on the monkfish stock. Status quo in DAS declaration requirements in the SFMA would not alter fishing effort patterns and therefore would have neutral impacts on EFH. As the preferred alternative represents status quo, the economic impacts would be neutral. The preferred alternative not allowing the declaration of a monkfish DAS at sea in the SFMA would have neutral economic impacts, assuming other factors external to this action that may influence monkfish landings and revenues remain constant, because it would not increase the ability of the fishery to achieve its TAL.

The preferred alternative for the modification of the DAS/trip limit allocation for Category F vessels was the No Action alternative. As this represents status quo, neutral impacts would be expected on the monkfish stock. Status quo in DAS/trip limit allocation for Category F vessels would not alter fishing effort patterns and therefore would have neutral impacts on EFH. As the preferred alternative represents status quo, the economic impacts would be neutral. Maintaining current trip limit and DAS allocation for Category F vessels would have neutral economic impacts on monkfish, assuming other factors external to

this action that may influence monkfish landings and revenues remain constant, because no change in trip limit or DAS allocation would occur.

No Action was selected as preferred for DAS requirements for RSA vessels when on a monkfish DAS. As this represents status quo, neutral impacts would be expected on the monkfish stock. Status quo in DAS declaration requirements for RSA vessels would not alter fishing effort patterns and therefore would have neutral impacts on EFH. As the preferred alternative represents status quo, the economic impacts would be neutral. Maintaining current restrictions that prohibit the re-declaration from a monkfish DAS to a monkfish RSA DAS while at sea would have neutral impacts on monkfish, assuming other factors external to this action that may influence monkfish landings and revenues remain constant, because while there would be no expected change in current fishing effort.

The preferred alternative for the northern area monkfish trip limit on a NE multispecies and monkfish DAS was to eliminate the trip limit for vessels fishing on a NE multispecies and monkfish DAS in the NFMA. The impacts analyses indicate that the majority of trips are landing below the incidental limit when on a NE multispecies DAS, accordingly, effort would not be expected to increase under the preferred alternative. This combined with the under harvesting of the TAL in this management area indicates neutral impacts on the monkfish stock. Impacts to EFH could be slightly higher in scale than the No Action alternative, however, overall effort is constrained by existing catch limits, effort controls, and AMs resulting in overall negligible impacts. The preferred alternative would have neutral to low positive economic impacts because of the low number of trips approaching the monkfish DAS trip limit in the NFMA in the time period examined. This would lead to the conclusion that the preferred alternative would significantly increase monkfish landings or revenue. Eliminating the trip limit in the NFMA for monkfish Category C and D vessels fishing on both a NE multispecies and monkfish DAS would have low positive to positive economic impacts because based on the analysis, a small number of trips were approaching the existing trip limit and may be able to take advantage of an unlimited possession limit.

The preferred alternative to modify mesh size requirements on a monkfish DAS would reduce the minimum mesh size for standup gillnets in the SFMA when fishing on a monkfish and/or NE multispecies DAS. This would have neutral biological impacts because effort is not expected to increase on monkfish, the total number of standup gillnets in the Mid-Atlantic and SNE dogfish Exemption Areas are limited to 50 for limited access vessels, and the use of the smaller mesh has already been occurring throughout the area. The preferred alternative would have neutral impacts on EFH because a change in mesh size would not affect the vulnerability of EFH in the SFMA to gillnet gear. Modifying the minimum mesh size requirements for standup gillnet gear in the SFMA would have neutral to low positive economic impacts because most gillnet trips under a monkfish-only or combined monkfish/NE multispecies DAS occur in the SFMA, portions of the preferred alternative would apply to vessels with monkfish permits in Categories A and B as well as those with monkfish permits in Categories C and D, and it would provide greater flexibility as to mesh size used.

7.6.5 Cumulative Effects Summary

The following analysis will summarize 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 8 to the Monkfish FMP (NEFMC, 2014), past actions in the Monkfish FMP have rebuilt monkfish stocks in both the NFMA and SFMA such that neither stock is subject to overfishing nor overfished. Both Amendment 5 and FW 8 implemented measures to comply with the MSA Reauthorization in 2007 that provide for the long-term sustainability of the stock, including

implementing ABCs, ACLs, ACTs, and AMs. While the preferred alternatives would allow greater flexibility to harvest monkfish in the NFMA and SFMA, given management measures implemented in the fishery, NFMA and SFMA monkfish landings would not exceed the established NFMA and SFMA monkfish TALs. Thus, there would be positive changes to previously anticipated levels of monkfish catch as a result of the preferred alternatives, without causing negative impacts on either the northern or southern stocks. The preferred alternatives, along with protections afforded through other management plans, such as FW 53 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 Amendment 2 would also not likely result in changes that would affect the current status of the monkfish resource in the NFMA or the SFMA. It is expected that all actions combined would still result in NFMA and SFMA 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 and SFMA, 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 alternatives, notwithstanding the potential for the preferred alternatives to increase monkfish landings and, potentially, dogfish landings. While the increased opportunity to target monkfish would allow for effort to shift from other fisheries, particularly the groundfish fishery, as intended, there may be increased incidental catch of some species, particularly skates and dogfish. However, such an increase would likely be negligible and controlled by management measures in those fisheries that are designed to prevent overfishing and rebuild overfished stocks consistent with the requirements of the Magnuson-Stevens Act. Thus, the cumulative effect of this action would likely result in negligible changes to the sustainable management of those fisheries, with no anticipated significant impacts.

Endangered and Other Protected Species

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

Habitat Including Non-fishing Effects

Past actions taken under the Monkfish FMP, particularly the controls on fishing effort and the closure of three offshore canyon areas, have had a positive effect on protecting habitat, including EFH. The preferred alternatives may be neutral or negative with respect to habitat depending on the time and area where any potential increased effort may materialize. A negative effect might occur if, for example, vessels fish more directed monkfish trips rather than simply converting monkfish discards into landings. Under the preferred alternatives, additional flexibility would be allowed in the fishery in the form of modifying DAS declaration requirements, possession limits in the NFMA, and minimum mesh sizes in

the SFMA. Interactions with target species other than monkfish may be more likely to limit directed monkfish effort levels during FY 2015-2016. However, even more effort is directed on monkfish, the preferred alternatives would still ensure that monkfish landings do not exceed established NFMA and SFMA monkfish TALs and, when discards are included, ACT, effort would not increase beyond levels evaluated in the EA. The recent substantially-reduced groundfish ACLs and associated measures to prevent these ACLs from being exceeded are likely an even more limiting factors to control effort. Therefore, in the context of the monkfish and groundfish fisheries as a whole, the overall recent effort reductions in the groundfish fishery, the constrains in fishing effort in effect in both the monkfish and groundfish fisheries, and the ongoing development of the Omnibus Habitat Amendment 2, the net effect of the preferred alternatives will likely be negligible overall.

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

Human Communities

Rebuilding of the monkfish resource over the past decade, along with stability afforded by the multi-year specifications-setting process has had an overall positive effect on affected human communities. This trend is likely to continue under the preferred alternatives, which allow for increased fishing opportunities through modified DAS declaration regulations, modified trip limits, and modified mesh size requirements beginning in FY 2016. 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.

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8.0 Consistency with Applicable Laws

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

8.1.1 National Standards

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

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

The existing NFMA and SFMA monkfish ACTs were set at a level that would prevent overfishing after taking into account the scientific uncertainty in the estimate of the overfishing level of catch and management uncertainty. OY is defined in Amendment 5 as the yield corresponding to the ACT. The preferred alternatives would help increase monkfish landings to increase the proportion of the NFMA and SFMA monkfish ACTs caught beginning in FY 2015 and, in doing so, more likely achieve optimum yield in the fishery.

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

The proposed measures are based upon the existing TAL and ACT in each area that were adopted by the NEFMC and MAFMC under Framework Adjustment 8. These catch levels were based upon the most recent stock assessment (Operational Assessment for Monkfish, NEFSC 2013) and the recommendations of the SSC following their review of the results of the 2013 Operational Monkfish Assessment and additional analysis by the Monkfish PDT. These catch levels were then used in developing the proposed measures to improve flexibility for the fishery to achieve optimum yield.

- (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 stated in FW 7, the NEFMC and MAFMC considered a single-stock approach, but rejected it, based in part, on scientific information from SARC 34 (NEFSC 2002) that concluded information was insufficient to make a determination whether to manage monkfish as one or two monkfish stocks. The latest assessment, the Operational Monkfish Assessment (NEFSC 2013), did not change the findings of the previous assessment, and the NEFMC and MAFMC did not change this two-area approach due to the insufficient scientific information.

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

The preferred alternatives do not discriminate between residents of different states. The two-area management program is based on differences in the fisheries between the two areas, and not based on allocation of fishing privileges differently among sectors of the industry. While the preferred alternatives

do not discriminate between permit holders, they do have different impacts on different participants. The preferred alternatives would allow groundfish sector vessels in the NFMA to declare a NE multispecies DAS while at sea, would eliminate the monkfish trip limit in the NFMA when fishing on a NE multispecies and monkfish DAS, and would modify the minimum mesh size requirements for standup gillnets when fishing on a monkfish DAS in the SFMA. Thus, as specified in the purpose and need for this action (Section 3.2), this was specifically designed to revise existing management measures to achieve, but not exceed, catch limits specified.

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

The preferred alternatives do not have economic allocation as their sole purpose, and do not distribute fishery resources among fishermen on the basis of economic factors alone. The preferred alternatives were designed as compromises between biological and economic benefits to the monkfish fishery. The preferred alternatives were designed to provide flexibility for the fleet to better achieve, but not exceed, the TAL. This action contributes to the control of fishing mortality by allowing the fishery to catch, but not exceed, the amount of monkfish that is appropriate given the status of the stock, and the requirements of the FMP and MSA, based upon updated scientific information.

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

The two-area management approach of the FMP is specifically intended to take into account the differences in fisheries between the two areas. Other measures in the FMP, such as the permit categories and gear and area-based incidental and directed catch limits are also based on the differences among various fisheries that catch monkfish either as a target or incidental catch species. These considerations are not changed under the preferred alternatives. The primary effort controls in the monkfish fishery, DAS and landing limits, allow each vessel operator some flexibility to fish when and how it best suits his or her business. The preferred alternatives further enhance operational flexibility based on the purpose and need for this action.

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

The flexibility afforded to the fishery by the preferred alternatives would provide additional fishing opportunity and revenue for vessels fishing in both the NFMA and SFMA. The measures do not duplicate other regulatory efforts, and were designed to achieve the management objectives of the Monkfish FMP.

(8) Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of paragraph (2), in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

Consistent with the requirements of the MSA to prevent overfishing and rebuild overfished stocks, this action would likely increase monkfish landings from both the NFMA and SFMA without resulting in overfishing monkfish in either stock area. Analyses of the impacts of this action show that overall landings and revenues are likely to increase, thereby reducing adverse impacts on fishing communities,

without exceeding the NFMA or SFMA TALs or ACTs established by Amendment 5 and FW 8 to the Monkfish FMP. At the individual level, landings and revenue will depend upon the vessel's fishing behavior and fishing history. This action attempts to provide for the sustained participation of communities associated with the monkfish fishery by providing additional fishing opportunities and potential revenue by allowing more monkfish to be landed from the NFMA and SFMA and increasing operational flexibility beginning in FY 2016.

- (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 modifying DAS declarations in the NFMA, possession limits in the NFMA, and minimum mesh sizes in the SFMA, this action would reduce incentives to discard monkfish, and may turn some discards, particularly regulatory discards, into landings.

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

Under the current monkfish DAS and landing limits requirements, if a vessel caught more monkfish than its intended monkfish DAS charge would allow, it would be forced to either discard the fish or remain at sea until the monkfish DAS charge was sufficient. The preferred alternatives would provide vessels with more flexibility in changing DAS declarations while at sea to access higher possession limits.

8.1.2 Required Provisions

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

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

Foreign fishing is not allowed under this management plan, or this action and so specific measures are not included that specify and control allowable foreign catch. The measures in the preferred alternatives are designed to prevent overfishing and rebuild overfished stocks by vessels of the U.S. consistent with the National Standards. The preferred alternatives would rely upon measures implemented by previous management actions, including the monkfish NFMA and SFMA ACLs and ACTs adopted in Amendment 5 and FW 8, to ensure that overfishing is prevented for NFMA and SFMA monkfish. There are no international agreements that are germane to the management of NFMA or SFMA monkfish.

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

The fishery and its components, including biological, social and economic aspects, are described in the Affected Environment section of the EIS for the FMP, as well as in subsequent environmental documents prepared for previous management actions, including Amendment 5 and FW 8 to the FMP. Section 6.0 of this document updates this information, including the number of vessels involved, the type of fishing gear used, and potential revenues from the fishery beginning in FY 2014. There is no foreign fishing for monkfish, no directed recreational fishery, and there are no known Indian treaty fishing rights pertaining to monkfish.

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

The most recent stock assessment (Monkfish Operational Assessment; NEFSC 2013) contains the best estimate of the present condition of the monkfish resource. That information, in conjunction with an evaluation of that stock assessment by the SSC, was used to support the continuation of the NFMA and SFMA monkfish TALs and ACTs originally implemented under FW 8 and Amendment 5, respectively. OY is defined in Amendment 5 as the yield corresponding to the ACT. Assuming these ACTs are not exceeded, as projected in the preferred alternatives, overfishing will not occur on NFMA or SFMA monkfish, and these stocks will continue to not be overfished.

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

Although in recent years the monkfish fishery has not been able to fully harvest OY in the NFMA or SFMA, this action is specifically designed to increase the efficient utilization of the monkfish resource, with the preferred alternatives designed to increase monkfish landings to more fully harvest, but not exceed, the ACTs in the NFMA and SFMA. In previous FYs, the domestic fishery has caught monkfish in amounts equivalent to the TALs and ACTs specified in each year that would be continued under this action. Thus, there is no amount of OY available for foreign fishing. Furthermore, sufficient domestic processing capacity exists to utilize all monkfish harvested by United States vessels.

- (5) specify the pertinent data which shall be submitted to the Secretary with respect to commercial, recreational, charter fishing, and fish processing in the fishery, including, but not limited to, information regarding the type and quantity of fishing gear used, catch by species in numbers of fish or weight thereof, areas in which fishing was engaged in, time of fishing, number of hauls, economic information necessary to meet the requirements of this Act, and the estimated processing capacity of, and the actual processing capacity utilized by, United States fish processors;*

Current reporting requirements for this fishery have been in effect since the implementation of the FMP in 1999. The requirements include VTRs that are submitted by each fishing vessel and DAS declaration requirements. Dealers are also required to submit reports on the purchases of regulated groundfish from permitted vessels. Current reporting requirements are detailed in 50 CFR 648.7. The Monkfish Plan Development Team (PDT) compiles and publishes annually a description of the fishery, including affected communities, as part of the SAFE Report, most recently in Section 6.0 of this document. There is no significant recreational or charter fishery for monkfish.

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

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

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

Section 6.0 contains the description of monkfish essential fish habitat, and Section 7.2 contains the analysis of impacts of the preferred alternatives and other alternatives on EFH.

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

Stock assessments are typically conducted by the NEFSC every three years including a discussion of research needs in the fishery, along with an annual SAFE Report prepared by the NEFMC. Such needs are documented in the 2013 operational assessment (NEFSC 2013). Section 6.0 of this document serves as the most recent SAFE Report developed for the monkfish fishery.

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

Biological impacts are evaluated for monkfish, non-target species, protected species, and EFH in Sections 7.1, 7.2, and 7.3 of this EA. Economic and social impacts of the preferred alternatives on fishing communities directly affected by this action and adjacent areas can be found in Sections 5.3 and 5.4 of this EA. Consideration of the effect of measures considered under this action have on the safety of fishery participants is evaluated in Section 6.1.1 of this EA.

- (10) *specify objective and measurable criteria for identifying when the fishery to which the plan applies is overfished (with an analysis of how the criteria were determined and the relationship of the criteria to the reproductive potential of stocks of fish in that fishery) and, in the case of a fishery which the Council or the Secretary has determined is approaching an overfished*

condition or is overfished, contain conservation and management measures to prevent overfishing or end overfishing and rebuild the fishery;

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

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

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

Since this provision requires the establishment of a Standardized Bycatch Reporting Methodology (SBRM), in January 2006, development began on the Northeast Region Omnibus SBRM Amendment. This amendment covers 13 FMPs, 39 managed species, and 14 types of fishing gear. The SBRM Amendment was approved on October 22, 2007, and a final rule became effective on February 27, 2008, however, this SBRM was vacated by a ruling by the District Court for the District of Columbia in September 2011. The final rule for the omnibus SBRM amendment, developed by both the New England and Mid-Atlantic Fishery Management Councils, was published on June 30, 2015. The intended effect of the amendment was to implement the following: a new prioritization process for all allocation of observers if agency funding is insufficient to achieve target observer coverage levels, bycatch reporting and monitoring mechanisms, analytical techniques and allocation of at-sea fisheries observers, a precision-based performance standard for discard estimates, a review and reporting process, framework adjustment and annual specifications provisions, and provisions for industry-funded observers and observer set-aside programs.

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

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

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

Monkfish catch in recreational fisheries is not significant enough to be recorded in the recreational catch and vessel data. Commercial fishery sectors are described in the Affected Environment section of the EIS

for the original FMP, as well as in subsequent environmental documents (plan amendments and framework adjustments), and is updated in Section 6.0 of this document.

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

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

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

The NEFMC and MAFMC completed Amendment 5 to the FMP in September 2010, which includes, among other provisions, specification of ACLs and AMs. The ACTs are a proactive form of AM. FW 8 increased monkfish DAS allocations and landings limits, allowed vessels issued a limited access monkfish Category H permit to fish throughout the SFMA and enabled vessels to use an allocated Monkfish-only DAS at any time throughout the fishing year.

8.1.3 EFH Assessment

This essential fish habitat (EFH) assessment is provided pursuant to 50 CFR 600.920(e) of the EFH Final Rule to initiate EFH consultation with the NMFS.

Description of Action

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

In general, the activity within the scope of this action, fishing for monkfish within the NFMA and SFMA, occurs off the U.S. coast within the U.S. EEZ. Thus, the range of this activity occurs across the designated EFH of all Council-managed species (see Amendment 11 to the Northeast Multispecies FMP for a list of species for which EFH was designated, the maps of the distribution of EFH, and descriptions of the characteristics that comprise the EFH; NEFMC 1998). The overall effect of the monkfish fishery on EFH was discussed and mitigated for in Amendment 2, and in Multispecies Amendment 13, and the alternatives proposed in this action do not change those findings. EFH designated for species managed under the Secretarial Highly Migratory Species FMPs are not affected by this action, nor is any EFH designated for species managed by the South Atlantic Fishery Management Council as all of the relevant species are pelagic and not directly affected by benthic habitat impacts.

Assessing the Potential Adverse Impacts

The potential adverse impacts to habitat are described in Section 7.2. This section demonstrates that the overall habitat impacts of the proposed measures have negligible or neutral impacts overall relative to the baseline habitat protections established under the original Monkfish FMP. As such, additional measures

to mitigate or minimize adverse effects of the monkfish fishery on EFH beyond those established under the original FMP are not necessary.

