Summer Flounder, Scup and Black Sea Bass Commercial Accountability Measure Framework Adjustment (Framework Adjustment 13)

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Prepared by the Mid-Atlantic Fishery Management Council

in cooperation with the National Marine Fisheries Service (NMFS)

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1. EXECUTIVE SUMMARY

This document was prepared by the Mid-Atlantic Fishery Management Council (the Council) in consultation with the National Marine Fisheries Service (NMFS). This document was developed in accordance with all applicable laws and statutes as described in section 8.

This framework action considers changes to the summer flounder, scup and black sea bass commercial accountability measures (AMs), with a focus on evaluating and accounting for commercial discards. Alternatives were developed that would modify commercial AMs in terms of both 1) evaluation of annual catch limit (ACL) overages and 2) responses to ACL overages to account for the latest information and current stock status.

AMs are management measures that are implemented to prevent ACLs from being exceeded or to correct for ACL overages and are intended to mitigate the negative biological impacts of such overages. The commercial AMs currently in place for summer flounder, scup and black sea bass are both proactive and reactive in nature. Proactive AMs, such as in-season measures to close the fishery once a quota is reached (coastwide, quota period or state), are implemented to prevent the ACL from being exceeded. Reactive AMs are implemented in response to an ACL being exceeded. For summer flounder, scup and black sea bass, reactive AMs currently require pound for pound paybacks through quota deductions in following years, regardless of the circumstances of the overages. The Council initiated a framework to consider adding flexibility in the commercial AMs based on stock status, similar to the AMs in place for the recreational fisheries.

There are two sets of alternatives for consideration (Box ES-1). One set of alternatives provides different approaches when conducting the commercial ACL overage evaluation and a second set of alternatives considers stock condition when applying a payback due to a non-landing (i.e. discards) ACL overage. These two sets of alternatives can be selected independently (i.e. changing or choosing one alternative does not depend on changing or choosing the other).

Other than the No Action/*status quo* alternative, the alternatives would treat commercial landings and discards differently for both evaluation and for implementation or response. The commercial summer flounder, scup and black sea bass quota monitoring system is timely and effective at constraining landings to the quota and the payback provisions for landing overages have been a successful deterrent without significant negative consequences to the fishery. Therefore, there are no proposed changes to the current evaluation of commercial landings relative to the commercial quota, or the landings overage repayment.

1.1. Summary of the Alternatives

The alternatives are described in Section 5 and are summarized below.

1.1.1. Commercial ACL overage evaluation

Alternative 1A (Preferred): No Action/*status quo* – single year examination of total catch

Under this alternative, the current regulatory language would remain unchanged. It is as follows: *The commercial sector ACL will be evaluated based on a single-year examination of total catch (landings and dead discards). Both landings and dead discards will be evaluated in determining if the commercial sector ACL has been exceeded.*

The commercial sector ACL is comprised of both landings and discards and the current ACL evaluation considers a single-year examination of commercial catch to the ACL. If the ACL was exceeded due to landings in excess of the quota (coastwide, state or quota period depending upon the fishery), the overage would be deducted from the appropriate following year quota as prescribed in regulation. If the ACL overage was not due to landings, or if the ACL overage could not be completely accounted for through a landings payback, then the ACL was exceeded due to the one year of higher than projected discards and would require a payback at the ACL level.

Alternative 1B (Non-Preferred): 3-year moving average evaluation for discards only

Under this alternative, the commercial sector ACL would be evaluated based on a single-year examination of landings and a 3-year moving average of dead discards to calculate total commercial catch. Both landings (one-year) and dead discards (3-year moving average) would be evaluated to determine if the commercial ACL had been exceeded. As described under Alternative 1A, if the ACL was exceeded because of landings in excess of the quota, the overage would be deducted from the following year quota. If the overage was not due to landings, or if the overage could not be completely accounted for through a landings payback, then the ACL was exceeded due to 3-year moving average discard estimate and would require a payback at the ACL level.

1.1.2. Non-landing accountability measures

Alternative 2A (Non-Preferred): No Action/*status quo* – pound for pound payback of ACL overage if not accommodated through landings-based AMs

Under this alternative, the regulatory language would remain the same. It is as follows: *In the event that the commercial ACL has been exceeded and the overage has not been accommodated through the landings-based AM, then the exact amount by which the commercial ACL was exceeded, in pounds, will be deducted, as soon as possible, from applicable subsequent single fishing year commercial ACL.*

Alternative 2B (Preferred): Scaled payback of the discard overage

As previously mentioned, landings overages and subsequent pound-for-pound repayments will remain regardless of stock condition. Therefore, if the ACL overage was caused by higher than projected discards then, under this alternative, the condition of the stock (biomass (B) relative to biomass at maximum sustainable yield (B_{MSY}), or B/B_{MSY}) based on the most recent stock assessment information scales the payback amount. Management response to an ACL overage, in terms of the amount of required payback, would differ depending upon stock condition and whether only the commercial ACL, or the commercial ACL and the acceptable biological catch (ABC) was exceeded. If the commercial ACL was exceeded and the overage cannot be accommodated through landings-based AMs alone, then a scaled payback would be applied to the remainder of the ACL overage. Similar to the recreational AM scaled payback provisions, the following procedures would be followed:

