FRAMEWORK ADJUSTMENT 8

TO THE

Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan

Environmental Assessment

December 2013

Mid-Atlantic Fishery Management Council
in cooperation with
the National Marine Fisheries Service (NMFS)

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First Framework Meeting: October 17, 2012
Second Framework Meeting: December 12, 2012
Final approved by National Oceanic and Atmospheric Administration (NOAA): March 19, 2013

A Publication of the Mid-Atlantic Fishery Management Council pursuant to National Oceanic and Atmospheric Administration (NOAA) Award No. NA10NMF4410009

1.0 TABLE OF CONTENTS, GUIDE TO TABLES AND FIGURES, ABBREVIAITONS AND ACRONYMS

1.0 TABLE OF CONTENTS, GUIDE TO TABLES AND FIGURES, ABBREVIAITONS AND ACRONYMS 2

1.1 TABLE OF TABLES 3
1.2 TABLE OF FIGURES 3
1.3 ACRONYMS, ABBREVIATIONS, ETC. 4

2.0 EXECUTIVE SUMMARY 4

3.0 BACKGROUND, PURPOSES AND NEEDS, HISTORY OF FISHERY MANAGEMENT PLAN, MANAGEMENT OBJECTIVES, AND MANAGEMENT UNIT, ... 7

3.1 BACKGROUND 7
***3.2* HISTORY OF FISHERY MANAGEMENT PLANS DEVELOPMENT 9**
3.3 FISHERY MANAGEMENT PLANS GENERAL MANAGEMENT OBJECTIVES/GOALS 11

4.0 MANAGEMENT ALTERNATIVES 11

4.1.1 ALTERNATIVE 1 (STATUS QUO/NO ACTION ON DISCARD CAP ALLOCATION CHANGES) 12
4.1.2 ALTERNATIVE 2 (CAP ALLOCATION A) - PREFERRED 13
4.1.3 ALTERNATIVE 3 (CAP ALLOCATION B) 14
4.2.1 ALTERNATIVE 4 (STATUS QUO/NO ACTION ON IN-SEASON TRANSFERS) 15
4.2.2 ALTERNATIVE 5 (ALLOW IN-SEASON TRANSFERS) - PREFERRED 16

5.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES 17

5.1 DESCRIPTION OF THE MANAGED RESOURCES 17
5.2 PHYSICAL ENVIRONMENT 18
5.3 HABITAT, INCLUDING ESSENTIAL FISH HABITAT (EFH) 19
5.4 ENDANGERED SPECIES ACT (ESA) LISTED SPECIES AND MARINE MAMMAL PROTECTION ACT (MMPA) PROTECTED SPECIES 22
5.5 OTHER NON-TARGET SPECIES 33
5.6 HUMAN COMMUNITIES AND ECONOMIC ENVIRONMENT 36

6.0 WHAT ARE THE IMPACTS (BIOLOGICAL AND HUMAN COMMUNITY) FROM THE ALTERNATIVES CONSIDERED IN THIS DOCUMENT? 50

6.1 MANAGED RESOURCES 50
6.2 NON-TARGET FISH SPECIES 51
6.3 PHYSICAL ENVIRONMENT AND ESSENTIAL FISH HABITAT IMPACTS 52
6.4 IMPACTS ON PROTECTED RESOURCES (ENDANGERED SPECIES, MARINE MAMMALS) 54
6.5 HUMAN COMMUNITIES - SOCIOECONOMIC IMPACTS 56
6.6 CUMULATIVE IMPACTS 59

7.0 CONSISTENCEY WITH THE MAGNUSON-STEVENS ACT 69

7.1 NATIONAL STANDARDS 69
7.2 OTHER REQUIRED PROVISIONS OF THE MAGNUSON-STEVENS ACT 71
7.3 DISCRETIONARY PROVISIONS OF THE MAGNUSON-STEVENS ACT 75
7.4 ESSENTIAL FISH HABITAT ASSESSMENT 75

8.0 OTHER APPLICABLE LAWS 76

9.0 PREPARERS & LIST OF AGENCIES AND PERSONS CONSULTED 86

10.0 LITERATURE CITED AND OTHER SELECTED REFERENCES 87

1.1 Table of Tables

Table 1. Expected impacts of measures 6
Table 2. Need and Purpose Summary ..... **Error! Bookmark not defined.**
Table 3. History of Fishery Management Plans Development 9
Table 4. Cap Allocation Alternatives Summary 12
Table 5. Essential Fish Habitat (EFH) descriptions for species vulnerable to trawl gear 20
Table 6. Primary Incidental Catch and Discards in the Longfin Squid Fishery 2010-2012 35
Table 7. Butterfish Quota Performance (metric tons) 38
Table 8. 2012 Data (most recent) for Permitted and Active Vessels by State 39
Table 9. 2012 Vessel Dependence on Butterfish (revenue-based) 40
Table 10. Recent Landings by State (metric tons) 40
Table 11. Recent Landings by Month (metric tons) 40
Table 12. Recent Landings by Gear (metric tons) 41
Table 13. Recent Ex-Vessel Revenues by Port for All Ports with at least $50,000 ex-vessel sales totaled over last three years. 41
Table 14. Recent Numbers of Active Dealers 41
Table 15. Recent Kept Catch in Statistical Areas with substantial recent catch 42
Table 16. Longfin Domestic Annual Harvest (DAH) Performance. (metric tons) 44
Table 17. 2012 Data for Permitted and Active Vessels by State 45
Table 18. 2012 Vessel Dependence on Longfin (revenue-based) 45
Table 19. Recent Landings by State (metric tons) 46
Table 20. Recent Landings by Month (metric tons) 46
Table 21. Recent Landings by Gear (metric tons) 46
Table 22. Recent Ex-Vessel Revenues by Port for All Ports with at Least $200,000 Ex-Vessel Sales Combined Over last three years 47
Table 23. Recent Numbers of Active Dealers 47
Table 24. Recent Catch in Statistical areas with at least 250 metric tons of longfin caught in at least one year of last three 47

1.2 Table of Figures

Figure 1. Historical Butterfish Landings in the U.S. Exclusive Economic Zone 37
Figure 2. Longfin/Butterfish Moratorium Permits Per Year (Combination permit) 39
Figure 3. National Marine Fisheries Service Statistical Areas. 42
Figure 4. Historical Longfin Squid Landings in the U.S. Exclusive Economic Zone 43
Figure 5. Longfin/Butterfish Moratorium Permits Per Year (Combination permit) 45
Figure 6. National Marine Fisheries Service Statistical Areas 48

1.3 Acronyms, Abbreviations, etc.

Council - Mid-Atlantic Fishery Management Council
CV - Coefficient of Variation
DPS - Distinct Population Segment
FR - Federal Register
MMPA - Marine Mammal Protection Act of 1972
NMFS - National Marine Fisheries Service
NOAA - National Oceanic and Atmospheric Administration
PBR - Potential Biological Removal
U.S. - United States

2.0 EXECUTIVE SUMMARY

This action considers several measures to improve the butterfish discard cap that controls butterfish mortality in the longfin squid fishery. The rest of this section will summarize the cap, two potential issues with the cap (i.e. the purpose and need for this action), and the proposed solutions/alternatives.

<u>Introduction to the Butterfish Discard Cap for the Longfin Squid Fishery</u>

The Mid-Atlantic Fishery Management Council (Council) has a butterfish discard cap for the longfin squid fishery that was implemented in 2011 via Amendment 10 to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan. While the assessment and overfished determination that spurred Amendment 10 have since been invalidated, there is still a need to directly control butterfish mortality in the longfin squid fishery in real time. Butterfish discards in the longfin squid fishery have accounted for the largest source of butterfish fishing mortality in recent years, and if butterfish mortality in the longfin squid fishery is not controlled in real time, substantial overages of the butterfish annual catch limit (ACL) could occur. Landings are tracked and controlled in real-time and the butterfish cap tracks and controls most butterfish discards in real time, thereby minimizing the likelihood of a butterfish annual catch limit overage. Avoiding annual catch limit overages minimizes the chance of overfishing and since annual catch limit overages must be paid back in subsequent years, this also minimizes the chance of disruptions to butterfish fishing and longfin squid fishing in future years.

The cap was previously based on total catch but Framework 7 converted the cap to only address discards since a limited directed fishery for butterfish (that is monitored separately) has recently resumed.

Purpose and Need

This action is necessary to address two issues that have been identified with the current measures for the cap, either of which could interfere with effective management of the butterfish and longfin squid fisheries:

1. The first purpose of this action is to consider adjusting the Trimester allocations for the butterfish discard cap on the longfin squid fishery, the addition of a closure mechanism for Trimester 2, and the adjustment of closure thresholds for Trimesters 1 and 3. These adjustments are needed to better match the allocation of the butterfish discard cap to fishing effort in the longfin squid fishery, and to increase butterfish catch accountability in Trimester 2. This need is addressed by Alternative Set 1 (see below).

2. The second purpose of this action is to consider a mechanism to move butterfish quota between the butterfish landings allocation and the butterfish discard cap allocation near the close of each fishing year. This mechanism is needed to optimally utilize the butterfish that is available for fishing each year. This need is addressed by Alternative Set 2 (see below).

Solutions / Alternatives Summary

Alternative Set 1 - Trimester Butterfish Cap Allocations and Closures

Alternative 1 - No action would be taken regarding adjusting the Trimester allocations for the butterfish discard cap on the longfin squid fishery (T1: 65%, T2: 3.3%, T3: 31.7%), adding a closure mechanism for Trimester 2, or adjusting the closure thresholds for Trimesters 1 and 3.

Alternative 2 (PREFERRED) - Butterfish cap allocations would be made to match the longfin squid trimester allocations (T1: 43%, T2: 17%, T3: 40%). Trimester 1 longfin squid fishing would be closed when 95% of the Trimester 1 allocation had been used (determined via projection). Trimester 2 would be closed when 95% of the Trimester 2 allocation had been used (determined via projection). Trimester 3 would be closed when 95% of the annual allocation had been used (determined via projection).

Alternative 3 - Butterfish cap allocations would be made halfway between the current allocations and the longfin squid allocations (T1: 54%, T2: 10.15%, T3: 35.85%). Trimester 1 longfin squid fishing would be closed when 95% of the Trimester 1 allocation had been used (determined via projection). Trimester 2 would be closed when 95% of the Trimester 2 allocation had been used (determined via projection). Trimester 3 would be closed when 95% of the annual allocation had been used (determined via projection).

Alternative Set 2- Quota Shifting Between Butterfish Landings and the Butterfish Cap

Alternative 4 - No action would be taken regarding a mechanism to move butterfish quota between the butterfish landings allocation and the butterfish discard cap allocation near the close of each fishing year.

Alternative 5 (PREFERRED) - Under this alternative, the National Marine Fisheries Service would be able to transfer a certain amount of catch quota between landings and the butterfish cap near the end of the year in order to optimally utilize the butterfish that is available for fishing each year.

Impacts Summary

As illustrated in Table 1, none of the impacts from any of the alternatives are expected to be significant. The cap allocations may reduce butterfish catch and longfin squid catch (and effort). Less longfin squid effort may benefit non-target species, protected resources, and habitat. However, the cap allocations are expected to address potential distributional issues and could improve long term sustainability. Allowing the National Marine Fisheries Service to make end-of season transfers between the butterfish cap and landings quota may slightly increase effort for butterfish or longfin squid, but for reasons described in this document, the increases should be relatively small. The transfers could also increase fishery revenues.

Table 1. Expected impacts of measures
("+" signifies a positive impact, "-" a negative impact, and "0" a similar impact to the year before. "0/" before "+" or "-" indicates a likely small impact; Impacts for non-preferred alternatives are discussed in Section 6)

Management measures besides specifications.	Managed Resource	Non-target Species	Human Communi-ties	Protected Resources	Essential Fish Habitat
Alt 1 - Status Quo/No Action for Cap Allocations	0	0	0	0	0
Alt 2 - Preferred - Butterfish cap allocations to mactch longfin squid trimester allocaitons	0/+	0/+	mixed	0/+	0/+
Alt 3 - Butterfish cap allocations in between alterntaives 1 and 2	0/+	0/+	mixed	0/+	0/+
Alt 4 - Status Quo/No Action for In-Season Transfers	0	0	0	0	0
Alt 5 - Preferred - Allow NMFS to make end-of season transfers between butterfish cap and landings	0	0/-	0/+	0/-	0/-

The cumulative impacts to date should be positive for all valued ecosystem components (managed resources, non-target species, human communities, etc.). The domestication of the fishery and imposition of annual catch limits have reduced overall effort, which should have benefited managed resources, non-target species, protected resources, and habitat. Also, a variety of measures have addressed specific issues related to conservation of these valued ecosystem components. In terms of human communities, the current management measures should maintain sustainability of the managed resources, which has positive human community impacts.

As detailed in the impacts section below, the two preferred alternatives should only have small biological impacts that would not change the overall cumulative impacts. In addition, the slightly negative impacts of Alternative 5 in terms of non-target species, protected resources, and habitat may be at least partially offset by the slightly positive impacts of Alternative 2, further reinforcing that overall cumulative impacts should not be changed. The preferred alternatives should combine to create positive human community impacts, further improving the cumulative human community impact.

3.0 BACKGROUND, PURPOSES AND NEEDS, HISTORY OF FISHERY MANAGEMENT PLAN, MANAGEMENT OBJECTIVES, AND MANAGEMENT UNIT,

3.1 BACKGROUND

Background

The Mid-Atlantic Fishery Management Council (Council) has a butterfish discard cap for the longfin squid fishery that was implemented in 2011 via Amendment 10 to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan. While the assessment and overfished determination that spurred Amendment 10 have since been invalidated, there is still a need to directly control butterfish mortality in the longfin squid fishery in real time. Butterfish discards in the longfin squid fishery account for the largest source of butterfish fishing mortality, and if butterfish mortality in the longfin squid fishery is not controlled in real time, substantial overages of the butterfish annual catch limit (ACL) could occur. Since annual catch limit overages must be paid back in subsequent years, such overages could substantially disrupt butterfish fishing and longfin squid fishing in future years. Landings are tracked and controlled in real-time and the butterfish cap tracks and controls most butterfish discards in real time, thereby minimizing the likelihood of a butterfish annual catch limit overage.

The cap currently operates in the following manner. First, longfin squid trips must notify the observer program and observers are randomly placed on longfin squid trips. Second, the ratio of butterfish discards to total kept catch on observed longfin squid trips is calculated. Third, the ratio is applied to total landings by longfin squid trips to determine total butterfish discards from longfin squid fishing. Fourth, the longfin squid fishery is closed if it discards a specified amount of butterfish.

An example may help illustrate the process. Assume that 5 observed longfin squid trips discarded 10,000 pounds of butterfish and retained 100,000 pounds of total squid/fish. So for every 10 pounds of squid/fish landed, they discarded 1 pound of butterfish. If total landings by all squid trips equaled 40,000,000 pounds, then the estimated butterfish discards would be 4,000,000 pounds. If the cap was set to close at 4,500,000 pounds of butterfish, the longfin squid fishery would be getting close to closing in this example. These numbers are just for illustration purposes.

The cap was first based on all catch but Framework 7 converted the cap to only address discards as a limited directed fishery for butterfish (monitored separately) has resumed.

3.2 PURPOSES AND NEEDS

First Purpose

The first purpose of this Framework is to consider adjusting the Trimester allocations for the butterfish discard cap on the longfin squid fishery, the addition of closure mechanism for Trimester 2, and the adjustment of closure thresholds for Trimesters 1 and 3.

First Purpose's Need

These adjustments are needed to better match the allocation of the butterfish discard cap to fishing effort in the longfin squid fishery, and to increase butterfish catch accountability in Trimester 2. The cap is broken out by Trimesters, like the directed longfin squid fishery. However, in Trimester 2 there is only authority to close the longfin squid fishery if it reaches 75% of the **total** annual butterfish discard cap. This is an artifact from the original implementation of the cap when any Trimester 2 cap allocation would be too small to monitor. Initially there was no Trimester 2 closure authority but the 2013 specifications implemented the 75% closure authority as a backstop measure to ensure that the cap was not completely utilized before Trimester 3. Longfin squid catches in Trimester 2 have been substantial in recent years, and theoretically the potential exists for most (i.e. 75%) of the entire annual cap to be used up in Trimester 2. This could lead to a variety of negative outcomes including closing most of Trimester 3 (creating a distributional and fairness issue). Also, annual catch limit overages could lead to overfishing and/or deductions from future years if the annual catch limit is exceeded due to state and incidental landings that occur after Trimester 2 closed at 75% of the total cap.

Second Purpose

The second purpose of this action is to consider a mechanism to move butterfish quota between the butterfish landings allocation and the butterfish discard cap allocation near the close of each fishing year.

Second Purpose's Need

This mechanism is needed to avoid excessive unused quota in either the butterfish landing allocation or the discard cap allocation. During the 2013 specifications process an issue was highlighted in that there could be substantial unused butterfish landings or butterfish cap quota, and revenues could be increased if the National Marine Fisheries Service (NMFS) was able to transfer a certain amount of quota between landings and the cap near the end of the year in order to optimally utilize the butterfish that is available for fishing each year.

3.2 History of Fishery Management Plans Development

Management of the Atlantic mackerel, longfin squid, *Illex* squid, and butterfish fisheries began through the implementation of three separate fishery management plans (one each for mackerel, the squids , and butterfish) in 1978. The plans were merged in 1983. Over the years a wide variety of management issues have been addressed including stock rebuilding, habitat conservation, discard minimization, and limited entry. The original plans and amendments that have affected management of these fisheries are summarized below. All plan documents are available at: http://www.mafmc.org/Fishery Management Plan/msb.htm, including smaller "Framework" actions. Annual specification actions can also change certain management measures. Proposed rules and associated analyses for annual specifications since 2000 can be found at: http://www.nero.noaa.gov/regs/.

Table 2. History of Fishery Management Plans Development

History of the Atlantic Mackerel, Squid and Butterfish Fishery Management Plans		
Year	**Document**	**Management Action**
1978-1980	Original Fishery Management Plans (3) and individual amendments	Established and continued management of Atlantic mackerel, squid, and butterfish fisheries
1983	Merged Fishery Management Plans	Consolidated management of Atlantic mackerel, squid, and butterfish fisheries under a single Fishery Management Plans
1984	Amendment 1	Implemented squid optimum yield adjustment mechanism
		Revised Atlantic mackerel mortality rate
1986	Amendment 2	Equated fishing year with calendar year
		Revised squid discard total allowable level of foreign fishing allowances
		Implemented Framework adjustment process
		Converted expiration of fishing permits from indefinite to annual
1991	Amendment 3	Established overfishing definitions for all four species
1991	Amendment 4	Limited the activity of directed foreign fishing and joint venture transfers to foreign vessels
		Allowed for specification of optimum yield for Atlantic mackerel for up to three years
1996	Amendment 5	Adjusted longfin squid maximum sustainable yield; established 1 7/8" minimum mesh size
		Eliminated directed foreign fisheries for longfin squid, *Illex*, and butterfish
		Instituted a dealer and vessel reporting system; Instituted operator permitting
		Implemented a limited access system for longfin squid, *Illex* and butterfish
		Expanded management unit to include all Atlantic mackerel, longfin squid, *Illex*, and butterfish under U.S. jurisdiction.

(Table 3 Continued)

History of the Atlantic Mackerel, Squid and Butterfish Fishery Management Plans		
Year	**Document**	**Management Action**
1997	Amendment 6	Established directed fishery closure at 95% of domestic annual harvest for longfin squid, *Illex* and butterfish with post-closure trip limits for each species
		Established a mechanism for seasonal management of the *Illex* fishery to improve the yield-per recruit
		Revised the overfishing definitions for longfin squid, *Illex* and butterfish
1997	Amendment 7	Established consistency among Fishery Management Plans in the Northeast region of the U.S. relative to vessel permitting, replacement and upgrade criteria
1998	Amendment 8	Brought the Fishery Management Plans into compliance with new and revised National Standards and other required provisions of the Sustainable Fisheries Act.
		Added a Framework adjustment procedure.
2008	Amendment 12	Standardized Bycatch Reporting Methodology
2009	Amendment 9	Extended the moratorium on entry into the *Illex* fishery, without a sunset provision
		Adopted biological reference points for longfin squid recommended by the stock assessment review committee.
		Designated Essential Fish Habitat for longfin squid eggs based on available information
		Prohibited bottom trawling by mackerel, squid, and butterfish-permitted vessels in Lydonia and Oceanographer Canyons
		Authorized specifications to be set for all four plan species for up to 3 years
2010	Amendment 10	Implemented a butterfish rebuilding program.
		Increased the longfin squid minimum mesh in Trimesters 1 and 3.
		Implemented a 72-hour trip notification requirement for the longfin squid fishery.
2011	Amendment 11	Mackerel limited access
		Essential Fish Habitat Updates
		Commercial/Recreational Mackerel Allocation
2011	Amendment 13	Annual Catch Limit and Accountability Measure Omnibus Amendment
2013	Amendment 14	River Herring/Shad Catch Monitoring & Reduction
2013	Amendment 16	Deep Sea Coral Conservation (ongoing)

Note: Development of Amendment 15, which was going to consider adding river herring and shad as stocks in the fishery in this fishery management plan, has been paused while the Council explores additional ways to participate in river herring and shad conservation.

3.3 FISHERY MANAGEMENT PLANS GENERAL MANAGEMENT OBJECTIVES/GOALS

The objectives, as described in the Fishery Management Plan as currently amended, are listed below.

1. Enhance the probability of successful (i.e., the historical average) recruitment to the fisheries.
2. Promote the growth of the U.S. commercial fishery, including the fishery for export.
3. Provide the greatest degree of freedom and flexibility to all harvesters of these resources consistent with the attainment of the other objectives of this Fishery Management Plans.
4. Provide marine recreational fishing opportunities, recognizing the contribution of recreational fishing to the national economy.
5. Increase understanding of the conditions of the stocks and fisheries.
6. Minimize harvesting conflicts among U.S. commercial, U.S. recreational, and foreign fishermen.

3.4 MANAGEMENT UNIT/SCOPE

The management unit is currently all northwest Atlantic mackerel (*Scomber scombrus*), longfin squid (*Doryteuthis (Amerigo) pealeii*, formerly named *Loligo pealeii*), *Illex illecebrosus*, and butterfish (*Peprilus triacanthus*) under U.S. jurisdiction.