Conclusions

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

8.2 National Environmental Policy Act (NEPA)

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

8.2.1 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 3.2;
- The alternatives that were considered are described in Section 4.0;
- The environmental impacts of the preferred alternative are described in Section 7.0;
- The agencies, preparers and persons consulted on this action are listed in Section 8.0;
- An Executive Summary can be found in Section 1.0;
- A table of contents can be found on page 11;
- Background and purpose are described in Section 3.0;
- A brief description of the affected environment is in Section 6.0;
- Cumulative impacts of the preferred alternatives are described in Section 7.6;
- A determination of significance is in Section 8.11.1.

8.2.2 Finding of No Significant Impact (FONSI Statement)

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

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

Response: 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 7.0 indicates allowing the declaration of a NE multispecies DAS to occur at sea in the NFMA, eliminating the monkfish possession limit while on a NE multispecies and monkfish DAS in the NFMA, and reducing the minimum standup gillnet mesh size in the SFMA would not result in monkfish catch exceeding the ACTs. Constraining monkfish catch within the ACT is consistent with preventing overfishing and sustaining the biomass over

the long term. Both scientific and management uncertainty have been accounted for in the specifications, so the risks of negative biological impacts have been minimized.

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

Response: This action cannot be reasonably expected to jeopardize the sustainability of any non-target species that may be affected by the action. The preferred alternatives allow the declaration of a NE multispecies DAS to occur at sea in the NFMA, eliminate the monkfish possession limit while on a NE multispecies and monkfish DAS in the NFMA, and reduce the minimum standup gillnet mesh size in the SFMA. The reduction in minimum standup gillnet mesh size may allow increased landing of dogfish while on a monkfish DAS, however, this is expected to increase efficiency for vessels targeting both monkfish and dogfish, instead of increasing effort on dogfish. Also, the number of standup gillnets allowed to be fished in the Mid-Atlantic Exemption Area and the SNE Dogfish Exemption Area would be restricted to 50. The reduced mesh size was restricted to the SFMA out of concerns for potential interaction with groundfish in the NFMA. Therefore, measures designed to limit fishing mortality on monkfish as well as other stocks, particularly groundfish stocks, are expected to limit the potential increase and ensure that any increase in fishing mortality as a result of this action does not compromise conservation measures designed to prevent overfishing and rebuild overfished stocks. There are no indications that an increase in monkfish fishing activity will jeopardize the sustainability of non-target species particularly given the other constraints in these other fisheries.

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

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

Response: The preferred alternatives cannot be reasonably expected to cause substantial damage to the ocean and coastal habitats and/or EFH, as defined under the Magnuson-Stevens Act and identified in the FMP. As discussed in Section 7.2, the preferred alternative in the context of the FMP as a whole, is expected to have a minor negative impact on habitat compared to the no action alternative, with overall effort less than effort observed when the FMP was first developed and the impacts of EFH first assessed.

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

Response: None of the measures proposed in this action would alter fishing procedures or otherwise create a safety or public health concern. In fact, improving flexibility for DAS declaration to occur at sea in the NFMA and the elimination of the monkfish possession limit when on a NE multispecies and monkfish DAS in the NFMA 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. The reduction in the minimum standup gillnet mesh size in the SFMA may improve efficiency of vessels also targeting dogfish.

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

Response: Fishing effort would not be expected to increase under the preferred alternatives, therefore the net effect on protected species would be expected to be neutral (Section 7.3). The activities and fishing effort levels conducted under the preferred alternatives are within the scope of the original FMP, and would be restricted by the specifications set in FW8, as noted in Section 7.3. The measures controlling fishing effort in the monkfish fishery, including those in this action, in combination with NMFS's actions being taken to protect Atlantic sturgeon, sea turtles, harbor porpoise, and large whales will mitigate much of the impact of the fisheries (both the directed monkfish fishery and other fisheries in the region) on protected species, and keep such interactions within acceptable limits.

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

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

Response: The preferred alternatives are not expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area. The use of the NFMA and SFMA monkfish ACTs would control catch of monkfish. As noted in FW 8 and SAW 50, although the role of monkfish within the ecosystem is not well understood, monkfish account for upwards of six percent of total consumption by all finfish in the ecosystem (NEFMC 2011b, NEFSC 2010). Accordingly, maintaining sustainable levels of monkfish would likely promote biodiversity and ecosystem function over the long term.

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

Response: The EA documents that no significant natural or physical effects will result from the implementation of the preferred alternatives. There are no significant natural or physical environmental effects resulting from the preferred alternatives that may have an impact on communities or the human environment in the context of NEPA. The preferred alternatives are designed to increase efficient use of the monkfish resource, increase operational flexibility and to achieve, but not exceed the ACTs. As described in Section 7.1, the preferred alternatives would allow the fishery to better achieve but not exceed existing NFMA or SFMA monkfish TALs or ACTs recommended by the NEFMC SSC at a level that would prevent overfishing and sustain the biomass over the long term. Accordingly, expected impacts fall within the scope of those analyzed under Amendment 5, and FW 8, and are considered to not be significant. The action cannot be reasonably expected to have a substantial impact on habitat or protected species, as the level of fishing effort targeting monkfish is still limited by monkfish DAS allocations and other effort controls in both the monkfish and groundfish fisheries, including ACLs, gear

restrictions, size limits, and AMs. The action's potential economic and social impacts are also addressed in this EA (see Sections 7.4 and 7.5, respectively) and more specifically in the Executive Order 12866 review and the Regulatory Impact Review (Section 8.11). Based on that analysis, the preferred alternatives would likely result in low increases in fishing revenue for affected entities, which is not characterized as a significant impact.

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

Response:

Based on the scientific data used, the proposed action is not expected to be highly controversial. The analysis utilized the best scientific data available. For example, when analyzing the alternative that would modify the minimum mesh size requirements for standup gillnet gear, a long time series of observer data was used to quantify the bycatch and size frequency of monkfish caught in the smaller mesh sizes. In addition, the stock status under current management appears stable.

(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: The preferred alternatives allow the declaration of a NE multispecies DAS to occur at sea in the NFMA, eliminate the monkfish possession limit while on a NE multispecies and monkfish DAS in the NFMA, and reduce the minimum standup gillnet mesh size in the SFMA. Other types of commercial fishing already occur in these areas, and although it is possible that historic or cultural resources such as shipwrecks could be present, vessels try to avoid fishing too close to wrecks due to the possible loss or entanglement of fishing gear. Therefore, it is not likely that the preferred alternative would result in substantial impacts to unique areas.

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

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

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

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

Response: The Proposed Action is not related to other actions with individually insignificant but cumulatively significant impacts. The cumulative effects analysis presented in Section 7.6 of this document considers the impacts of the proposed action in combination with relevant past, present, and reasonably foreseeable future actions and concludes that no additional significant cumulative impacts are expected from the Proposed Action.

(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 7.0 of the EA. The preferred alternatives allow the declaration of a NE multispecies DAS to occur at sea in the NFMA, eliminate the monkish possession limit while on a NE multispecies and monkfish DAS in the NFMA, and reduce the minimum standup gillnet mesh size in the SFMA. Although there are shipwrecks present in the area where fishing occurs, including some registered on the National Register of Historic Places, vessels typically avoid fishing too close to wrecks due to the possible loss or entanglement of fishing gear. Therefore, it is not likely that the preferred alternative would adversely affect the historic resources listed above.

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

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

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

Response: The proposed action is not likely to establish a precedent for future action with significant effects, and it does not represent a decision in principle about future consideration. The preferred alternatives allow the declaration of a NE multispecies DAS to occur at sea in the NFMA, eliminate the monkish possession limit while on a NE multispecies and monkfish DAS in the NFMA, and reduce the minimum standup gillnet mesh size in the SFMA. 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 alternatives are intended to implement measures that are consistent with the protection of marine resources and would not threaten a violation of Federal, state, or local law or requirements to protect the environment.

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

Response: Cumulative effects are analyzed in Section 7.6 of this EA. That analysis concludes that the proposed action is expected to continue to maintain a healthy monkfish stock in the NFMA and SFMA, result in negligible changes to the sustainable management of those fisheries, with no anticipated significant impacts on either monkfish or non-target species. Further, as specified in the responses to the first two criteria of this section, the proposed action is not expected to result in cumulative adverse effects that would have a substantial effect on target or non-target species. This action would be consistent with optimizing the long-term sustainable use of the monkfish resource. Any impacts on target or non-target species would be minimized by other effort controls in the fishery that are designed to limit catch to sustainable levels.

FONSI STATEMENT:

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for Framework Adjustment 9 to the Monkfish Fishery Management Plan and Framework Adjustment 54 to the Northeast Multispecies Fishery Management Plan, it is hereby determined that this action will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all beneficial and adverse impacts of the Proposed Action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not required.

Regional Administrator,
Greater Atlantic Regional Fisheries
Office, NOAA

Date

8.2.3 List of Preparers; Point of Contact

Questions concerning this document may be addressed to:

Mr. Thomas A. Nies, Executive Director
New England Fishery Management Council
50 Water Street, Mill 2
Newburyport, MA 01950 (978) 465-0492

This document was prepared by:

Gregory Ardini, Northeast Fisheries Science Center Social Sciences Branch (NEFSC SSB)
Douglas Christel, Greater Atlantic Regional Fisheries Office (GARFO)
Patricia Clay (NEFSC SSB)
Steven Correia, Massachusetts Division of Marine Fisheries (MA DMF)
Jason Didden, Mid-Atlantic Fishery Management Council (MAFMC)
Jay Hermsen (GARFO)
Fiona Hogan, New England Fishery Management Council (NEFMC)
Danielle Palmer (GARFO)
Michael Pentony (GARFO)
Michael Ruccio (GARFO)
Katherine Richardson (GARFO)
Anne Richards (NEFSC)

8.2.4 Agencies Consulted

The following agencies were consulted in preparation of this document:

- Mid-Atlantic Fishery Management Council
- New England Fishery Management Council, which includes representatives from the following additional organizations:
 - Connecticut Department of Environmental Protection
 - Rhode Island Department of Environmental Management
 - Massachusetts Division of Marine Fisheries
 - New Hampshire Fish and Game
 - Maine Department of Marine Resources
 - National Marine Fisheries Service, NOAA, Department of Commerce
 - United States Coast Guard, Department of Homeland Security

8.2.5 Opportunity for Public Comment

The preferred alternatives were developed during the period August 2014 through June 2015 and was discussed at the following meetings. Opportunities for public comment were provided at each of these meetings.

Date	Meeting Type	Location
8/25/14	Joint Monkfish Committee and Advisory Panel	Embassy Suites Philadelphia, Philadelphia, PA
11/17-20/14	Council Meeting	Newport Marriott, Newport, RI
2/6/15	Monkfish PDT	Holiday Inn, Mansfield, MA
4/7/15	Monkfish Committee	Radisson Airport Hotel, Warwick, RI
5/15/15	Monkfish PDT	Mariners House, Boston, MA
5/26/15	Monkfish Committee	Radisson Airport Hotel, Warwick, RI
6/8-11/15	MAFMC Meeting	Hilton Virginia Beach Oceanfront, Virginia Beach, VA
6/16-18/15	Council Meeting	Hotel Viking, Newport, RI

8.3 Endangered Species Act (ESA)

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

On February 9, 2012, NMFS reinitiated formal consultation to reconsider the effects of the continued authorization of several fisheries, including the monkfish fishery, on DPSs of Atlantic sturgeon listed as threatened or endangered under the ESA on February 6, 2012. An updated batched BO was issued for seven fisheries in the Northeast, including the monkfish fishery, on December 16, 2013 (NMFS 2013).

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

The Council does acknowledge that endangered and threatened species may be affected by the measures proposed, but impacts should be minimal. In general, the impacts on protected resources would track the trend in fishing effort. The scope of the potential increase with respect to the overall monkfish and groundfish fisheries is expected to be small, however, and the fact that other regulations restricting catch of both monkfish and groundfish will likely limit any increase in fishing effort resulting from the preferred alternatives. The net effects of the preferred alternatives will be neutral impacts for protected species based on fishing effort not being expected to change, largely because landings are still restricted by the specifications set in FW8.

For further information on the potential impacts of the fishery and the proposed management action on listed species, see Section 7.3 of this document.

8.4 Marine Mammal Protection Act (MMPA)

NMFS, Greater Atlantic Region has reviewed the impacts of this action on marine mammals and has concluded that the management action is consistent with the provisions of the MMPA. Although the preferred alternatives are likely to affect species inhabiting the monkfish management unit, the measures will not alter the effectiveness of existing MMPA measures, such as take reduction plans, to protect those species based on overall reductions in fishing effort that have been implemented through the FMP. For further information on the potential impacts of the fishery and the proposed management action on marine mammals, see Section 7.3 of this document.

8.5 Paperwork Reduction Act (PRA)

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

8.6 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 8 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.

8.7 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 sections address these requirements.

8.7.1 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 laws.

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

8.7.2 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.

8.7.3 Objectivity of Information Product

For purposes of the Pre-Dissemination Review, this document is considered to be a “Natural Resource Plan.” Accordingly, the document adheres to the published standards of the Magnuson-Stevens Act; the Operational Guidelines, Fishery Management Plan Process; the Essential Fish Habitat Guidelines; the National Standard Guidelines; and NOAA Administrative Order 216-6, Environmental Review Procedures for Implementing the National Environmental Policy Act.

The proposed action and associated analyses in the EA are based upon the best scientific information available, including the Monkfish Operational Assessment (NEFSC 2013) and information from the most recent complete calendar year, through 2013, and in some cases preliminary information collected during calendar year 2014. The EA contains updated information describing catch of monkfish, expected fishing revenue from monkfish operations, and DAS usage in the fishery based upon information collected through the vessel trip report and commercial dealer databases. Updated analysis for Atlantic sturgeon and loggerhead sea turtles included in the EA supporting the proposed action reflects findings from the December 16, 2013 BO. Original analyses in the EA were prepared using data from accepted sources. Finally, the summary of the impacts of proposed measures in the proposed rule is based upon information in the EA.

NS 2 of the MSA requires that the FMP’s conservation and management measures be based upon the best scientific information available. Analyses of the proposed action incorporate the most complete data set from recent fishing years that is available to assess the impacts of these measures. These data represent the best information available, and are consistent with the principles for evaluating best scientific information available, as approved in the NS 2 Guidelines (78 FR 43066; July 19, 2013) regarding relevance, inclusiveness, objectivity, transparency, timeliness, verification, validation, and peer review. These measures have been determined to be in compliance with NS 2 based upon the best scientific information available.

The policy choices are clearly articulated in Section 4.0 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 7.0 of this document. All supporting materials, information, data, and analyses within this document have been, to the maximum extent practicable, properly referenced according to commonly accepted standards for scientific literature to ensure transparency.

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

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

8.9 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. A list of MPA sites has been developed and is available at: <http://marineprotectedareas.noaa.gov/nationalsystem/nationalsystemlist/>. No further guidance related to this E.O. is available at this time.

8.10 Administrative Procedure Act (APA)

This action was developed in compliance with the requirements of the Administrative Procedure Act, and these requirements will continue to be followed when the proposed regulation is published. Section 553 of the Administrative Procedure Act establishes procedural requirements applicable to informal rulemaking by federal agencies. The purpose of these requirements is to ensure public access to the federal rulemaking process, and to give the public adequate notice and opportunity for comment. At this time, the Council is not requesting any abridgement of the rulemaking process for this action.

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

8.11.1 Determination of significance under E.O. 12866

The purpose of E.O. 12866 is to enhance planning and coordination with respect to new and existing regulations. This E.O. requires the Office of Management and Budget (OMB) to review regulatory programs that are considered to be “significant.” Section 8.11 of this document represents the RIR, which includes an assessment of the costs and benefits of the Proposed Action in accordance with the guidelines established by E.O. 12866. NMFS guidelines provide criteria to be used to evaluate whether a proposed action is significant.

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

- (1) Have an annual effect on the economy of \$100 million or more, or adversely effect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities;*
- (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;*
- (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; 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.*

Section 7.4 presents a detailed economic analysis for the proposed action. This analysis is also summarized below, with references to the relevant tables in Section 7.4. The analysis included in Section 7.4, this RIR and the IRFA below demonstrates that the proposed action is not “significant” because it will not have an annual effect on the economy of \$100 million or more, or adversely affect in a material way the economy or a sector of the economy, productivity, jobs, the environment, public health, or safety, or State, local, or tribal governments or communities.

8.11.1.1 Objectives

The goals and objectives of FW9 are consistent with the goals of the original FMP, specified as the following management objectives:

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

As noted in Section 3.3, the goals and objectives for this framework supplement the basic FMP objectives. This framework is intended to address identified needs consistent with these FMP objectives.

8.11.1.2 Description

A description of the entities affected by this Framework Adjustment, specifically stakeholders in the Monkfish Fishery, is provided in Section 6.4 of this document, Human Environment, Vessels, Ports and Communities.

8.11.1.3 Problem Statement

The need and purpose of the actions proposed in this Framework Adjustment are set forth in Section 3.2 of this document and are incorporated herein by reference.

8.11.1.4 Analysis of Alternatives

This section provides an analysis of each proposed alternative of FW9 as mandated by E.O. 12866. The focus will be on the expected changes 1) in net benefits and costs to stakeholders of the Monkfish Fishery, 2) changes to the distribution of benefits and costs within the industry, 3) changes in income and employment, 4) cumulative impacts of the regulation, and 5) changes in other social concerns. Much of this information is captured already in the detailed economic impacts and social impacts analyses of Sections 7.4 and 7.5 of this document. This RIR will summarize and highlight the major findings of the economic impacts analysis provided in Section 7.4 of this document, as mandated by E.O. 12866. For social impacts of each alternative, see Section 7.5.

When assessing net benefits and costs of the regulations, it is important to note that the analysis will focus on the producer surplus generated by the impacted fishing businesses. Consumer surplus is not expected to be affected by any of the regulatory changes proposed in FW9, given the supply of substitutes for monkfish.

8.11.1.4.1 Requirement for vessels with groundfish permits to also use a NE multispecies DAS when on a monkfish DAS

A detailed description of this alternative can be found in Section 4.1.1 of this document.

Option 1: No Action

If this option was adopted, vessel operators would continue to not be able to declare a NE multispecies DAS while at sea. No immediate economic impacts would be expected from Option 1, assuming that other factors external to this action that may influence monkfish landings and revenues remain constant. Under Option 1, some amount of producer surplus may be forgone by sector vessels that encounter opportunities to land and sell amounts of specific species (monkfish, dogfish and skates) beyond what would be permitted by the existing applicable limit when a vessel begins the trip on a non-DAS. Common pool vessels must be on a DAS to begin a fishing trip. Under Option 1, common pool vessels operating in the GOM/GB Monkfish Gillnet Exemption on a monkfish-only DAS would have to return to port and declare a NE multispecies DAS in order to be allowed to fish outside of the exemption area. The expenses and time associated with returning to port solely to declare a NE multispecies DAS is a source of inefficiency, which results in loss of producer surplus.