- If $B/Bmsy \geq 1$, no non-landing pound-for-pound payback is needed
- If $1 \geq B/Bmsy \geq ½$ and the stock is not under a rebuilding plan, then the following non-landing payback is applied:

- If the commercial ACL is exceeded but the ABC is not exceeded, no non-landing pound-for-pound payback is needed
- If both the commercial ACL and ABC are exceeded, then a single-year adjustment to the commercial annual catch target (ACT) will be made, as specified below:
    - The ACT will be reduced by the exact amount, in pounds, of the product of the non-landing overage and the payback coefficient based on B/Bmsy
    - The calculation for the for the payback amount, in pounds, would be as follows: (overage amount) * (Bmsy – B) / ½ Bmsy

- If B/Bmsy ≤ ½, the stock is under a rebuilding plan, or biological reference points are unknown, then the non-landing payback is pound-for-pound

Box ES-1: Summary of alternatives considered in this document.

Alternative Type	Alternative	Summary of Alternative
ACL overage evaluation	**Alternative 1A:** (Preferred: No Action/*status quo*)	Commercial sector ACL evaluation based on single year examination of total commercial catch (landings and discards)
	Alternative 1B: (Non-preferred)	Commercial sector ACL evaluation based on single year examination of landings and 3-year moving average of discards
Non-landing AM payback	**Alternative 2A:** (Non-preferred: No Action/*status quo*)	Pound for pound payback of ACL overage if not accommodated through landings-based AMs
	Alternative 2B: (Preferred)	Scaled AM payback of ACL overage due to discards based on stock condition (B/ B_{MSY})

1.2. Summary of Impacts

The following section presents a qualitative summary of expected impacts by alternative and cumulatively for all evaluated alternatives (Box ES-2). The impacts of each alternative, and the criteria used to evaluate them, are described in detail in section 7.

The Magnuson Stevens Act (MSA) requires that the Council's Scientific and Statistical Committee (SSC) provide recommendations for ABCs, prevention of overfishing, and maximum sustainable yield (MSY). The Council's catch limit recommendations cannot exceed the ABCs recommended by the SSC. The Council has typically set the combined commercial and recreational ACLs for summer flounder, scup and black sea bass equal to the ABC. Therefore, the established ACLs and subsequent commercial quotas are based on the best scientific information available and are intended to prevent overfishing. Under all alternatives, commercial landings would still be restricted to the annual, seasonal or state-specific quotas that are established for the various commercial summer, flounder, scup and black sea bass fisheries.

The actions proposed through this framework are largely administrative in nature in that they do not necessarily have any immediate impacts, but rather affect the management process and procedures for future accountability actions. However, these alternatives may have indirect impacts, particularly for the target and non-target species and human communities Valued Ecosystem Components (VECs). Anticipated indirect impacts are described below.

1.2.1. Impacts of ACL overage evaluation alternatives

These alternatives address an evaluation procedure and the catch data (both landings and discards) that would be used in the evaluation to determine if the commercial ACL was exceeded in any particular year. Neither of the alternatives considered here specify the nature of any management response or action if it was determined the ACL was exceeded, so none are associated with any direct impacts.

Impacts to Summer Flounder, Scup, Black Sea Bass and Non-Target Species

None of the alternatives would modify the established process for specifying initial annual commercial summer flounder, scup or black sea bass quotas. These quotas are based on the best scientific information and are intended to prevent overfishing. Neither alternative would directly result in a change in fishing effort, thus they are expected to have a slight positive impact by maintaining the current positive stock status (i.e. not overfished) and conditions for the target species. The alternatives are unlikely to have a meaningful impact on non-target species caught in the commercial summer flounder, scup and black sea bass fisheries. All non-target species that are most commonly caught on directed summer flounder, scup and black sea bass trips have a positive stock status, with the exception of northern and striped sea robins which are unassessed. Given that commercial effort is not expected to change substantially under either alternative, both are expected to have a slight positive impact by maintaining the current positive stock status of the non-target species.

A comparison of the two alternatives was conducted and revealed little or no difference between the two approaches in terms of their impacts on target and non-target species. They are likely to have similar magnitude and impacts on target and non-target species.

Impacts to Physical Habitat

Although commercial fishing, in particular bottom otter trawl, affects fisheries habitat, the ACL overage evaluation alternatives considered here would not modify the manner in which these commercial fisheries operate and do not modify the existing commercial summer flounder, scup or black sea bass quotas. These alternatives simply specify either one year or a three-year running average of commercial discard information will be used, along with commercial landings, to determine if the commercial sector ACL was exceeded. These alternatives simply determine if the ACL was exceeded and its magnitude, but they do not specify what management action(s) should be taken to address any overage. Therefore, both the *status quo* alternative (alternative 1A) and alternative 1B would continue to conduct an ACL overage evaluation and would have no direct and measurable habitat impacts.