4.0 MANAGEMENT ALTERNATIVES

The management regimes and associated management measures within the Fishery Management Plan for the managed resources have been refined over time and codified in regulation. The plan also has provisions whereby the current management measures "roll over" from year to year in the event no further action has yet been taken. The *status quo* management measures for the managed resources, therefore, each involve a set of indefinite (i.e., in force until otherwise changed) measures that have been established. These measures would continue as they are even if the actions contained within this Framework are not taken (i.e., no action). The no action alternative for these managed resources is therefore equivalent to *status quo*. On that basis, the status quo and no action are presented in conjunction for comparative impact analysis relative to the action alternatives. Current mackerel, squid, and butterfish regulations may be found here: http://www.nero.noaa.gov/nero/regs/, and are summarized here: http://www.nero.noaa.gov/nero/regs/infodocs/MSBInfoSheet.pdf. Preferred alternatives for this action (those recommended by the Council) are labeled as such and are surrounded with a box later in this section.

For ease of description, the alternatives have been broken down into two alternative sets. Set 1 deals with the butterfish cap allocation closure authority and cap allocation among trimesters. Set 2 considers a mechanism to allow the National Marine Fisheries Service to transfer butterfish between landings and the cap near the end of the year.

4.1 Alternative Set 1 - Discard Cap Closure Authority and Trimester Allocations

Introduction to the Butterfish Discard Cap

Since 2011 the longfin squid fishery has been subject to closure if it catches or discards too much butterfish. Because of the cap, butterfish discards may limit production in the squid fishery, so butterfish takes on a "shadow value" in terms of the indirect impact on the longfin squid fishery. While the exact relationship between butterfish and longfin squid catches is unknown ahead of time for any given year, the "shadow value" of butterfish could be quite large; that is, the longfin squid fishery may recognize large increases in landings/revenues/profits from relatively small increases in the butterfish specifications (and vice-versa with decreases). The following table describes the base cap allocations for Alternatives 1-3, however the rollover provisions described in the alternatives affects the final distribution of cap quota throughout the year.

Table 3. Cap Allocation Alternatives Summary

Based on Cap of 3,884	Status Quo	Alternative 2, Cap Allocation A PREFERRED	Alternative 3, Cap Allocation B
T1 Base Allocation	2,525	1,670	2,097
T2 Base Allocation	128	660	394
T3 Base Allocation	1,231	1,554	1,392

4.1.1 Alternative 1 (Status Quo/no action on discard cap allocation changes)

Under this status quo/no action alternative, no action would be taken to amend closure authority in Trimester 2 related to the butterfish cap or to enable the National Marine Fisheries Service to shift butterfish catch between butterfish landings and the discard cap.

Currently the cap is allocated such that theoretically Trimester 1 gets 65%, Trimester 2 gets 3.3%, and Trimester 3 get 31.7%.

The cap would continue to close Trimester 1 longfin squid fishing when 80% of the Trimester 1 cap is caught. Trimester 2 would continue to close when 75% of the annual butterfish cap was reached. Trimester 3 longfin squid fishing would continue to close when 90% of the total annual cap was caught (underages and overages from Trimesters 1 and 2 rollover into Trimester 3). While Trimester 2 has continued to have relatively low butterfish catch rates as described in Amendment 10, if longfin fishing is strong a substantial amount of the entire annual quota (75%) could be used up in Trimester 2, to the potential detriment of Trimester 3 fishing.

Under the status quo, cap underages and overages from Trimester 1 roll over into Trimester 2 automatically since Trimester 2 closes at 75% of the annual cap. Likewise, underages and overages from Trimester 2 automatically roll over into Trimester 3, which closes at 90% of the annual cap.

4.1.2 Alternative 2 (Cap Allocation A) - PREFERRED

Under this alternative the cap could be closed in any trimester because of the butterfish discards in that trimester. It is preferred because the cap would be allocated between the Trimesters as per the longfin squid allocation, 43% to Trimester 1, 17% to Trimester 2, and 40% to Trimester 3 (i.e. the butterfish cap allocation would be the same as the longfin squid allocation). It could be unfair to Trimester 2 longfin squid fishery participants to close Trimester 2 under the status quo allocation (3.3%) because this trimester was initially allocated a very low percentage of the butterfish cap due to historically low levels of butterfish catch in this period. Such a closure allocation would amount to penalizing Trimester 2 longfin squid fishery participants for historically maintaining low interactions of butterfish during this period. Instead, Alternative 2 is preferred because each trimester is equally accountable for its butterfish discards and will be more or less constrained depending on how much butterfish is discarded, which is the goal of the cap.

Trimester 1 longfin squid fishing would be closed when 95% of the Trimester 1 allocation had been used (determined via projection). Trimester 2 would be closed when 95% of the Trimester 2 allocation had been used (determined via projection). Trimester 3 would be closed when 95% of the annual allocation had been used (determined via projection). 5% buffers are used because the shutdown of the longfin squid fishery in 2012 demonstrated that the cap should be utilized at a very slow rate during a longfin squid fishery closure, as further discussed in the following paragraph.

During a closure, federally-permitted vessels cannot land more than 2,500 pounds of longfin squid so they cannot land enough squid to make their trip count toward the cap. State vessels however can land more than 2,500 pounds of squid from state waters during a closure, and their landings could make the cap increase after a closure. However, squid are unlikely to be widely available in state waters during the colder water months of potential Trimester 1 and Trimester 3 closures, so a 5% buffer should be sufficient for those Trimesters. The slow use of the cap in Trimester 2 during the 2012 closure (even with state vessel activity), and the fact that any overage in Trimester 2 will be accounted for in Trimester 3, suggest that a 5% buffer should be sufficient for Trimester 2 as well.

Like the current situation with longfin squid, any underages of the **cap** for Trimester 1 that are greater than 25 percent of the Trimester 1 cap would be reallocated to Trimesters 2 and 3 (50%-50%) of the same year. The reallocation of cap from Trimester 1 to Trimester 2 is limited, such that the Trimester 2 cap may only be increased by 50 percent; the remaining portion of the underage would be reallocated to Trimester 3. Any underages of the cap for Trimester 1 that are less than 25 percent of the Trimester 1 cap would be applied to Trimester 3 of the same year. Any overages of the cap for Trimesters 1 and 2 would be subtracted from Trimester 3 of the same year.

4.1.3 Alternative 3 (Cap Allocation B)

Under this alternative the cap could be closed in any trimester because of the butterfish discards in that trimester. The cap would be allocated between the Trimesters as 54% to Trimester 1, 10.15% to Trimester 2, and 35.85% to Trimester 3. These are the midpoints between the current cap allocation and the current longfin squid trimester allocation described in Alternative 2. They are designed to create a range of possible alternatives.

Trimester 1 longfin squid fishing would be closed when 95% of the Trimester 1 allocation had been used (determined via projection). Trimester 2 would be closed when 95% of the Trimester 2 allocation had been used (determined via projection). Trimester 3 would be closed when 95% of the annual allocation had been used (determined via projection). 5% buffers are used because the shutdown of the longfin squid fishery in 2012 demonstrated that the cap should be utilized at a very slow rate during a longfin squid fishery closure, as discussed in the following paragraph.

During a closure, federally-permitted vessels cannot land more than 2,500 pounds of longfin squid so they cannot land enough squid to make their trip count toward the cap. State vessels however can land more than 2,500 pounds of squid from state waters during a closure, and their landings could make the cap increase after a closure. However, squid are unlikely to be widely available in state waters during the colder water months of potential Trimester 1 and Trimester 3 closures, so a 5% buffer should be sufficient for those Trimesters. The slow use of the cap in Trimester 2 during the 2012 closure (even with state vessel activity), and the fact that any overage in Trimester 2 will be accounted for in Trimester 3, suggest that a 5% buffer should be sufficient for Trimester 2 as well.

Like the current situation with longfin squid, any underages of the cap for Trimester 1 that are greater than 25 percent of the Trimester 1 cap would be reallocated to Trimesters 2 and 3 (50%-50%) of the same year. The reallocation of cap from Trimester 1 to Trimester 2 is limited, such that the Trimester 2 cap may only be increased by 50 percent; the remaining portion of the underage would be reallocated to Trimester 3. Any underages of the cap for Trimester 1 that are less than 25 percent of the Trimester 1 cap would be applied to Trimester 3 of the same year. Any overages of the cap for Trimesters 1 and 2 would be subtracted from Trimester 3 of the same year.

4.2 Alternative Set 2 - In season transfers.

Background

Currently a limited directed butterfish fishery exists. As described above, the butterfish discard cap for the directed longfin squid fishery limits butterfish mortality in the longfin squid fishery. Since butterfish catch is split between these uses and is set 16-17 months before the end of any given year, it is possible that the directed butterfish fishery gets closed but substantial butterfish remains available in the cap. It is also possible for the butterfish cap to close the longfin squid fishery but have substantial butterfish remaining available in the landings quota. In either case, a more optimal use of butterfish may be achieved if near the end of the year the National Marine Fisheries Service can transfer butterfish between the landings quota and the cap. If one or the other has closed, the transfer could allow a re-opening. If one is close to closing a transfer could prevent a closing.

4.2.1 Alternative 4 (Status Quo/no action on in-season transfers)

Under this status quo/no action alternative, no action would be taken to allow the National Marine Fisheries Service to transfer a certain amount of quota between landings and the quota near the end of the year. Under current regulations, butterfish landings are regulated under a 3-Phase system where the year starts out with no trip limits for moratorium-permitted vessels using 3-inch or greater mesh and transitions to lower trip limits as more of the quota is utilized. Details may be found here: http://www.nero.noaa.gov/regs/info.html (see Mackerel, Squid, and Butterfish information sheet). Also under current regulations, the butterfish cap closes the longfin squid fishery in Trimester 3 when it reaches 90% of the annual cap. Details may be found here: http://www.nero.noaa.gov/regs/info.html (see Mackerel, Squid, and Butterfish information sheet). Note that Alternative Set 1 considers changing the Trimester 3 closure threshold from 90% to 95%.

There would also remain the possibility that at the end of the year, substantial butterfish landings quota remained and the longfin fishery had been shut down because the butterfish cap had been reached or vice-versa, where a substantial amount of cap was left unused but butterfish landings had been shut down. In either case, one fishery could be unnecessarily limited because the assignment of quota between the two had been made more than a year in advance and no provisions currently exist for National Marine Fisheries Service to routinely shift quota between one purpose (landings) to another (the cap/discards in the longfin squid fishery).

4.2.2 Alternative 5 (Allow In-Season Transfers) - PREFERRED

Under this alternative, National Marine Fisheries Service would be able to transfer a certain amount of catch quota between landings and the butterfish cap near the end of the year in order to optimally utilize the butterfish that is available for fishing each year.

Around November 1, National Marine Fisheries Service would make a projection regarding the likely trajectories of butterfish landings and the butterfish cap. If one appeared likely to constrain the relevant fishery and the other appeared unlikely to be impacted at all by a shift (i.e. reduction) of some quota, then the National Marine Fisheries Service could transfer up to 50% of the total landings/Domestic Annual Harvest (DAH) or total cap quota to optimize the overall use of butterfish catch. For example if it appeared that reducing the landings quota by 200 metric tons would not impact landings for the rest of the year but 200 metric tons of additional cap might allow the longfin squid fishery to continue longer (or reopen), then such a switch would be made. National Marine Fisheries Service would consult the Council leadership and staff on any transfers. Since if a transfer resulted in an annual catch limit overage a deduction would be made in future years and because the intent is for the transfer to not impact the fishery "losing" quota, a conservative approach would be utilized.

Alternative 5 is preferred because it is more likely to achieve optimum yield by not closing the butterfish directed fishery or the longfin squid fishery unnecessarily. It also provides additional incentive for the fleet to avoid butterfish during the year since additional butterfish landings may become available late in the year if butterfish discarding is low.

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5.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES

This section identifies and describes the *valued ecosystem components* (Beanlands and Duinker 1984) that comprise the affected environment and may be affected by the alternatives proposed in this document. The valued ecosystem components are identified and described here as a means of establishing the context for the impact analysis that will be presented in Section 6's "Analysis of Impacts." The significance of the various impacts of the proposed alternatives on the valued ecosystem components will also be assessed from a cumulative effects perspective. The valued ecosystem components are:

1. Managed resources (longfin squid and butterfish). Atlantic Mackerel and *Illex* squid are not subjects of this action and are not discussed further, but additional information on those species and related fisheries can be found in the current and/or previous years' specifications documents, available at: http://www.nero.noaa.gov/regs/.
2. Habitat including Essential Fish Habitat for the managed resources and non-target species
3. Endangered and other protected resources
4. Human communities

The physical environment is described first, to establish the context for the valued ecosystem components. Impacts of the alternatives on the physical environment are addressed through analysis of impacts on habitat, as most of the impacted physical environment comprises Essential Fish Habitat for various species.

5.1 Description of the Managed Resources

Butterfish

The basic biology of Atlantic butterfish, a semi-pelagic/semi-demersal schooling fish species primarily distributed between Nova Scotia and Florida, is detailed in the Essential Fish Habitat document for the species, located at: http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

The status of butterfish is unknown with respect to being overfished or not and "unlikely" with respect to experiencing overfishing or not, based on the 2010 assessment, available at: http://www.nefsc.noaa.gov/saw/archive.html. Recent results from the Northeast Fisheries Science Center Fall Trawl survey (the fall survey catches the most butterfish) are highly variable, and are graphed in the "Northeast Fisheries Science Center Biological Update" that is created as part of the Scientific and Statistical Committee Acceptable Biological Catch -setting process. These are available at:

http://www.mafmc.org/ssc-meeting-documents/. The Northeast Fisheries Science Center has conducted additional analysis based on recent survey data that suggests the absolute butterfish stock is likely larger than recent assessments have suggested and that overfishing appears unlikely at current or proposed catch levels. That analysis is available at http://www.mafmc.org/s/3-Butterfish_Updates_for_2014_Specs.pdf and has been the basis for the Scientific and Statistical Committee's recent butterfish Acceptable Biological Catch recommendations.

Longfin Squid

The basic biology of longfin squid, a semi-pelagic/semi-demersal schooling cephalopod species primarily distributed between Georges Bank and Cape Hatteras, North Carolina, is detailed in the Essential Fish Habitat document for the species, located at: http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

Based on a new proposed biomass reference point from a 2010 stock assessment, the longfin inshore squid stock was not overfished in 2009, but overfishing status was not determined because no overfishing threshold could be recommended (the assessment described the stock as "lightly exploited'). The assessment documents are available at: http://www.nefsc.noaa.gov/saw/reports.html. Recent results from the Northeast Fisheries Science Center Trawl surveys are highly variable, and are graphed in the "Northeast Fisheries Science Center Biological Update" that is created as part of the Scientific and Statistical Committee Acceptable Biological Catch -setting process. These are available at: http://www.mafmc.org/ssc-meeting-documents/. Longfin squid will be in year 3 of three-year multiyear specifications in 2014, and additional information is available in the 2012 specifications Environmental Assessment, available at: http://www.nero.noaa.gov/regs/.

5.2 Physical Environment

Climate, physiographic, and hydrographic differences separate the Atlantic ocean from Maine to Florida into two distinct areas, the New England-Middle Atlantic Area and the South Atlantic Area, with the natural division occurring at Cape Hatteras, though the division is better thought of as a mixing zone rather than as a definitive boundary. The mackerel, squid, and butterfish fisheries are prosecuted in the New England-Middle Atlantic Area. The inshore New England-Middle Atlantic area is fairly uniform physically and is influenced by many large coastal rivers and estuarine areas. The continental shelf (characterized by water less than 650 feet in depth) extends seaward approximately 120 miles off Cape Cod, narrows gradually to 70 miles off New Jersey, and is 20 miles wide at Cape Hatteras. Surface circulation is generally southwesterly on the continental shelf during all seasons of the year, although this may be interrupted by coastal in-drafting and some reversal of flow at the northern and southern extremities of the area. Water temperatures range from less than 33 ^{o}F from the New York Bight north in the winter to over 80 ^{o}F off Cape Hatteras in summer.

Within the New England-Middle Atlantic Area, the principal area within which the mackerel, squid, and butterfish fisheries are prosecuted is the Northeast Shelf Ecosystem which includes the area from the Gulf of Maine to Cape Hatteras, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream. A number of distinct subsystems comprise the region. The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with various sediment types. Georges Bank 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 fast-moving currents. The Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, North Carolina. Detailed information on the affected physical and biological environments inhabited by the managed resources is available in Stevenson et al. (2004).

5.3 Habitat, Including Essential Fish Habitat (EFH)

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act as currently amended ("Magnuson-Stevens Act" hereafter), Essential Fish Habitat Provisions (50 Code of Federal Regulations Part 600.815 (a)(1)), a fishery management plan must describe Essential Fish Habitat by life history stage for each of the managed species in the plan. This information was updated via Amendment 11 to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan. Essential Fish Habitat for the managed resource is described using fundamental information on habitat requirements by life history stage that is summarized in a series of documents produced by the National Marine Fisheries Service and available at: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. Matrices of habitat parameters (i.e. temperature, salinity, light, etc.) for eggs/larvae and juveniles/adults were developed and the updated Essential Fish Habitat designations (text and maps) use this information and are available at http://www.nero.noaa.gov/nero/regs/com.html in the Amendment 11 Environmental Impact Statement (search for Amendment 11 in the July 2011 actions). In general, the Essential Fish Habitat for the mackerel, squid, and butterfish species is the water column itself, and the species have temperature and prey preferences/needs that drive the suitability of any particular area/depth. Thus fishing activity has minimal impacts. Longfin squid also use hard bottom, submerged vegetation, other natural or artificial structure, and sand or mud to attach/anchor eggs, but there are no known preferences for different types of substrates or indications that fishing activity may negatively impact longfin squid egg Essential Fish Habitat.

There are other life stages of federally-managed species that have designated Essential Fish Habitat that may be susceptible to adverse impacts from bottom-tending mobile gear as described in the following table (see Stevenson et al 2004):

Table 4. Essential Fish Habitat (EFH) descriptions for species vulnerable to trawl gear

Species	Life Stage	Geographic Area of Essential Fish Habitat	Depth (meters)	Bottom Type
American plaice	juvenile	Gulf of Maine, including estuaries from Passamaquoddy Bay to Saco Bay, Maine and from Massachusetts Bay to Cape Cod Bay	45 - 150	Fine grained sediments, sand, or gravel
American plaice	adult	Gulf of Maine, including estuaries from Passamaquoddy Bay to Saco Bay, Maine and from Massachusetts Bay to Cape Cod Bay	45 - 175	Fine grained sediments, sand, or gravel
Atlantic cod	juvenile	Gulf of Maine, Georges Bank, eastern portion of continental shelf off Southern New England, these estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	25 - 75	Cobble or gravel
Atlantic cod	adult	Gulf of Maine, Georges Bank, eastern portion of continental shelf off Southern New England, these estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	10 - 150	Rocks, pebbles, or gravel
Atl halibut	juvenile	Gulf of Maine and Georges Bank	20 - 60	Sand, gravel, or clay
Atl halibut	adult	Gulf of Maine and Georges Bank	100 - 700	Sand, gravel, or clay
Barndoor skate	juvenile/ adult	Eastern Gulf of Maine, Georges Bank, Southern New England, Mid-Atlantic Bight to Hudson Canyon	l0-750, most < 150	Mud, gravel, and sand
Black sea bass	juvenile	Gulf of Maine to Cape Hatteras, North Carolina, including 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/ eelgrass beds, manmade structures, offshore clam beds, and shell patches
Black sea bass	adult	Gulf of Maine to Cape Hatteras, North Carolina, including Buzzards Bay, Narragansett Bay, Gardiners Bay, Great South Bay, Barnegat Bay to Chesapeake Bay, and James River	20 - 50	Structured habitats (natural and manmade), sand and shell substrates preferred
Clearnose skate	juvenile/ adult	Gulf of Maine, along continental shelf to Cape Hatteras, North Carolina, including the estuaries from Hudson River/Raritan Bay south to the Chesapeake Bay main stem	0 – 500, most < 111	Soft bottom and rocky or gravelly bottom
Haddock	juvenile	Georges Bank, Gulf of Maine, and Mid-Atlantic south to Delaware Bay	35 - 100	Pebble and gravel
Haddock	adult	Georges Bank, eastern side of Nantucket Shoals, and throughout Gulf of Maine	40 - 150	Broken ground, pebbles, smooth hard sand, and smooth areas between rocky patches
Little skate	juvenile/ adult	Georges Bank through Mid-Atlantic Bight to Cape Hatteras, North Carolina; includes estuaries from Buzzards Bay south to main stem Chesapeake Bay	0-137, most 73 - 91	Sandy or gravelly substrate or mud
Ocean pout	eggs	Gulf of Maine, Georges Bank, Southern New England, and Mid-Atlantic south to Delaware Bay, including the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay and Cape Cod Bay	<50	Generally sheltered nests in hard bottom in holes or crevices
Ocean pout	juvenile	Gulf of Maine, Georges Bank, Southern New England, Mid-Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, and Cape Cod Bay	< 50	Close proximity to hard bottom nesting areas
Ocean pout	adult	Gulf of Maine, Georges Bank, Southern New England, Mid-Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, and Cape Cod Bay	< 80	Smooth bottom near rocks or algae
Pollock	adult	Gulf of Maine, Georges Bank, Southern New England, and Mid-Atlantic south to New Jersey and the following estuaries: Passamaquoddy Bay, Damariscotta R., Massachusetts Bay, Cape Cod Bay, Long Island Sound	15 – 365	Hard bottom habitats including artificial reefs