Option 2: Allow all limited access Monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the Northern Fishery Management Area

Option 2 is expected to have neutral to low-positive impacts compared to Option 1. Option 2 would allow vessel operators of sector and common pool limited access Monkfish Category C and D vessels to declare a NE multispecies DAS while at sea in the NFMA.

For sector vessels on a non-DAS trip, declaring a NE multispecies DAS in the NFMA increases the landing limit for Category C vessels up to 600 lbs. (tail weight) per DAS and up to 500 lbs. (tail weight) per DAS for Category D vessels. If a monkfish DAS is used in conjunction with the NE multispecies DAS, then the limits go up to 1,250 lbs. for Category C vessels and 600 lbs. for Category D vessels (Table 116).

Monkfish Permit Category	Operating under no DAS (lbs. in t.w. per DAS)	Operating under a NE Multispecies-only DAS (lbs. in t.w. per DAS)	Operating under a NE Multispecies DAS or a combined monkfish/NE Multispecies DAS (lbs. in t.w. per DAS)
C	5% of the total weight of fish on board, not to exceed 50 lbs. or 150 lbs. per trip	600 lbs.	1,250 lbs.
D	5% of the total weight of fish on board, not to exceed 50 lbs. or 150 lbs. per trip	500 lbs.	600 lbs.

Table 116 - Monkfish daily trip limits under different DAS programs.

Section 7.4.1.1.2 shows there were few trips, if any that would have yielded additional monkfish landings in recent fishing years had the NE multispecies DAS at-sea declaration of Option 2 been in place. These numbers could be interpreted as indicating that sector vessels that are operating under no DAS generally having no intention of landing monkfish. Alternatively, because NE multispecies DAS are currently inexpensive, vessel operators may be generally erring on the side of utilizing their NE multispecies DAS in case they run into a significant catch of monkfish (or dogfish and skates, which also require a NE multispecies DAS declaration for a higher possession limit for sector vessels). In other words, the opportunity cost of not being under a NE multispecies DAS for sector vessel trips will, in some cases, greatly exceed the cost of leasing in a NE multispecies DAS.

Because Option 2 would allow declaration of a NE multispecies DAS while at sea, any NE multispecies DAS declared by sector vessels prior to leaving the dock that ended up being unnecessary (i.e. a sector non-DAS trip would have been sufficient for the resulting catch portfolio from that trip) could be a source of inefficiency. Figure 37 shows the distribution of sector NE multispecies-only DAS trips taken by Category C and D vessels in the NFMA in relation to the incidental trip limit (50 lbs. monkfish t.w. per DAS) during FYs 2012-2013. While the majority of these trips resulted in monkfish catch below the incidental limit, a preliminary look at other species landed on these trips suggests many cases where dogfish or skate catches exceed incidental limits. However, even in cases where the usage of a NE multispecies DAS may not have been necessary, a decrease in fishery production would only materialize if that permit holder would eventually run out of NE multispecies DAS before the end of the fishing year and they were unable to lease in more DAS. It is far more likely that the permit holder would be able to lease in additional NE multispecies DAS, preventing a loss in production for the individual or the fishery as a whole, and the net result would simply be a transfer payment from one permit holder to another.

The potential benefit of Option 2 to common pool vessels is to those common pool vessels that operate in the GOM/GB Monkfish Gillnet Exemption on a monkfish-only DAS. By having the option to declare a NE multispecies DAS at sea, these vessels could then switch from a monkfish-only DAS to a NE multispecies DAS and proceed to fish outside of the exemption area without having to return to port to declare a NE multispecies DAS at the start of a trip. However, there is extremely limited evidence of Category C and D common pool vessels fishing in the GOM/GB Monkfish Gillnet Exemption Area. During FYs 2009-2013, only 2 of such trips occurred, with both happening in FY2010 by the same vessel. The level of fishing effort by common pool C and D vessels in the NFMA is also very low outside of the exemption area, as shown in Table 62. If implementation of Option 2 does not cause common pool vessels to change their behavior, Option 2 would be unlikely to yield much benefit in the form of increased producer surplus to these vessels.

Option 3: Allow only groundfish sector vessels holding limited access Monkfish Category C, and D permits to declare a NE multispecies DAS at sea in the Northern Fishery Management Area (*Preferred Alternative*)

Option 3 would allow vessel operators of sector limited access Monkfish Category C and D vessels to declare a NE multispecies DAS while at sea in the NFMA. The economic impacts of Option 3 would likely be neutral relative to Option 2. Relative to No Action, the impacts of Option 3 would likely be neutral as well, but possibly low positive. The opportunity for monkfish permit Category C and D sector vessels to increase their possession limit (Table 116) through a NE multispecies DAS declaration at sea in Option 3 would be the same as Option 2. Option 3 would not allow common pool vessels the flexibility of fishing in the GOM/GB Monkfish Gillnet Exemption Area and then declaring a NE multispecies DAS. However, as mentioned in the Option 2 analysis, there is very little evidence of monkfish permit Category C and D common pool vessels fishing in this exemption area. For this reason, the impacts of Option 3 are not expected to deviate much from those of Option 2, regardless of the magnitude of positive impacts these two options provide relative to Option 1, the no action alternative.

8.11.1.4.2 Southern Management Area at-sea Monkfish DAS declaration

A detailed description of this alternative can be found in Section 4.1.2 of this document.

Option 1: No Action (*Preferred Alternative*)

Vessels in the Southern Fishery Management Area must start the trip on a monkfish DAS to be able to land more than the incidental limit. The provision that allows a vessel on a NE multispecies, but not a monkfish DAS, to declare a monkfish DAS at sea prior to returning to port in the event the vessel exceeds the monkfish incidental limit currently only applies in the Northern Management Area. The economic impacts of Option 1 would be neutral, assuming that other factors external to this action that may influence monkfish landings and revenues remain constant. Vessel operators would continue to not be permitted to declare a monkfish DAS while at sea in the SFMA. Under No Action, some vessel operators and crew may forgo revenues from monkfish that could have been earned if the vessel was able to catch amounts of monkfish above the incidental limit, which would result in forgone producer surplus, all else held equal. Amounts of monkfish that are caught above the incidental limit would need to be discarded.

Option 2: Allow at-sea Monkfish DAS declaration in the Southern Fishery Management Area

This alternative would allow Category C and D permitted vessels on a NE multispecies DAS in the Southern Fishery Management Area (SFMA) to declare a monkfish DAS at sea prior to returning to port. The economic impacts of Option 2, relative to Option 1, the no action alternative, would likely be neutral, but possibly low positive. Positive economic impacts, if they occur, would result from increases in revenue to vessel owners with monkfish permits in Category C and Category D and possibly crew employed on these vessels. Revenue increases would result in increased producer surplus, assuming costs remaining constant.

The current monkfish possession limit for Category C and D vessels using non-trawl gear that are on a NE Multispecies DAS in the SFMA, but not on a monkfish DAS, is 50 lbs. tail weight per DAS. By declaring a monkfish DAS, the monkfish possession limits would be increased for C and D vessels to 610 and 500 lbs. tail weight per DAS, respectively. For Category C and D vessels using trawl gear in the SFMA, the incidental trip limit is 300 lbs. monkfish tail weight per DAS. These vessels would be able to increase their landing limits to 610 and 500 lbs. tail weight per DAS respectively by declaring a monkfish DAS in the SFMA (Table 117).

Monkfish Permit Category	Gear Type	Limit for NE multispecies DAS (lbs. in t.w./DAS)	Limit for monkfish DAS (lbs. in t.w./DAS)	Potential Gain (lbs. in t.w./DAS)
C	Non-trawl	50	610	560
C	Trawl	300	610	310
D	Non-trawl	50	500	450
D	Trawl	300	500	200

Table 117 - Monkfish trip limits for vessels fishing in the SFMA on a NE multispecies DAS and trip limit fishing on a monkfish DAS, as well as the potential gain from switching.

The detailed economic analysis of this option is presented in Section 7.4.1.2.2. The analysis indicates that for monkfish permit Category C and D trawl and non-trawl vessels fishing in the SFMA in FYs 2009-2013 on a Northeast multispecies DAS, the volume of regulatory discards occurring from the applicable trip limits in Table 117 was low. This suggests that the amount of producer surplus forgone from discarded monkfish was likely small, but positive.

For Category C and D non-trawl vessels fishing in the SFMA on NE multispecies DAS, 66.2% of the trips represented had no monkfish landings during FYs 2009-2013. Of the 251 trips that had any monkfish landings during FYs 2009-2013, 49% had monkfish landings in the range approaching the trip limit, 40-50 lbs. of monkfish tail weight per DAS. Section 7.4.1.2.2 estimates that 161 monkfish were discarded so as to avoid the 50 lb. trip limit during FYs 2009-2013. At a price of \$9.20 per fish, an estimated \$1,486 could have been generated from converting these regulatory discards into landings over the course of 5 years across all Category C and D non-trawl vessels participating in the fishery within the SFMA. This yields an annual estimate of \$297. Based on the lower and upper bound prices, additional revenue generated from Option 2 would range from \$1,153 to \$1,742 or from \$242 to \$365 annually across all non-trawl vessels in the SFMA. If this revenue were to be distributed across all non-trawl vessels in the SFMA that had at least one “bump-up” trip or landed any monkfish at all (Figure 39), the revenue generated per vessel would be extremely low.

Similar results occurred for monkfish permit Category C and D trawl vessels fishing on a NE multispecies DAS in the SFMA. The trip limit for these vessels on a NE multispecies DAS in the SFMA is 300 lbs. monkfish tail weight per DAS. These vessels would be able to increase their landing limit to

610 and 500 lbs. tail weight per DAS respectively by declaring a monkfish DAS in the SFMA (Table 117). Only 3.2% of the 4,273 trips taken in FYs 2009-2013 had landings that ranged from >250 lbs. to 300 lbs., with 1.4% of all trips with monkfish landings in the <290 lbs. to 300 lbs. range. Section 7.4.1.2.2 contains analysis estimating that 188 monkfish were discarded so as to avoid the 300 lb. trip limit during FYs 2009-2013. At a price of \$5.51 per fish, an estimated \$1,034 could have been generated from converting these regulatory discards into landings over the course of 5 years across all Category C and D trawl vessels participating in the fishery within the SFMA. This yields an annual estimate of \$207. Based on the lower and upper bound prices, additional revenue generated from Option 2 would range from \$1,153 to \$1,742 or from \$168 to \$254 annually across all trawl vessels in the SFMA. As was the case for the Category C and D non-trawl vessels, if this forgone revenue were to be distributed across all trawl vessels in the SFMA that had at least one “bump-up” trip or landed any monkfish at all (Figure 39), the revenue generated per vessel would be extremely low.

The estimated average annual monkfish revenue for Category C and D non-trawl and trawl vessels fishing on a Northeast multispecies DAS in the SFMA that could have been generated from converting monkfish discards into landings is \$504. The lower bound estimate is \$410 per year and the upper bound estimate is \$619 per year. These numbers, of course, represent past fishing activity and may not represent future activity. Furthermore, the estimate of forgone revenue is derived from a relatively small group of observed trips. Nevertheless, these five years of data do suggest that the volume of regulatory discards occurring from the existing trip limits to be low. Major shift in regulatory discarding would be unexpected.

Because Option 2 would allow declaration of a monkfish DAS while at sea in the SFMA, any monkfish DAS declared prior to leaving the dock that ended up being unnecessary (i.e. a NE multispecies DAS trip would have been sufficient for the resulting catch portfolio from that trip) could also be a source of inefficiency. The vast majority (91.1%) of non-trawl trips exceeded the 50 lbs. t.w. per DAS trip limit, and a smaller majority (65.5%) of trawl trips exceeded their trip limit of 300 lbs. t.w. per DAS (Table 66 and Table 67). For those vessel trips that did not exceed their incidental limit while operating under a monkfish DAS, the declaration of a monkfish DAS rather than a NE multispecies DAS could be viewed as an inefficient use or “waste” of a monkfish DAS. However, if the vessel permit holder would not have a reason to use the monkfish DAS later in the season, then there is no opportunity cost to the vessel owner to use the monkfish DAS since they cannot be leased to other vessel owners.

Option 2 is not expected to result in a major shift in effort from the NFMA to the SFMA relative to the status quo, though a definitive statement cannot be made. Details are provided in Section 7.4.1.2.2.

8.11.1.4.3 Modify DAS/Trip Limit Allocation for Category F (offshore) Vessels

A detailed description of this alternative can be found in Section 4.1.3 of this document.

Option 1: No Action (*Preferred Alternative*)

Option 1 would maintain the current trip limit and DAS allocation formula for Category F vessels. Category F Vessel operators would continue to have a monkfish trip limit of 1,600 lbs. in tail weight, and their DAS use would continue to be prorated.

Option 2: Increase the trip limit

Under Option 2, the trip limit applicable to Category F vessels would be increased. The economic impacts of Option 2 would be uncertain relative to Option 1, the no action alternative, as the specific DAS

calculation chosen (Option 2, Sub-Option 1 or Option 2, Sub-Option 2) will determine the direction and magnitude of impacts. Economic impacts are further discussed under the sub-options below. Regardless of the trip limit specified, Option 2, Sub-Option 1 is expected to have more positive impacts than Option 2, Sub-Option 2. Option 2, Sub-Option 1 would likely have neutral impacts relative to Option 1, the no action alternative, regardless of the trip limit specified, but low positive net impacts are possible.

Sub-Option 1: Existing DAS allocation

The economic impacts of Option 1, Sub-Option 1 would likely be neutral relative to Option 1, the no action alternative, but possibly low positive. Increasing the trip limit and adjusting DAS according to the current DAS allocation formula may allow Category F vessels to increase efficiency by allowing monkfish permit Category F vessels to catch slightly higher amounts of monkfish per DAS. Table 2 shows that the potential maximum landings of monkfish would not be affected by the trip limit in place under the current allocation formula, as the DAS allocation is decreased proportionally to any increase in the trip limit.

There are two possible benefits to a higher trip limit and increased efficiency. First, reducing the time that offshore vessels spend at sea, all else held equal, is expected to reduce the safety risks associated with vessels remaining at sea until sufficient time has elapsed to account for the amount of monkfish landed. Second, the action may result in increased producer surplus if Category F vessels are able to lower their costs by reducing the time they need to remain at sea and if monkfish revenues remain constant.

1,800 lbs. tail weight

If the trip limit for Category F vessels is raised to 1,800 pounds, these vessels would be able to land an additional 200 pounds of monkfish tail weight per DAS. Category F vessels that were considered the most likely to be impacted by this higher trip limit were those that had trips approaching the current 1,600 lb. trip limit during FYs 2009-2013. During this time period, there were 3 different vessels with a total of 4 trips landing 1,500-1,600 pounds of monkfish tail weight per DAS. When considering a broader catch range, there were 4 different vessels with a total of 10 trips landing 1,000-1,600 pounds of monkfish tail weight per DAS during FYs 2009-2013.

Given these results, the 1,600 lb. trip limit in place is likely only forcing a small group of vessels to spend additional time at sea so as to remain under the current limit. Additionally, of the 10 trips landing 1,000-1,600 pounds of monkfish t.w. per DAS, 3 of these trips were observed, and there were no regulatory discards of monkfish on any of these trips. All monkfish discards on these trips were identified as below market sized fish in the observer data. There is no means of knowing if regulatory discards occurred on unobserved trips, but the presumption is that similar behavior occurred on unobserved trips, absent the explicit documentation of an observer effect. Therefore, the expected economic impacts associated with decreased safety risks and increased profitability are expected to be neutral, but possibly low positive compared to Option 1, the no action alternative.

2,200 lbs. tail weight

If the trip limit for Category F vessels is raised to 2,200 pounds, these vessels would be able to land an additional 600 pounds of monkfish tail weight per DAS compared to the current trip limit. As mentioned above, there have been few trips approaching the current trip limit, so it is likely that time lost at sea is an issue for only a small group of vessels. Again, while a small increase in net benefit due to increased safety and increased profitability for the low numbers of vessel owners and crew on such trips may occur as a result of a higher trip limit, in aggregate the change in net benefit is more likely negligible.

Sub-Option 2: Revised DAS allocation

The economic impacts of Option 2, Sub-Option 2 would be low negative to negative compared to Option 1, the no action alternative, as the maximum potential landings per vessel would decrease due to a smaller DAS allocation. This is expected to result in decreased producer surplus relative to Option 1, the no action alternative. Table 2 gives the maximum potential landings for Category A, B, C, and D vessels under the current DAS allocation formula and Table 3 gives the maximum potential landings for these vessel categories under the revised formula.

The largest decrease in maximum potential landings under a revised formula would be if the current 1,600 lb. daily trip limit was retained. Under this scenario, Category A & C vessels would see a decrease in maximum potential landings from 21,960 lbs. per vessel per fishing year to 4,197 lbs. per vessel per fishing year. At \$2.58 per landed pound (the highest average price observed in recent years from Table 56), the maximum potential reduction in revenue for these vessels from Option 2, Sub-Option 2 would be \$45,829 (17,763*\$2.58) annually. However, such a large reduction in revenue would be highly unlikely as during FY2013 there were a total of 13 active Category F vessels (Table 57) landing 56,000 pounds of monkfish (Table 58), or just over 4,300 pounds per vessel, which is just above maximum potential landings per vessel per fishing year (4,197 lbs.) if the revised formula were implemented under the current 1,600 lb. daily trip limit.

1,600 lbs. tail weight

Under the current trip limit of 1,600 lbs. of tail weight and Option 2, Sub-Option 2, Category F vessels could be negatively impacted, given that the maximum potential landings per vessel per fishing year would decrease because of a smaller DAS allocation relative to Sub-Option 1, the existing DAS allocation formula (Table 2). If landings by Category F vessels are constrained to a level below what would occur under Option 1, the no action alternative, we would expect a decrease in producer surplus, assuming monkfish demand and price remain constant. Under Option 2, Sub-Option 2, the DAS allocation would be increased proportionally to any increase in the trip limit. However, for the three trip limit alternatives presented (1,600, 1,800 and 2,200 pound in tail weight), the current DAS allocation formula under Option 1 presents considerably higher potential landings.

Under the revised formula, Category F vessels that intend to make a small number (1-3) of offshore trips would likely not be made worse off, as they would not be constrained by the lower DAS allocation. Those vessels that intend to make a larger number of trips would likely be worse off, as they would not have the necessary DAS to cover these trips. Producer surplus would be expected to decrease for those vessels that would not have enough DAS to cover their trips.

1,800 lbs. tail weight

If the trip limit for Category F vessels is raised to 1,800 pounds, these vessels would be able to land an additional 200 pounds of monkfish tail weight per DAS. Category F vessels that were considered the most likely to be impacted by this higher trip limit were those that had trips approaching the current 1,600 lb. trip limit during FYs 2009-2013. During this time period, there were 3 different vessels with a total of 4 trips landing 1,500-1,600 pounds of monkfish tail weight per DAS. When considering a broader catch range, there were 4 different vessels with a total of 10 trips landing 1,000-1,600 pounds of monkfish tail weight per DAS during FYs 2009-2013.