Species	Life Stage	Geographic Area of Essential Fish Habitat	Depth (meters)	Bottom Type
Red hake	juvenile	Gulf of Maine, Georges Bank, continental shelf off Southern New England, and Mid-Atlantic south to Cape Hatteras, including the following estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, Massachusetts Bay to Cape Cod Bay; Buzzards Bay to Connecticut River, Hudson River, Raritan Bay, and Chesapeake Bay	< 100	Shell fragments, including areas with an abundance of live scallops
Red hake	adult	Gulf of Maine, Georges Bank, continental shelf off Southern New England, Mid-Atlantic south to Cape Hatteras, these estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, Massachusetts Bay to Cape Cod Bay; Buzzards Bay to Connecticut River, Hudson River, Raritan Bay, Delaware Bay, and Chesapeake Bay	10 - 130	In sand and mud, in depressions
Redfish	juvenile	Gulf of Maine, southern edge of Georges Bank	25 - 400	Silt, mud, or hard bottom
Redfish	adult	Gulf of Maine, southern edge of Georges Bank	50 - 350	Silt, mud, or hard bottom
Rosette skate	juvenile/ adult	Nantucket shoals and southern edge of Georges Bank to Cape Hatteras, North Carolina	33-530, most 74-274	Soft substrate, including sand/mud bottoms
Scup	juvenile/ adult	Gulf of Maine to Cape Hatteras, North Carolina, including the following estuaries: Massachusetts Bay, Cape Cod Bay to Long Island Sound, Gardiners Bay to Delaware inland bays, and Chesapeake Bay	0-38 for juv 2-185 for adult	Demersal waters north of Cape Hatteras and inshore estuaries (various substrate types)
Silver hake	juvenile	Gulf of Maine, Georges Bank, continental shelf off Southern New England, Mid-Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Casco Bay, Maine, Massachusetts Bay to Cape Cod Bay	20 – 270	All substrate types
Summer Flounder	juvenile/ adult	Gulf of Maine to Florida – estuarine and over continental shelf to shelf break	0-250	Demersal/estuarine waters, varied substrates. Mostly inshore in summer and offshore in winter.
Smooth skate	juvenile/ adult	Offshore banks of Gulf of Maine	31–874, most 110-457	Soft mud (silt and clay), sand, broken shells, gravel and pebbles
Thorny skate	juvenile/ adult	Gulf of Maine and Georges Bank	18-2000, most 111-366	Sand, gravel, broken shell, pebbles, and soft mud
Tilefish	juvenile/ adult	Outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary	100 - 300	Burrows in clay (some may be semi-hardened into rock)
White hake	juvenile	Gulf of Maine, southern edge of Georges Bank, Southern New England to Mid-Atlantic and the following estuaries: Passamaquoddy Bay, Maine to Great Bay, New Hampshire, Massachusetts Bay to Cape Cod Bay	5 - 225	Sea grass beds, mud, or fine grained sand
Winter flounder	adult	Georges Bank, inshore areas of Gulf of Maine, Southern New England, Mid- Atlantic south to Delaware Bay and the estuaries from Passamaquoddy Bay, Maine to Chincoteague Bay, Virginia	1 - 100	Mud, sand, and gravel
Winter skate	juvenile/ adult	Cape Cod Bay, Georges Bank, Southern New England shelf through Mid-Atlantic Bight to North Carolina; includes the estuaries from Buzzards Bay south to the Chesapeake Bay main stem	0 - 371, most < 111	Sand and gravel or mud
Witch flounder	juvenile	Gulf of Maine, outer continental shelf from Georges Bank south to Cape Hatteras	50 - 450 to 1500	Fine grained substrate
Witch flounder	adult	Gulf of Maine, outer continental shelf from Georges Bank south to Chesapeake Bay	25 - 300	Fine grained substrate
Yellowtail flounder	adult	Georges Bank, Gulf of Maine, Southern New England and Mid-Atlantic south to Delaware Bay and these estuaries: Sheepscot River and Casco Bay, Maine, Massachusetts Bay to Cape Cod Bay	20 - 50	Sand or sand and mud

5.3.1 Fishery Impact Considerations

Any actions implemented in the fishery management plan that affect species with overlapping Essential Fish Habitat were assessed in Amendment 9 to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan in 2008 (http://www.mafmc.org/fmp/history/smb-hist.htm). Mackerel are primarily caught by mid-water trawls (which should not impact the bottom) but longfin squid, *Illex* squid, and butterfish are primarily caught with bottom trawls (mobile bottom-tending gear) that does contact the bottom. Amendment 9 included an analysis of the adverse impacts of the mackerel, squid, and butterfish fisheries on Essential Fish Habitat (as required pursuant to section 303(a)(7) of the Magnuson-Stevens Act). In Amendment 9 the Council determined that bottom trawls used in mackerel, squid, and butterfish fisheries do have the potential to adversely affect Essential Fish Habitat for some federally-managed fisheries in the region and closed portions of two offshore canyons (Lydonia and Oceanographer) to squid trawling. Subsequent closures were implemented in these and two other canyons (Veaches and Norfolk) to protect tilefish Essential Fish Habitat and prohibited all bottom trawling activity. Because there have be no significant changes to the manner in which the mackerel, squid, and butterfish fisheries are prosecuted, and because none of the alternatives being considered in this document should adversely affect Essential Fish Habitat (see Section 6), no additional alternatives to minimize adverse effects on Essential Fish Habitat are considered as part of this management action. The Council is also considering protections for Deep-Sea Corals via Amendment 16 to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan.

5.4 Endangered Species Act (ESA) Listed Species and Marine Mammal Protection Act (MMPA) Protected Species

There are numerous species which inhabit the environment within the management unit of the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan that are afforded protection under the Endangered Species Act of 1973 (i.e., for those designated as threatened or endangered) and/or the Marine Mammal Protection Act of 1972 (MMPA). Eighteen species are classified as endangered or threatened under the Endangered Species Act, while the rest are protected by the provisions of the MMPA. The subset of these species that are known to have interacted with the mackerel, squid, and butterfish fisheries is starred in the list below, including one candidate species (species being considered for listing as an endangered or threatened species).

Candidate species receive no substantive or procedural protection under the Endangered Species Act; however, the National Marine Fisheries Service recommends considering conservation actions to limit the potential for adverse effects on candidate species. The Protected Resources Division of the National Marine Fisheries Service Northeast Regional Office has initiated review of recent stock assessments, bycatch information, and other information for these candidate species which will be incorporated in the status review reports for candidate species

* = Known to have interacted with mackerel, squid, and butterfish fisheries

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

Sea Turtles Species	**Status**
*Leatherback sea turtle (*Dermochelys coriacea*)	Endangered
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered
Green sea turtle (*Chelonia mydas*)	Endangered
Hawksbill sea turtle (*Eretmochelys imbricata*)	Endangered
*Loggerhead sea turtle (*Caretta caretta*)	
-Northwest Atlantic Distinct Population Segment (DPS)	Threatened

Fish Species	**Status**
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered
Atlantic salmon – Gulf of Main DPS(*Salmo salar*)	Endangered
Atlantic sturgeon (*Acipenser oxyrinchus*)	
Chesapeake Bay DPS	Endangered
New York Bight DPS	Endangered
Carolina DPS	Endangered
South Atlantic DPS	Endangered
Gulf of Maine DPS	Threatened
Cusk (*Brosme brosme*)	Candidate

Protected Species Interactions with the Managed Resources – Includes Fishery Classification under Section 118 of the MMPA.

Species	Status
Common dolphin (*Delphinus delphis*)	Protected
White-sided dolphin (*Lagenorhynchus acutus*)	Protected

Pilot whale (*Globicephala spp*.)	Protected
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered
Loggerhead sea turtle (*Caretta caretta*)	
-Northwest Atlantic DPS	Threatened
Risso's dolphin (*Grampus griseus*)	Protected
Bottlenose dolphin (*Tursiops truncatus*)	Protected

Under section 118 of the MMPA, the National Marine Fisheries Service must publish and annually update the List of Fisheries, which places all U.S. commercial fisheries in one of three categories based on the level of incidental serious injury and mortality of marine mammals in each fishery (arranging them according to a two tiered classification system). The categorization of a fishery in the List of Fisheries determines whether participants in that fishery may be required to comply with certain provisions of the MMPA, such as registration, Northeast Fishery Observer Program observer coverage, and take reduction plan requirements. The classification criteria consists of a two tiered, stock-specific approach that first addresses the total impact of all fisheries on each marine mammal stock (Tier 1) and then addresses the impact of the individual fisheries on each stock (Tier 2). If the total annual mortality and serious injury of all fisheries that interact with a stock is less than 10% of the Potential Biological Removal (PBR) for the stock then the stock is designated as Tier 1 and all fisheries interacting with this stock would be placed in Category III. Otherwise, these fisheries are subject to categorization under Tier 2. PBR is the product of minimum population size, one-half the maximum productivity rate, and a “recovery” factor (MMPA Sec. 3. 16 U.S.C. 1362; Wade and Angliss 1997). The current (2012) list of fisheries is available at: http://www.nmfs.noaa.gov/pr/interactions/lof/.

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

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

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

In Category I, there is documented information indicating a "frequent" incidental mortality and injury of marine mammals in the fishery. In Category II, there is documented information indicating an "occasional" incidental mortality and injury of marine mammals in the fishery. In Category III, there is information indicating no more than a "remote likelihood" of an incidental taking of a marine mammal in the fishery or, in the absence of information indicating the frequency of incidental taking of marine mammals, other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, and species and distribution of marine mammals in the area suggest there is no more than a remote likelihood of an incidental take in the fishery. "Remote likelihood" means that annual mortality and

serious injury of a stock in a given fishery is less than or equal to 10% of the PBR level or, that it is highly unlikely that any marine mammal will be incidentally taken by a randomly selected vessel in the fishery during a 20-day period or, in the absence of reliable information it is at the discretion of the Assistant Administrator for Fisheries to determine whether the incidental injury or mortality qualifies (or not) for a specific category.

Marine Mammal Stock Assessment Reports:

As required by the MMPA, the National Marine Fisheries Service has incorporated earlier public comments into revisions of marine mammal stock assessment reports. These reports contain information regarding the distribution and abundance of the stock, population growth rates and trends, the stock's Potential Biological Removal level, estimates of annual human-caused mortality and serious injury from all sources, descriptions of the fisheries with which the stock interacts, and the status of the stock. The MMPA requires these assessments to be reviewed at least annually for strategic stocks and stocks for which significant new information is available, and at least once every 3 years for non-strategic stocks. The most recent stock assessment reports are available at: http://www.nmfs.noaa.gov/pr/sars/.

The National Marine Fisheries Service elevated the (mid-water) mackerel, squid, and butterfish fishery to Category I in the 2001 List of Fisheries but it was reduced to a Category II fishery in 2007 (see discussion below describing the Atlantic Trawl Gear Take Reduction Plan). The reduction in interactions documented between the mackerel, squid, and butterfish fisheries and several species/stocks of marine mammals compared to previous years led to the re-classification. No classification changes have occurred since 2007.

5.4.1 Commercial Fisheries Interactions

The following is a description of species of concern because they are protected under MMPA and, as discussed above, have had documented interactions with fishing gears used to harvest species managed under this fishery management plan. Five year take averages are provided as found in Waring *et al* (2012).

Common dolphin (PBR = 529, all fisheries annual take 2006-2010 = 164)

The common dolphin may be one of the most widely distributed species of cetaceans, as it is found worldwide in temperate, tropical, and subtropical seas. They are widespread from Cape Hatteras northeast to Georges Bank (35° to 42° North latitude) in outer continental shelf waters from mid-January to May. Exact total numbers of common dolphins off the U.S. or Canadian Atlantic coast are unknown, although the most recent Stock Assessment Report considers the best abundance estimate for common dolphins to be 67,191 (Coefficient of Variation (CV) =0.29). PBR for the western North Atlantic

common dolphin is 529. See Waring *et al*. 2012 (http://www.nmfs.noaa.gov/pr/sars/) for more life history information.

Fishery Interactions - The following fishery interaction information was taken from the latest stock assessment for common dolphin contained in Waring *et al.* (2012) which summarizes incidental mortality of this species. Annual averages are presented below – details on encounters may be reviewed in Waring *et al* (2012).

Illex/Longfin squid/butterfish - These fisheries are included in both the Northeast and Mid-Atlantic bottom trawl fisheries. The 2006-2010 average annual mortality attributed to the northeast bottom trawl was 20 animals (CV=0.13). The 2006-2010 average annual mortality attributed to the Mid-Atlantic bottom trawl was 103 animals (CV=0.13). The portion attributable to the directed *Illex*/longfin squid fisheries is unknown.

Atlantic white-sided dolphin (*Lagenorhynchus acutus*) (PBR = 304, all fisheries annual take 2006-2010 = 212)

Atlantic white-sided dolphins (*Lagenorhynchus acutus)* are found in temperate and sub-polar waters of the North Atlantic, primarily in continental shelf waters to the 100m depth contour. The exact total number of white-sided dolphins (*Lagenorhynchus acutus)* along the eastern U.S. and Canadian Atlantic coast is unknown, although the best available current abundance estimate for white-sided dolphins in the western North Atlantic stock is 48,819 (CV=0.61). PBR for the western North Atlantic stock of white-sided dolphin (*Lagenorhynchus acutus)* is 304. See Waring *et al*. 2012 (http://www.nmfs.noaa.gov/pr/sars/) for more life history information.

Fishery Interactions - The following information was taken from the latest stock assessment for white-sided dolphin (*Lagenorhynchus acutus)* contained in Waring *et al* (2012) which summarized incidental mortality of this species. Annual averages are presented below – details on encounters may be reviewed in Waring *et al* (2012).

Illex/Longfin squid/butterfish - These fisheries are included in both the Northeast and Mid-Atlantic bottom trawl fisheries. The 2006-2010 average annual mortality attributed to the northeast bottom trawl was 142 animals (CV=0.15). The 2006-2010 average annual mortality attributed to the Mid-Atlantic bottom trawl was 20 animals (CV=0.09). The portion attributable to the directed *Illex*/longfin squid fisheries is unknown.

Long-finned (*Globicephala melas*) and short-finned (*Globicephala macrorhynchus*) pilot whales (PBR = 265, all fisheries annual take 2005-2009 = 162) (Note, an updated 2012 assessment document was not available at the time this document was written).

There are two species of pilot whales in the Western Atlantic - the Atlantic (or long-finned) pilot whale, *Globicephala melas*, and the short-finned pilot whale, *G. macrorhynchus*. These species are difficult to identify to the species level at sea. Preliminary analysis suggests the following distribution of the two species: sightings south of the mouth of the Chesapeake Bay are likely short-finned pilot whales, as are offshore (near the 4,000m depth contour) sightings from off the mouth of the Chesapeake Bay through off New Jersey. Sightings from the mouth of the Chesapeake Bay to the Southern Edge of Georges Bank along the 100/1,000 m depth contours are likely mixed. Sightings in the Gulf of Maine and east and north of Cape Cod are likely long-finned pilot whales, as are sightings in shelf waters immediately southeast of Nantucket. The minimum population size for short-finned pilot whales is estimated to be 17,190 and the minimum population size for long-finned pilot whales is estimated to be 9,333. PBR for short-finned pilot whales is estimated to be 172 and PBR for long-finned pilot whales is estimated to be 93 (total is 265). See Waring *et al*. 2011 (http://www.nmfs.noaa.gov/pr/sars/) for more life history information.

Fishery Interactions - The following information was taken from the latest stock assessment for pilot whales (*Globicephala* species) contained in Waring *et al* (2011) which summarized incidental mortality of this species. Annual averages are presented below – details on encounters may be reviewed in Waring *et al* (2011).

Illex/Longfin squid/butterfish - These fisheries are included in both the Northeast and Mid-Atlantic bottom trawl fisheries. The 2005-2009 average annual mortality attributed to the northeast bottom trawl was 12 animals (CV=0.14). The 2005-2009 average annual mortality attributed to the Mid-Atlantic bottom trawl was 30 animals (CV=0.16). The portion attributable to the directed *Illex*/longfin squid fisheries is unknown.

Risso's dolphin (*Grampus griseus*) (PBR = 95, all fisheries annual take 2006-2010 = 17)

Risso's dolphins are distributed worldwide in tropical and temperate seas, and in the Northwest Atlantic occur from Florida to eastern Newfoundland. Off the northeast U.S. coast, Risso's dolphins are distributed along the continental shelf edge from Cape Hatteras northward to Georges Bank during spring, summer, and autumn. In winter, the range is in the Mid-Atlantic Bight and extends outward into oceanic waters. The best population estimate for the western North Atlantic Risso's dolphin is 15,197 (CV=0.55). See Waring *et al*. 2012 (http://www.nmfs.noaa.gov/pr/sars/) for more life history information.

Fishery Interactions - the National Marine Fisheries Service foreign-fishery observers reported four deaths of Risso's dolphins incidental to squid and mackerel fishing activities in the continental shelf and continental slope waters between March 1977 and December 1991. In the pelagic pair trawl fishery, one mortality was observed in 1992.

Mid- Atlantic Bottom Trawl

Fifteen Risso's dolphins were observed taken in mid-Atlantic bottom trawl fisheries in 2010. This is the first time this species was observed taken in this fishery. The 2010 mortality estimate is currently not available. Until this bycatch estimate can be developed, the 2006-2010 average annual mortality attributed to the mid-Atlantic bottom trawl is calculated as 3 animals (15 animals/5 years). The specific fishery responsible for the 2010 interactions is not yet known.

Bottlenose dolphin (*Tursiops truncatus*) Offshore Form (not updated in 2012 so information below is from Waring et al 2008). (PBR = 566, all fisheries take is unknown)

There are two morphologically and genetically distinct bottlenose dolphin morphotypes described as the coastal and offshore forms. Both inhabit waters in the western North Atlantic Ocean along the U.S. Atlantic coast. See http://www.nmfs.noaa.gov/pr/sars/ for more life history information.

Fisheries Information

Total estimated mean annual fishery-related mortality for this stock during 2001-2006 is unknown, however mortalities of offshore bottlenose dolphins were observed during this period in the Northeast Sink Gillnet and Mid-Atlantic Gillnet commercial fisheries.

Earlier Interactions

Thirty-two bottlenose dolphin mortalities were observed in the pelagic pair trawl fishery between 1991 and 1995. Estimated annual fishery-related mortality (CV in parentheses) was 13 dolphins in 1991 (0.52), 73 in 1992 (0.49), 85 in 1993 (0.41), 4 in 1994 (0.40) and 17 in 1995 (0.26).

Although there were reports of bottlenose dolphin mortalities in the foreign squid mackerel butterfish fishery during 1977-1988, there were no fishery-related mortalities of bottlenose dolphins reported in the self-reported fisheries information from the mackerel trawl fishery during 1990-1992.

One bottlenose dolphin mortality was documented in the North Atlantic bottom trawl in 1991 and the total estimated mortality in this fishery in 1991 was 91 (CV=0.97). Since 1992 there were no bottlenose dolphin mortalities observed in this fishery.

5.4.2 Atlantic Trawl Gear Take Reduction Plan

In September 2006, the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service convened the Atlantic Trawl Gear Take Reduction Team under the MMPA. The Atlantic Trawl Gear Take Reduction Team was convened to address incidental mortality and serious injury of long-finned pilot whales (*Globicephala melas*), short-finned pilot whales (*Globicephala macrorhynchus*), common dolphins (*Delphinus delphis*), and Atlantic white-sided dolphins (*Lagenorhynchus acutus*) in several trawl gear fisheries operating in the Atlantic Ocean. These marine mammal species are known to interact with the Mid-Atlantic Mid-Water Trawl, the Mid-Atlantic Bottom Trawl, Northeast Mid-Water Trawl and the Northeast Bottom Trawl fisheries.

The immediate goal of a Take Reduction Plan is to reduce, within six months of implementation, the incidental serious injury or mortality of marine mammals from commercial fishing to levels less than PBR. The long-term goal is to reduce, within five years, the incidental serious injury and mortality of marine mammals from commercial fishing operations to insignificant levels approaching a zero serious injury and mortality rate, taking into account the economics of the fishery, the availability of existing technology, and existing state or regional fishery management plans.

Presently, none of these marine mammal stocks under consideration by the Atlantic Trawl Gear Take Reduction Team are classified as a strategic stock nor do they currently interact with a Category I fishery. NOAA's General Counsel legal guidance has stated that neither the 11 month timeline for the development of a Take Reduction Plan nor the 5 year goal for reaching the Zero Mortality Rate Goal apply to non-strategic stocks that do not interact with Category I fisheries. The Atlantic Trawl Gear Take Reduction Team agreed that while a take reduction plan may not be required at this time, efforts should be made to identify and conduct research necessary to identify measures to reduce serious injury and mortality of marine mammals in Atlantic trawl fisheries and, ultimately, to achieve the MMPA's Zero Mortality Rate Goal. This information is captured in the Atlantic Trawl Gear Take Reduction Strategy.

The Atlantic Trawl Gear Take Reduction Team recommended that two plans be developed to achieve the overall goal of the Take Reduction Strategy to reduce the incidental take of marine mammals in Atlantic trawl fisheries. These include an Education and Outreach Plan and a Research Plan as part of an overall take reduction strategy. The Atlantic Trawl Gear Take Reduction Team established two sub-groups to develop the Education and Outreach and Research Plans. The Education and Outreach Plan identifies activities that promote the exchange of information necessary to reduce the catch of marine mammals in Atlantic trawl fisheries. The Research Plan identifies information and research needs necessary to improve our understanding of the factors resulting in marine mammal catch in Atlantic trawl fisheries. The results of the identified research will be used to direct additional research and/or identify measures to reduce the serious injury and mortality of short- and long-finned pilot whales, Atlantic white-sided dolphins, and common dolphins in trawl fisheries to levels approaching the Zero Mortality Rate Goal. The Atlantic Trawl Gear Take Reduction Strategy is available at: http://www.nero.noaa.gov/prot_res/atgtrp/.

5.4.3 Description of Turtle Species with Documented Interactions with the Mackerel, Squid, and Butterfish Fisheries

The October 2010 Biological Opinion for the mackerel, squid, and butterfish (http://www.nero.noaa.gov/prot_res/section7/NMFS-signedBOs/SMB%20BIOP%202010.pdf) fisheries contains detailed information on sea-turtle interactions. This document updates information on sea turtle interactions with trawl gear in the mackerel, squid, and butterfish fisheries. Summary information is provided below and the full document above may be consulted for details.

The primary species likely to be adversely affected by the mackerel, squid, and butterfish fishery would be loggerhead sea turtles, as they are the most abundant species occurring in U.S. Atlantic waters. Sea sampling and observer data indicate that fewer interactions occur with leatherback, Kemp's ridley, and green sea turtles. The primary area of impact of the directed commercial fishery for mackerel, squid, and butterfish on sea turtles is likely bottom otter trawls in waters of the Mid-Atlantic from Virginia through New York, from late spring through fall. In New England, interactions with trawl gear may occur in summer through early fall, although given the level of effort, the probability of interactions is likely lower than in the Mid-Atlantic related to mackerel, squid, and butterfish fishing effort.

There have been 9 observed sea turtle takes in the mackerel, squid, and butterfish fishery during the past 11 years (using top species landed to categorize trips). All sea turtle takes have occurred in bottom otter trawl gear participating in the squid fishery. Loggerhead sea turtles are more likely to interact with mackerel, squid, and butterfish trawl gear but green, Kemps ridley and leatherback interaction may also occur. All sea turtles were released alive, except the 2002 take, when a gillnet was hauled up as part of the catch when the loggerhead turtle entangled was freshly dead.

Based on data collected by observers for the reported sea turtle captures in mackerel, squid, and butterfish trawl gear, the Northeast Fisheries Science Center has estimated loggerhead bycatch in the mackerel, squid, and butterfish trawl fishery 2005-2008 to be about 25 animals annually (Warden 2011). The National Marine Fisheries Service estimates 1 leatherback, 2 green, and 2 Kemp's ridley turtles are taken each year based on the very low encounter rates for these species and/or unidentified turtles (Murray 2008).

On March 16, 2010, the Services announced 12-month findings on petitions to list the North Pacific populations and the Northwest Atlantic populations of the loggerhead sea turtle as DPSs with endangered status and published a proposed rule to designate nine loggerhead DPSs worldwide, seven as endangered (North Pacific Ocean DPS, South Pacific Ocean DPS, Northwest Atlantic Ocean DPS, Northeast Atlantic Ocean DPS, Mediterranean Sea DPS, North Indian Ocean DPS, and Southeast Indo-Pacific Ocean DPS) and two as threatened (Southwest Indian Ocean DPS and South Atlantic Ocean DPS). On March 22, 2011, the timeline for the final determination was extended for six months until September 16, 2011 (76 FR 15932).