Given these results, the 1,600 lb. trip limit currently in place under Option 1, the no action alternative, is likely only forcing a small group of vessels to spend additional time at sea so as to remain under the current limit. Additionally, of the 10 trips landing 1,000-1,600 pounds of monkfish t.w. per DAS, 3 of these trips were observed, and there were no regulatory discards of monkfish on any of these trips. All monkfish discards on these trips were identified as below market sized fish in the observer data. There is no means of knowing if regulatory discards occurred on unobserved trips, but the presumption, absent the documentation of an explicit observer effect, is that similar behavior occurred on unobserved trips.

Under a trip limit of 1,800 lbs. of monkfish tails per DAS and the revised DAS allocation formula, the maximum potential landings would still decrease relative to the status quo trip limit of 1,600 lbs. of monkfish tail weight per DAS and the existing DAS allocation formula. The decrease would not be as large as with the 1,600 lbs. trip limit and revised DAS allocation formula. Nevertheless, the potential losses in producer surplus from decreased landings likely outweigh the possible benefits of having a small number of trips avoiding extra time at sea. Therefore, expected net benefit with a 1,800 lb. trip limit under Option 2, Sub-Option 2 is expected to be lower than expected net benefits from both Option 1, the no action alternative, and Option 2, Sub-Option 1.

2,200 lbs. in tail weight

If the trip limit for Category F vessels is raised to 2,200 pounds of monkfish tail weight per DAS, these vessels would be able to land an additional 600 pounds of monkfish tails per DAS. As mentioned, there have been few trips approaching the current trip limit, so it is unlikely that there are a sizable number of trips wasting time at sea.

Under a trip limit of 2,200 lbs. of monkfish tails per DAS and the revised DAS allocation, the maximum potential landings would still decrease relative to the status quo trip limit and the existing DAS allocation formula. The decrease would not be as large as with the 1,600 or 1,800 lbs. per DAS trip limits. Nevertheless, the loss in producer surplus to vessel owners and crew from decreased landings remains likely to outweigh the possible benefits associated with having a few trips avoiding extra time at sea. Therefore, the expected net benefit associated with a 2,200 lb. trip limit under Option 2, Sub-Option 2 is expected to be lower than expected net benefits under Option 1, the no action alternative and Option 2, Sub-Option 1.

8.11.1.4.4 DAS requirements for RSA vessels when on a monkfish DAS

A detailed description of this alternative can be found in Section 4.1.4 of this document.

Option 1: No Action (Preferred Alternative)

Under Option 1, a vessel must declare their intent to use a monkfish RSA DAS prior to leaving the dock.

Option 2: Allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea

The net economic impacts of Option 2 relative to Option 1, the no action alternative, are uncertain. Under Option 2, vessels that exceed existing monkfish trip limits while on a monkfish DAS would be allowed to switch to a monkfish RSA DAS, while at sea, to land additional monkfish. For vessels enrolled in the RSA program, Option 2 may result in increases in producer surplus under specific circumstances. However, this increase in benefits must be weighed against possible decreases in benefits stemming from

decreased participation in the RSA monkfish program. Neither net benefits of the RSA program to the monkfish fishery under Option 1, the no action alternative, or under Option 2 can be quantified.

The likely economic impacts of Option 2 were analyzed in two ways:

- 3) Identification of trips taken under a monkfish DAS declaration by vessels that participate in the RSA program and may have benefitted from the flexibility to declare a monkfish RSA DAS while at sea, thereby allowing the vessel to land additional monkfish (Table 68)

and by

- 4) Identification of monkfish RSA days that were “unnecessarily” declared in terms of the volume of monkfish landed by determining how many vessels in the RSA program used monkfish RSA DAS on trips where their monkfish landings were within the allowed trip limit for trips on a monkfish DAS (Table 69)

Table 68 shows that there were nearly 4,000 monkfish non-RSA trips made by vessels enrolled in the RSA program during FYs 2009-2013. Of these trips, over half (54.0%) caught at least 90% of the monkfish trip limit associated with their fishing year/permit/monkfish management area. This suggests that these trips could have potentially benefited from the ability to switch to a monkfish RSA DAS while at sea to increase monkfish landings. Option 2 could reduce discarding behavior, as vessel owners would have the flexibility to land monkfish in excess of the directed trip limit by converting to a monkfish RSA DAS while at sea. However, there is extremely limited evidence of regulatory discarding of monkfish occurring on directed monkfish trips. Of the 2,144 trips that bumped up against the trip limit during FYs 2009-2013, 184 of these trips were observed and only one observed trip had regulatory discards of monkfish. RSA trips during FYs 2009-2013 that did not exceed the directed monkfish trip limit were also identified. Table 69 shows that over half (51.4%) of all RSA trips did not exceed the monkfish trip limit associated with the fishing year/permit/monkfish management area. In essence, these RSA trips were unnecessary in terms of monkfish landings, as a monkfish DAS would have allowed for a high enough daily catch limit for that trip. It should be noted that the landing limits in FY2013 for this analysis are from the original specifications for that fishing year. The limits do not take into account the emergency action that eliminated the NFMA trip limit for Category C and D vessels on a combined monkfish/NE multispecies DAS from the start of FY2013. However, Monkfish RSA trips in the NFMA are rare, with only 8 occurring in the NFMA during FYs 2009-2013 vs. 1,402 in the SFMA over the same time period.

Possible increases in producer surplus from Option 2 relative to Option 1, the no action alternative, may stem from increased profitability for vessel owners and crew associated with increased monkfish landings, assuming monkfish demand and monkfish price remain constant. Realized increases in producer surplus from increased profitability would depend on whether the revenue earned from additional monkfish landings would offset the cost of a monkfish RSA DAS and any other costs (e.g., fuel, ice, etc.) associated with the increase in monkfish landings. The estimated cost associated with leasing a RSA day is \$600/day. The amount of additional revenue earned by increased landings of monkfish would depend on the vessel’s ability to catch and sell the additional monkfish, as well as any changes in the market price of monkfish that may occur due to changes in supply or demand.

A vessel’s participation in the monkfish RSA program results in benefits beyond the direct benefit to the participating vessel owner to land monkfish in excess of the directed trip limit. Vessel participation in the monkfish RSA program is essential to enhancing the state of knowledge for the monkfish fishery resource and contributes to the body of information used to inform management decisions. The needs and

priorities for the 2014 Monkfish RSA Program include research on monkfish life history, migration patterns, trophic interactions of monkfish with other species and monkfish cannibalism, and bycatch and discard mortality¹³. Option 2 could potentially decrease participation in the RSA program compared to participation in the RSA program under Option 1, the no action alternative, as under Option 2, vessels would be able to use their RSA days more strategically given the flexibility to declare an RSA day while at sea. Vessel owners may opt to purchase fewer RSA days upfront if they have the option to fish under a monkfish DAS, evaluate conditions while at sea, and convert to a monkfish RSA DAS while at sea only if conditions present an opportunity to profitably land a higher volume of monkfish.

Some industry members expressed concern about the mechanism by which a vessel owner would convert from a monkfish DAS to a monkfish RSA DAS while at sea. This would likely require an action by the vessel owner via the vessel's VMS system or by IVR (Interactive Voice Response). While many of the vessels participating in the RSA program are likely to already have a VMS in place due to the requirements of other fisheries, the costs associated with the initial purchase of a VMS and the associated service plan are not negligible. Estimates for the purchase of a VMS range from \$1,600-\$3,000, with monthly service plan costs ranging from \$22-\$74 per month. If it were permissible for vessels to convert from a monkfish DAS to a monkfish RSA DAS while at sea via the IVR system, the vessel owner would have to be in the range of their cellular phone or Internet service, or possess a satellite phone. Nevertheless, if the ability to declare a monkfish RSA DAS results in increases in revenues in excess of the onboard technology purchases made and the cost of leasing an RSA DAS, the individual vessel owner would benefit from an increase in profits, assuming other costs and the ex-vessel price of monkfish remained constant.

Overall, the net benefit of Option 2 to the monkfish fishery involves weighing the benefits that may accrue to vessels in the RSA program from using their monkfish RSA days more effectively and the impacts of possible decreased participation in the program. Table 70 shows that in recent fishing years, monkfish catch rates have typically been higher for vessels on an RSA DAS than for vessels on a monkfish DAS. This has not always been the case however. For example, vessels fishing in the SFMA in FY2010 as a whole had higher catch rates on a monkfish DAS. This highlights that, regardless of the trip limit that vessels are operating under, the ability to target monkfish is subject to variability. Option 2 would help to counter this variability by allowing the vessel operator to hold off on declaring a monkfish RSA DAS until it is apparent that the trip would be landing a large volume of monkfish. Furthermore, a slim majority (51.6%) of RSA trips landed monkfish in excess of existing limits during FYs 2009-2013 (Table 69), meaning nearly half of monkfish RSA DAS have been unnecessarily declared. However, such a decrease in RSA days used would come at a cost of possibly reducing funding available to support research that could increase available information to improve stock assessments, reduce biological uncertainty, and, in turn, potentially increase total allowable landings for the fishery. These benefits cannot be quantified at this time, and in turn, the net benefits of Option 2 as a whole cannot be quantified. Given the caveats outlined above, the net benefits of Option 2 would be uncertain relative to those of Option 1.

¹³ <http://www.federalgrants.com/Fiscal-Year-2014-Monkfish-Research-Set-Aside-43900.html>

8.11.1.4.5 Northern Area Monkfish Trip Limit on a NE multispecies and monkfish DAS

A detailed description of this alternative can be found in Section 4.2 of this document.

Option 1: No Action

Under Option 1, vessels fishing in the Northern Management Area on a monkfish DAS are subject to a trip limit, and when on a NE multispecies, but not a monkfish, DAS these vessels have an incidental limit of 600 lbs. tail wt. per DAS.

Option 2: Eliminate the Trip Limit on a NE multispecies DAS and monkfish DAS (Preferred Alternative)

The net benefits of Option 2 are expected to be slightly greater than those of Option 1 (the no action alternative). Option 2 would eliminate the monkfish possession limit when Category C and D permitted vessels (i.e. vessels issued both limited access NE multispecies and monkfish permits) are fishing under a both a NE multispecies and monkfish DAS, on the same trip, in the NFMA. The elimination of the monkfish trip limit for vessels on a combined monkfish/NE Multispecies DAS in the NFMA would revert back to the regulatory environment of the emergency action for the monkfish FMP during FY2013.

There was no monkfish trip limit for Category C and D monkfish permit holders fishing on a combined monkfish/NE Multispecies from May 1, 2013 through October 27, 2013, which makes FY2013 a useful reference point. Table 71 shows the breakdown of landings by such trips during this time period, with roughly 90% of trips by C and D vessels resulting in monkfish landings of less than 90% of the FY2015 trip limit. From October 28, 2013 through April 30, 2014, Category C and D vessels operating under a NE multispecies-only DAS were not subject to a monkfish trip limit. Table 72 shows the breakdown of landings by such trips during this time period, with roughly 98% of trips by C and D vessels resulting in monkfish landings of less than 90% of the FY2015 trip limit.

The number of NE multispecies-only DAS trips captured in Table 72 is also much greater than the number of combined monkfish/NE multispecies DAS trips in Table 71. In addition, the percentage of trips that did not “bump-up” against the trip limit in Table 71 is lower than the percentage in Table 72. This is a function of, at least to a certain extent, vessels operating under a combined monkfish/NE multispecies DAS only when they intend to land some monkfish. Vessels operating under a NE multispecies-only DAS may have little to no intention of landing monkfish and may be targeting groundfish, skates or dogfish.

While it is beneficial to analyze FY2013 due to the removal of monkfish trip limits during that fishing year, a larger time series gives a better picture of the distribution of landings on combined monkfish/NE multispecies DAS trips. In Section 7.4.2.1.2, for such trips in the NFMA during FYs 2009-2013, Figure 40 and Figure 41 illustrate these distributions for Category C and Category D vessels, respectively. A small portion of the distributions for both permit categories approached the existing trip limits with 1.3% (10/760) of trips made by Category C vessels and 3.0% (33/1,110) of trips made by Category D vessels during FYs 2009-2013 having monkfish landings of 90-100% of the FY2015 trip limits. Between the two categories there were 43 “bump-up” trips for the five year period, with 13 of these trips observed and no regulatory discards of monkfish occurring on any of these observed trips. In terms of trips exceeding the FY2015 trip limits, 0.5% (4/760) of Category C vessel trips and 4.1% (46/1,110) of Category D vessel trips during FYs 2009-2013 had monkfish landings at such a level. These results suggest that the elimination of the trip limit for vessels on a combined monkfish/NE multispecies DAS in the NFMA would likely have minimal net benefits compared to those that would occur under Option 1 (the no action

alternative) for Category C vessel owners. Option 2 can be expected to yield slight higher net benefits for Category D vessel owners and crew compared to Option 1. Any increases in net benefit from Option 2 relative to Option 1 would stem from increases in producer surplus resulting from higher revenues due to increased monkfish landings, holding monkfish demand, monkfish price and costs constant.

8.11.1.4.6 Modification to mesh size requirements on a monkfish DAS

A detailed description of this alternative can be found in Section 4.3.1 of this document.

Option 1: No Action

Under Option 1, vessels fishing under monkfish DAS must fish with trawls having mesh no smaller than 10-inches square or 12-inches diamond in the codend, unless the vessel has a Category C or D permit and is also fishing under a NE multispecies DAS. If a vessel is fishing under both a monkfish and NE multispecies DAS, a trawl must use a mesh size that conforms to the regulations for the NE Multispecies FMP. Assuming demand for monkfish and monkfish ex-vessel price remain constant, Option 1 would have negligible impact on monkfish landings and revenues. While future conditions in the domestic and world markets for monkfish and in the markets for other fish, particularly groundfish, may result in changes to monkfish landings and revenues in future fishing years, these changes would not be a direct result of Option 1.

Baseline Conditions for the FY2009-FY2013 period

To analyze the potential economic impacts of each of the three action alternatives (Options 2, 3, 4) relative to the No-action Alternative (Option 1) for this measure, the economic impacts analysis in Section 7.4.3.1.1 presents data on trends for FYs 2009-2013 in the portion of the monkfish fishery that uses sink gillnets, the gear type to which the proposed modifications apply. The numbers of permits that took at least one trip on a monkfish-only DAS or on a combined monkfish/NE multispecies DAS that used sink gillnets (gear code GNS) in either the NFMA or SFMA during each of FYs 2009-2013 were identified (Figure 42). The number of monkfish permits taking at least one of these trips peaked at 154 permits in FY2009 and was at its lowest point in FY2013, 126 permits. In FY2013, Category D permits accounted for 40.5% (51 permits) of the total monkfish permits taking such trips, followed by Category B permits at 24.6% (31 permits), Category C permits at 15.1% (19 permits), and Category A permits at 14.3% (18 permits). Category H permits accounted for 5.6% (7 permits) of all monkfish permits taking such trips.

Table 73 contains the numbers of trips on either a monkfish-only or a combined monkfish/NE multispecies DAS that used sink gillnets for each fishing year, by fishery management area and by monkfish permit category. Trips fishing under a monkfish-only or monkfish/NE multispecies DAS using sink gillnets are more common in the SFMA, with trips taken in the SFMA area accounting for 91.9% of all such trips. In FY2013, the total number of trips taken in the NFMA increased relative to FY2012, but trips taken in the SFMA decreased relative to FY2012. Table 74 contains the average total nominal revenues earned per trip taken by monkfish permit category and fishery management area for permits in Categories A, B and H. Average total nominal revenues are presented for FY2013, as well as averaged over the period from FY2009 to FY2013. Average total revenues are broken down into average revenues earned from monkfish and from species other than monkfish. Vessels with monkfish permits in categories A, B or H cannot land groundfish on a monkfish only DAS. Data from FY2013 suggest that revenues earned from species other than monkfish may be becoming relatively more important over time for gillnetters. With the exception of Category B vessels taking gillnet trips in the NFMA, the percentage of average total nominal per trip derived from species other than monkfish was higher in FY2013 than on average for the FY2009-FY2013 period. This is especially notable for vessels in permit categories A, B

and H taking gillnet trips in the SFMA. Table 75 presents the average total nominal revenues earned per trip taken under a monkfish-only or combined monkfish/NE multispecies DAS by fishery management area for vessels in monkfish permit categories C and D. Average total nominal revenues are presented for FY2013, as well as averaged over the period from FY2009 to FY2013. Average total revenues are broken down into average revenues earned from monkfish, from groundfish and from other species other than monkfish and groundfish. In the NFMA, on average from FY2009 to FY2013, vessels with Category C and D permits taking gillnet trips did not derive much of their total nominal revenue from species other than monkfish and groundfish. Vessels with C and D permits fishing in the SFMA using sink gillnets derive a larger percentage of their total nominal revenue per trip from species other than monkfish or groundfish. These vessels are also less dependent on revenue from groundfish than those gillnet vessels fishing in the NFMA.

Over the FY2009-FY2013 time period, the majority of sink gillnet trips taken on a monkfish-only or combined monkfish/NE Multispecies DAS used one mesh size for the trip's duration. Currently, the Monkfish FMP requires gillnetters to use a minimum 10" diamond mesh. Gillnet vessels are permitted to use multiple mesh sizes on the same trips if all mesh sizes used are a minimum of 10". In addition, gillnet vessels with either a Category C, D, or H permit and a NE Multispecies permit can begin a trip on a NE multispecies DAS with the option to later declare a monkfish DAS and then opt to switch at sea to also use a monkfish DAS and continue to use gillnet gear with less than 10" diamond mesh as long as the vessel adheres to the more restrictive mesh sizes in the NE Multispecies FMP.

The purpose of the proposed gear modifications is to allow gillnetters to use mesh less than 10" minimum while fishing under a monkfish-only or combined monkfish/NE multispecies DAS when targeting other species using stand-up gillnet gear. Gillnet vessels fishing in the SFMA currently do not have an option to fish one mesh at least 10" and a second mesh less than 10" on the same trip. The gear mesh modification options are designed to increase operational flexibility for gillnetters, allowing them to target monkfish in 10" minimum mesh and other species such as dogfish and skates in less than 10" mesh on the same trip. Industry advisors have suggested that some gillnetters fishing in the SFMA have already been using multiple mesh sizes (minimum 10" and less than 10" mesh) to target both monkfish and dogfish on the same trip.

Table 76 identifies the number of trips that used at least one additional mesh size less than 10". In the NFMA, nearly 12% of all monkfish trips used two mesh sizes during a trip and there were no trips using more than two mesh sizes. In the SFMA, only just over 1% of all trips used multiple mesh sizes during the trip and only one trip, taken in FY2010, used three distinct mesh sizes on the same trip. Over the entire FY2009-FY2013 period, there were 148 trips taken in the NFMA using one mesh at least 10" and a second mesh less than 10". Some of these trips occurred because the vessel's VMS declaration was changed from a NE Multispecies to a NE Multispecies and monkfish declaration while at sea, in which case the use of less than 10" mesh is permitted. When more than one mesh size was used on a single trip in the NFMA, the three most frequently used combinations were 12" & 6.5" mesh, 12" & 7" mesh, and 10" & 7" inch mesh – combinations currently allowed under existing regulations. There were 108 trips taken in the SFMA over FYs 2009-2013 that used both mesh at least 10" mesh and mesh less than 10" on the same trip, with 40 of these trips occurring in FY2013. When more than one mesh size was used on a single trip in the SFMA, the three most frequently used combinations were 12" & 10" mesh (currently permitted), 12" & 7" mesh, and 12" & 8.5" mesh.

Information collected from VTR and dealer data do not allow for the determination of how many of the total number of sink gillnet trips taken on a monkfish-only or combined monkfish/NE multispecies DAS used stand-up gillnets (i.e. sink gillnets without tie-downs). However, data collected by both NEFOP and ASM observers on observed trips of this type provide some information about the use of tie-downs in sink gillnets. Over the FY2009-FY2013 period, a total of 16,661 trips were taken in the NFMA and SFMA

that used sink gillnet gear and were fishing under a monkfish-only or combined monkfish/NE multispecies DAS, with 1,346 trips taken in the NFMA and 15,315 trips taken in the SFMA (Table 73). Of these trips, a total of 981 trips (nearly 6.0% of all such trips) were observed. Observer trip coverage over FYs 2009-2013 was 13.6% for trips in the NFMA and 6.4% for trips in the SFMA; trips in the NFMA have greater coverage rates due to the monkfish fishery's overlap with the NE Multispecies Fishery. Of the observed trips, 19% (183 observed trips) were taken in the NFMA and 81% (798 observed trips) were taken in the SFMA.

Table 77 further summarizes information about the number of observed trips taken under a monkfish-only or a combined MF/NE multispecies DAS using sink gillnets in each fishing year 2009-2013, by monkfish permit category and fishery management area. Note that the main numbers for each cell in this table represent the total numbers of observed sink gillnet trips fishing on a monkfish-only or a combined monkfish/NE multispecies DAS for a particular cell, whereas the numbers in parentheses beneath represent the number of these trips where observer data indicated that no tie-downs were used for any portion of the trip; these numbers reflect the numbers of trips that used stand-up gillnets only. For both fisheries management areas, most of the observed sink gillnet trips used tie-downs for at least some portion of the trip; only 10% of observed trips taken in the NFMA and 1.5% of the observed trips taken in the SFMA used exclusively stand-up gillnets (sink gillnets with no tie-downs) throughout the entire trip.

Option 2: Allow the use of 5-7" mesh in standup gillnet on a monkfish DAS

Option 2 would allow limited access Category C and D monkfish vessels to target other species, e.g. dogfish, using mesh size between 5 and 7 inches in stand-up gillnets and also retain legal-sized monkfish when fishing on a monkfish or a monkfish/NE multispecies DAS on the same trip.

Net benefit stemming from Option 2 is expected to be similar or slightly higher than that under Option 1 (the no action alternative). Possible economic gains (increases in producer surplus) from increased profits to gillnet vessel owners and crew must be weighed against possible impacts from increased catch in the groundfish and dogfish fisheries. However, the expected increased profits to gillnet vessel owners and crew under Option 2 are expected to offset or slightly exceed any possible negative effects under Option 2, therefore leading to net economic benefit that is similar or slightly higher compared to that under Option 1.

Impacts to Gillnet Vessels

By increasing operational flexibility, Option 2 may increase the expected short run profits of gillnet fishermen by allowing them to target species other than monkfish, particularly dogfish, while on the same trip. The primary economic benefit expected is decreased operating or trip costs (e.g. labor, fuel, etc.) since the vessel would no longer be required to make separate trips to target monkfish in 10" minimum mesh and other species in less than 10" minimum mesh. In addition, total landings of monkfish and species targeted less than 10" mesh may increase slightly, although large increases in landings are not expected. Under these conditions, producer surplus under Option 2 should be larger than it is under Option 1, the no action alternative.

The ultimate net impact on profits from Option 2 would depend on market conditions in the monkfish and related fisheries, including demand for monkfish, dogfish and skates, as well as cost savings from no longer needing separate trips to target monkfish and species that are caught in less than 10" minimum mesh. If landings of monkfish and other species, such as dogfish, either remain stable or increase, and trip costs (operating costs) decrease, gillnets vessels should see increases in net revenues (total gross revenues less trip costs). This assumes that the ex-vessel prices earned by vessels for monkfish and other species remain constant; any increases in landings are expected to be small enough so as not to drive

down ex-vessel prices through increases in supply. In addition, demand for these species is assumed to be constant. Increases in total net revenues should benefit not only the vessel owner, but also vessel crew. Assuming fixed costs (non-trip or non-operating costs) remain constant, increases in total net revenues should bring increases in profits.

Based on FY2013 data, approximately 70 monkfish permits may benefit from increased profits if they adopt use of a second mesh-size (5" to 7") in standup-gillnets. The majority of monkfish trips likely to be impacted by this measure are taken in the SFMA. The overall net economic impact of this gear modification on gillnet vessel owners and crew will depend on modifications in fishing behavior that gillnet vessel owners with monkfish permits in Categories A-D may make. It is difficult to predict these changes. The additional operational flexibility this mesh modification would provide may induce gillnet vessels with monkfish permits in Categories A-D to increase the number of monkfish trips that they make, since they will now be able to target both monkfish and dogfish on the same trip, though limits on the number of gillnets that can be used in a single trip would not be altered by this action. At the same time, vessel owners would no longer need to make separate trips to target dogfish and other species in less than 10" minimum mesh.

The likelihood that a vessel would adopt use of a second mesh size would depend on weighing 1) the perceived costs associated with using a second mesh size on the same trip and 2) the perceived benefits associated with retained catch (landed species) from use of the smaller mesh size. The costs associated with using the second, smaller mesh size would depend, in part, on whether or not the vessel already owned nets with 5"-7" mesh. If a vessel does not already own nets with 5"-7" mesh, purchase of nets with this mesh represents an upfront cost to the vessel owner. The cost of this netting can range from \$50-\$100 per net depending on the height and length of the net (New England Marine and Industrial). In addition, it is possible that inactive monkfish permits could opt to become active partially as a result of the increased flexibility this action would offer. These decisions would depend in part on market conditions in the monkfish and dogfish fisheries, including the ex-vessel prices for each of these species.

Option 2 is expected to have neutral to low negative impacts on the monkfish stock relative to Option 1, the No-Action Alternative. The Biological Impacts section, Section 7.1, demonstrated that observer data suggest that when multiple mesh sizes are used on the same trip, smaller mesh caught more small sized monkfish (Figure 36). If implementation of Option 2 leads to an increase in the number of small monkfish that are caught and discarded, this could affect the long-term health of the stock, and eventually, the long-run profits of gillnetters that target monkfish. However, observer data suggest that the use of 5"-7" mesh has already been occurring, with no effect yet noted for the status of the monkfish stock.

Table 78 summarizes information about the numbers of Category C and D monkfish permits using sink gillnet gear that took at least one trip under a monkfish-only or combined monkfish/NE multispecies DAS during the FY2009-FY2013 period, and the total numbers of such trips taken by these permits. Based on FY2013 data, this measure would impact approximately 70 monkfish permits, 19 of which are Category C permits and 51 of which are Category D permits. The estimation of the number of monkfish permits likely to be impacted is based on the assumption that the proposed measure would not provide an incentive for inactive Category C and D permits to fish for monkfish in 10"-12" mesh and other species in 5"-7" mesh in sink gillnets.

Table 79 contains information about Category C and D permits that took trips on a monkfish-only or combined monkfish/NE multispecies DAS in FYs 2009-2013 using sink gillnet gear, with one mesh between 10" and 12" (inclusive), and another mesh between 5" to 7" (inclusive). Note that because VTR data do not distinguish between landings obtained with sink gillnet gear with and without the use of tie-downs, Table 79 reflects the number of permits that used these mesh sizes in sink gillnet gear both with

and without tie-downs. In the entire FY2009-FY2013 period, there were 4 unique permits in Category C and 7 unique permits in Category D that used 5" to 7" mesh while fishing in the NFMA, and 5 unique permits in Category C and 9 unique permits in Category D that used 5" to 7" mesh while fishing in the SFMA.

Landings data from vessels with monkfish permits in Category C and D that used sink gillnets trips on a combined monkfish/NE multispecies DAS with mesh sizes between 10" to 12" and 5" to 7" are limited. Table 80 presents summary information for FY2013 on landings values from catch obtained in mesh ranging from 5" to 7" in the NFMA, by mesh size used. Note that these landings were earned by less than six unique permits fishing in the NFMA (Table 79). Within the NFMA, three mesh sizes within the 5" to 7" range were used in addition to 10"-12" mesh – 6", 6.5" and 7" mesh. Gillnet vessels with monkfish permits in Category C took a total of 8 sector vessel trips in FY2013 that used sink gillnet gear with 5"-7" mesh as a second mesh in the NFMA; all of these vessels fished in the Gulf of Maine. NE multispecies trips that used 12" and 6.5" mesh during July and August accounted for 7 of these trips. One trip in August 2013 declared the monkfish option, and fished with 11" and 6.5" mesh. Gillnet vessels with monkfish permits in Category D took a total of 28 trips in the NFMA during FY2013 that used 5"-7" mesh as a second mesh size; all these trips were taken in the GOM. All but one of these trips were sector trips in the GOM that declared the monkfish option. The remaining trip was a groundfish trip taken in the GOM during September by a sector vessel. All of these trips fished with 12" and 6.5" mesh. Table 80 shows that a total of \$142,301 was earned in FY2013 by vessels with Category C and Category D monkfish permits from landings obtained from 5" to 7" mesh in sink gillnets while fishing on a combined monkfish/NE multispecies DAS in the NFMA. Nearly all revenue (99.5%) obtained from landings using the smaller mesh size can be attributed to 6.5" mesh. Table 81 lists the species caught by Category C and D permits using 5" to 7" mesh on sink gillnets trips, while fishing on combined monkfish/NE multispecies DAS in the NFMA in FY2013, for those species that have total revenues greater than \$1,000. Seven species caught in 5" to 7" mesh each had total revenues for FY2013 of \$1,000 or greater, four of which are allocated Northeast Multispecies stocks. From highest to lowest total value, these species are pollock, cod, white hake, monkfish, spiny dogfish, silver hake and haddock. These seven species yielded a total of \$139,569 in FY2013, which accounted for 98% of the total revenue earned from landings obtained through the use of 5" to 7" mesh.

In the SFMA, revenues earned by monkfish permit Category C and D vessels from the use of 5" to 7" mesh as a second mesh size were much smaller than in the NFMA. In FY2013, there were less than 3 Category C vessels fishing with mesh between 5" – 7" on SFMA trips. Category D also had less than 3 vessels fishing with this mesh size in the SFMA (Table 79). Category C vessels took a total of 7 trips in the SFMA during FY2013 that used mesh between 5"-7" in addition to mesh greater than or equal to 10" on the same trip. These trips were all taken in the SNE Monkfish, Skate, and Dogfish Exemption Area during the month of June, using 12" and 7" mesh on the same trip. These trips landed monkfish and skates caught in 12" mesh, and monkfish and spiny dogfish caught in 7" mesh. Landing of dogfish, monkfish and skates from the same trip is not permitted under the existing regulations (represented by Option 1). These seven trips are representative of the type of trips the proposed measure seeks to address.

Category D vessels took a total of 10 trips in the SFMA during FY2013 that used mesh between 5"-7" in addition to mesh greater than or equal to 10" on the same trip. Common pool vessels took 7 of these trips, which all fished in the SNE Monkfish, Skate, and Dogfish Exemption Area during May and June 2013, using both 7" and 12" mesh on the same trip. These trips landed monkfish and skates caught in 12" mesh, and monkfish and spiny dogfish caught in 7" mesh. Landing of dogfish, monkfish and skates from the same trip is not permitted under the existing regulations (represented by Option 1). These 10 trips, like those taken by Category C vessels that were described above in the preceding paragraph, are representative of the type of trips the proposed measure seeks to address. The existence of these trips

that landed monkfish, dogfish, and skates caught in the SNE Monkfish, Skate, and Dogfish Exemption Area supports industry advisor statements that some fishermen have already been targeting monkfish and dogfish, using both 10" minimum mesh and less than 10" mesh on the same trip.

Table 82 presents summary information for FY2013 on landings values earned by Category C and D vessels from fishing with mesh ranging from 5" to 7" in the SFMA, by mesh size that was used on the trip. In the SFMA, a broader range of mesh sizes within 5" to 7" (ranging from 5.5" to 7") was used in addition to 10"-12" mesh than was used in the NFMA. A total of \$16,531 in nominal revenue was earned in FY2013 from landings obtained from 5" to 7" mesh while fishing with sink gillnets on a monkfish only or combined monkfish/NE multispecies DAS in the SFMA; 6" mesh accounted for 43% of this revenue, followed by 7" mesh at 33%. Table 83 lists the species that were caught by Category C and D permits using 5" to 7" mesh in sink gillnets trips, while fishing under a monkfish-only or combined monkfish/NE multispecies DAS in the SFMA during FY2013 that had total revenues greater than \$1,000. Four species caught in 5" to 7" mesh each had total nominal revenues for FY2013 of \$1,000 or greater: spiny dogfish, monkfish, smooth dogfish, and skates. These four species yielded a total of \$15,801 in FY2013, which accounted for 96% of the total revenue earned from landings obtained by Category C and D vessels through the use of 5" to 7" mesh while fishing in the SFMA.

Limited information about catch obtained from use of 5" to 7" mesh in stand up sink gillnets is available from observed trips of this type. Table 83 presents summary information on the numbers of observed trips on a monkfish-only or a combined/NE multispecies DAS that used 5"-7" while fishing with stand-up sink gillnets. In the NFMA, all of the 16 observed trips in the FY2009-FY2013 period used either 6.5" or 7" mesh, and most of these trips were taken by vessels with monkfish permits in Category D. In the SFMA, there were no observed trips by Category C using 5"-7" mesh in stand-up gillnets, and only 6 trips of this type taken by Category D vessels over the entire FY2009-FY2013 period. One of these trips used 6" mesh, one used 6.5" and the remaining 4 trips used 7" mesh.

Table 84 summarizes the very limited data on landings and revenue from species caught on observed trips in the NFMA while fishing 5"-7" mesh with stand-up gillnets for species where the revenue earning from landing the species was greater than or equal to \$100 nominal dollars. No species met these criteria for FY2009 and FY2010; therefore, species-level landings and revenues data are presented by mesh size used for FYs 2011-2013 only. Because there is so little data on species caught with the use of 5" to 7" mesh in stand-up gillnets, Table 84 should be viewed with caution. However, the limited amount of data available does suggest that this gear type and range of mesh sizes would be most likely to result in some increased revenues from landings of monkfish and spiny dogfish, as well as three types of groundfish – cod, white hake, and pollock. The amount by which these revenues would increase under the proposed modification cannot be predicted because we cannot determine how many gillnet fishermen would opt to fish a second mesh size between 5" – 7" in order to target species other than monkfish. In addition, possible revenue increases would depend on market conditions in the fisheries. It is possible that ex-vessel price for a species could fall if supply of these species increased significantly and demand for the species did not change or fell. The ability to earn increased revenues from allocated groundfish species would also be impacted by quota for those species, which affects domestic supply, and consumer acceptance of foreign supplies of groundfish as a viable substitute for locally-caught groundfish.

In the SFMA, the species-level revenue earned from landings obtained from 5" to 7" mesh was greater than or equal to \$100 nominal dollars per fishing year for spiny dogfish only, and this occurred only in FY2011 and FY2013 (Table 85). Based on this very limited data, use of 5"-7" mesh in standup gillnets while fishing on a monkfish DAS in the SFMA appears to be successful in targeting spiny dogfish.

Impacts to Other Species

Option 2 may result in increased landings of spiny dogfish, skates, some groundfish species and monkfish on fishing trips under a monkfish-only or combined monkfish/NE Multispecies DAS relative to that under Option 1, the no action alternative. In the NFMA, use of 5" to 7" mesh in sink gillnets is associated not only with spiny dogfish catch, but also with catch of some allocated NE Multispecies (primarily pollock, cod, and white hake) and monkfish (Table 81). In the SFMA, use of 5" to 7" mesh in sink gillnets is associated with catch of spiny dogfish, monkfish, smooth dogfish and skates (Table 83).

Option 3: Allow the use of 5-7" mesh standup gillnet on a monkfish DAS in NFMA

Option 3 would allow limited access monkfish vessels in Categories A, B, C and D to target other species, e.g. dogfish, using mesh size between 5 and 7 inches in stand-up gillnets and also retain legal-sized monkfish when fishing on a monkfish or a monkfish/NE multispecies DAS on the same trip in the NFMA.

The expected net benefit associated with Option 3 would be similar or possibly slightly higher compared to net benefit under Option 1, the no action alternative. Option 3 would likely benefit fewer gillnetters with monkfish permits than Option 2, since Option 3 is limited to monkfish permits that fish in the NFMA. Total increase in producer surplus compared to Option 1 is expected to be smaller under Option 3 than it would be under Option 2. Possible negative impacts to the monkfish, groundfish, and spiny dogfish species are similar to those described for Option 2, although negative impacts to the spiny dogfish and monkfish stocks may be lessened by exclusion of the SFMA from Option 3.

Many limited access monkfish vessels using gillnet gear did not fish in the NFMA in FY2013, and therefore would not likely be impacted by Option 3. To identify how many monkfish permit holders and monkfish trips would be likely to be impacted by Option 3, Table 85 presents data on the numbers of monkfish permits that took at least one trip in the NFMA and the total number of trips taken by these permits, by monkfish permit category, for FY2009-2013. In FY2013, the numbers of permits using sink gillnet gear and fishing in the NFMA were at five year low across permit categories. A small percentage of all sink gillnet trips on monkfish-only or combined monkfish/NE multispecies DAS take place in the NFMA (approximately 8% over FY2009-FY2013; Table 73). In FY2013, there was only one sink gillnet trip in the NFMA by a vessel with a monkfish permit in Category A and only two such trips by permits in Category B. Category C vessels took a total of 62 trips in the NFMA in FY2013, while Category D Vessels took 173 such trips in the NFMA (Table 86). The available VTR data do not indicate how many of these trips used standup gillnets; whether or not a gillnet vessel used tie-downs is only known for those trips that were observed.

Based on FY2013 data, approximately 21 monkfish permits are mostly likely to benefit from increased profits if they adopt use of a second mesh-size (5" to 7") in stand-up gillnets while targeting monkfish in the NFMA. Option 3 would allow Category A and B gillnetters, which do not have limited access NE Multispecies permits and therefore would not be fishing under a NE multispecies DAS, to use a second mesh size of 5" to 7" in stand-up gillnets while fishing in the NFMA under a monkfish DAS. However, based on FY2013 data, there is only 1 monkfish permit in Category A that fished on a monkfish DAS using sink gillnets in the NFMA, and only 2 such monkfish permits in Category B. FY2013 data also indicates there are 6 permits in Category C and 12 permits in Category D that would likely impacted by Option 3 (Table 86). The estimation of the number of monkfish permits mostly likely to be impacted is based on the assumption that Option 3 will not provide an incentive for inactive permits to fish for monkfish in 10-12" mesh and other species in 5"-7" mesh in sink gillnets in the NFMA. It also assumes that Option 3 would not provide an incentive for monkfish permits in Categories A-D that have traditionally fished exclusively in the SFMA to redirect effort to the NFMA.