A final listing determination was published on September 22, 2011 (76 FR 58867). Unlike the proposed listing, the final listing designates four DPSs (Northwest Atlantic, South Atlantic, Southeast Indo-Pacific, Southwest Indian) as threatened, and five DPSs (Northeast Atlantic, Mediterranean, North Indian, North Pacific, South Pacific) as endangered.

5.4.4 Atlantic sturgeon

In 2012 the National Marine Fisheries Service announced a final decision to list five distinct population segments (DPS) of Atlantic sturgeon under the Endangered Species Act. The Chesapeake Bay, New York Bight, Carolina, and South Atlantic DPSs of Atlantic sturgeon were listed as endangered, while the Gulf of Maine DPS was listed as threatened. Atlantic sturgeon from any of the five DPSs could occur in areas where mackerel, squid, and butterfish fisheries operate, and the species has been captured in gear targeting longfin squid (http://www.nmfs.noaa.gov/pr/species/fish/atlanticsturgeon.htm). Therefore, this Environmental Assessment includes background information on Atlantic sturgeon in this section and considers the anticipated effects of the action on Atlantic sturgeon in Section 6 of this Environmental Assessment.

Atlantic sturgeon is an anadromous species that spawns in relatively low salinity, river environments, but spends most of its life in the marine and estuarine environments from Labrador, Canada to the Saint Johns River, Florida. There are no total population size estimates for any of the 5 Atlantic sturgeon DPSs at this time. However, there are two estimates of spawning adults per year for two river systems (e.g., 863 spawning adults for the Hudson River, and 343 spawning adults per year for the Altamaha River). The Altamaha estimate represent only a fraction of the total population size of this subpopulation as Atlantic sturgeon do not spawn every year. Additionally, neither of these estimates include sub-adults or early life stages. Detailed life history information may be found in the 2007 Atlantic Sturgeon Status Review, available at: (http://www.nmfs.noaa.gov/pr/species/fish/atlanticsturgeon.htm).

Atlantic sturgeon are known to be captured in sink gillnet, drift gillnet, and otter trawl gear. Of these gear types, sink gillnet gear poses the greatest known risk of mortality for by-caught sturgeon. Sturgeon deaths are rarely reported in the otter trawl observer dataset. However, the level of mortality after release from the gear is unknown. For the years 2006 through 2010, an average of 775 Atlantic sturgeon encounters with small mesh otter trawl gear occurred in all areas (759 in the 600 series of statistical areas) (http://www.nmfs.noaa.gov/pr/species/fish/atlanticsturgeon.htm).

National Marine Fisheries Service Northeast Regional Office's Sustainable Fisheries Division reinitiated formal intra-service consultation with the Protected Resources Division on the continued operation of seven fisheries as authorized by the National Marine Fisheries Service including mackerel, squid, and butterfish. Re-initiation of these consultations was necessary as these fisheries may affect five distinct population

segments of Atlantic sturgeon that were newly listed as threatened or endangered on February 6, 2012. Comments on a draft biological opinion were due July 19, 2013 and a final biological opinion was not available when this document was created. The draft biological opinion found that the mackerel, squid, and butterfish fisheries are not likely to appreciably reduce the likelihood of species survival for any Atlantic sturgeon DPS.

5.4.5 River Herring Endangered Species Act Determination

On August 5, 2011, the National Marine Fisheries Service received a petition from the Natural Resources Defense Council (NRDC), requesting that alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*) be listed each as threatened throughout all or a significant portion of their range under the Endangered Species Act. In the alternative, NRDC requested that the National Marine Fisheries Service designate distinct population segments of alewife and blueback herring as specified in the petition (Central New England, Long Island Sound, Chesapeake Bay, and Carolina for alewives, and Central New England, Long Island Sound, and Chesapeake Bay for blueback herring). The National Marine Fisheries Service reviewed the petition and published a positive 90-day finding on November 2, 2011, determining that the information in the petition, coupled with information otherwise available to the agency, indicated that the petitioned action may be warranted. As a result of the positive finding, the agency reviewed the status of the species to determine if listing under the Endangered Species Act is warranted. The agency determined on August 7, 2013 that listing is not warranted at this time but has proposed additional cooperative efforts with the Commission and other management partners to address river herring data gaps and explore additional conservation strategies. More information is available at: http://nero.noaa.gov/stories/2013/riverherring.html. The Council continues to be engaged in river herring and shad management through incidental catch reduction and engagement in regional conservation efforts (http://www.mafmc.org/newsfeed/2013/pr/am15).

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5.5 Other Non-Target Species

Butterfish

A list of species taken incidentally and discarded in the butterfish fishery has not been calculated because very limited directed fishing for butterfish has occurred recently due to regulations and market demand. It is also very difficult to identify a recent directed butterfish trip in the observer database and double counting with other fisheries would likely occur due to the recent incidental nature of the fishery. Prior specifications identified red hake, silver hake, spiny dogfish, scup, unclassified skates, fourspot flounder, longfin squid, mackerel, and little skate as primary bycatch and/or discard species in the butterfish fishery. Beginning in 2013 a limited directed fishery for butterfish was re-established and these species could be impacted. However, in previous years when the butterfish fishery operated there was no minimum mesh and attitudes about discarding were different. It is expected that the 3" minimum mesh incorporated as part of the reestablishment of the butterfish fishery will minimize bycatch (further reducing the applicability of previous analyses), and any observer data from trips targeting butterfish will be examined in the future to describe non-target interactions and to determine if additional bycatch minimization measures are needed. For non-target species that are managed under their own fishery management plan, incidental catch/discards are also considered as part of the management of that fishery.

Longfin Squid

While the overall specifications for longfin squid are not considered in this action (in 2014 they will be in year three of three-year multiyear specifications), since some management measure changes are being considered and because the butterfish specifications can affect the amount of longfin squid effort, non-target interactions in the longfin squid fishery are described below. Non-target interactions in the longfin squid fishery are also relatively high compared to the other mackerel, squid, and butterfish fisheries.

Various species are caught incidentally by the longfin squid fishery and will be impacted to some degree by the prosecution of the fishery. For non-target species that are managed under their own fishery management plan, incidental catch/discards are also considered as part of the management of that fishery.

The primary database used to assess discarding is the National Marine Fisheries Service Observer Program database, which includes data from trips that had trained observers onboard to document discards. One critical aspect of using this database to describe discards is to correctly define the trips that constitute a given directed fishery. Presumably some criteria of what captains initially intend to target, how they may adjust targeting over the course of a trip, and what they actually catch would be ideal.

Thus to begin this process, staff first reviewed 2010-2012 trips in the dealer weighout database to see if a certain trip definition could account for most longfin squid landed. Since fisheries evolve over time, and the implementation of the butterfish cap (began in 2011) has likely changed behavior, a relatively recent, three-year time period was examined.

The result of this review resulted in the following definition for longfin squid trips using landings: All trips that had at least 50% longfin squid by weight and all trips that had at least 10,000 pounds of longfin squid regardless of the ratio to other species. This definition results in capturing 89.9% of all longfin squid landings in the dealer weighout database 2010-2012. This definition was applied to the observer database to examine discards in the longfin squid fishery. The resulting set of trips in the observer database included 135 on average for each year 2010-2012. These trips made 4618 hauls of which 92% were observed. Hauls may be unobserved for a variety of reasons, for example transfer to another vessel without an observer, observer not on station, haul slipped (dumped) in the water, etc. While this trip definition does not match the regulatory definition that is used in the butterfish cap, compared to that definition (more than 2,500 pounds of squid), it captures slightly more of the total longfin squid landings by bringing in smaller longfin squid trips that are mostly longfin squid.

The observed longfin squid caught on these trips accounted for approximately 7.6% of the total longfin squid caught (this is the overall coverage rate based on weight). While a very rough estimate, especially given the low observer coverage in small mesh fisheries and non-accounting for spatial and temporal trends, one can use the information in the table immediately following and the fact that about 9,674 metric tons of longfin squid were caught annually 2010-2012 to generally and roughly estimate annual incidental catch for the species in the table. This is the last column in the table and while this information is provided, readers are strongly cautioned that while this is a reasonable approach for a quick, rough, and relative estimate given the available data, it is highly imprecise and does not follow the protocol used for official discard estimates. Note also that even the estimates that can be calculated would only really be valid for the 89.9% of landings captured by the chosen directed trip definition. It is even more difficult to assess the other 11% because to some degree the longfin squid is being caught incidental to other fisheries in those cases. Nonetheless, the longfin squid-to-other-species ratios were scaled up to the 100% of longfin squid catch to keep calculations relatively simple. Compared to the analysis in last year's specifications, changes in results arise from updates to previous year's observer data, using 2010-2012 observer data versus 2009-2011 data, and the different amount of squid landed over 2010-2012 versus 2009-2011.

Table 5. Primary Incidental Catch and Discards in the Longfin Squid Fishery 2010-2012.

NE Fisheries Science Center Common Name	Pounds Observed Caught	Pounds Observed Discarded	Of all discards observed, percent that comes from given species	Percent of given species that was discarded	For every metric ton of Loligo caught, pounds of given species caught.	D:K Ratio (species discarded to longfin kept)	Rough Annual Catch (pounds) based on 3-year (2010-2012) average of longfin catch (9,674 mt)
SQUID (longfin)	4,840,820	80,356	3%	2%	2,205	0.02	21,327,300
BUTTERFISH	559,787	522,389	20%	93%	255	0.11	2,466,264
SQUID (ILLEX)	554,774	236,034	9%	43%	253	0.05	2,444,178
DOGFISH SPINY	378,347	373,545	14%	99%	172	0.08	1,666,889
HAKE, SILVER	374,685	251,199	10%	67%	171	0.05	1,650,757
HAKE, SPOTTED	269,969	265,052	10%	98%	123	0.06	1,189,407
SCUP	209,686	138,949	5%	66%	95	0.03	923,818
SKATE, LITTLE	114,273	112,427	4%	98%	52	0.02	503,455
FLOUNDER, SUMMER	74,201	32,965	1%	44%	34	0.01	326,911
CRAB, LADY	65,296	65,296	2%	100%	30	0.01	287,675
BLUEFISH	61,127	16,338	1%	27%	28	0.00	269,307
DOGFISH SMOOTH	52,458	38,612	1%	74%	24	0.01	231,114
HERRING, ATLANTIC	52,193	8,518	0%	16%	24	0.00	229,946
HAKE, RED	51,865	49,642	2%	96%	24	0.01	228,501
DORY, BUCKLER (JOHN)	46,322	19,426	1%	42%	21	0.00	204,081
FLOUNDER, FOURSPOT	40,707	40,707	2%	100%	19	0.01	179,341
SEA ROBIN, NORTHERN	36,858	36,763	1%	100%	17	0.01	162,386
SKATE, BIG	31,672	30,118	1%	95%	14	0.01	139,539
SCALLOP, SEA	28,306	25,263	1%	89%	13	0.01	124,707
SEA BASS, BLACK	25,778	15,552	1%	60%	12	0.00	113,569
ANGLER	25,612	11,621	0%	45%	12	0.00	112,838
BASS, STRIPED	25,264	24,741	1%	98%	12	0.01	111,306
SEA WEEDS	23,433	23,433	1%	100%	11	0.00	103,241
FLOUNDER, WINTER	18,653	18,315	1%	98%	8	0.00	82,181
SEA ROBIN, STRIPED	14,690	14,421	1%	98%	7	0.00	64,720
LOBSTER	13,586	10,219	0%	75%	6	0.00	59,856
SHAD, AMERICAN	13,325	12,083	0%	91%	6	0.00	58,705
MACKEREL, ATLANTIC	13,192	5,716	0%	43%	6	0.00	58,119
SKATE, ROSETTTE	11,010	11,010	0%	100%	5	0.00	48,507
HADDOCK	10,197	10,197	0%	100%	5	0.00	44,924
SQUID, NK	8,973	1,418	0%	16%	4	0.00	39,533
HERRING (NK)	8,474	6,762	0%	80%	4	0.00	37,333
HAKE, NK	8,030	7,160	0%	89%	4	0.00	35,378
WINDOWPANE	7,730	7,653	0%	99%	4	0.00	34,058
SKATE, CLEARNOSE	7,202	7,104	0%	99%	3	0.00	31,731
DOGFISH CHAIN	6,225	6,225	0%	100%	3	0.00	27,426
TAUTOG	6,212	5,995	0%	96%	3	0.00	27,370
RAY, BULLNOSE	6,207	6,207	0%	100%	3	0.00	27,344
SKATE, BARNDOOR	6,067	6,067	0%	100%	3	0.00	26,731
CRAB, JONAH	5,909	5,637	0%	95%	3	0.00	26,035
SKATE, NK	5,464	5,464	0%	100%	2	0.00	24,073
ALEWIFE	5,014	4,132	0%	82%	2	0.00	22,091
FISH, NK	4,661	4,641	0%	100%	2	0.00	20,533
HERRING, BLUE BACK	4,628	4,628	0%	100%	2	0.00	20,390

5.6 Human Communities and Economic Environment

5.6.1 Fishery Descriptions

This section describes the socio-economic importance of the longfin squid and butterfish fisheries, which are the fisheries potentially impacted by this action.

Recent Amendments to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan contain additional information, especially demographic information on ports that land mackerel, squid, and butterfish species. See Amendments 11 and 14 at http://www.mafmc.org/fmp/history/smb-hist.htm for more information or visit the National Marine Fisheries Service' community profiles page at: http://www.nefsc.noaa.gov/read/socialsci/community_profiles/.

For each species with alternatives in this document, Section 6.6 describes the following: history of landings, prices and total revenues since 1982, specification performance for the last 10 years, 2012 data for permitted and active vessels by state, 1997-2012 numbers of permits, 2012 vessel dependence on each managed species as a proportion of total ex-vessel sales, 2010-2012 landings by state, 2010-2012 landings by month, 2010-2012 landings by gear, 2010-2012 landings in key ports, 2010-2012 numbers of active dealers, and 2010-2012 vessel trip report catches by key statistical area. There is also a market overview section for mackerel per the fishery management plan as well as sections for recreational mackerel and longfin squid catch (butterfish are not caught in substantial amounts by recreational fishermen). If less than either 3 vessels or 3 dealers were active for a given species in a given port, or if there is other concern about data confidentiality, some information may be withheld or limited in order to maintain the confidentiality of proprietary business data of fishery participants.

The Council employed a new procedure for gathering information from its Squid-Mackerel-Butterfish Advisory Panel during the 2012 specifications setting process, which it continued for 2014 specifications. The mackerel, squid, and butterfish Advisory Panel created a "Fishery Performance Report" for each species based on the advisors' personal and professional experiences as well as reactions to an "informational document" for each species created by Council staff. The Informational Documents and Fishery Performance Reports may be found here http://www.mafmc.org/ssc-meeting-documents/. These documents, while not National Marine Fisheries Service reviewed or peer-reviewed, and also containing some preliminary information, were constructed using the same basic analytical techniques as this document and may be of interest to readers looking for additional descriptive fishery information.

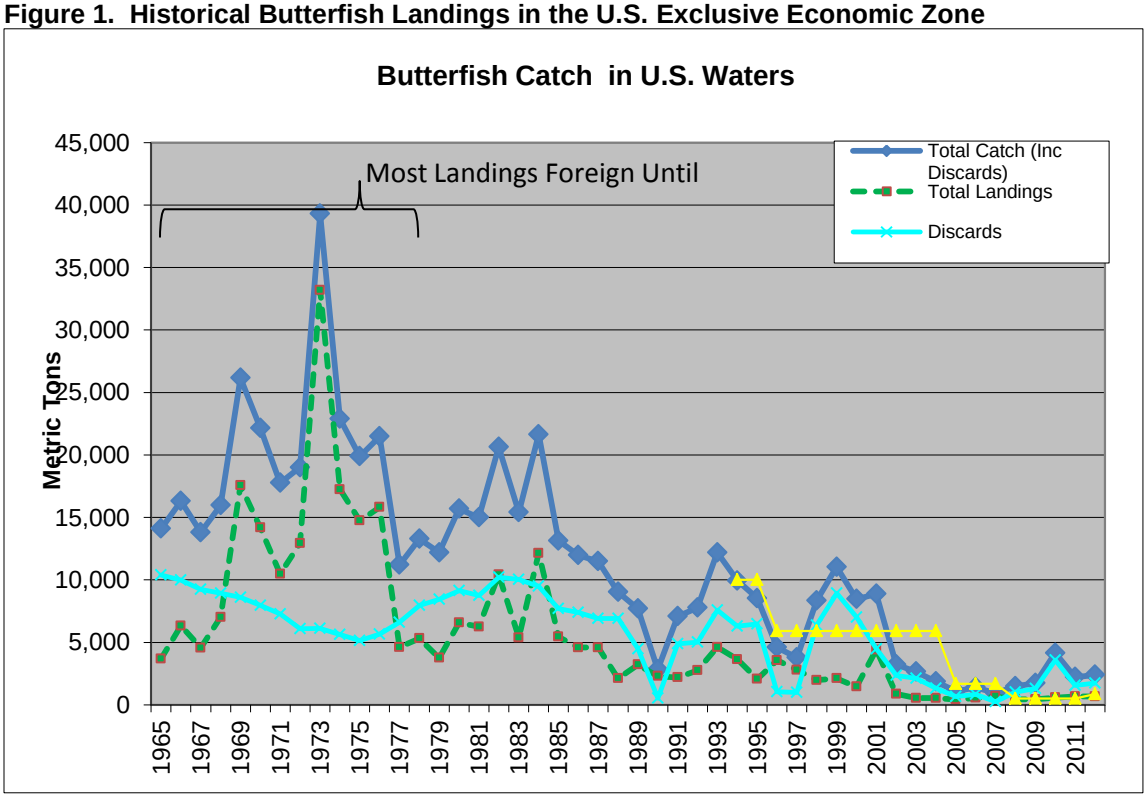
5.6.2 Atlantic butterfish

Historical Commercial Fishery

Atlantic butterfish were landed exclusively by U.S. fishermen from the late 1800's (when formal record keeping began) until 1962 (Murawski and Waring 1979). Reported landings averaged about 3,000 metric tons from 1920-1962 (Waring 1975). Beginning in 1963, vessels from Japan, Poland and the Union of Soviet Socialist Republics began to exploit butterfish along the edge of the continental shelf during the late-autumn through early spring. Reported foreign catches of butterfish increased from 750 metric tons in 1965 to 15,000 metric tons in 1969, and then to about 32,000 metric tons in 1973. With the advent of extended jurisdiction in U.S. waters, reported foreign catches declined sharply from 14,000 metric tons in 1976 to 2,000 metric tons in 1978. Foreign landings were completely phased out by 1987.

During the period 1965-1976, U.S. Atlantic butterfish landings averaged 2,051 mt. From 1977-1987, average U.S. landings doubled to 5,252 mt, with a historical peak of slightly less than 12,000 metric tons landed in 1984. Since then U.S. landings have declined sharply. Low abundance and reductions in Japanese demand for butterfish probably had a negative effect on butterfish landings in the 1990s-early 2000s, but regulations kept butterfish catches low from 2005-2012. Quotas were increased somewhat in 2012 and more so in 2013.

Figure 1. Historical Butterfish Landings in the U.S. Exclusive Economic Zone



Price (nominal) has increased fitfully since 1982 to about $1600/ metric ton in 2012, but taking inflation into account erodes most of that price increase (see Fishery Information Document at http://www.mafmc.org/ssc-meetings/2013/april-may for details). 2012 landings totaled 671 metric tons and generated $1.1 million in ex-vessel revenues.

Fishery Performance

The principle measure used to manage butterfish landings is monitoring via dealer weighout data that is submitted weekly. The dealer data triggers in-season management actions that institute lower trip limits once various thresholds are crossed. The principle measure used to manage butterfish discards is the butterfish cap for the longfin squid fishery, which will close the longfin squid fishery once a certain level of discards is reached (by trimester and annually). There is also an allocation made for discards in other fisheries.

The table below lists the performance of the butterfish fishery compared to the effective quota for the last 10 years. There were quota overages in 2010 and 2011. The causes of these are likely the increased butterfish abundance in recent years leading to early closures combined with incomplete controls on state-permitted vessels. The long time period of incidental post-closure landings resulted in the fishery ending up over its quota, but the new closure system implemented in 2013 should correct this problem for landings. There were Acceptable Biological Catch overages in 2009-2011 and Acceptable Biological Catch overages from 2012 on must be repaid. Additional buffering implemented in 2012 combined with the butterfish cap for the longfin squid fishery should avoid future Acceptable Biological Catch overages, but if Acceptable Biological Catches are lower in the future, care will need to be exercised in order to avoid Acceptable Biological Catch overages and subsequent pay-backs. There is also the possibility of uncontrolled post-cap closure longfin squid fishing during Trimester 2 (state vessels or incidental-level fishing) leading to higher than expected butterfish discards, but this has not been a realized problem to date and this action proposes additional controls on Trimester 2 to address this potential (see Alternative Set 1).

Table 6. Butterfish Quota Performance (metric tons)

Year	Harvest (only commercial)	Quota	Percent of Quota Landed	ABC	Discards	Total Catch	Percent of ABC Caught
2003	536	5,900	9%		2,114	2,649	
2004	537	5,900	9%		1,320	1,857	
2005	428	1,681	25%		648	1,076	
2006	554	1,681	33%		839	1,393	
2007	678	1,681	40%		241	919	
2008	451	500	90%		1,029	1,480	
2009	435	500	87%	1,500	1,298	1,733	116%
2010	576	500	115%	1,500	3,576	4,152	277%
2011	664	500	133%	1,811	1,555	2,219	123%
2012	627	872	72%	4,200	1,726	2,353	56%
2009 was the first year that the SSC provided an ABC recommendation. 2011 was the first year of the butterfish cap, which directly controls most discards. Any ABC overages from 2012 on must be repaid pound for pound.							

Source: Unpublished National Marine Fisheries Service dealer reports

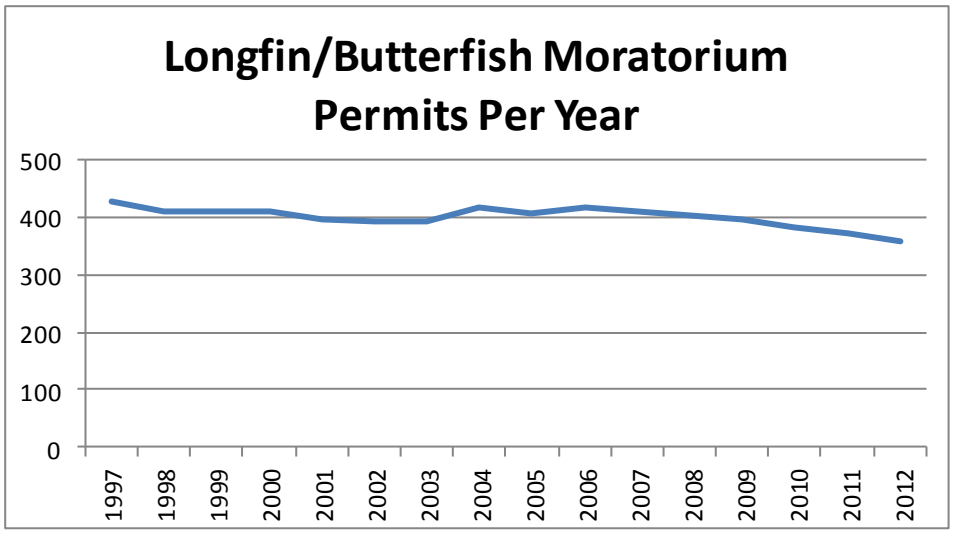
The tables and figures on the following pages describe vessel participation, vessel dependency, distribution of landings by state/month/gear/port, dealer participation, and the general at-sea location of most recent catches.

Table 7. 2012 Data (most recent) for Permitted and Active Vessels by State

State of Principal Port	200,000 or more pounds	50,000-200,000 pounds	10,000-50,000 pounds	1,000-10,000 pounds
CT		.	4	2
MA		.	1	7
NC		.	.	2
NH		.	.	3
NJ		.	1	14
NY		.	14	25
RI		1	18	32
VA		.	.	1

Source: Unpublished National Marine Fisheries Service dealer reports and permit data.

Figure 2. Longfin/Butterfish Moratorium Permits Per Year (Combination permit)



Source: Unpublished National Marine Fisheries Service permit data.

Table 8. 2012 Vessel Dependence on Butterfish (revenue-based)

Dependence on Butterfish	Number of Vessels in Each Dependency Category
1%-5%	93
5%-25%	15
25%-50%	2
More than 50%	0

Source: Unpublished National Marine Fisheries Service dealer reports. (Not at State Level to Avoid Confidentiality Issues)

Table 9. Recent Landings by State (metric tons)

YEAR	CT	DE	MA	MD	ME	NA	NH	NJ	NY	RI
2010	31	0	79	1	0	5	2	20	184	254
2011	48	0	64	1	0	4	4	29	235	278
2012	82	0	80	3	0	14	2	34	207	249

Source: Unpublished National Marine Fisheries Service dealer reports

Table 10. Recent Landings by Month (metric tons)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	32	17	24	47	82	89	61	71	43	56	37	18
2011	54	40	55	63	97	100	31	25	60	54	47	38
2012	28	46	73	48	72	61	60	59	54	67	67	39

Source: Unpublished National Marine Fisheries Service dealer reports

Table 11. Recent Landings by Gear (metric tons)

YEAR	Bottom Trawl	Dredge	Trap/Pots/Pound/Weir	Other/Unknown
2010	407	28	20	119
2011	451	27	12	174
2012	484	20	13	153

Source: Unpublished National Marine Fisheries Service dealer reports

Table 12. Recent Ex-Vessel Revenues by Port for All Ports with at least $50,000 ex-vessel sales totaled over last three years.

YEAR	POINT JUDITH, RI	MONTAUK, NY	NEW BEDFORD, MA	STONINGTON, CT	HAMPTON BAYS, NY	NEWPORT, RI	AMAGANSETT, NY	LITTLE COMPTON, RI	NORTH KINGSTOWN, RI	Belford, NJ	New London, CT
2010	$256,681	$204,895	$ 73,271	$ 28,054	$ 34,693	$ 54,808	$ 22,958	$ 38,253	$ 4,438	CI	CI
2011	$373,268	$281,011	$ 58,929	$ 52,168	$ 47,095	$ 52,997	$ 49,144	$ 21,525	$ 31,224	CI	CI
2012	$301,552	$225,486	$ 75,411	$ 79,928	$ 59,532	$ 32,513	$ 35,268	$ 36,136	$ 27,466	CI	CI

Source: Unpublished National Marine Fisheries Service dealer reports. CI = Confidential Data

Table 13. Recent Numbers of Active Dealers

	Number of dealers selling at least $10,000 Butterfish	Number of dealers selling at least $25,000 Butterfish
2010	18	1
2011	21	2
2012	17	2

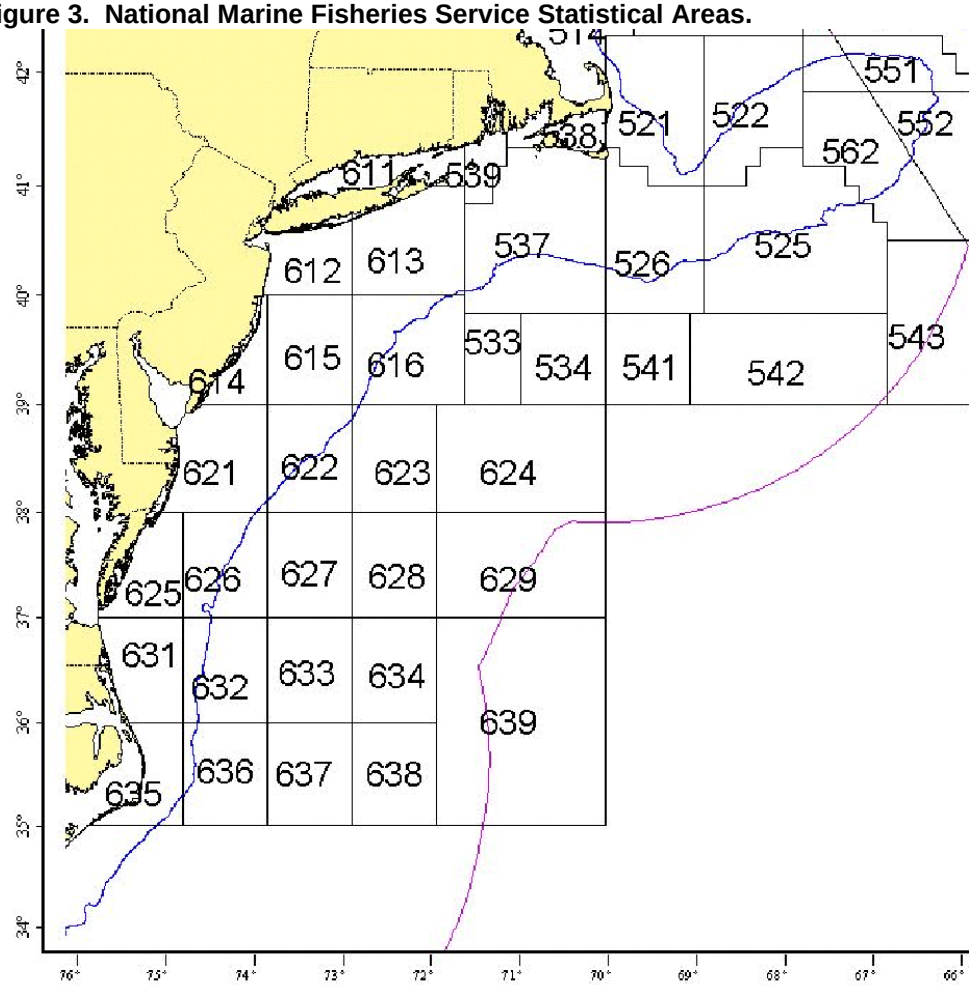
Source: Unpublished National Marine Fisheries Service dealer reports

Table 14. Recent Kept Catch in Statistical Areas with substantial recent catch

YEAR	_537	_611	_539	_616	_613	_525	_522	_562	_612
2010	127.6	54.14	65.42	36.86	29.09	25.69	20.46	27.61	12.3173
2011	105.3	81.37	61.69	72.45	31.19	31.03	10.34	8.884	8.5012
2012	102.9	57.98	64.37	36.93	44.31	31.18	18.87	12.58	23.4897

Source: Unpublished National Marine Fisheries Service vessel trip reports

Figure 3. National Marine Fisheries Service Statistical Areas.



5.6.3 Longfin Squid

Historical Commercial Fishery

U.S. fishermen have been landing squid along east coast of the U.S. since the 1880's (Kolator and Long 1978) but early fisheries were minor in scope. Focused effort began in 1968 by The Union of Soviet Socialist Republics and Japanese vessels. Reported foreign landings of longfin squid increased from 2000 metric tons in 1964 to a peak of 36,500 metric tons in 1973. Foreign longfin squid landings averaged 29,000 metric tons for the period 1972-1975.

Foreign fishing for longfin squid began to be regulated with the advent of extended fishery jurisdiction in the U.S. in 1977. Initially, U.S. regulations restricted foreign vessels fishing for squid (and other species) to certain areas and times (the so-called foreign fishing "windows"), primarily to reduce spatial conflicts with domestic fixed gear fishermen and minimize bycatch of non-target species. Later, foreign allocations were reduced and then eliminated as the domestic fishery became established. The development and expansion of the U.S. squid fishery occurred relatively slowly as the U.S. industry did not develop the appropriate technology to catch and process squid in offshore waters until the 1980's.

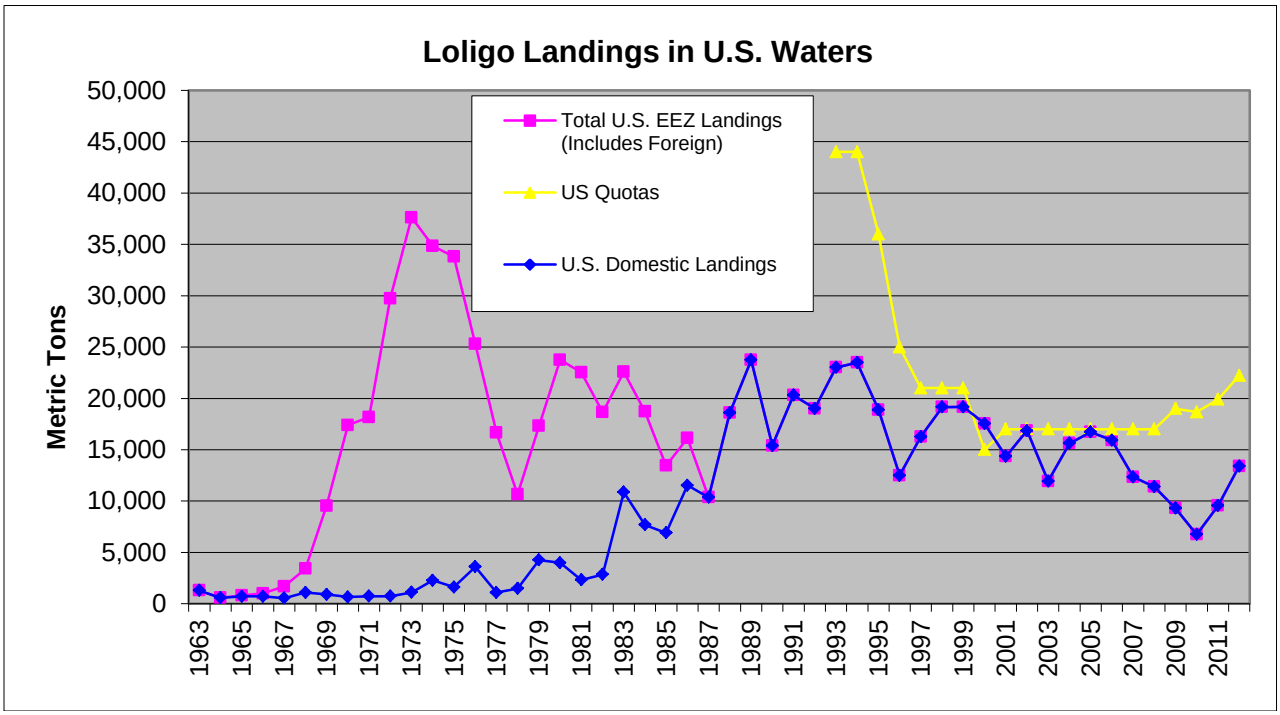


Figure 4. Historical Longfin Squid Landings in the U.S. Exclusive Economic Zone.

Price (nominal) has increased fairly steadily since 1982 to $2,413/ metric tons in 2012, even taking inflation into account (see Fishery Information Document at http://www.mafmc.org/ssc-meetings/2013/april-may for details). 2012 landings totaled 13,408 metric tons and generated $32.4 million in ex-vessel revenues.

Fishery Performance

The principle measure used to manage longfin squid is Trimester quota monitoring via dealer data that is submitted weekly. The dealer data triggers in-season management actions that institute relatively low trip limits when 90% of the Trimester quotas are reached in Trimesters 1 and 2 and when 95% of the annual Domestic Annual Harvest (DAH) is reached in Trimester 3. The tables and figures on the subsequent pages describe quota performance, vessel participation, vessel dependency, distribution of landings by state/month/gear/port, dealer participation, and the general at-sea location of most recent catches.

The longfin squid Domestic Annual Harvest is currently divided up into trimesters and has been since 2007 while 2001-2006 had quarterly management. Each seasonal time period closes at a threshold of the seasonal allocation, which can result in seasonal closures. The seasonal closures that have occurred since 2002 are: **2002**: May 28-Jun30, Aug 16-Sep 30, Nov 2 -Dec 11, Dec 24-Dec31; **2003**: Mar 25-Mar 31; **2004**: Mar 5-Mar 31; **2005**: Feb 20-Mar 31, April 25-Jun 30, Dec 18-Dec 31; **2006**: Feb 13-Mar 31, April 21-April 26, May 23-June 30, Sept 2-Sept 30; **2007**: April 13-April 30; **2008**: July 17 - Aug 31; **2009**: Aug 6 - Aug 31; **2010**: No closures; **2011**: Aug 23 – Aug 31; **2012**: April 17 - April 30 (butterfish cap), July 10-August 31. There are occasional overages of the trimester quotas, but these are typically minor and should minimal effects since any Trimester 1 and 2 overages are applied to Trimester 3.

Table 15. Longfin Domestic Annual Harvest (DAH) Performance. (metric tons)

Year	Commercial Landings	Quota	Percent of Quota Landed
2003	11,941	17,000	70%
2004	15,629	17,000	92%
2005	16,720	17,000	98%
2006	15,920	17,000	94%
2007	12,343	17,000	73%
2008	11,394	17,000	67%
2009	9,307	19,000	49%
2010	6,749	18,667	36%
2011	9,554	19,906	48%
2012	13,408	22,220	60%

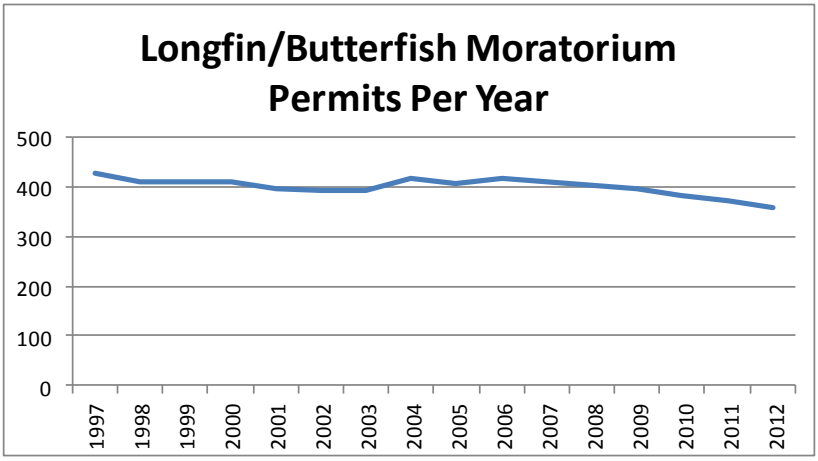
Source: Unpublished National Marine Fisheries Service dealer reports

Table 16. 2012 Data for Permitted and Active Vessels by State

State of Principal Port	500,000 or more pounds	100,000-500,000 pounds	50,000-100,000 pounds	10,000-50,000 pounds
CT	.	4	2	2
MA	.	7	6	15
ME	.	1	1	1
NC	.	3	1	.
NH	.	1	4	.
NJ	.	6	5	7
NY	2	25	12	7
RI	6	28	6	6
VA	.	.	1	2

Source: Unpublished National Marine Fisheries Service dealer reports and permit data.

Figure 5. Longfin/Butterfish Moratorium Permits Per Year (Combination permit)



Source: Unpublished National Marine Fisheries Service permit data.

Table 17. 2012 Vessel Dependence on Longfin (revenue-based)

Dependence on Longfin	Number of Vessels in Each Dependency Category
1%-5%	42
5%-25%	73
25%-50%	64
More than 50%	33

Source: Unpublished National Marine Fisheries Service dealer reports Not at State Level to Avoid Confidentiality Issues

Table 18. Recent Landings by State (metric tons)

YEAR	CT	MA	MD	ME	NA	NC	NJ	NY	RI
2010	166	701	1	0	25	32	713	1,769	3,342
2011	226	639	1	0	34	11	1,591	2,553	4,498
2012	1,280	1,335	1	5	35	1	1,893	3,556	5,302

Source: Unpublished National Marine Fisheries Service dealer reports

Table 19. Recent Landings by Month (metric tons)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	524	336	289	271	781	533	632	274	720	1,082	727	579
2011	1,245	913	975	447	345	1,011	2,135	949	344	552	288	350
2012	362	365	691	1,071	2,147	2,754	2,472	897	805	1,116	296	434

Source: Unpublished National Marine Fisheries Service dealer reports

Table 20. Recent Landings by Gear (metric tons)

YEAR	Bottom Trawl	Unknown	Midwater Trawl	Dredge	Trap/Pots/Pound/Weir	Other
2010	5,399	965	215	61	34	75
2011	8,050	1,319	91	54	13	26
2012	11,435	1,655	99	131	48	40

Source: Unpublished National Marine Fisheries Service dealer reports

Table 21. Recent Ex-Vessel Revenues by Port for All Ports with at Least $200,000 Ex-Vessel Sales Combined Over last three years

YEAR	POINT JUDITH, RI	MONTAUK, NY	CAPE MAY, NJ	HAMPTON BAYS, NY	NORTH KINGSTOWN, RI	NEW BEDFORD, MA	NEW LONDON, CT
2010	$5,982,349	$2,859,112	$1,069,880	$807,223	$1,061,729	$919,771	$62,389
2011	$8,206,277	$3,792,870	$2,932,800	$2,643,944	$2,321,291	$1,128,010	$141,030
2012	$10,513,128	$4,700,714	$3,666,660	$3,071,927	$1,837,346	$1,084,906	$2,061,831

YEAR	BARNSTABLE, MA	STONINGTON, CT	POINT LOOKOUT, NY	BELFORD, NJ	POINT PLEASANT, NJ	WOODS HOLE, MA	FALMOUTH, MA
2010	$482,247	$249,570	$475,173	CI	CI	CI	CI
2011	$331,584	$360,612	$488,106	CI	CI	CI	CI
2012	$1,100,494	$1,243,286	$516,646	CI	CI	CI	CI

YEAR	NEWPORT, RI	SHINNECOCK, NY	EAST HAVEN, CT	FREEPORT, NY
2010	CI	CI	CI	CI
2011	CI	CI	CI	CI
2012	CI	CI	CI	CI

Source: Unpublished National Marine Fisheries Service dealer reports

Table 22. Recent Numbers of Active Dealers

	Number of dealers buying at least $10,000 longfin	Number of dealers buying at least $100,000 longfin	Number of dealers buying at least $1,000,000 longfin
2010	18	22	4
2011	21	22	6
2012	20	26	7

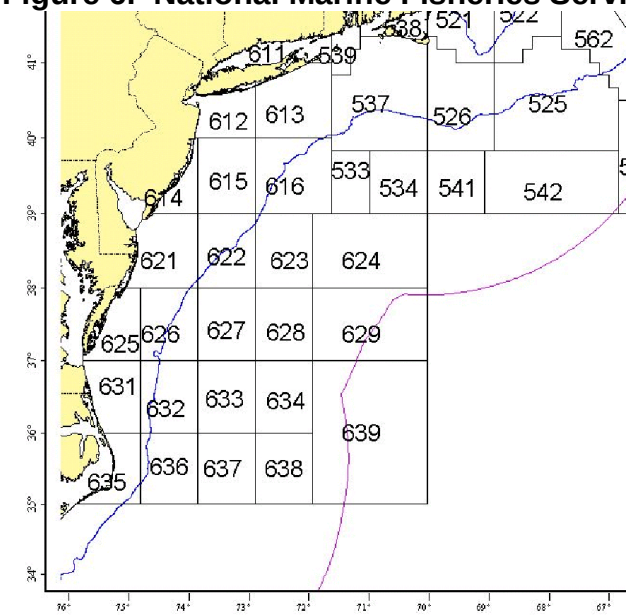
Source: Unpublished National Marine Fisheries Service dealer reports

Table 23. Recent Catch in Statistical areas with at least 250 metric tons of longfin caught in at least one year of last three

YEAR	_616	_537	_622	_612	_613	_539	_538	_626	_525	_623	_611	_632	_562	_526
2010	2,505	604	1,043	475	474	333	199	173	348	52	226	275	224	51
2011	1,321	1,252	1,608	1,630	642	327	114	417	459	235	313	137	110	324
2012	1,419	2,501	1,244	1,765	1,699	407	722	385	114	433	174	130	95	12

Source: Unpublished VTR reports

Figure 6. National Marine Fisheries Service Statistical Areas



Butterfish Catch/Mortality Cap

Since 2011 the longfin squid fishery has been subject to closure if it catches or discards too much butterfish. Because of the butterfish cap, butterfish discards may limit production in the squid fishery, so butterfish takes on a "shadow value" in terms of the indirect impact on the longfin squid fishery. While the exact relationship between butterfish and longfin squid catches is unknown ahead of time for any given year, the "shadow value" of butterfish could be quite large; that is, the longfin squid fishery may recognize large increases in landings/revenues/profits from relatively small increases in the butterfish specifications (and vice-versa with decreases).

The cap also is important for butterfish management. While the cap was instituted due to an assessment and overfished finding that have both since been invalidated, since annual catch limit (ACL) overages of butterfish have to be paid back in following years, the cap serves to limit annual butterfish mortality to a given amount established by the Scientific and Statistical Committee, which should both protect the butterfish stock and avoid negative impacts related to large paybacks if discarding is not monitored and controlled in each year in near real-time.

The cap currently operates in the following manner. First, longfin squid trips must notify the observer program and observers are randomly placed on longfin squid trips. Second, the ratio of butterfish discards to total kept catch on observed longfin squid trips is calculated. Third, the ratio is applied to total landings by longfin squid trips to determine total butterfish discards from longfin squid fishing. Fourth, the longfin squid fishery is closed if it discards a specified amount of butterfish.