To determine the net benefit associated with Option 3, possible gains in producer surplus to gillnet vessel owners and crew must be weighed against possible negative impacts from increased groundfish catch. Groundfish catch (both landings and discards) by Category C and D vessels, which have limited access NE Multispecies permits, will be accounted for as described above for Option 2. Vessel owners with monkfish permits in Category A and B may hold open access NE Multispecies permits (permits in Categories I or K, or a Hand Gear B permit), but would not be subject to the same catch monitoring requirements that limited access groundfish vessels are. However, only 3 permits in Categories A and B fished with sink gillnets under a monkfish-only DAS in FY2013.

By increasing operational flexibility, Option 3 may increase the expected short run profits of gillnet fishermen that fish in the NFMA by allowing them to target species other than monkfish while on the same trip, thereby decreasing the operating costs (e.g., fuel, labor, etc.) that would be necessary if a separate trip to target species other than monkfish is required. In addition, total landings of monkfish and species caught in 5" to 7" mesh may increase slightly, although large increases in landings are not expected. The additional operational flexibility this mesh modification would provide may induce gillnet vessels with permits in Categories A-D to increase the number of monkfish trips that they make since they will now be able to target both monkfish and dogfish on the same trip. However, they would no longer require separate trips to target monkfish in 10" minimum mesh and other species in 5" to 7" mesh; the possible efficiency of trips is increased by both Options 2 and 3 relative to Option 1 (the no action alternative). Therefore, under Option 3 we would expect an increase in producer surplus relative to Option 1, but a smaller increase than that expected under Option 2 relative to Option 1.

The realized net benefit expected under Option 3 relative to the net benefit associated with Option 1 would depend on market conditions in the monkfish and related fisheries, including demand for monkfish and dogfish, as well as cost savings from no longer needing separate trips to target monkfish and species that are caught in 5"-7" mesh. If landings of monkfish and other species, such as dogfish, either remain stable or increase, and trip costs (operating costs) decrease, gillnet vessels should see increases in net revenues (total gross revenues less trip costs). This assumes that the ex-vessel prices earned by vessels for monkfish and other species remain constant; any increases in landings are expected to be small enough so as not to drive down ex-vessel prices through increases in supply. In addition, demand for these species is assumed to be constant. Increases in total net revenues should benefit not only the vessel owner, but also vessel crew. Assuming fixed costs (non-trip or non-operating costs) remain constant, increases in total net revenues should bring increases in profits. Producer surplus can be expected to increase.

The likelihood that a vessel would adopt use of a second mesh size would depend on weighing 1) the perceived costs associated with using a second mesh size on the same trip and 2) the perceived benefits associated with retained catch (landed species) from use of the smaller mesh size. Note that under Option 3, the vessel owner would be able to use this 5" to 7" mesh while targeting monkfish in larger mesh on the same trip only in the NFMA. The costs associated with using the second, smaller mesh size would depend, in part, on whether or not the vessel already owned 5"-7" mesh. If a vessel does not already own a 5"-7" mesh size, purchase of this mesh represents an upfront cost to the vessel owner. The cost of this netting can range from \$50-\$100 per net depending on the height and length of the net (New England Marine and Industrial).

In addition, it is possible that inactive permits could opt to become active in the NFMA partially as a result of this measure. These decisions would depend in part on market conditions in the monkfish and dogfish fisheries, including the ex-vessel prices for each of these species.

Table 87 contains information about the numbers of monkfish permits that took trips on a monkfish-only or combined monkfish/NE multispecies DAS in FYs 2009-2013 with sink gillnet gear while fishing in the

NFMA, and used one mesh between 10” and 12” (inclusive), and another mesh between 5” to 7” (inclusive). Note that because VTR data do not distinguish between landings obtained with sink gillnet gear with and without the use of tie-downs, Table 87 reflects the number of permits that have used these mesh sizes in sink gillnet gear over the FY2009-FY2013 period, including both stand-up gillnets and gillnets using tie-downs. In the entire FY2009-FY2013 period, there were no unique monkfish permits in Category A that used 5” to 7” mesh in sink gillnets while fishing in the NFMA on a monkfish DAS. For Categories B, C, and D there were 3, 4, and 7 unique monkfish permits, respectively, that used 5” to 7” mesh, in addition to 10” minimum mesh, while fishing with sink gillnets in the NFMA on a monkfish-only or combined monkfish/NE multispecies DAS sometime during the FY2009-FY2013 period.

Landings data from vessels with monkfish permits in Categories A-D that used sink gillnets trips on a monkfish only or combined monkfish/NE multispecies DAS in the NFMA with mesh size between 10” to 12” and 5” to 7” are limited, and this is especially true for monkfish trips using two mesh sizes taken by Category A and B. There is very little activity using both 10-12” mesh and 5”-7” mesh on the same trip in the NFMA by Category A and B gillnetters (Table 87). In FY2013, all revenues from all landings in 5”-7” mesh were earned by less than 6 unique permits fishing in the NFMA, all of which were Category C and D vessels. For this reason, landings and revenues for vessels in monkfish permit Categories A-D on trips that used 5”-7” while fishing on a monkfish-only or combined monkfish/NE multispecies DAS in the NFMA will not be repeated here. They are nearly identical to those presented for Option 2 and cannot be presented here due to confidentiality concerns.

Option 4: Modification of the minimum mesh requirements for standup gillnets on a monkfish DAS in SFMA (*Preferred Alternative*)

Option 4 would reduce the minimum mesh size allowed in the SFMA for vessels fishing with stand-up gillnet gear under a monkfish-only or combined monkfish/NE multispecies DAS, depending on area fished. The smallest mesh size that would be permitted is 5” and use of 5” minimum mesh would be restricted to stand-up gillnets while fishing in the Mid-Atlantic Exemption Area.

The net benefit associated with Option 4 (the preferred alternative) is likely to be at least equal to, but likely higher than that associated with Option 1 (the no action alternative). In addition, Option 4 is likely to result in higher levels of net benefit than Options 2 or 3 for three reasons. First, most gillnet trips under a monkfish-only or combined monkfish/NE multispecies DAS occur in the SFMA (Option 3 is restricted to the NFMA). Second, portions of Option 4 would apply to vessels with monkfish permits in Categories A and B, as well as those with monkfish permits in Categories C and D (Option 2 is limited to monkfish permits in Categories C and D). Finally, Option 4 provides greater flexibility as to mesh size used, and would allow for the use of mesh between 7” and less than 10”, which does appear to be used by gillnetters in the SFMA.

Impacts to Gillnet Vessels

By increasing operational flexibility, Option 4 may increase the expected short run profits of monkfish fishermen that use gillnets in the SFMA by allowing them to target species in less than 10” mesh and monkfish in 10” minimum mesh on the same trip. The primary benefit of this flexibility is that the ability to land both monkfish and other species on the same trip would likely decrease trip-related or operating costs (e.g. fuel, labor, etc.) that would be necessary if separate trips to target monkfish and other species (such as dogfish) are required. Landings of monkfish, dogfish and skates may also increase, which could increase gross revenues if the ex-vessel prices of these species remain constant. Since Option 4 has the potential both to increase gross revenues and decrease trip or operating costs, net revenues (total gross revenues less trip costs) would likely increase. Assuming fixed costs (non-trip costs) remain constant, we

would expect to see increases in short-run profits. Increases in profit would likely benefit not only the vessel owner, but also the vessel crew, and would increase producer surplus.

The likelihood that a vessel would adopt use of a second mesh size would depend on weighing 1) the perceived costs associated with using a second mesh size on the same trip and 2) the perceived benefits associated with retained catch (landed species) from use of the smaller mesh size. The costs associated with using the second, smaller mesh size would depend, in part, on whether or not the vessel already owned less than 10" minimum mesh. If a vessel does not already own the smaller mesh size, purchase of this mesh represents an upfront cost to the vessel owner. The cost of this netting can range from \$50-\$100 per net depending on the height and length of the net (New England Marine and Industrial).

Option 4 may change incentives for monkfish permit holders. The additional operational flexibility this mesh modification would provide may induce gillnet vessels with permits in Categories A-D to increase the number of monkfish trips that they make since they will now be able to target both monkfish and species that are caught in less than 10" mesh on the same trip. However, separate trips to target species other than monkfish would no longer be required. In addition, it is possible that inactive monkfish permits could opt to become active partially as a result of this measure. These decisions would depend in part on market conditions in the monkfish, dogfish and skate fisheries, including the ex-vessel prices for each of these species.

Option 4 is expected to have neutral to low negative impacts on the monkfish stock relative to Option 1, the No-Action Alternative. It is expected that Option 4 would have less negative impact on the monkfish stock than Option 2 because Option 4 limits the number of standup gillnets fished to a total of 50 in the Mid-Atlantic and SNE Dogfish Exemption Areas. As noted earlier in the discussion of Biological Impacts section, Section 7.1, observer data suggest that when multiple mesh sizes are used on the same trip, smaller mesh caught more small sized monkfish (Figure 34). If implementation of Options 2 or 4 leads to an increase in the number of small monkfish that are caught and discarded in the SFMA, this could negatively affect the long-term health of the stock, and eventually, the long-run profits of gillnetters that target monkfish in the SFMA. However, because observer data suggest that the use of less than 10" minimum mesh has already been occurring with no apparent effects noted in the monkfish stock assessment, this potential negative impact is expected to be minimal.

Impacts to Other Species

Option 4 may result in increased landings of species caught in less than 10" mesh, including dogfish and skates, on fishing trips under a monkfish-only or combined monkfish/NE multispecies DAS in the SFMA, compared to impacts on these species relative to Option 1 (the no action alternative). The expected impacts on landings of species other than monkfish and groundfish are similar to those described in Option 2. The net effect of an increased supply of a species on total revenues earned from that species will depend on market conditions, including the responsiveness of both quantity supplied and quantity demanded of the species to the ex-vessel price of the species (the price elasticity of supply and demand) and whether or not demand for the species changes.

Option 4 is expected to result in less negative impacts to groundfish stocks than Option 2 because encounters with groundfish are more limited in the SFMA. As shown earlier, in the SFMA, use of less than 10" mesh in sink gillnets is associated with catch of spiny dogfish, monkfish, smooth dogfish and skates (Table 83).

The expected change in net benefit associated with Option 4 (the preferred alternative) relative to Option 1 (the no action alternative) is neutral to positive. The positive impacts associated with Option 4 are

expected to offset or exceed any possible negative impacts. Note that Option 4 consists of several components, which will be addressed separately below.

Vessels holding limited access monkfish permits in Categories C and D and fishing on a combined monkfish/NE multispecies DAS would be allowed to use a minimum of 6.5” mesh in stand-up gillnets (i.e. sink gillnets without tie-downs) in the SFMA.

Based on FY2013 data, the total number of permits most likely to be impacted by this measure is 70 permits, 19 of which are Category C permits and 51 of which are Category D permits (Table 78). Vessels with Category C permits took a total of 390 trips in the SFMA. Vessels with Category D permits took 887 trips in the SFMA (Table 73). For both permit categories, total numbers of trips in the SFMA were at 5 year low in FY2013. Eighteen of these permits (6 in Category C and 12 in Category D) took at least one trip on a monkfish-only or combined monkfish/NE multispecies DAS in the NFMA, but this does not necessarily mean that these permit holders will always choose to fish in the NFMA, particularly if Option 4 increases the incentive to fish in the SFMA and adverse conditions in the NE Multispecies Fishery continue. The estimation of the number of monkfish permits likely to be impacted is based on the assumption that the proposed measure will not provide enough of an incentive to motivate currently inactive Category C and D permits to begin fishing for monkfish in 10-12” mesh and other species in smaller mesh in the SFMA.

Table 88 contains information about Category C and D permits that took trips on a monkfish-only or combined monkfish/NE multispecies DAS during FYs 2009-2013 in the SFMA, using sink gillnet gear with mesh size between 6.5” to less than 10”. Note that because VTR data do not distinguish between landings obtained with sink gillnet gear with and without the use of tie-downs, Table 88 reflects the number of permits that used mesh size within this range in sink gillnet gear, including both stand-up gillnets and gillnets using tie-downs. In the entire FY2009-FY2013 period, there were 6 unique permits in Category C that used mesh between 6.5” to less than 10” in sink gillnets while fishing in the SFMA. The mesh sizes used were: 6.5”, 7.0”, 8.0” and 8.5”. Twelve unique permits in Category D used 6.5” to less than 10” in sink gillnets while fishing in the SFMA over FY2009-FY2013. There was slightly more variety in the mesh sizes used by Category D permits: 6.5”, 7”, 7.5”, 8”, 8.5”, 9”, 8.8”, 9.3”, and 9.5”.

Landings data from vessels with monkfish permits in Category C and D that used sink gillnets trips on a monkfish only or combined monkfish/NE multispecies DAS in the SFMA with mesh size between 6.5” to less than 10” are presented in Table 89 for FY2013, by mesh size used. Note that these landings were earned by 8 unique permits fishing in the SFMA in FY2013 – 4 permits in Category C and 4 permits in Category D (Table 87). A total of \$13,847 was earned in FY2013 from landings obtained from 6.5” to less than 10” mesh in sink gillnets.

Table 89 lists the species landed by Category C and D permits using 6.5” to less than 10” mesh in sink gillnets trips on combined monkfish/NE multispecies DAS in the SFMA for FY2013 for species that have revenues greater than \$1,000 per year. Again, it should be noted that these landings and revenues were earned by 8 unique permits fishing in the SFMA in FY2013 – 4 permits in each of Categories C and D (Table 88). Four species that were caught in 6.5” to less than 10” mesh in the SFMA by Category C and D gillnetters had revenues that surpassed \$1,000 in FY2013; in order of landed value, these were spiny dogfish (\$5,489), monkfish (\$2,828), summer flounder (\$2,880) and skates (\$1,326) (Table 89). These four species accounted for 90% of the landed value of fish caught in the SFMA by Category C and D vessels using 6.5” to less than 10” mesh in sink gillnets. Landings and revenues in Table 89 reflect landed species caught in 6.5” to less than 10” mesh in both stand-up gillnets and gillnets that used tie-downs. In the SFMA, we do not see significant landings of groundfish species from the use of 6.5” to less than 10” mesh in gillnets.

Very limited information about the use of 6.5” to less than 10” mesh in stand up sink gillnets specifically is available from observed trips of this type. Table 90 presents summary information on the numbers of observed trips on a monkfish-only or a combined/NE Multi-species DAS that used 6.5” to less than 10” mesh in stand-up sink gillnets while fishing in the SFMA. Less than 10 observed trips used 6.5” to less than 10” mesh in stand-up gillnets over the entire FY2009-2013 period; these trips were all taken by Category D vessels.

Table 91 summarizes the very limited data on landings and revenue from species caught on observed trips in the SFMA while fishing 6.5” to less than 10” mesh in stand-up gillnets for species where the revenue earned from landing the species was greater than or equal to \$100 nominal dollars per fishing year. No species met these criteria for FY2009 and FY2010; therefore, species-level landings and revenues are presented by mesh size used for FYs 2011-2013 only. In the SFMA, the species-level revenue earned from landings obtained from 6.5” to less than 10” mesh in stand-up gillnets was greater than or equal to \$100 nominal dollars per fishing year for spiny dogfish in 6.5” and 7” mesh, and for monkfish in 9.5” mesh. This limited data should be viewed with care, but supports the argument that the use of 6.5” to less than 10” mesh in standup gillnets while fishing on a monkfish DAS in the SFMA successfully targets spiny dogfish. The amount by which these revenues for spiny dogfish and monkfish would increase under the proposed modification cannot be predicted because we cannot determine how many gillnet fishermen would opt to fish a second mesh size between 6.5” and less than 10” to target spiny dogfish if Option 4 were implemented, thereby making use of a second mesh less than 10” on the same trip permissible. In addition, possible revenue increases would depend on market conditions for spiny dogfish. It is possible that ex-vessel price for the species could fall if supply of spiny dogfish increased significantly and demand did not change.

Vessels holding limited access monkfish permits in Categories A, B, C, and D that are fishing on a monkfish DAS or a combined monkfish/NE multispecies DAS within the Mid-Atlantic Exemption Area would be allowed to use a minimum of 5” mesh in stand-up gillnets (i.e. sink gillnets without tie-downs) and could retain both monkfish and dogfish on the same trip. While the regulations for the total number of gillnets fished (which) based on monkfish permit category would not be altered by this component of Option 4, the option does limit the number of stand-up gillnets fished to 50.

All vessels with monkfish permits in Categories A, B, C, and D that fish with gillnets on a monkfish-only or combined monkfish/NE multispecies DAS have the potential to be impacted by this portion of the option; based on FY2013 data, this would be a total of 126 permits – 18, 31, 19, and 51 in Categories A, B, C, and D, respectively (Figure 42). Although the owners of these permits may not have historically fished in the SFMA or in the Mid-Atlantic Exemption Area, it is possible that they could opt to do so. Vessels fishing in the Mid-Atlantic Exemption area are exempt from the 5-percent bycatch criteria specifications and can fish outside of a NE multispecies DAS, provided that the vessel does not possess or land regulated NE multispecies finfish. To estimate which permits are most likely to be impacted by this action, Table 92 summarizes information about the numbers of permits, by permit category, that took at least one trip in the Mid-Atlantic Exemption area, fishing under a monkfish-only or combined monkfish/NE multispecies DAS, using sink gillnet gear during the FY2009-FY2013 period. The total numbers of sink gillnet trips by permit category and fishing year are also indicated in Table 92.

Based on FY2013 data, 40 monkfish permits are most likely to be impacted by the flexibility offered by this portion of Option 4 since these permits took at least one trip in the Mid-Atlantic Exemption Area in FY2013. This group of 40 permits was comprised of 8 permits in Category A, 22 permits in Category B, 5 permits in Category C and 5 permits in Category D. Together, these permits took a total of 984 trips from FYs 2009-2013 on a monkfish-only or combined monkfish/NE multispecies DAS in the Mid-

Atlantic Exemption Area that fished with sink gillnets. We cannot determine from the available VTR data how many of these trips used standup gillnets; whether or not a gillnet vessel used tie-downs is only known for those trips that were observed. The number of monkfish permits that are actually impacted by this portion of the measure could be greater than 40 since the measure could provide an incentive for more permits to fish in the Mid-Atlantic Exemption Area. In addition, it is possible that should Option 4 be implemented, previously inactive permits may opt to fish in the Mid-Atlantic Exemption Area, since they would then be able to target monkfish in 10" and larger mesh, and dogfish in 5" to less than 10" mesh on the same trip.

Table 93 contains information about monkfish permits in Categories A-D that took trips on a monkfish-only or combined monkfish/NE multispecies DAS during FY2009-FY2013 in the Mid-Atlantic Exemption Area, using sink gillnet gear with mesh size between 5" to less than 10". Note that because VTR data do not distinguish between landings obtained with sink gillnet gear with and without the use of tie-downs, Table 93 reflects the number of permits that used mesh size within this range, including both stand-up gillnets and gillnets using tie-downs.