An example may help illustrate the process. Assume that 5 observed longfin squid trips discarded 10,000 pounds of butterfish and retained 100,000 pounds of total squid/fish. So for every 10 pounds of squid/fish landed, they discarded 1 pound of butterfish. If total landings by all squid trips equaled 40,000,000 pounds, then the estimated butterfish discards would be 4,000,000 pounds. If the cap was set to close at 4,500,000 pounds of butterfish, the longfin squid fishery would be getting close to closing in this example. These numbers are just for illustration purposes.

There were no cap closures in 2011. In 2012 there was a closure from April 17-30, although late-arriving data caused the closure rather than actual discards. 2013 was still underway at the time this document was written but a cap closure appears unlikely given early indications. Additional details on the cap estimation may be found here: http://www.nero.noaa.gov/nero/regs/frdoc/11/11SMB2011ButterfishSpecsRevisedCAP.pdf and a report on the 2011 operation of the cap may be found here: http://www.mafmc.org/ssc-meetings/may-2012. Review of the cap's 2011 operation by the Scientific and Statistical Committee in May 2012 found that the cap appears to be operating as designed, i.e. tracking and limiting butterfish mortality in the longfin squid fishery. It did also find that non-cap mortality also needs to be sufficiently accounted for to avoid Acceptable Biological Catch overages. As described in Section 5 of this document, the proposed butterfish specifications do account for non-cap mortality in 2014. Review of the cap's 2012 operation found that there were no Acceptable Biological Catch overages for butterfish in 2012, which was the first year that overages of butterfish catch limits must be paid back.

Longfin Squid Recreational Fishery

While there is definitely a recreational fishery for longfin squid, catch amounts have not been estimated – the Marine Recreational Information Program (http://www.st.nmfs.noaa.gov/recreational-fisheries/index) does not collect information on invertebrates. Based on qualitative research by Council staff, recreational fishing primarily occurs in the following modes: fishing from shore on manmade structures with artificial lighting at night; private boat fishing, charter boat fishing, and party/head boat fishing. Once the new Marine Recreational Information Program methodology is fully in place the Council may request that additional information on squid catches be collected by Marine Recreational Information Program interviewers. If individuals are looking for qualitative information on recreational squid fishing, the following site contains a variety of anecdotal information on recreational longfin squid fishing: http://www.squidfish.net/forums/index.php?/forum/18-east-coast/.

6.0 WHAT ARE THE IMPACTS (Biological and Human Community) FROM THE ALTERNATIVES CONSIDERED IN THIS DOCUMENT?

6.1 Managed Resources

Mackerel, longfin squid, and *Illex* squid should not be affected by the status quo or the action alternatives as mortality is controlled separately for those species with hard quotas and accountability measures. The current measures in effect for these fisheries are further described at: http://www.nero.noaa.gov/regs/info.html. Impacts related to butterfish are described below.

Closure Authority and Cap Allocation Alternatives (Alts 1,2,3)

If the status quo is maintained, it is possible that the limited Trimester 2 closure authority (75% of annual butterfish cap) could result in a butterfish Acceptable Biological Catch (ABC) overage. This is because if only 25% of the annual butterfish cap remains at some point during the summer, subsequent state and/or incidental longfin squid fishing could potentially lead to an overall cap overage, which could cause an Acceptable Biological Catch overage (through unexpectedly high discards). While the butterfish Acceptable Biological Catch is set conservatively, and any overage would not be expected to be large, it is possible that the butterfish stock could be negatively impacted by Acceptable Biological Catch overages.

Amending the in-season closure authority for the cap in Trimester 2 could thus have a small positive benefit for butterfish compared to the status quo because it would reduce the possibility of acceptable biological catch overages that could result from excessive butterfish catch after a cap closure of the longfin squid fishery in Trimester 2. No differences would be expected between alternatives 2 and 3 in this regard.

These allocation alternatives involve different closure threshold and rollover mechanisms between Trimesters compared to the status quo. However, since overall butterfish mortality control would not be affected, no impacts on butterfish would be expected.

In-Season Transfers Between Butterfish Cap and Butterfish Landings (Alts 4 & 5)

Under the status quo, the inability to shift quota between the cap and landings (the two primary controls on butterfish mortality) at the end of the year should continue to keep butterfish below its acceptable biological catch, which would continue positive benefits for butterfish.

The ability to automatically shift quota between the cap and landings should have no impact on butterfish compared to the status quo because it still should not lead to acceptable biological catch overages. If one is increased (the cap or landings), the other would be decreased by the same amount. This action is primarily aimed at optimizing use of the quota. Any overages would continue to be addressed via accountability measures that call for acceptable biological catch overage paybacks and/or the revisiting of existing management measures.

6.2 Non-Target Fish Species

Recent non-target species interactions in the longfin squid and butterfish fisheries are summarized in Section 5.5. These would constitute the status-quo impacts. No measures are contemplated that would affect the operation of the *Illex* squid or Atlantic mackerel fisheries. The availability of the targeted species is often highly variable from year to year and that variability can impact effort (and therefore non-target fish impacts) more than any management measure.

Closure Authority and Cap Allocation Alternatives (Alts 1,2,3)

Theoretically, the alternatives to amend Trimester 2 in-season closure authority would tend to result in positive impacts for non-target fish species compared to the status quo because the alternatives could reduce overall effort by closing longfin squid fishing earlier than would have otherwise occurred. Alternatives 2 and 3 differ slightly in how the butterfish cap is allocated, but in either case could result in an earlier closure in Trimester 1 or Trimester 2 than currently occurs. While to some degree this may shift effort to later in the year, since the availability of squid later in the year may be high or low, over time one would expect an overall effort decrease if the fishery is closed earlier in any Trimester than would otherwise occur. In some years if squid are available later in the year effort may just shift to later in the year, but if squid are not available later in the year then effort would decrease. If in some years effort stays the same (shifts) but in some years effort decreases, then overall effort, and non-target impacts, should decrease. Given the natural variability in squid abundance and the fishery effort that tracks that variability, any difference between alternatives 2 and 3 is likely to be negligible in terms of non-target fish impacts.

The allocation alternatives involve different closure threshold and rollover mechanisms between Trimesters compared to the status quo. However, these are operational details related to the new allocations, and should have a negligible impact on effort compared to the allocation and Trimester 2 closure authority parts of these alternatives. Also, since at current cap levels and recent butterfish catches and discards, no closures are expected, these measures should have a negligible impact on effort and therefore non-target catch.

In practice, since catches of butterfish earlier in the year have never limited the longfin squid fishery in Trimesters 2 or 3, no impacts from what has actually occurred would be expected, and these allocations just preserve the Trimester 3 fishery that typically occurs. Overall impacts are thus best characterized as low-positive compared to the status quo.

In-Season Transfers Between Butterfish Cap and Butterfish Landings (Alts 4 & 5)

The alternative to shift quota at the end of the year could facilitate some additional butterfish fishing or additional longfin squid fishing. The maximum transfer amount is 50% of the original quota, i.e. 50% of one could be transferred to the other. It is not possible to predict how much extra effort this could result in over time. It would probably be more than zero but probably much less than the fishery overall since the

transfer would only be in place after November 15th, which is approximately 12% of the year, and the transfer would only take place if the fishery appeared to be limited which would mean that a substantial amount of effort would have already taken place earlier in the year. Impacts would be increased for the directed fishery (longfin squid or butterfish) that was enabled to stay open longer or reopen due to a transfer. It is also possible that analysis would often suggest that closures would not be predicted to occur, in which case these provisions would not be used in a particular year. It is also likely that analysis would sometimes suggest that a transfer could cause the fishery losing quota to close, which is another case when these provisions would not be used in a particular year. Thus compared to the status-quo, the non-target species impacts are likely "low-negative" for the alternative that facilitates routine quota transfer by National Marine Fisheries Service, but not significant.

6.3 Physical Environment and Essential Fish Habitat Impacts

Managed Species' Essential Fish Habitat (EFH)

Essential Fish Habitat for the managed species generally consists of the water column, which is not significantly impacted by fishing activity, specifically the bottom trawl gear utilized in the squid and butterfish fisheries. The exception to the Essential Fish Habitat location being the water column is longfin squid eggs, which are attached to sand, mud, or hard (e.g. rocks) and soft (e.g. plants) bottom structure (manmade or natural). However, as described in Amendment 9, there is no indication that longfin squid preferentially attach eggs to substrates that are vulnerable to disturbance from fishing, so no impacts on Essential Fish Habitat for longfin squid eggs are expected from any increase or decrease in fishing effort by bottom trawls. Thus the impact is neutral for the managed species' Essential Fish Habitat for any level of mackerel, squid, and butterfish fishing, which means that the impact of any of the status quo or action alternatives on the managed species' Essential Fish Habitat is neutral.

Other Species' Essential Fish Habitat

Under the status quo, bottom trawling activity related to longfin squid and butterfish fishing may impact Essential Fish Habitat for other federally-managed species (see section 5.3 above), but these impacts have been reduced to the extent practicable via other actions (see below for examples). No measures are contemplated that would affect the operation of the *Illex* squid or Atlantic mackerel fisheries.

Most squid and butterfish fishing takes place over open sandy or muddy areas that are heavily impacted by currents and storms. Deeper areas that have less natural disturbance may be more impacted than shallower areas that have more natural disturbance. Amendment 9 to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan prohibited bottom-trawling in several areas of important golden tilefish Essential Fish

Habitat (delicate deep-water mud burrows), but Essential Fish Habitat protections have generally been implemented in other plans even though squid fishing may be impacted. For example, there are a variety of area-based closures for New England groundfish Essential Fish Habitat, which are documented here: http://www.nero.noaa.gov/regs/infodocs/multsclosedareas.pdf. Additional area closures for tilefish Essential Fish Habitat were also implemented through Amendment 1 to the Tilefish Fishery Management Plan. These types of closures in other plans prohibit fishing with bottom trawling gear, which would include squid fishing. There is also an ongoing amendment in development to address interactions with deep sea corals (http://www.mafmc.org/actions/msb/am16).

Closure Authority and Cap Allocation Alternatives (Alts 1,2,3)

Theoretically, the alternatives to amend Trimester 2 in-season closure authority would tend to result in positive impacts for habitat compared to the status quo, because the alternatives could reduce overall effort by closing longfin squid fishing earlier than would have otherwise occurred. Alternatives 2 and 3 differ slightly in how the butterfish cap is allocated, but in either case could result in an earlier closure in Trimester 1 or Trimester 2 than currently occurs. While to some degree this may shift effort to later in the year, since the availability of squid later in the year may be high or low, over time one would expect an overall effort decrease if the fishery is closed earlier in any Trimester than would otherwise occur. In some years if squid are available later in the year effort may just shift to later in the year, but if squid are not available later in the year then effort would decrease. If in some years effort stays the same (shifts) but in some years effort decreases, then overall effort, and habitat impacts, should decrease. Given the natural variability in squid abundance and the fishery effort that tracks that variability, any difference between alternatives 2 and 3 is likely to be negligible in terms of habitat impacts.

The allocation alternatives involve different closure threshold and rollover mechanisms between Trimesters compared to the status quo. However, these are operational details related to the new allocations, and should have a negligible impact on effort compared to the allocation and Trimester 2 closure authority parts of these alternatives. Also, since at current cap levels and recent butterfish catches and discards, no closures are expected, these measures should have a negligible impact on effort and therefore habitat.

In practice, since catches of butterfish earlier in the year have never limited the longfin squid fishery in Trimesters 2 or 3, no impacts from what has actually occurred would be expected, and these allocations just preserve the Trimester 3 fishery that typically occurs. Overall impacts are thus best characterized as low-positive compared to the status quo.

In-Season Transfers Between Butterfish Cap and Butterfish Landings (Alts 4 & 5)

The alternative (5) to shift butterfish quota at the end of the year could facilitate some additional butterfish fishing or additional longfin squid fishing near the end of the year compared to the status quo. The maximum transfer amount is 50% of the original quota,

i.e. 50% of one could be transferred to the other. It is not possible to predict how much extra effort this could result in over time. It would probably be more than zero but probably much less than the fishery overall since the transfer would only be in place after November 15th, which is approximately 12% of the year and the transfer would only take place if the fishery appeared to be limited which would mean that a substantial amount of effort would have already taken place earlier in the year. It is also possible that analysis would often suggest that closures would not be predicted to occur, in which case these provisions would not be used in a particular year. It is also likely that analysis would sometimes suggest that a transfer could cause the fishery losing quota to close, which is another case when these provisions would not be used in a particular year. Thus compared to the status quo, the habitat impacts are likely minimally “low-negative" for the alternative that facilitates routine quota transfer by National Marine Fisheries Service, and not significant.

6.4 Impacts on Protected Resources (Endangered Species, Marine Mammals)

Recent non-target species interactions in the mackerel, squid, and butterfish fisheries are summarized in Section 5.4. These would constitute the status-quo impacts. The availability of the targeted species is often highly variable from year to year and that variability can impact effort (and therefore protected resource impacts) more than any management measure. In general there can be some marine mammal, turtle, and sturgeon interactions in the longfin squid and butterfish fisheries, but lower levels than occur with many other fisheries. No measures are contemplated that would affect the operation of the *Illex* squid or Atlantic mackerel fisheries.

<u>Closure Authority and Cap Allocation Alternatives (Alts 1,2,3)</u>

Theoretically, the alternatives to amend Trimester 2 in-season closure authority would tend to result in positive impacts for protected resources compared to the status quo because they could reduce overall effort by closing longfin squid fishing earlier than would have otherwise occurred. Alternatives 2 and 3 differ slightly in how the butterfish cap is allocated, but in either case could result in an earlier closure in Trimester 1 or Trimester 2 than currently occurs. While to some degree this may shift effort to later in the year, since the availability of squid later in the year may be high or low, over time one would expect an overall effort decrease if the fishery is closed earlier in any Trimester than would otherwise occur. In some years if squid are available later in the year effort may just shift to later in the year, but if squid are not available later in the year then effort would decrease. If in some years effort stays the same (shifts) but in some years effort decreases, then overall effort, and protected resource impacts, should decrease. Given the natural variability in squid abundance and the fishery effort that tracks that variability, any difference between alternatives 2 and 3 is likely to be negligible in terms of protected resource impacts.

The allocation alternatives involve different closure threshold and rollover mechanisms between Trimesters compared to the status quo. However, these are operational details related to the new allocations, and should have a negligible impact on effort compared to the allocation and Trimester 2 closure authority parts of these alternatives. Also, since at current cap levels and recent butterfish catches and discards, no closures are expected, these measures should have a negligible impact on effort and therefore habitat.

In practice, since catches of butterfish earlier in the year have never limited the longfin squid fishery in Trimesters 2 or 3, no impacts from what has actually occurred would be expected, and these allocations just preserve the Trimester 3 fishery that typically occurs. Overall impacts are thus best characterized as low-positive compared to the status quo.

If effort is shifted from the warmer inshore fishing of late Trimester 1 and Trimester 2 to the colder offshore fishing of Trimester 3, impacts on turtles and sturgeon may be reduced as these animals are more likely to be found in warmer (turtles) and/or near-shore (sturgeon) waters. It is not known if such a shift would impact marine mammals, which may be found throughout the fishery area depending on prey availability.

<u>In-Season Transfers Between Butterfish Cap and Butterfish Landings (Alts 4 & 5)</u>

The alternative (5) to shift butterfish quota at the end of the year could facilitate some additional butterfish fishing or additional longfin squid fishing near the end of the year compared to the status quo. Since turtle and sturgeon interactions in the late-year offshore fishery should be low to begin with, any impacts would likely be focused on marine mammals. The maximum transfer amount is 50% of the original quota, i.e. 50% of one could be transferred to the other. It is not possible to predict how much extra effort this could result in over time. It would probably be more than zero but probably much less than the fishery overall since the transfer would only be in place after November 15th, which is approximately 12% of the year and the transfer would only take place if the fishery appeared to be limited, which would mean that a substantial amount of effort would have already taken place earlier in the year. It is possible that analysis would often suggest that closures would not be predicted to occur, in which case these provisions would not be used in a particular year. It is also likely that analysis would sometimes suggest that a transfer could cause the fishery losing quota to close, which is another case when these provisions would not be used in a particular year. Thus compared to the status quo, protected resource impacts are likely “low-negative” for the alternative that facilitates routine quota transfer by National Marine Fisheries Service, but not significant.

6.5 Human Communities - Socioeconomic Impacts

Under the status-quo measures, the longfin squid fishery has recently generated around $15-$25 million in ex-vessel revenues and butterfish has generated around $1 million in ex-vessel revenues. Multiplier effects exist because landings stimulate a variety of economic activity. Approximately similar revenues would likely continue to be generated under the status quo. Related to their revenues, these fisheries support fishing related jobs in ports in the Mid-Atlantic and New England. Because most vessels target a number of species and support industries service many businesses, it is difficult to place a number on the total jobs supported.

The annual specifications environmental assessment has additional details on how many vessels participate in these fisheries. In terms of vessel participation, in 2012 approximately 15 vessels derived at least 5% of their ex-vessel revenues from butterfish and 170 vessels derived at least 5% of their ex-vessel revenues from longfin squid. These numbers cannot be added since there is overlap between the 15 and the 170. Of the 170 vessels cited related to longfin squid revenues, 64 received 25%-50% of their ex-vessel revenues from longfin squid and 33 had greater than 50% of their ex-vessel revenues come from longfin squid.

<u>Closure Authority and Cap Allocation Alternatives (Alts 1,2,3)</u>

The alternatives to amend in-season Trimester 2 closure authority would tend to result in positive long-term socioeconomic impacts compared to the status quo because they would 1) reduce the chance of acceptable biological catch overages that could reduce long-term butterfish productivity; 2) avoid distributional issues in the longfin squid fishery that would occur if Trimester 2 used up most (75%) of the butterfish cap; and 3) avoid future disruptions of the fishery if the status quo led to an acceptable biological catch overage that had to be repaid.

Compared to the status quo it is possible that some squid revenues could be lost in the short term. If Trimester 2 is shut down earlier than would otherwise occur because of the amended butterfish cap in Trimester 2, and revenues are not recouped later in the year because squid are unavailable then there would be some revenues lost. However, since there has never been a closure at current cap levels, it is not possible to estimate such losses and they may be unlikely. The longer term benefits described above are also expected to offset any occasional short-term losses of revenue.

The distributional issues mentioned in benefit (2) above warrant additional discussion. Under the status quo, Trimester 1 receives a large percentage of the cap (65%) but Trimester 2 is not limited by the cap until 75% of the entire annual cap is reached. This means that Trimester 3 could be largely eliminated if the combined Trimester 1 and Trimester 2 usage of the cap nears 75%. Alternative 2's cap allocation would mirror the current longfin allocation between trimesters, which means that Trimester 1 would receive 43%, Trimester 2 17%, and Trimester 3 should have at least 40% of the cap

quota. Alternative 3's cap allocation would split the difference between the current allocation (i.e. status quo) and the longfin squid allocation percentages (i.e. Alternative 2), which means that Trimester 1 would have 54%, Trimester 2 10.15%, and Trimester 3 should have at least 35.85% of the cap quota. Rollovers and overages would still apply as currently occurs.

The main tradeoffs involved are that to ensure that Trimester 3 has a reasonable amount of quota, some quota must be carved out from Trimesters 1 and 2. Also, Trimester 2 should be assigned a reasonable quota. At current cap quota levels, none of the proposed allocations would be expected to cause a closure as long as the longfin squid fleet maintains relatively low butterfish discard rates. The preferred alternative, Alternative 2, was chosen because it aligns the cap allocation with the squid allocation. Thus each longfin squid Trimester is responsible for its butterfish cap, and each trimester starts with a butterfish cap that matches its longfin squid allocation. This provides good incentive for each trimester to avoid discarding butterfish and does not penalize a trimester that had low historical butterfish discards by giving it a very low quota.

One tradeoff that appears consistent is that Trimester 1 has the most cap allocation under the status quo, less under Alternative 3, and least under the preferred Alternative 2. However, since the offshore fleet fishes in Trimesters 1 and 3, and the overall purpose is to ensure that a reasonable amount of cap remains for Trimester 3, any disadvantage from losing cap quota in Trimester 1 for the offshore fleet may be made up by improved access to Trimester 3.

While the allocation of cap to Trimester 2 is increasing on paper, in practice the new system may be more constraining since currently there is weaker closure authority during Trimester 2 compared to either of the action alternatives. However, the intent of the Council is to ensure that butterfish cap quota is spread out fairly throughout the longfin squid Trimesters so that all participants have an opportunity to access the longfin squid resource.

The allocation alternatives involve different closure threshold and rollover mechanisms between Trimesters compared to the status quo. However, these are operational details related to the new allocations, and should have a negligible impact on effort compared to the allocation and Trimester 2 closure authority parts of these alternatives. Also, since at current cap levels and recent butterfish catches and discards, no closures are expected, these measures should have negligible socioeconomic impacts.

In-Season Transfers Between Butterfish Cap and Butterfish Landings (Alts 4 & 5)

The alternative to shift quota at the end of the year could facilitate some additional butterfish fishing or additional longfin squid fishing compared to the status quo. The maximum transfer amount is 50% of the original quota, i.e. 50% of one could be transferred to the other (50% of the landings quota to the cap quota or 50% of the cap quota to landings). It is not possible to predict how much extra landings this could result in over time. It would probably be more than zero but probably much less than the fishery overall since the transfer would only be in place after November 15th, which is approximately 12% of the year and the transfer would only take place if the fishery appeared to be limited which would mean that a substantial amount of effort would have already taken place earlier in the year.

Since the 2013 butterfish landings quota is 2,570 mt, this provides a starting point for examining the range of benefits that could accrue from a transfer from butterfish landings to the cap. At most ½ of the landings quota could be transferred, or 1,285 mt. It is possible that such a transfer could result in reopening of the longfin fishery for the last six weeks of the year or longfin staying open when it would have otherwise closed. While the last six weeks of the year have seen relatively low longfin squid landings recently, late season catches in 2004-2007 demonstrate that catches of 1-2 million pounds per week of longfin squid are possible in the last six weeks of the year, which could theoretically result in additional revenues of approximately $6-$12 million given recent longfin squid prices, though this would likely be the high end of the range.

With the butterfish cap in 2013 set at 3,884 mt, ½ of that amount would be 1,942 metric tons that would at most be able to be transferred to butterfish landings. It is possible that 1,942 metric tons of butterfish could be landed in six weeks, but the price of such landings is difficult to determine. Recent years prices have ranged from $1,400 – $1,800 per metric ton, which could theoretically mean additional revenues of around $3 million dollars, though it is not clear that recent prices would be maintained at higher landings levels, which would mean that $3 million should be considered the high end of possible additional revenues.

In both of the transfer scenarios, since a transfer would only be made if it appears there would be totally unused quota, there are no opportunity costs associated with the transfer in terms of other fishery operations.

It is possible that analysis would often suggest that closures would not be predicted to occur, in which case these provisions would not be used in a particular year. It is also likely that analysis would sometimes suggest that a transfer could cause the fishery losing quota to close, which is another case when these provisions would not be used in a particular year. Thus overall, the socio-economic impact of the action alternative (5) is likely “low-positive” compared to the status quo but this could still potentially result in several million dollars of extra ex-vessel revenues in some years compared to the status quo. Note: revenues are described instead of profits or net benefits because profit information is not available.

6.6 Cumulative Impacts

The impacts of the proposed alternatives considered herein are expected to be positive since they are likely to provide positive socioeconomic benefits without inducing substantial negative impacts to the managed species, habitat, protected resources, or other non-target species. The proposed measures are considered the most reasonable actions to achieve the fishery management plan's conservation objectives while optimizing the outcomes for fishing communities given the conservation objectives of the fishery management plan, which are summarized in Section 3. The expected impacts of each alternative have been analyzed earlier in this section and are summarized in Table 1 in the Executive Summary.

Definition of Cumulative Effects

A cumulative impact analysis is required by the Council on Environmental Quality's regulation for implementation of the National Environmental Policy Act. Cumulative effects are defined under the National Environmental Policy Act as "The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action (40 Code of Federal Regulations section 1508.7)."

The cumulative impacts of past, present, and future Federal fishery management actions (including the recommendations in this document) should generally be positive. The mandates of the Magnuson-Stevens Act as currently amended, and of the National Environmental Policy Act, require that management actions be taken only after consideration of impacts to the biological, physical, economic, and social dimensions of the human environment. Therefore, it is expected that under the current and proposed management regime, the long term cumulative impacts will contribute toward improving the human environment.

Temporal Scope

The temporal scope of this analysis is primarily focused on actions that have taken place since 1976, when these fisheries began to be managed under the Magnuson-Stevens Act. For endangered and other protected species, the context is largely focused on the 1980s and 1990s, when the National Marine Fisheries Service began generating stock assessments for marine mammals and turtles that inhabit waters of the U.S. Exclusive Economic Zone. In terms of future actions, the analysis considers the period between the expected effective date of these measures (January 1, 2014) and Dec 31, 2018. The temporal scope of this analysis does not extend beyond 2018 because the fishery management plan and the issues facing these fisheries may change in ways that cannot be effectively predicted.

Geographic Scope

The geographic scope of the analysis of impacts to fish species and habitat for this action is the range of the relevant fisheries in the Western Atlantic Ocean, as described in the Affected Environment section of the document. For endangered and protected species the geographic range is the total range of each species. The geographic range for socioeconomic impacts is defined as those fishing communities bordering the range of the fisheries for mackerel, longfin squid and *Illex* squid and butterfish which occur primarily from the U.S.- Canada border to Cape Hatteras, although the management unit includes all the coastal states from Maine to Florida.

Summary of the Past, Present and Reasonably Foreseeable Future Actions

The earliest management actions implemented under this fishery management plan involved the sequential phasing out of foreign fishing for these species in U.S. waters and the gradual development of the domestic fishing fleet. All mackerel, squid, and butterfish species are considered to be fully utilized by the U.S. domestic fishery to the extent that sufficient availability allows full harvest of annual quotas in any given year. More recent actions have focused on reducing bycatch and habitat impacts.

Past actions which had a major impact on the fishery include: the implementation of a limited access program in Amendment 5 to control capacity in the squid and butterfish fisheries; revision of overfishing definitions in Amendment 6; modification of vessel upgrade rules in Amendment 7; and implementation of overfishing and rebuilding control rules and other measures in Amendment 8. Amendment 9 allowed multi-year specifications; extended the moratorium on entry into the *Illex* fishery without a sunset provision; adopted biological reference points recommended by the SARC 34 (2002) for longfin squid; designated Essential Fish Habitat for longfin squid eggs, and prohibited bottom trawling by mackerel, squid, and butterfish-permitted vessels in Lydonia and Oceanographer Canyons. Amendment 10's measures included increasing the longfin squid minimum mesh to 2 1/8 inches in Trimesters 1 and 3 and implementing a butterfish mortality cap in the longfin squid fishery. Amendment 11 implemented mackerel limited access, a recreational-commercial mackerel allocation, and Essential Fish Habitat updates. Amendment 12 implemented a Standardized Bycatch Reporting Methodology that has since been vacated by court order and will be revisited in a new upcoming amendment. Amendment 13 implemented Annual Catch Limit and Accountability Measures.

In the near future Amendment 14 is likely to result in additional mitigation of non-target catch of river herring and shads. Amendment 14 will both increase and improve monitoring (vessel, dealer, and observer) of the mackerel and longfin squid fisheries and implement a cap catch of river herrings and shads in the mackerel fishery in 2014. Monitoring improvements include minimization of unobserved catch, observer facilitation and assistance, weekly vessel trip reporting, additional trip notification, and electronic vessel monitoring systems and reporting.

Annual specifications actions in future years should maintain the benefits as described above. Other actions expected before 2018 include Amendment 16, which will protect deep water corals, Framework 8, which will optimize butterfish quota management, Framework 9, which will improve observer operations by minimizing slippage (unobserved discards), and an omnibus Amendment to increase observer coverage through industry funding.

Amendment 5 and Framework 3 to the Atlantic Herring FMP will institute similar river herring/shad measures for the Atlantic Herring fishery (many MSB-permitted vessels have Atlantic herring permits as well) and implementation should be in parallel to Amendment 14.

Regarding protected resources, a take reduction strategy for long-finned pilot whales (*Globicephala melas*), short-finned pilot whales (*Globicephala macrorhynchus*), white-sided dolphins (*Lagenorhynchus acutus*), and common dolphins (*Delphinus delphis*) has been developed and is described in Section 5.4.

Overall all of the past fishery actions described in the above section have served to reduce effort or the impacts of effort through access limitations, upgrade restrictions, area and gear restrictions, Essential Fish Habitat designations, monitoring, and accountability. These reductions have likely benefitted the managed species, habitat, protected resources, and non-target species. By ensuring the continued productivity of the managed resources, the human communities that benefit from catching the managed resources have also benefited in the long term, though at times quota reductions and other regulations have caused short-term economic dislocations.

In addition to the direct effects on the environment from fishing, the cumulative effects to the physical and biological dimensions of the environment may also come from non-fishing activities. Non-fishing activities, in this sense, relate to habitat loss from human interaction and alteration, or natural disturbances. These activities are widespread and can have localized impacts to habitat such as accretion of sediments from at-sea disposal areas, oil and mineral resource exploration, aquaculture, construction of at-sea wind farms, bulk transportation of petrochemicals, and significant storm events. In addition to guidelines mandated by the Magnuson-Steven Act, the National Marine Fisheries Service reviews the effects of some of these projects as required by Section 404 of the Clean water Act and Section 10 of the Rivers and Harbors Act.

Cumulative Effects Analysis

The cumulative impacts of this fishery management plan were last fully addressed in final form by the EIS for Amendment 14 (http://www.nero.noaa.gov/regs/2013/August/13smbamend14prnotice.html). All four species in the management unit are managed primarily via annual specifications to control fishing mortality so the operation of the fishery is also reviewed annually. As noted above, the cumulative impact of this fishery management plan and annual specification process has been positive since its implementation after passage of the

Magnuson-Stevens Act for both the resources and communities that depend on them. Limited access and control of fishing effort through implementation of the annual specifications have had a positive impact on target and non-target species since the current domestic fishery is being prosecuted at lower levels of fishing effort compared to the historical foreign fishery. The foreign fishery was also known to take significant numbers of marine mammals including common dolphin, white sided dolphin, and pilot whales.

The Council continues to manage these resources in accordance with the National Standards required under the Magnuson-Stevens Act. First and foremost the Council has strived to meet the obligations of National Standard 1 by adopting and implementing conservation and management measures that prevent overfishing, while achieving, on a continuing basis, the optimum yield for the four species and the United States fishing industry. The Council uses the best scientific information available (National Standard 2) and manages these resources throughout their range (National Standard 3). The management measures do not discriminate between residents of different states (National Standard 4), and they do not have economic allocation as its sole purpose (National Standard 5). The measures account for variations in fisheries (National Standard 6), avoid unnecessary duplication (National Standard 7), they take into account fishing communities (National Standard 8), address bycatch in these fisheries (National Standard 9) and promote safety at sea (National Standard 10). By continuing to meet the National Standards requirements of the Magnuson-Stevens Act through future fishery management plan amendments and actions, the Council should insure that cumulative impacts of these actions will remain positive. The cumulative effects of the proposed measures will be examined for the following five valued economic components: target/managed species, habitat, protected species, communities, and non-target species.

For ease of reference, the preferred alternatives are summarized below:

Alternative 2 (PREFERRED) - Butterfish cap allocations would be made to match the longfin squid trimester allocations (T1: 43%, T2: 17%, T3: 40%). Trimester 1 longfin squid fishing would be closed when 95% of the Trimester 1 allocation had been used (determined via projection). Trimester 2 would be closed when 95% of the Trimester 2 allocation had been used (determined via projection). Trimester 3 would be closed when 95% of the annual allocation had been used (determined via projection).

Alternative 5 (PREFERRED) - Under this alternative, National Marine Fisheries Service would be able to transfer a certain amount of catch quota between landings and the butterfish cap near the end of the year in order to optimally utilize the butterfish that is available for fishing each year.

6.6.1. Target Fisheries and Managed Resources

First and foremost, the Council has met the obligations of National Standard 1 by adopting and implementing conservation and management measures that have prevented overfishing, while achieving, on a continuing basis, the optimum yield for the four managed species. Mackerel were overfished prior to U.S. management under the Magnuson-Stevens Act and then were subsequently rebuilt under the fishery management plan and subsequent Amendments. While the current status based on a 2010 assessment is unknown, the stock is likely in better shape compared to if no management had taken place. Longfin squid were considered overfished in 2000 but remedial action by the Council in subsequent years (i.e., reduced specifications) resulted in stock rebuilding to the point that the species in no longer considered overfished. *Illex* has never been designated as overfished and a hard quota is in place that controls fishing mortality. In the case of butterfish, the current status is unknown and the Council is maintaining the butterfish cap for the longfin squid fishery to help limit butterfish mortality at Scientific and Statistical Committee-approved levels that should avoid overfishing.

The most obvious and immediate impact on the stocks managed under this fishery management plan occurs as a result of controlling fishing mortality. The Council manages federally permitted vessels which fish for these four species throughout their range in both Federal and state waters. Fishing mortality from all fishing activities that catch these species is controlled and accounted for by the specifications and incorporated into stock assessments. In addition to mortality on these stocks due to fishing, there are other indirect effects from non-fishing anthropogenic activities, but these are generally not quantifiable at present. Nonetheless, since these species occur over wide areas of the mid and north Atlantic Ocean and inhabit both inshore and offshore pelagic waters, it is unlikely that any indirect anthropogenic activity currently substantially impacts these populations, especially in comparison to direct effects from fishing.

The measures proposed under the preferred alternatives (adjusting the butterfish cap allocation/closure authority and facilitating in-season quota transfers between landings and the butterfish cap) were developed to achieve the primary goal of the fishery management plan and Magnuson-Stevens Act which is to prevent overfishing while providing for the greatest overall benefit to the nation (i.e., achieve optimum yield). As described in section 6.1, the preferred alternatives should not cause any significant biological impacts to any managed species and may have small positive impacts for butterfish related to increased catch accountability. These measures in conjunction with previous actions and any future actions should allow the Council to continue to manage these resources such that the objectives of the Magnuson-Stevens Act continue to be met and therefore no significant cumulative impacts to the target fisheries are expected.

6.6.2 Essential Fish Habitat (EFH)

The 2002 final rule for Essential Fish Habitat requires that fishery management plans minimize to the extent practicable adverse effects on Essential Fish Habitat caused by fishing (section 600.815 (a) (2)). Pursuant to the final Essential Fish Habitat regulations (50 CFR 600.815(a)(2)), fishery management plans must contain an evaluation of the potential adverse effects of fishing on Essential Fish Habitat designated under the fishery management plan, including effects of each fishing activity regulated under the fishery management plan or other Federal fishery management plans (see section 5.3). The evaluation should consider the effects of each fishing activity on each type of habitat found within Essential Fish Habitat. Fishery management plans must describe each fishing activity, review and discuss all available relevant information (such as information regarding the intensity, extent, and frequency of any adverse effect on Essential Fish Habitat: the type of habitat within Essential Fish Habitat that may be affected adversely; and the habitat functions that may be disturbed), and provide conclusions regarding whether and how each fishing activity adversely affects Essential Fish Habitat. The evaluation should also consider the cumulative effects of multiple fishing activities on Essential Fish Habitat

The mackerel fishery primarily uses mid-water trawls, which should not substantially impact habitat. Bottom otter trawls are the principal gear used in the squid and butterfish fisheries. In general, bottom tending mobile gears have the potential to reduce habitat complexity and change benthic communities. Available research indicates that the effects of mobile gear are cumulative and are a function of the frequency and intensity with which an area is fished, the complexity of the benthic habitat (structure), energy of the environment (high energy and variable or low energy and stable), and ecology of the community (long-lived versus short lived). The extent of an adverse impact on habitat requires high resolution data on the location of fishing effort by gear and the location of specific seafloor habitats.

Stevenson *et al.* (2004) performed an evaluation of the potential impacts of otter trawls and susceptible species and life stages as described in Section 5.3. The Council analyzed mackerel, squid, and butterfish gear impacts on Essential Fish Habitat in Amendment 9, which also included measures which address gear impacts on Essential Fish Habitat. To reduce mackerel, squid, and butterfish gear impacts on Essential Fish Habitat, Amendment 9 prohibited bottom trawling by mackerel, squid, and butterfish -permitted vessels in Lydonia and Oceanographer Canyons. Amendment 1 to the Tilefish fishery management plan created closures in these canyons as well as Veatches and Norfolk canyons for bottom trawling. All Essential Fish Habitat designations were updated in Amendment 11 and the new designations will be used in future evaluations. However since the Essential Fish Habitat for most mackerel, squid, and butterfish species is the water column, mackerel, squid, and butterfish species are generally not susceptible to impacts from the mackerel, squid, and butterfish fisheries. Overall, impacts on Essential Fish Habitat have been reduced and will continue to be analyzed to see if additional

minimization is practicable in the future. As noted above, none of the management measures proposed in this action under the preferred alternatives are expected to result in substantial changes to levels of effort relative to the status quo.

Johnson et al 2008 (available at http://www.nefsc.noaa.gov/publications/tm/tm209/index.html) suggest that for non-fishing impacts, given the wide distribution of the mackerel, squid, and butterfish species and their use of Essential Fish Habitat (the water column), minor overall negative effects to their habitat are anticipated since the affected areas are localized to specific project sites, which involve a small percentage of the fish populations and their habitat.

The measures proposed under the preferred alternatives (adjusting the butterfish cap allocation/closure authority and facilitating in-season quota transfers between landings and the butterfish cap) should have no significant impacts on habitat. As described in Section 6.3, there could be some small positive impacts related to adjusting the butterfish cap allocation/closure authority due to potential effort reductions and some small negative impacts related to facilitating in-season quota transfers due to potential effort increases. However, these impacts are expected to be minimal and are offsetting, so the measures proposed under the preferred alternatives, in conjunction with previous actions and any future actions should allow the Council to continue to reduce habitat impacts such that the objectives of the Magnuson-Stevens Act continue to be met, and no significant cumulative effects to habitat are expected.

6.6.3 Protected Species

There is a variety of protected species which inhabit the environment within the management unit of this fishery management plan and are afforded various protections. The species protected either by the Endangered Species Act, the Marine Mammal Protection Act (MMPA), or the Migratory Bird Act, and that can be found in the environment utilized by Mackerel, Squid and Butterfish fisheries, are listed in section 5.4.

Prior to the passage of the Magnuson-Stevens Act and development of this fishery management plan, the foreign prosecution of these fisheries occurred at much higher levels of fishing effort and were likely a major source of mortality for a number of marine mammal stocks, turtles, and sturgeon. The elimination of these fisheries and subsequent controlled development of the domestic fisheries have resulted in lower fishing effort levels, providing positive cumulative impacts for protected resources. As described in Section 5.4, a number of take-reduction activities have also been developed.

The measures proposed under the preferred alternatives (adjusting the butterfish cap allocation/closure authority and facilitating in-season quota transfers between landings and the butterfish cap) should have no significant impacts on protected resources. As described in Section 6.4, there could be some small positive impacts related to adjusting

the butterfish cap allocation/closure authority due to potential effort reductions and some small negative impacts related to facilitating in-season quota transfers due to potential effort increases. However, these impacts are expected to be minimal and are offsetting, so the measures proposed under the preferred alternatives, in conjunction with previous actions and any future actions (e.g. overall effort decreases, take reduction measures), should allow the Council to continue to reduce protected resource impacts, and no significant cumulative effects to protected resources are expected.

6.6.4 Human Communities

National Standard 8 requires that management measures take into account fishing communities. Communities from Maine to North Carolina are involved in the harvesting of mackerel, squid and butterfish. Through implementation of the fishery management plan for these species, the Council seeks to achieve the primary objectives of the Magnuson-Stevens Act which are to avoid overfishing and to achieve optimum yield from fisheries.

The cumulative effect of the fishery management plan has been to guide the development of the domestic harvest and processing fishery infrastructure to create sustainable fisheries. Part of this fishery rationalization process included the development of limited access programs to control capitalization while maintaining harvests at levels that are sustainable. In addition, by meeting the National Standards prescribed in the Magnuson-Stevens Act, the Council has strived to achieve optimum yield in each fishery.

The measures proposed under the preferred alternatives (adjusting the butterfish cap allocation/closure authority and facilitating in-season quota transfers between landings and the butterfish cap) should have no significant impacts on human communities. As described in Section 6.5, there should be some small positive net socio-economic impacts related to adjusting the butterfish cap allocation/closure authority and facilitating in-season quota transfers. Accordingly, the measures proposed under the preferred alternatives, in conjunction with previous actions and any future actions, should maintain positive cumulative impacts for the communities which depend on these resources by maintaining stock sizes and providing for optimal sustainable harvests, but no significant cumulative effects are expected.

6.6.5 Non-target Species

National Standard 9 requires Councils to consider the bycatch effects of existing and planned conservation and management measures. The term "bycatch" means fish that are harvested in a fishery, but that are not sold or kept for personal use. Bycatch includes the discard of whole fish at sea or elsewhere, including economic discards and regulatory discards, and fishing mortality due to an encounter with fishing gear that does not result in capture of fish (i.e., unobserved fishing mortality). Bycatch does not include any fish that legally are retained in a fishery and kept for personal, tribal, or cultural use, or that enter commerce through sale, barter, or trade.

Since these species occur over wide areas of the mid and north Atlantic Ocean and inhabit both inshore and offshore pelagic waters, it is unlikely that any indirect anthropogenic activity currently substantially impacts these populations, especially in comparison to the direct effects on these populations as a result of fishing.

None of the management measures recommended by the Council in this action are expected to substantially promote or result in increased overall levels of bycatch relative to the status quo because none are expected to substantially increase effort or substantially change fishing practices. Past measures implemented under this fishery management plan which help to control or reduce discards of non-target species in these fisheries include 1) fishery domestication, limited entry, and specifications which are intended to control or reduce fishing effort, 2) incidental catch allowances, and 3) minimum mesh requirements. Other fishery management plans have also regulated mackerel, squid, and butterfish fishing to minimize bycatch (such as the Scup Gear Restricted Areas implemented through its fishery management plan).

The measures proposed under the preferred alternatives (adjusting the butterfish cap allocation/closure authority and facilitating in-season quota transfers between landings and the butterfish cap) should have no significant impacts on non-target species. As described in Section 6.2, there could be some small positive impacts related to adjusting the butterfish cap allocation/closure authority due to potential effort reductions and some small negative impacts related to facilitating in-season quota transfers due to potential effort increases. However, these impacts are expected to be minimal and are offsetting, so the measures proposed under the preferred alternatives, in conjunction with previous actions and any future actions (e.g. overall effort decreases, bycatch reduction measures), should allow the Council to continue to reduce non-target impacts, and no significant cumulative effects to non-target species are expected.

6.6.6 Summary of Cumulative Impacts

The impacts of the preferred alternatives on the biological, physical, and human environment are described in Section 6 above. The overall interactions of improvements in the efficiency of the fisheries are expected to generate positive impacts. These impacts will be felt most strongly in the social and economic dimension of the environment. These benefits are also summarized in the Regulatory Impact Review and Initial Regulatory Flexibility Analysis, which are appended to this document. Indirect benefits of the preferred alternatives are likely to affect consumers and in areas of the economic and social environment that interact in various ways with these fisheries.

The proposed actions, together with past and future actions are not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment. As long as management continues to prevent overfishing and rebuild overfished stocks, the fisheries, their associated communities, and the U.S. should continue to benefit. As noted above, the historical development of the fishery management plan resulted in a number of actions which have impacted these fisheries. The cumulative effects of past actions in conjunction with the proposed measures and possible future actions are discussed above. Within the construct of that analysis, the Council has concluded that no significant particular or cumulative impacts will result from this action.

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7.0 CONSISTENCEY WITH THE MAGNUSON-STEVENS ACT

7.1 NATIONAL STANDARDS

Section 301 of the Magnuson-Stevens Fishery Conservation and Management Act requires that fishery management plans contain conservation and management measures that are consistent with the ten National Standards:

In General. – Any fishery management plan prepared, and any regulation promulgated to implement any such plan, pursuant to this title shall be consistent with the…national standards for fishery conservation and management.

(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 measures proposed via this document are designed to avoid acceptable biological catch overages (i.e. avoid overfishing) while also allowing the fishery to achieve the specified quotas, i.e. optimum yield.

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

The data sources considered and evaluated during the development of this Framework include, but are not limited to: permit data, landings data from vessel trip reports, information from resource trawl surveys, sea sampling (observer) data, data from the dealer weighout purchase reports, peer-reviewed assessments and original literature, and descriptive information provided by fishery participants and the public. To the best of the Council's knowledge these data sources constitute the best scientific information available. All analyses based on these data have been reviewed by National Marine Fisheries Service and the public.

(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.

The fishery management plan addresses management of the mackerel, squid, and butterfish stocks throughout the range of the species in U.S. waters, in accordance with the jurisdiction of U.S. law.

(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 proposed management measures are not expected to discriminate between residents of different States. This action does not allocate or assign fishing privileges among various fishermen.

(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 proposed measures should not impact the efficiency of utilization of fishery resources. The measures to shift quota between the cap and landings at the end of the year may lead to more complete utilization of the allowed butterfish catch.