In the entire FY2009-FY2013 period, 19 unique permits fished in sink gillnets in the Mid-Atlantic Exemption Area with mesh between 5" and less than 10"; 12 unique permits in Category B, 5 unique permits in Category D and less than 3 unique permits in each of Categories A and C. Table 94 presents a frequency chart for the number of trips in the Mid-Atlantic Exemption Area that used mesh sizes between 5" and less than 10" in sink gillnets (both stand-up and with tie-downs). For mesh less than 10", 6.0" and 5.5" mesh were the most frequent mesh sizes observed.

Landings data from vessels with monkfish permits in Categories B-D that used sink gillnets trips on a monkfish-only or combined monkfish/NE multispecies DAS in the Mid-Atlantic Exemption Area with mesh size between 5" to less than 10" are presented in Table 95 for FY2013, by mesh size used. These landings were earned by 9 unique permits fishing in the Mid-Atlantic Exemption Area in FY2013 – 6 permits in Category B, and less than 3 unique permits in each of Categories C and D (Table 93). A total of \$11,894 was earned in FY2013 from landings obtained from 5" to less than 10" mesh in sink gillnets while fishing in the Mid-Atlantic Exemption Area. During FY2013, no permits in Category A fished with less than 10" mesh in the Mid-Atlantic Exemption Area. Of this total revenue, \$1,945 (just over 16%) was derived from use of 5" to less than 6" mesh, which suggests there is some economic benefit to be gained from allowing the use of 5" to less than 6" mesh in the Mid-Atlantic Exemption area, where fishermen are less likely to encounter groundfish than they are in the NFMA.

Table 96 lists the species that were landed by monkfish permits in Categories A-D using 5" to less than 10" mesh in sink gillnets trips on monkfish-only or combined monkfish/NE multispecies DAS in the Mid-Atlantic Exemption Area for FY2013 for species that have total revenues greater than \$1,000 from landings obtained through the use of 5" to less than 10" mesh. These landings and revenues were earned by 9 unique permits fishing in the Mid-Atlantic Exemption Area with less than 10" mesh in FY2013 (Table 93). Three species caught in 5" to less than 10" mesh in the Mid-Atlantic Exemption Area by gillnetters with permits in Categories A-D had landings that exceeded \$1,000 in FY2013; in order of landed value, these were spiny dogfish (\$7,223), monkfish (\$2,606), and smooth dogfish (\$1,105) (Table 96). These three species accounted for 92% of the landed value of fish caught in the Mid-Atlantic Exemption Area by Category A-D gillnet vessels using 5" to less than 10" mesh while fishing on a monkfish-only or combined monkfish/NE multispecies DAS. These landings and revenues reflect species caught in 5" to less than 10" mesh in both stand-up gillnets and gillnets that used tie-downs.

Data on usage of 5" to less than 10" mesh while fishing in the Mid-Atlantic Exemption Area with sink gillnets using tie-downs versus stand-up gillnets is extremely limited, since the distinction between

gillnets with tie-downs and stand-up gillnets is made only for observed trips. There was only 1 observed trip in the entire FY2009-FY2013 period that fished with a mesh size between 5” and less than 10” in a stand-up gillnet in the Mid-Atlantic Exemption Area while on a monkfish-only or combined monkfish/NE multispecies DAS. This trip was taken in FY2013 by a Category D vessel, and used 6.5” mesh with no tie-downs. The only catch landed from use of this mesh size was spiny dogfish. There was also only 1 observed trip in the entire FY2009-FY2013 period that fished in the Mid-Atlantic Exemption Area with a mesh size between 5” and less than 10” in sink gillnets using tie-downs. This trip was also taken by a Category D vessel in FY2013, and no catch was retained while fishing with 6.5” mesh. The lack of landings and revenue data specific to the use of 5” to less than 10” mesh in stand-up gillnets versus in gillnets with tie-downs while fishing in the Mid-Atlantic Exemption Area means that no conclusions about the economic impacts of restricting use of 6” to less than 10” to stand-up gillnets can be drawn.

Southern New England (SNE) Monkfish, Skate, and Dogfish Gillnet Exemption Areas

The remaining portions of Option 4 pertain to the SNE Dogfish, and the SNE Monkfish and Skate, Gillnet Exempted Areas. These areas are the same area geographically. However, the applicable regulations depend on which species the gillnet vessel is targeting.

Option 4 would allow vessels holding limited access monkfish permits in Categories A, B, C, and D that are fishing on a monkfish DAS or a combined monkfish/NE multispecies DAS within the SNE Dogfish Exemption Area to use a minimum of 6” mesh in stand-up gillnets (i.e. sink gillnets without tie-downs) and retain both monkfish and dogfish on the same trip if the trip occurs during the designated exemption season (May 1 to October 31). While the regulations for the total number of gillnets fished would not be altered by this component of Option 4, Option 4 does limit the number of stand-up gillnets fished in the SNE Dogfish Gillnet Exempted Fishery during May 1 to October 31 to 50 stand-up gillnets.

Option 4 would also allow vessels holding limited access monkfish permits in Categories A, B, C, and D that are fishing on a monkfish DAS or a combined monkfish/NE multispecies DAS within the SNE Monkfish and Skate Exemption Area to use a minimum of 10” mesh in all gillnets, and retain both monkfish and dogfish on the same trip. This would be permitted year round. The regulations for the total number of gillnets fished would not be altered by this component of Option 4.

All vessels with monkfish permits in Categories A, B, C, and D that fish with gillnets on a monkfish-only or combined monkfish/NE multispecies DAS have the potential to be impacted by the portion of the option that applies to the SNE Monkfish, Skate and Dogfish Gillnet Exemption Area. Based on FY2013 data, this would be a total of 126 active permits – 18, 31, 19, and 51 in Categories A, B, C, and D, respectively (Figure 42). While some permits may not have fished in the SNE Monkfish, Skate and Dogfish Exemption Area traditionally, they could opt to in the future and therefore could potentially be impacted by the gear mesh modification.

To identify the permits mostly likely to be positively impacted by the flexibility to retain monkfish while targeting dogfish in the SNE Dogfish Exempted Fishery, Table 97 summarizes the numbers of monkfish permits that took at least one trip in the SNE Dogfish Exemption Area during May 1-October 31 using 6” to less than 10” minimum mesh in gillnet gear, by monkfish permit category for each of FYs 2009-2013. In addition, Table 97 indicates the total number of trips taken that used 6” to less than 10” mesh in gillnets during the exemption season in the SNE Dogfish Exemption Area for each of FYs 2009-2013, by permit category. By definition, these trips could not have been fishing in the SNE Monkfish and Skate Exempted Fishery, since that exempted fishery requires 10” minimum mesh. Note that no monkfish permit in Category A took this type of trip in any of the FYs 2009-2013. In FY2013, less than 9 of permits (less than 3 permits in each of Categories B-D) fished with mesh between 6” to less than 10” in the SNE Dogfish Exempted Fishery during May 1-October 31 of the fishing year. Under Option 1, the no

action alternative, monkfish should not have been landed on these trips. The benefits associated with this part of Option 4 stem from allowing these permits to land monkfish caught while fishing with 6” minimum mesh in the SNE Dogfish Exempted Fishery. Additional economic impacts would be expected if the modification encourages more permits to fish with 6” minimum mesh in stand-up gillnets in the SNE Dogfish Exemption Area during May 1 – October 31 because they will now be able to retain monkfish while targeting dogfish.

Table 98 summarizes the landings and revenues of the permits for the May 1 – October 31 period of FY2013 from fishing in the SNE Dogfish Exemption Area with mesh between 6” to less than 10” in sink gillnets for species with total nominal revenues \$100 or greater. Note that these landings and revenues were earned by fewer than 9 unique permits on fewer than 35 trips (Table 97). Spiny dogfish accounted for 35% of the total nominal revenue earned from landings in 6” to less than 10” mesh. Although gillnet vessels are not permitted to retain monkfish while fishing 6” to less than 10” minimum mesh in the SNE Dogfish Exempted Fishery during May 1-October 31, monkfish was the third most valuable species landed in 6” to less than 10” mesh. This supports observations by industry advisors that some gillnet vessels have been using less than 10” minimum mesh in the SFMA while on a monkfish DAS. It also suggests that if Option 4 is implemented, there will be opportunity for gillnetters to retain monkfish that are landed while they are targeting dogfish in 6” minimum mesh. Net revenues (total gross revenues less trip costs) would increase because gillnetters would earn revenues from the landed monkfish (assuming they could sell it), rather than discarding it. Increases in net revenue would occur both due to increased landings of monkfish (assuming the ex-vessel price of monkfish remained constant) and reduced operational costs, since a separate trip to target monkfish would not be required. Assuming fixed cost remain constant, increases in net revenue should translate into an increase in profits, which would benefit the vessel owner and vessel crew. Producer surplus would be expected to increase.

Monkfish permits that take trips in the SNE Monkfish and Skate Gillnet Exemption Area using 10” minimum mesh are also likely to be positively impacted by this portion of the measure, since they would gain the ability to retain dogfish. Table 99 summarizes the numbers of monkfish permits that took at least one trip in the SNE Monkfish and Skate Gillnet Exemption Area using 10” minimum mesh, by monkfish permit category, in any month for FYs 2009-2013. In addition, Table 99 indicates the total number of trips taken during the fishing year in the SNE Monkfish and Skate Gillnet Exemption Area using 10” minimum mesh for each of FYs 2009-2013, by permit category. Based on FY2013 data, 64 monkfish permits are fishing in the SNE Monkfish and Skate Exemption Area using a minimum of 10” mesh in gillnets, and could benefit from the flexibility to retain dogfish that are caught. As noted above in the discussion for Table 97 in FY2013 less than 9 of these permits (less than 3 permits in each of Categories B-D) also fished with mesh between 6” to less than 10” in this area, under the SNE Dogfish Exempted Fishery, during May 1-October 31 of the fishing year.

Table 100 summarizes the landings and revenues of the 64 permits, as reported, that were obtained while fishing in the SNE Monkfish and Skate Exempted Fishery during FY2013 with 10” minimum mesh in sink gillnets for species with total nominal revenues of \$1,000 or greater. The top five species, by value, landed in 10” mesh or larger in FY2013 were monkfish (\$3.1 million), skates (\$1.4 million), monkfish heads (\$40,758), summer flounder (fluke) (\$29,400) and spiny dogfish (\$23,278). Note that some of the trips taken by these permits may have been using mesh in the 6” to less than 10” inch size range and operating under the SNE Dogfish Exempted Fishery since a vessel is permitted to use 6” minimum mesh in that fishery from May 1 to October 31 and land dogfish under that exemption. Some of the landings reported as being caught in 10” minimum mesh may have been caught in the smaller mesh. This could be one explanation for the large presence of spiny dogfish in Table 100. Vessels may fish in both the monkfish/skate and dogfish exempted fisheries during the same time period, provided they land only dogfish and bycatch species; or land only monkfish, skate, and bycatch species, for each individual fishing trip. To adjust for dogfish that may have been landed from May 1-October 31 while fishing under

the SNE Dogfish Exempted Fishery, Table 101 summarizes landings from 10” mesh or larger while fishing in the Exemption Area outside of the season for the SNE Dogfish Exempted Fishery (i.e. in the months of January-April, November and December). A total of just over \$2.0 million in nominal revenues (44% of total nominal revenues for the entire FY2103) was earned by gillnet vessels fishing with 10” minimum mesh in the Monkfish and Skate Exemption Area outside of the season for the SNE Dogfish Exempted Fishery.

A comparison of Table 100 and Table 101 shows that the amount of spiny dogfish being landed drops dramatically once we restrict dogfish landings and revenues from catch that was reported as being obtained from 10” minimum mesh to the period outside of the season for the SNE Dogfish Exempted Fishery. Table 100 and Table 101 make two things clear. Some spiny dogfish can be caught while targeting monkfish and skates in the SNE Monkfish and Skate Exempted Fishery outside the season that allows for targeting dogfish in the SNE Dogfish Exempted Fishery. In addition, Table 100 provides insight into the landings and revenues that occurred for the few vessels that appeared to be operating as if the proposed modification were already in place since these vessels landed monkfish and dogfish on the same trip while fishing in the SNE Monkfish, Skate and Dogfish Exemption Area. The proposed modification could benefit gillnet vessels by making it permissible for the vessel to retain these legal size dogfish on a trip targeting monkfish and skates, provided that they can sell them. Increases in net benefit, which would stem from increases in producer surplus, would depend on how much revenues increase from landed spiny dogfish, which will depend on market conditions in the dogfish fishery at the time of landing, including ex-vessel price of dogfish.

8.11.1.5 Summary of Analysis for the Proposed Action

Adopting the preferred alternatives for each measure contained within the Proposed Action would result in the following changes in regulations relative to No Action:

- Monkfish Category C and Category D vessels fishing under a Northeast multispecies sector non-DAS trip or under a monkfish-only DAS in the NFMA would be permitted to declare a Northeast multispecies Category A DAS while at sea.
- The NFMA monkfish trip limit would be eliminated for monkfish Category C and Category D vessels fishing under both a NE multispecies and monkfish DAS.
- The following modifications to gear requirements while fishing on a monkfish DAS would be allowed:
 - Vessels fishing on a combined NE multispecies and monkfish DAS in the SFMA would be able to use 6.5” minimum mesh stand-up gillnet gear.
 - Vessels fishing on a monkfish DAS within the Mid-Atlantic Exemption Area would be allowed to use 6” minimum mesh stand-up gillnet-gear and retain both monkfish and dogfish on the same trip.
 - Vessels fishing on a monkfish DAS within the SNE Dogfish Exemption Area would be allowed to use 6” minimum mesh stand-up gillnet-gear and retain both monkfish and dogfish on the same trip during the exemption season.
 - Vessels fishing on a monkfish DAS within the SNE Monkfish and Skate Exemption Area would be allowed to use 10” minimum mesh gillnets and retain both monkfish and dogfish on the same trip, year-round.

The expected economic impacts for each individual preferred alternative contained within the Proposed Action are presented in detail above in Section 7.4 and summarized above in Section 8.11.1.4. The economic analysis indicates that permitting monkfish permit Category C and Category D vessels fishing under a Northeast multispecies sector non-DAS trip or under a monkfish-only DAS in the NFMA to declare a Northeast multispecies Category A DAS while at sea would likely result in neutral to low positive economic impacts. In addition, the analysis also demonstrates that modifying the monkfish possession to eliminate the monkfish trip limit in the NFMA for monkfish permit Category C and Category D vessels fishing under both a NE multispecies DAS and a monkfish DAS would likely result in low positive to positive economic impacts. These two changes will benefit vessels in Category C and Category D that fish in the NFMA. Sector vessels in monkfish permit Category C and Category D fishing in the NFMA will benefit from both changes, as they will be permitted to declare a NE multispecies DAS while at sea if they are fishing on a sector non-DAS trip or a monkfish-only trip. In addition, sector vessel fishing under a combined NE multispecies DAS and a monkfish DAS would no longer have any trip limit for monkfish landings. Common pool vessels in Categories C and D will continue to be required to declare a NE multispecies DAS before leaving the dock, and if they are fishing under both a NE multispecies DAS and a monkfish DAS, landings of monkfish will now be unlimited. The portion of the Proposed Action that pertains to gear modifications for gillnet vessels will benefit Category A, B, C and D gillnet vessels fishing in the SFMA under a monkfish-only or combined monkfish/NE multispecies DAS by reducing the minimum mesh size, depending on area fished. By increasing operational flexibility, this portion of the Proposed Action may increase the expected short run profits of monkfish fishermen that use gillnets in the SFMA by allowing them to target species in less than 10” mesh and monkfish in 10” minimum mesh on the same trip. The primary benefit of this flexibility is that the ability to land both monkfish and other species on the same trip would likely decrease trip-related or operating costs (e.g. fuel, labor, etc.) that would be necessary if separate trips to target monkfish and other species (such as dogfish) are required. As detailed in Section 7.4.3.1.4, the expected positive economic impacts of increased profits to gillnetters are expected to offset or slightly exceed any possible negative impacts, therefore leading to net economic impacts that are neutral or positive.

The expected net benefits associated with each of the preferred alternatives contained within the Proposed Action range from neutral to positive. When positive net benefit occurs, it stems from increases in producer surplus. When considering total expected net benefit from the Proposed Action as a whole, it is likely that the total expected net benefit stemming from the Proposed Action is higher than the expected net benefit relative to No Action

8.11.1.6 Determination of Significance

The Proposed Action is not predicted to have an adverse impact on fishing vessels, purchasers of seafood products, ports, recreational anglers, and operators of party/charter businesses in excess of \$100 million. Not all alternatives have impacts that could be quantified, but the likely economic impacts of all FW9 measures have been discussed qualitatively, and where possible, quantified.

8.11.2 Initial Regulatory Flexibility Analysis (IRFA)

8.11.2.1 Introduction

The purpose of the Regulatory Flexibility Analysis (RFA) is to establish a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure such proposals are given serious consideration.

The RFA does not contain any decision criteria; instead the purpose of the RFA is to inform the agency, as well as the public, of the expected economic impacts of various alternatives contained in the FMP or amendment (including framework management measures and other regulatory actions) and to ensure the agency considers alternatives that minimize the expected impacts while meeting the goals and objectives of the FMP and applicable statutes.

With certain exceptions, the RFA requires agencies to conduct an Initial Regulatory Flexibility Analysis (IRFA) for each proposed rule. The IRFA is designed to assess the impacts various regulatory alternatives would have on small entities, including small businesses, and to determine ways to minimize those impacts. An IRFA is conducted to primarily determine whether the proposed action would have a “significant economic impact on a substantial number of small entities.” In addition to analyses conducted for the RIR, the IRFA provides: 1) A description of the reasons why action by the agency is being considered; 2) a succinct statement of the objectives of, and legal basis for, the proposed rule; 3) a description and, where feasible, an estimate of the number of small entities to which the proposed rule will apply; 4) a description of the projected reporting, record-keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirements of the report or record; and, 5) an identification, to the extent practicable, of all relevant federal rules, which may duplicate, overlap, or conflict with the proposed rule.

8.11.2.2 Description of reasons why action by the Agency is being considered

The need and purpose of the actions are set forth in Section 3.2 of this document and are incorporated herein by reference.

8.11.2.3 Statement of the objectives of, and legal basis for, the proposed rule

The goals and objectives of FW 9 are the same as those detailed in the original Monkfish FMP and subsequent amendments. In general, the intent of FW 9 is to improve flexibility to achieve, but not exceed, catch limits specified based on the most recent stock assessment and more effectively OY, as required by the MSA.

8.11.2.4 Description and estimate of the number of small entities to which the proposed rule will apply

Small entities include "small businesses," "small organizations," and "small governmental jurisdictions." The Small Business Administration (SBA) has established size standards for all major industry sectors in the U.S. including commercial finfish harvesters (NAICS code 114111), commercial shellfish harvesters (NAICS code 114112), other commercial marine harvesters (NAICS code 114119), for-hire businesses (NAICS code 487210), marinas (NAICS code 713930), seafood dealers/wholesalers (NAICS code 424460), and seafood processors (NAICS code 311710).