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

Changes in fisheries occur continuously, both as the result of human activity (for example, new technologies or shifting market demand) and natural variation (for example, oceanographic perturbations). Recent stock assessments have suggested that the mackerel, squid, and butterfish stocks are all likely particularly sensitive to environmental variables. In order to provide the greatest flexibility possible for future management decisions, the fishery management plan includes a Framework adjustment mechanism with an extensive list of possible Framework adjustment measures that can be used to quickly adjust the plan as conditions in the fishery change. This Framework is an example of that process.

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

As always, the Council considered the costs and benefits associated with the management measures proposed in the action when developing this action. This action should not create any duplications and may result in only minor administrative costs related to National Marine Fisheries Service having to analyze shifting butterfish catch at the end of the year between landings and the cap.

(8) Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

The human community impacts of the action are described above and predicted to be positive.

(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.

The Magnuson-Stevens Act defines “bycatch” as fish that are harvested in a fishery, but are not retained (sold, transferred, or kept for personal use), including economic discards and regulatory discards. Incidentally landed catch are fish, other than the target species, that are harvested while fishing for a target species and retained and/or sold. The proposed measures should not impact bycatch more than minimally and previous actions taken in the fishery management plan have minimized bycatch to the extent practicable.

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

Fishing is a dangerous occupation; participants must constantly balance the risks imposed by weather against the economic benefits. According to the National Standard guidelines, the safety of the fishing vessel and the protection from injury of persons aboard the vessel are considered the same as "safety of human life at sea. The safety of a vessel and the people aboard is ultimately the responsibility of the master of that vessel. Each master makes many decisions about vessel maintenance and loading and about the capabilities of the vessel and crew to operate safely in a variety of weather and sea conditions. This national standard does not replace the judgment or relieve the responsibility of the vessel master related to vessel safety. No measures in this action are expected to impact safety at sea.

7.2 OTHER REQUIRED PROVISIONS OF THE MAGNUSON-STEVENS ACT

Section 303 of the MSA contains 15 additional required provisions for FMPs, which are listed and discussed below. Nothing in this action is expected to contravene any of these required provisions.

(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

The Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan has evolved over time through 14 Amendments and currently uses Acceptable Biological Catch recommendations from the Council's Scientific and Statistical Committee to sustainably manage the Mackerel, Squid, and Butterfish fisheries. Under the umbrella of limiting catch to the Acceptable Biological Catch, a variety of other management and conservation measures have been developed to meet the goals of the fishery management plan and remain consistent with the National Standards. The current measures are codified in the Code of Federal Regulations (50 C.F.R. § 648 Subpart B - http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=1e9802ffddb05d0243d9c657fade956c&rgn=div5&view=text&node=50:12.0.1.1.5&idno=50) and summarized at http://www.nero.noaa.gov/regs/infodocs/msbinfosheet.pdf. This action proposes minor modifications to the management of butterfish catch within a year, and nothing in this action should interfere with continued sustainable management.

(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

Every Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan provides this information. This action proposes minor modifications to the management of butterfish catch within a year, and since butterfish catch can limit the longfin squid fishery, updates on fishery information are provided in this document for both butterfish and longfin squid.

(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

This provision is addressed via assessments that are conducted through a peer-reviewed process at the NMFS Northeast Fisheries Science Center. The available information is summarized in every Amendment and Specifications document (Environmental Assessment or Environmental Impact Statement), for example the Amendment 14 Environmental Impact Statement, available at http://www.nero.noaa.gov/regs/2013/August/12smba14pr.html. Full assessment reports are available at: http://www.nefsc.noaa.gov/saw/.

(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

Based on past performance and capacity analyses (Amendment 11), if Atlantic mackerel, squid, and butterfish are sufficiently abundant and available, the domestic fishery has the desire and ability to fully harvest the available quotas, and domestic processors can process the fish/squid.

(5) specify the pertinent data which shall be submitted to the Secretary with respect to commercial, recreational, and charter fishing in the fishery, including, but not limited to, information regarding the type and quantity of fishing gear used, catch by species in numbers of fish or weight thereof, areas in which fishing was engaged in, time of fishing, number of hauls, and the estimated processing capacity of, and the actual processing capacity utilized by, United States fish processors

Previous Amendments have specified the data that must be submitted to NMFS in the form of vessel trip reports, vessel monitoring, and dealer transactions.

(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

There have been no such requests, but the plan contains provisions for framework actions to make modifications regarding access/permitting if necessary.

(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 6.3 of this document describes and identifies essential fish habitat (EFH). Amendments 9 and 11 evaluated habitat impacts, updated essential fish habitat designations, and implemented measures to reduce habitat impacts (primarily related to tilefish essential fish habitat).

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

The preparation of this action included a review of the scientific data available to assess the impacts of all alternatives considered. No additional data was deemed needed for effective implementation of the plan.

(9) include a fishery impact statement for the plan or amendment (in the case of a plan or amendment thereto submitted to or prepared by the Secretary after October 1, 1990) which shall assess, specify, and describe the likely effects, if any, of the conservation and management measures on-- (A) participants in the fisheries and fishing communities affected by the plan or amendment; and (B) participants in the fisheries conducted in adjacent areas under the authority of another Council, after consultation with such Council and representatives of those participants;

Section 7.5 of this document provides an assessment of the likely effects on fishery participants and communities from the considered actions.

(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

Amendments 8 and 9 to the fishery management plan established biological reference points for the species in the plan, and Amendment 10 contained measures for butterfish rebuilding. If a fishery is declared overfished or if overfishing is occurring, another Amendment would be undertaken to implement effective corrective measures.

(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 is currently developing an omnibus amendment to implement a new standardized reporting methodology since the previous methodology was invalidated by court order. See http://nero.noaa.gov/mediacenter/2013/09/draftsbrmamendment.html for details.

(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

There are some discards in the recreational mackerel fishery, but these are minimal related to the overall scale of the mackerel fishery. There are no size limits that would lead to regulatory recreational discarding of mackerel. There are no catch and release fishery management programs.

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

Every Amendment to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan provides this information, and it is updated in the annual specifications environmental assessments. Since only butterfish and longfin squid are affected by this action, updates for those fisheries are also included in section 5.6 of this document.

(14) to the extent that rebuilding plans or other conservation and management measures which reduce the overall harvest in a fishery are necessary, allocate any harvest restrictions or recovery benefits fairly and equitably among the commercial, recreational, and charter fishing sectors in the fishery.

The only active rebuilding plan is for butterfish, which is a commercial-only fishery.

(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 annual specifications process addresses this requirement, for example see the 2013 specifications document at: http://www.nero.noaa.gov/regs/2013/January/13smb2013specsea.pdf. Acceptable Biological Catch recommendations from the Council's Scientific and Statistical Committee are designed to avoid overfishing and form the upper bounds on catches. There are a variety of proactive and reactive accountability measures for these fisheries, fully described at: http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=1e9802ffddb05d0243d9c657fade956c&rgn=div5&view=text&node=50:12.0.1.1.5&idno=50#50:12.0.1.1.5.2.

7.3 DISCRETIONARY PROVISIONS OF THE MAGNUSON-STEVENS ACT

Section 303b of the Magnuson-Stevens Act contains 14 additional discretionary provisions for Fishery Management Plans. They may be read on pages of 59 and 60 of National Marine Fisheries Service's redline version of the Magnuson-Stevens Act at: http://www.nmfs.noaa.gov/msa2007/MSA_Amended%20by%20Magnuson-Stevens%20Reauthorization%20Act%20%281-31-07%20draft%29.pdf. Given the limited scope of this Framework, there are no significant impacts or issues related to such provisions.

7.4 ESSENTIAL FISH HABITAT ASSESSMENT

The Magnuson-Stevens Act / Essential Fish Habitat Provisions (50 Code of Federal regulations 600.920(e)(3)) require that any Federal action which may adversely affect Essential Fish Habitat must include a written assessment of the effects of that action on Essential Fish Habitat. As described in Section 6, only minimal Essential Fish Habitat impacts are expected.

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8.0 OTHER APPLICABLE LAWS

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

Finding of No Significant Impact (FONSI)

National Oceanic and Atmospheric Administration Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality regulations at 40 Code of Federal Regulations 1508.27 state that the significance of an action should be analyzed both in terms of context and intensity. Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the Administrative Order 216-6 criteria and Council on Environmental Quality's context and intensity criteria.
These include:

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

None of the proposed actions would be expected to jeopardize the sustainability of any target species affected by the action (see Section 6 of this document). The alternatives may affect how the total butterfish and longfin squid acceptable biological catches are utilized, but do not affect the setting of the acceptable biological catch, which is set by the Scientific and Statistical Committee to avoid overfishing. The alternatives should not lead to catches beyond the acceptable biological catch.

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

The Council has minimized bycatch and non-target catch that is retained through other actions, primarily the butterfish and river herring/shad caps (in Amendments 9 and 14 (pending)). Hard quotas and limited access also provide a ceiling on effort in the mackerel, squid, and butterfish fisheries. The butterfish cap allocation alternatives should not lead to increased effort and/or non-target interactions and the late-season transfer of butterfish quota between the cap and landings could only facilitate small increases in fishing effort that would not be expected to jeopardize the sustainability of any non-target species affected by the action (see Section 6 of this document).

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 fishery management plans*?*

The proposed action is not expected to cause damage to the ocean, coastal habitats, and/or Essential Fish Habitat as defined under the Magnuson-Stevens Act and identified in the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan (see Section 6). In general, bottom-tending mobile gear, primarily otter trawls, which are used to harvest squid and butterfish, have the potential to adversely affect Essential Fish Habitat for the benthic life stages of a number of species in the Northeast region that are managed by other fishery management plans. However, because none of the management measures proposed in this action for 2014 should cause any substantial increase in fishing effort relative to status quo, they are not expected to have any substantial negative impact on Essential Fish Habitat or on coastal and ocean habitats relative to the fishery as it would otherwise operate.

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

None of the measures substantially alter the manner in which the industry conducts fishing activities for the target species. Therefore, the proposed actions in these fisheries are not expected to adversely impact public health or safety.

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

Protected resource interactions are described in Sections 5 and 6. Fishing effort is not expected to substantially increase in magnitude under the proposed measures. In addition, none of the proposed measures are expected to substantially alter fishing methods, activities, or the spatial and/or temporal distribution of fishing effort. Therefore, this action is not expected to have increased negative effects on protected species relative to the fishery as it would otherwise operate.

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.)?

These fisheries are prosecuted using bottom otter trawls, which have the potential to impact bottom habitats. In addition, a number of non-target species are taken incidentally to the prosecution of these fisheries. However, fishing effort is not expected to substantially increase in magnitude under the proposed specifications (see Section 6 of this document). In addition, none of the proposed specifications are expected to substantially alter fishing methods, activities or the spatial and/or temporal distribution of fishing effort. Therefore, the proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area.

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

These fisheries are primarily prosecuted using mid-water and bottom otter trawls. Bottom otter trawls have the potential to impact bottom habitats. In addition, a number of non-target species are taken incidentally to the prosecution of these fisheries. However, fishing effort is not expected to substantially increase in magnitude under the proposed action. In addition, none of the proposed specifications are expected to substantially alter fishing methods, activities or the spatial and/or temporal distribution of fishing effort. As noted in Section 6 of this Environmental Assessment, the proposed action is not expected to have any substantial natural or physical effects within the affected area. Therefore, there are no social or economic impacts interrelated with significant natural or physical environmental impacts that are expected.

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

The proposed actions make relatively minor changes to the operation of the fishery and as such are not likely to be highly controversial.

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

The longfin squid and butterfish fisheries are prosecuted primarily using bottom otter and/or mid-water trawls in the open ocean throughout the Mid-Atlantic Bight and New England. Most of the fishing effort in these fisheries occurs over featureless sand and sand/mud bottoms along the Atlantic Coast. These fisheries are not known to be prosecuted in any unique areas such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas. Therefore, the proposed action is not expected to have a substantial impact on any of these areas.

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

While there is always a degree of uncertainty in the year to year performance of the relevant fisheries, the proposed actions are not expected to substantially increase effort or to substantially alter fishing methods and activities. As a result, the effects on the human environment of the proposed measures are not highly uncertain nor do they involve unique or uncertain risks (see Section 6 of this document).

11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

The impacts of the preferred alternatives on the biological, physical, and human environment are described in Section 6. The overall interaction of the proposed action with other actions are expected to generate positive socioeconomic impacts, but are not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment.

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

The longfin squid and butterfish fisheries are prosecuted primarily using bottom otter trawls in the open ocean throughout the Mid-Atlantic Bight and New England. Most of the fishing effort in these fisheries occurs over featureless sand and sand/mud bottoms along the Atlantic Coast. These fisheries are not known to be prosecuted in any areas that might affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places.

13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

There is no evidence or indication that these fisheries have ever resulted or would ever result in the introduction or spread of nonindigenous species.

14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

The proposed actions make relatively minor changes to the operation of the fishery and as such are not precedent setting.

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?

Fishing effort is not expected to substantially increase in magnitude under the proposed action (see Section 6 of this document). In addition, none of the proposed specifications are expected to substantially alter fishing methods, activities, or the spatial and/or temporal distribution of fishing effort. Thus, it is not expected that they would threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment. The proposed measures have been found to be consistent with other applicable laws as described in this Section.

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?

Fishing effort is not expected to substantially increase in magnitude under the proposed action (see Section 6 of this document). In addition, none of the proposed specifications are expected to substantially alter fishing methods, activities or the spatial and/or temporal distribution of fishing effort. Therefore the proposed action is unlikely to result in cumulative adverse effects (including any that could have a substantial effect on the target species or non-target species).

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for the proposed measures, it is hereby determined that the proposed measures 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 Environmental Impact Statement for this action is not necessary.

for BULLARD — 3/19/14

Greater Atlantic Regional Administrator, NOAA — Date

MARINE MAMMAL PROTECTION ACT (MMPA)

The Council has reviewed the impacts of the proposed actions on marine mammals and has concluded that the proposed management actions are consistent with the provisions of the MMPA, and would not alter existing measures to protect the species likely to inhabit the management unit.

ENDANGERED SPECIES ACT (ESA)

Potential protected resource impacts are described in Section 6 of this document. Section 7 of the Endangered Species Act requires Federal agencies conducting, authorizing, or funding activities that affect threatened or endangered species to ensure that those effects do not jeopardize the continued existence of listed species. Formal consultation on the mackerel, squid, and butterfish fisheries was last completed on October 29, 2010. The October 29, 2010, Biological Opinion concluded that the operation of the mackerel, squid, and butterfish fisheries is not likely to jeopardize the continued existence of listed species. Since the Atlantic sturgeon Distinct Population Segments have been listed as endangered and threatened under the Endangered Species Act, the Endangered Species Act Section 7 consultation for the mackerel, squid, and butterfish fisheries has been reinitiated, and additional evaluation would be included in the resulting Biological Opinion to describe any impacts of the fisheries on Atlantic sturgeon and define any measures needed to mitigate those impacts, if necessary. Draft results of the new sturgeon Biological Opinion have found that continued operation of these fisheries is not likely to jeopardize the continued existence of any Atlantic sturgeon Distinct Population Segments. Thus, this action is not expected to increase the risk that the fisheries and associated research are jeopardizing any Atlantic sturgeon Distinct Population Segments.

COASTAL ZONE MANAGEMENT ACT (CZMA)

Section 307(c)(1) of the Federal Coastal Zone Management Act 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 the Coastal Zone Management Act regulations at 15 Code of Federal Regulations 930.35, a negative determination may be made if there are no coastal effects and the subject action: (1) Is identified by a state agency on its list, as described in ' 930.34(b), or through case-by-case monitoring of unlisted activities; or (2) which is the same as or is similar to activities for which consistency determinations have been prepared in the past; or (3) for which the Federal agency undertook a thorough consistency assessment and developed initial findings on the coastal effects of the activity. Accordingly, National Marine Fisheries Service has determined that this action would have no effect on any coastal use or resources of any state. Letters documenting the National Marine Fisheries Service negative determination, along with this document, will be sent to the coastal zone management program offices of the states of Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, and Florida. A list of the specific state contacts and a copy of the letters will be made available upon request.

ADMINISTRATIVE PROCEDURES ACT

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

INFORMATION QUALITY ACT

Utility of Information Product

This document includes: A description of the management issues, a description of the alternatives considered, a description of their expected impacts, and the reasons for selecting the preferred management measures. This action proposes modifications to the existing Fishery Management Plan. These proposed modifications implement the Fishery Management Plan's conservation and management goals consistent with the Magnuson-Stevens Fishery Conservation and Management Act as well as all other existing applicable laws.

This proposed Framework was developed as part of a multi-stage process that involves review of the action by affected members of the public. The public had the opportunity to review and comment on management measures at two Council meetings (October 2012 and December 2012). The Federal Register notice that announces the proposed rule and the implementing regulations will be made available in printed publication and on the website of the Northeast Regional Office of the National Marine Fisheries Service (http://www.nero.noaa.gov/regs/). The notice provides metric conversions for all measurements as appropriate. The primary conversion useful for this document is that one metric ton equals approximately 2204.6 pounds.

Integrity of Information Product

The information product meets the standards for integrity under the following types of documents:

Other/Discussion (e.g., Confidentiality of Statistics of the Magnuson-Stevens Fishery Conservation and Management Act; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 Code of Federal Regulations 229.11, Confidentiality of information collected under the Marine Mammal Protection Act.)

Objectivity of Information Product

The category of information product that applies for this product is "Natural Resource Plans."

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

This Framework was developed to comply with all applicable National Standards, including National Standard 2. National Standard 2 states that the Fishery Management Plan's conservation and management measures shall be based upon the best scientific information available.

The management measures proposed to be implemented by this document are supported by the best available scientific information. The management measures contained herein have been designed to meet the conservation goals and objectives of the Fishery Management Plan and ensure a minimal impact on fishing communities.

The review process for this action involves the Mid-Atlantic Fishery Management Council, the National Marine Fisheries Service's Northeast Fisheries Science Center, the National Marine Fisheries Service's Northeast Regional Office, and National Marine Fisheries Service headquarters. The Center'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. The Council review process involves public meetings at which affected stakeholders have the opportunity to provide comments on the document. Review by staff at the Regional Office is conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. Final approval of this document and clearance of any associated rule is conducted by staff at National Marine Fisheries Service Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

IMPACTS RELATIVE TO FEDERALISM/ EXECUTIVE ORDER 13132

This proposed Framework does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order 13132.

ENVIRONMENTAL JUSTICE/ EXECUTIVE ORDER 12898

Executive Order 12898 provides that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

Executive Order 12898 directs each Federal agency to analyze the environmental effects, including human health, economic, and social effects of Federal actions on minority populations, low-income populations, and Indian tribes, when such analysis is required by the National Environmental Policy Act. Agencies are further directed to "identify potential effects and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices." The alternatives in this action should have no environmental justice implications.

REGULATORY FLEXIBILITY ACT/ EXECUTIVE ORDER 12866

National Marine Fisheries Service's guidelines provide criteria to be used to evaluate whether a proposed action is significant. A significant regulatory action means any regulatory action that is likely to result in a rule that may:

1. *Have an annual effect on the economy of $100 million or more, or adversely effect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities.*

The proposed actions are expected to have positive impacts as discussed in Section 6.

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

The proposed actions would not create a serious inconsistency with or otherwise interfere with an action taken or planned by another agency. No other agency has indicated that it plans an action that would interfere with the mackerel, squid, and butterfish fisheries.

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

The proposed action would not materially alter the budgetary impact of entitlements, grants, user fees or loan programs, or the rights and obligations of their participants.

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

The considered actions do not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in Executive Order 12866.

Description and Number of Small Entities to Which the Rule Applies

The Regulatory Flexibility Act (RFA) requires the Federal rulemaker to examine the impacts of proposed and existing rules on small businesses, small organizations, and small governmental jurisdictions. In reviewing the potential impacts of proposed regulations, the agency must either certify that the rule would not, if promulgated, have a significant economic impact on a substantial number of small entities or prepare a final

regulatory flexibility analysis. The Small Business Administration (SBA) defines a small business in the commercial fishing sector as a firm with receipts (gross revenues) of up to $19.0 million. Party/charter small businesses are included in North American Industry Classification System code 487210 and are defined as a firm with gross receipts of up to $7 million.

The measures in this action could have some impact on the approximately 375 vessels with limited access butterfish/longfin squid permits. Depending on the year, all of these vessels usually qualify as small businesses. However, this proposed action is expected to have positive impacts related to the relevant fisheries.

The measures to more firmly allocate the butterfish cap by trimester (Alternatives 2 and 3) do involve some reduction of cap allocation from Trimester 1. While vessels could potentially redistribute their effort to the other trimesters if the cap becomes limiting in Trimester 1, there are 29 vessels that caught more than 75% of their longfin squid from Trimester 1 over 2006-2012, and 14 of those caught their longfin exclusively in Trimester 1 over that time period. These vessels may also be able to redistribute their effort but their past fishing does demonstrate an apparently high preference for Trimester 1 so they may be more impacted than other vessels if the cap were to close Trimester 1. That said, recent cap performance suggests that the cap should not be constraining on any trimester at current quota levels. Vessels may also be able to target other species if longfin squid closes to mitigate any financial impacts, depending on their suite of permits.

Given that the Trimester I-preferring fishers retain the ability to shift effort to later trimesters, and that the cap, if it were applied at current levels, would not be reached anyway, it has been concluded that this action should not cause a significant impact on a substantial number of entities.

The allocation alternatives involve different closure threshold and rollover mechanisms between Trimesters compared to the status quo. However, these are operational details related to the new allocations, and should have a negligible impact on effort compared to the allocation and Trimester 2 closure authority parts of these alternatives. Also, since at current cap levels and recent butterfish catches and discards, no closures are expected, these measures should have negligible socioeconomic impacts.

PAPERWORK REDUCTION ACT (PRA)

The purpose of the Paperwork Reduction Act 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 preferred alternatives proposed in this action do not propose to modify any existing collections, or to add any new collections; therefore, no review under the Paperwork Reduction Act is necessary.

9.0 PREPARERS & LIST OF AGENCIES AND PERSONS CONSULTED

This environmental assessment was prepared by the following member of the Council staff: Jason Didden. Questions about this environmental assessment or additional copies may be obtained by contacting Jason Didden, Mid-Atlantic Fishery Management Council, 800 N. State Street, Dover, DE 19901 (302-674-2331). This Environmental Assessment may also be accessed by visiting the National Marine Fisheries Service Northeast Region website at http://www.nero.noaa.gov/regs/.

In preparing this document, the Council consulted with National Marine Fisheries Service, New England and South Atlantic Fishery Management Councils, U.S. Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. The advice of National Marine Fisheries Service Northeast Regional Office personnel was sought to ensure compliance with applicable laws and procedures.

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