A business primarily involved in finfish harvesting is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual receipts not in excess of \$20.5 million for all its affiliated operations worldwide. For commercial shellfish harvesters, the other qualifiers apply and the receipts threshold is \$5.5 million. For other commercial marine harvesters, for-hire businesses, and marinas, the other qualifiers apply and the receipts threshold is \$7.5 million. A business primarily involved in seafood processing is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual employment, counting all individuals employed on a full-time, part-time, or other basis not in excess of 500 employees²⁷ for all its affiliated operations worldwide. For

seafood dealers/wholesalers, the other qualifiers apply and the employment threshold is 100 employees. A small organization is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field. Small governmental jurisdictions are governments of cities, boroughs, counties, towns, townships, villages, school districts, or special districts, with population of fewer than 50,000.

This proposed action regulates commercial fish harvesting entities engaged in the Northeast monkfish limited access fishery. Commercial fishing harvesting entities engaged in the Northeast monkfish limited access fishery may also be engaged in the Northeast multispecies, dogfish and skate fisheries. A description of the specific entities that are likely to be impacted is included below for informational purposes, followed by a discussion of those regulated entities likely to be impacted by the proposed regulations. For the purposes of the RFA analysis, the ownership entities, not the individual vessels, are considered as regulated entities.

Ownership entities in regulated commercial harvesting businesses

Individually-permitted vessels may hold permits for several fisheries, harvesting species of fish that are regulated by several different fishery management plans, even beyond those impacted by the proposed action. Furthermore, multiple permitted vessels and/or permits may be owned by entities affiliated by stock ownership, common management, identity of interest, contractual relationships, or economic dependency. For the purposes of this analysis, ownership entities are defined by those entities with common ownership personnel as listed on permit application documentation. Only permits with identical ownership personnel are categorized as an ownership entity. For example, if five permits have the same seven personnel listed as co-owners on their application paperwork, those seven personnel form one ownership entity, covering those five permits. If one or several of the seven owners also own additional vessels, with sub-sets of the original seven personnel or with new co-owners, those ownership arrangements are deemed to be separate ownership entities for the purpose of this analysis.

Regulated Commercial Fish Harvesting Entities

Ownership entities are identified on June 1st of each year based on the list of all permit numbers, for the most recent complete calendar year, that have applied for any type of Northeast Federal fishing permit. The current ownership data set is based on calendar year 2014 permits and contains gross sales associated with those permits for calendar years 2012 through 2014. Ownership entities are classified into the categories established by the SBA (primarily finfish, primarily shellfish, or primarily for-hire businesses) based on which activity generated the greatest gross revenue in calendar year 2014. The determination as to whether the entity is large or small is based on the average annual revenue for the three years from 2012 through 2014.

Directly Regulated Monkfish Harvesting Entities

Commercial monkfishing in the Greater Atlantic region is currently managed using input controls (Days-At-Sea and trip limits). Most commercial monkfishing is conducted by trawl vessels in the Northern Fishery Management Area and by gillnet vessels in the Southern Fishery Management Area. Monkfish are often caught in conjunction with groundfish and therefore there is considerable overlap between the monkfish fishery and the NE multispecies fishery. There is no known directed recreational fishery for monkfish.

There are eight categories of monkfish permits in the Greater Atlantic region (categories A, B, C, E, F, G, and H). Category A and B permits are for vessels that do not have limited access permits for NE multispecies or Atlantic sea scallops. Category C and D permits are for vessels that have either a limited access NE multispecies or limited access Atlantic sea scallop permit. Vessels with Category G or H permits may only use their monkfish DAS in the portion of the Southern Fishery Management Area south

of 38°40' N latitude. Category F permits are designed for fishing only in an offshore area. Category E permits are open access or incidental catch permits and may be obtained by anyone with a valid vessel operator's license. Entities holding one or more limited access monkfish permits (monkfish permits in categories A, B,C, D, F and H) are the entities holding permits that are directly regulated by one or more measures included in the proposed action. These include entities that could not be classified into a business type because they did not earn revenue from landing and selling fish in 2014 and so they are considered to be small.

There were 397 distinct ownership entities based on calendar year 2014 permits, with 381 entities categorized as small and 16 entities categorized as large per the SBA guidelines (Table 118 and Table 119).

Table 118 - Entities directly regulated by the proposed action.

Entity Type	Number of Entities	Number of Small Business Entities
Primarily Finfish	206	206
Primarily Shellfish	166	150
Primarily Charter	0	0
No Revenues	25	25
Total	397	381

Table 119 - Description of directly regulated entities by gross sales.

Sales Category	Number of Entities	Number of Small Entities	Mean Annual Gross Sales *	Median Annual Gross Sales *	Mean number of permits per entity **	Maximum number of permits per entity **
<\$50 K	32	32	\$10,489	\$0	2	30
\$50K - \$100K	18	18	\$68,894	\$66,061	1	1
\$100K - \$500K	137	137	\$242,961	\$223,402	1	4
\$500K - \$1M	63	63	\$743,149	\$753,863	2	5
\$1.0M - \$5.5M	131	131	\$2,006,080	\$1,615,771	2	8
\$5.5M – \$20.5M	12	0	\$9,599,605	\$6,839,421	10	28
\$20.5M+	4	0	\$22,816,341	\$23,161,821	16	19

* Mean and median annual gross sales are calculated from annual sales for three years, 2012-2014.
**Mean and maximum numbers of permits per entity are identified based on permits held in 2014.

Directly Regulated, Active Monkfish Fishing Entities Impacted

While 397 commercial entities are directly regulated by the proposed action, not all of these entities are landing monkfish for commercial sale. Commercial entities that do not land monkfish for sale, while regulated by the proposed action, will not be impacted by the proposed action. Commercial fishing harvesting entities that land monkfish for sale are both directly regulated and possibly impacted by the proposed action.

To estimate the number of commercial entities that may experience impacts from the proposed action, active monkfish entities are defined as those entities containing permits that are directly regulated and that landed any monkfish in 2014 for commercial sale. These active entities are described in Table 120 and Table 121, and are a subset of those entities described in Table 118 and Table 119. There are 325

potentially impacted, directly regulated commercial entities, 310 (95.4%) of which are classified as small entities.

Table 120 - Entities directly regulated and impacted by the proposed action.

Entity Type	Number of Entities	Number of Small Business Entities
Primarily Finfish	198	198
Primarily Shellfish	127	112
Total	325	310

Table 121 - Description of directly regulated and impacted entities by gross sales.

Sales Category	Number of Entities	Number of Small Entities	Mean Annual Gross Sales *	Median Annual Gross Sales *	Mean number of permits per entity **	Maximum number of permits per entity **
<\$50 K	5	5	\$37,734	\$38,168	1	1
\$50K - \$100K	13	13	\$70,421	\$67,152	1	1
\$100K - \$500K	124	124	\$242,002	\$223,123	1	4
\$500K - \$1M	58	58	\$743,017	\$746,507	2	5
\$1.0M - \$5.5M	110	110	\$2,063,193	\$1,650,606	2	8
\$5.5M – \$20.5M	11	0	\$9,241,984	\$6,676,919	10	28
\$20.5M+	4	0	\$22,816,341	\$23,161,821	16	19

* Mean and median annual gross sales are calculated from annual sales for three years, 2012-2014.

**Mean and maximum numbers of permits per entity are identified based on permits held in 2014.

Description of the projected reporting, record-keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for the preparation of the report or records

The proposed actions do not introduce any new reporting, record keeping, or other compliance requirements.

Identification of all relevant Federal rules, which may duplicate, overlap or conflict with the proposed rule

The proposed actions do not duplicate, overlap or conflict with any other Federal Rules.

Significance of economic impacts on small entities

Substantial Number Criterion

In colloquial terms, substantial number refers to “more than a few.” The vast majority of the regulated entities impacted by this action (95.4%) are considered small, and therefore the preferred alternative will have impacts on a substantial number of small entities.

Significant Economic Impacts

The outcome of “significant economic impact” can be ascertained by examining two factors: *disproportionality* and *profitability*. *Disproportionality* refers to whether or not the regulations place small commercial entities at a significant competitive disadvantage to large commercial entities. *Profitability* refers to whether or not the regulations significantly reduce profits for a substantial number of small commercial entities.

Description of impacts on small entities

The proposed action will impact all small entities that possess at least one monkfish category A, B, C, D, F, or H permit and are actively harvesting monkfish. The proposed action will impact entities that engage in monkfish harvesting in either the northern or southern monkfish management area. These small entities consist of 198 primarily engaged in fin-fishing and 112 primarily engaged in shell-fishing.

In terms of disproportionality, the proposed action is not expected to place small entities at a competitive disadvantage to large entities. All of the large entities impacted by the proposed action are primarily engaged in shell-fishing. These large entities may in fact not benefit to the same degree as small entities, the majority of which are primarily engaged in fin-fishing, from the proposed actions of trip limit increases and a relaxation of mesh size changes allowed during fishing trips. A complete analysis of the proposed alternatives is available in Section 7.4 and summarized in the RIR included above in Section 8.11.

In terms of profitability, both small and large entities would benefit from increased operational flexibility from the Proposed Action. There is no reason to believe small entities will be negatively affected in any way relative to No Action by the preferred alternatives that constitute the Proposed Action. Adopting the preferred alternatives for each measure contained within the Proposed Action would result in the following changes in regulations relative to No Action:

- Monkfish Category C and Category D vessels fishing under a Northeast multispecies sector non-DAS trip or under a monkfish-only DAS in the NFMA would be permitted to declare a Northeast multispecies Category A DAS while at sea.
- The NFMA monkfish trip limit would be eliminated for monkfish Category C and Category D vessels fishing under both a NE multispecies and monkfish DAS.
- The following modifications to gear requirements while fishing on a monkfish DAS would be allowed:
 - Vessels fishing on a combined NE multispecies and monkfish DAS in the SFMA would be able to use 6.5” minimum mesh stand-up gillnet gear.
 - Vessels fishing on a monkfish DAS within the Mid-Atlantic Exemption Area would be allowed to use 6” minimum mesh stand-up gillnet-gear and retain both monkfish and dogfish on the same trip.
 - Vessels fishing on a monkfish DAS within the SNE Dogfish Exemption Area would be allowed to use 6” minimum mesh stand-up gillnet-gear and retain both monkfish and dogfish on the same trip during the exemption season.
 - Vessels fishing on a monkfish DAS within the SNE Monkfish and Skate Exemption Area would be allowed to use 10” minimum mesh gillnets and retain both monkfish and dogfish on the same trip, year-round.

The expected economic impacts for each individual preferred alternative contained within the Proposed Action are presented in detail above in Section 7.4 and summarized above in Section 8.11.1.4. As indicated in Section 8.11.1.5 the expected net benefits associated with each preferred alternative contained within the Proposed Action range from neutral to positive. When positive net benefit is

expected to occur, it would stem from increases in producer surplus. When considering the Proposed Action as a whole, it is likely that the total net benefit expected under the Proposed Action is positive and higher than the total net benefit expected under No Action.

In terms of profitability, both small and large entities should benefit from increased operational flexibility from the proposed action, though these benefits are likely to be marginal. There is no reason to believe small entities will be negatively affected in any way relative to the no-action alternatives by the preferred alternatives identified in the proposed action. Overall, the net impact on profits from the preferred alternatives for each of the measures contained within the proposed action is expected to be neutral to low positive, compared to the no-action alternatives.

Impacts from alternatives included under each of the measures within the proposed action are summarized separately below for 1) modifications to current DAS/trip limit system, 2) modifications to monkfish possession limits and 3) modifications to gear requirements while on a monkfish DAS. Detailed discussion of the analyses that estimated the impacts of these alternatives is included in Section 7.4.

Alternatives for modifications to current DAS/trip limit system

Four separate measures are proposed by FW9 for modification to the current DAS/trip limit system. The alternatives under each of these measures will be summarized.

Requirements for vessels with NE multispecies permits to also use a NE multispecies DAS when on a monkfish DAS Three alternatives were considered: the preferred alternative (Option 3, which would allow only groundfish sector vessels holding limited access monkfish permits in Category C and Category D to declare a NE multispecies DAS at sea in the NFMA), the no-action alternative (Option 1), and Option 2, which would allow all limited access monkfish Category C and D vessels to declare a NE multispecies DAS at sea in the NFMA. Both Option 2 (non-preferred alternative) and Option 3 (the preferred alternative) are expected to result in neutral or possibly small increases in profit relative to Option 1 (the no-action alternative). Options 2 and 3 are expected to have very similar economic impacts compared to each other. Option 3 was preferred over Option 2 due to some concern that common pool vessels may be able to fish in the GOM/GB Monkfish Gillnet Exemption Area on a monkfish-only DAS, then declare a NE multispecies DAS while at sea and fish outside the exempted area without returning to port, thereby avoiding the pre-trip notification system for at-sea monitoring. However, in 2012 and 2013, there was little evidence of common pool Category C and D vessels taking trips while under a NE multispecies DAS (Table 62).

Southern Fishery Management Area at-sea Monkfish Declaration

Two alternatives were considered: Option 1, the no-action and preferred alternative, under which vessel operators would continue to be unable to declare a monkfish DAS while at sea in the SFMA and Option 2, a non-preferred alternative, which would allow for an at-sea monkfish declaration in the SFMA. The economic analysis included in Section 7.4 and summarized in the RIR in Section 8.11 indicates that Option 2 would likely result in neutral impact to profit relative to Option 1 (the no-action alternative), but low positive impact on profit from Option 2 relative to Option 1 is possible. The analysis in Section 7.4 demonstrates that under Option 1, little regulatory discarding of monkfish is occurring in the SFMA, supporting the conclusion that Option 2 is most likely to have a negligible impact on profit relative to Option 1. Option 1 was preferred due to concerns about effort shifts from the NFMA to the SFMA, though the economic analysis in Section 7.4 suggests that a major shift in effort seems unlikely.

Modifying DAS/trip limit allocation for Category F (offshore) vessels

Two alternatives were considered: Option 1, the no-action and preferred alternative, under which Category F vessels would continue to have a monkfish trip limit of 1,600 lbs in tail weight and their DAS use would be pro-rated and Option 2, a non-preferred alternative, which would increase the trip limit and

for which two sub-options were considered. Under Option 2, Sub-Option 1, the existing DAS allocation would be retained, while under Option 2, Sub-Option 2, the DAS allocation formula would be revised.

The impact on profit from Option 2 would be uncertain relative to Option 1 (the no action alternative), as the specific DAS calculation chosen (Option 2, Sub-Option 1 or Option 2, Sub-Option 2) will determine the direction and magnitude of impact. Option 2, Sub-Option 1 would likely have neutral impact on profit relative to Option 1 (the no action, preferred alternative), regardless of the trip limit specified, but small increases in profit are possible for a few vessels due to increased efficiency from reducing the amount of time spent at sea. Option 2, Sub-Option 2 (a non-preferred alternative) is expected to have low negative to negative impacts on profit relative to Option 1 (the no-action, preferred alternative).

DAS requirements for RSA vessels when on a monkfish DAS

Two alternatives were considered: Option 1, the no action, preferred alternative and Option 2, a non-preferred alternative that would allow monkfish vessels to re-declare from a monkfish DAS to a monkfish RSA DAS while at sea. For vessels enrolled in the RSA program, Option 2 might have some positive impact on profit if the revenue earned from additional monkfish landings offset the cost of a monkfish RSA DAS and any other costs (e.g. fuel, ice, etc.) associated with any increase in monkfish landings. However, the net economic benefit of Option 2 relative to Option 1 (the no action, preferred alternative) is uncertain, because Option 2 may result in decreased participation in the RSA program, as vessels would be able to use their RSA days more strategically given the flexibility to declare a RSA day while at sea.

Alternatives for modifications to monkfish possession limits

NFMA monkfish trip limit on a NE Multispecies DAS

Two options were considered: Option 1, the no-action alternative, and Option 2, the preferred alternative, which would eliminate the trip limit on a NE multispecies DAS and monkfish DAS. Option 2 is expected to have positive impacts on profit relative to Option 1.

Alternatives for modifications to gear requirements while on a monkfish DAS

Four alternatives were considered. Option 1 is the no-action alternative, under which mesh size requirements on a monkfish-only DAS would not be modified. Options 2-4 were designed to provide increased flexibility to gillnet vessels to target both monkfish in 10" minimum mesh and other species in less than 10" mesh on the same trip and land both species.

Option 2 (a non-preferred alternative) would allow all limited access Category C and D vessels to target other species using mesh size between 5" and 7", inclusive, in stand-up gillnets while also retaining legal sized monkfish on the same trip when fishing under a monkfish-only or combined monkfish/NE multispecies DAS in the NFMA or SFMA. Option 3 (also a non-preferred alternative) would allow vessels with monkfish permits in Categories A, B, C, and D to use 5" to 7" mesh in standup gillnet on a monkfish or combined monkfish/NE multispecies DAS in the NFMA.

Option 4, the preferred alternative, would modify the minimum mesh requirements for standup gillnets on a monkfish-only or combined monkfish/NE multispecies DAS in the SFMA. This option has three components. The first component allows vessels with monkfish permits in Categories C and D that are fishing on a combined monkfish/NE multispecies DAS to use a minimum of 6.5" mesh in standup gillnets in the SFMA. The second component allows vessels with monkfish permits in Categories A, B, C and D that are fishing on a monkfish DAS or combined monkfish/NE multispecies DAS within the Mid-Atlantic Exemption Area to use a minimum of 5" mesh in stand-up gillnets and retain both monkfish and dogfish from the same trip. This component of Option 4 would limit the number of stand-up gillnets fished to 50, but would not change the limit on the total number of gillnets fished. The third component of Option 4 pertains to the Southern New England Dogfish and the Southern New England Monkfish and Skate Exempted Areas. These areas are the same area geographically. However, current regulations (under

Option 1, the no action alternative), depend on which species the gillnet vessel is targeting. Under Option 4, vessels with monkfish permits in Categories A, B, C and D that are fishing on a monkfish DAS or combined monkfish/NE multispecies DAS within the Southern New England Dogfish Exemption Area would be permitted to use a minimum of 6" mesh in stand-up gillnets and retain both monkfish and dogfish from the same trip if the trip occurs during the designated exemption season May 1 to October 31). The number of stand-up gillnets fished between May 1 and October 31 in the SNE Dogfish Exemption Area would be limited to 50, but the limit on the total number of gillnets fished would remain unchanged. In addition, vessels with monkfish permits in Categories A, B, C and D that are fishing on a monkfish DAS or combined monkfish/NE multispecies DAS within the Southern Monkfish and Skate Exemption Area would be allowed to use 10" minimum mesh in all gillnets, and retain both monkfish and dogfish on the same trip. This would be permitted year round.

Options 2, 3 and 4 are all expected to have neutral to positive impacts on profits to gillnet vessel owners and crew relative to Option 1, the no-action alternative. Option 4, the preferred alternative, is expected to result in higher levels of profit than the non-preferred Options 2 or 3, all else held equal. Most gillnet trips fishing under a monkfish-only or combined monkfish/NE multispecies DAS occur in the SFMA (Option 3 is restricted to trips in the NFMA). Portions of Option 4 would apply to vessels with monkfish permits in Categories A and B, as well as those with permits in categories C and D (Option 2 is limited to vessels with monkfish permits in categories C and D). Finally, Option 4 provides gillnet vessel owners with greater flexibility as to mesh size used (in addition to 10" minimum mesh) since it permits use of mesh between 7" and less than 10", which does appear to be used in the SFMA.

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