Impacts to Protected Resources

Although the commercial fishing gear used in the summer flounder, scup and black sea bass fisheries, in particular bottom otter trawl and pots/traps, interacts and results in the take of protected species, the ACL overage evaluation alternatives considered here would not modify the manner in which these commercial fisheries operate. These alternatives simply specify if either one year or a three-year running average of commercial discard information will be used, along with commercial landings, to determine if the commercial sector ACL was exceeded. These alternatives strictly determine if the ACL was exceeded and its magnitude, but they do not specify what management action(s) should be taken to address any overage. These alternatives do not modify the existing commercial quotas and fishing effort is not expected to change under either alternative. Therefore, both the *status quo* alternative (alternative 1A) and alternative 1B would continue to conduct an ACL overage evaluation and would have no direct and measurable impacts on protected resources.

Human Communities/Socioeconomic Impacts

When evaluating the two alternatives from the standpoint of maximizing the social and economic benefits, the merits of the approaches are not straightforward and are related to whether or not AM paybacks, and their magnitude, are needed. For example, there are trade-offs associated with using a three-year moving average discard estimate associated with alternative 1B. This approach will decrease the impact of an ACL overage initially if estimated discards increase; but it may also maintain the impact (i.e. calculate a higher discard amount) in subsequent years if discards decline. This may lead to an ACL overage in certain years and therefore may require a payback when it would otherwise not be needed. The *status quo* approach of using a single year of catch data may result a greater reduction in the commercial quota for one year if the ACL is exceeded because of high discards when compared to alternative 1B. Therefore, there are trade-offs in considering the potential impacts to the human communities associated with taking a larger reduction in one year (*status quo*) versus smaller reductions over a greater number of years (alternative 1B).

The ACL overage evaluation alternatives consider which year(s) of catch information to be used when evaluating if the commercial ACL was exceeded. These alternatives do not specify management action(s) if it was determined the ACL was exceeded. The non-landing payback alternatives (2A and 2B) considered in this document would define what the management response would be if the ACL were exceeded to due discards. Therefore, both the *status quo* alternative (alternative 1A) and alternative 1B would continue to conduct an ACL overage evaluation and would have no direct socioeconomic impacts compared to current conditions. Compared to each other, alternatives 1A and 1B are expected to have similar socioeconomic impacts, both in terms of magnitude and direction if the management response necessitates a payback. Alternative 1A results in the potential for larger short-term negative impacts but long-term positive impacts when compared to alternative 1B if reductions were necessary.

1.2.2. Impacts of non-landing payback alternatives

As mentioned above, these alternatives do not directly modify the already established science-based commercial summer flounder, scup and black sea bass quotas. Except for scup recently, nearly 100% of the commercial quota is harvested in any given year and fishing effort for these commercial fisheries will continue to be constrained by the commercial quotas. In addition, these alternatives do not modify the current pound-for-pound payback for any commercial landings-based overage. These alternatives determine what the payback requirement would be if the commercial ACL was exceeded due to discards. Since these alternatives may modify the commercial quota (i.e. reduce through a payback) in a subsequent year if the commercial ACL is exceeded, there is a possibility for indirect impacts to the associated VECs for these alternatives.

Impacts to Summer Flounder, Scup, Black Sea Bass and Non-Target Species

Under favorable stock conditions (i.e. above the biomass threshold), alternative 2B may be less precautionary because the frequency and magnitude of the discard overage paybacks will be lower than the No Action/*status quo* alternative. However, this should not result in negative impacts to the stock or result in the stock becoming overfished. Landings based overage paybacks will continue and commercial discards account for a relatively small portion, approximately 20% on average, of the overall commercial catch in these fisheries. In addition, a more precautionary approach would be implemented with discard overage paybacks increasing as the stock declines under alternative 2B such that long-term negative impacts are avoided. Neither alternative is expected to directly result in a change in fishing effort; therefore, they are expected to have a slight positive impact by maintaining the current positive stock status (i.e. not overfished) and conditions for the target species. Impacts on non-target species for both alternatives are also expected to be slight positive compared to recent conditions by maintaining the current positive stock status for those species.

There is little difference between the alternatives with respect to potential changes in fishing effort and biological impacts on target and non-target resources. Among the two alternatives, alternative 1A is expected to have slightly higher positive impacts on target and non-target species compared to alternative 1B given that 1A is more conservative and would implement pound-for-pound paybacks due to discard overages regardless of stock condition.

Impacts to Physical Habitat

These alternatives do not result in any direct impacts to the commercial summer flounder, scup and black sea bass fisheries, particularly regarding changes in commercial fishing effort. However, these alternatives would result in indirect impacts by potentially modifying the magnitude of any paybacks and reductions to the established commercial quotas due to higher than anticipated discards. Specifically, alternative 2B would reduce paybacks due to discard overages, depending upon stock condition, which could increase commercial catch opportunities relative to no action (alternative 2A) being taken.

Only those gear types which contact the bottom impact physical habitat. The impacts on habitat are driven primarily by commercial bottom trawl and pot/trap gear, since these gear types are responsible for the overwhelming majority of the total summer flounder, scup and black sea bass commercial catch. The commercial summer flounder, scup and black sea bass fisheries operate in areas that have been fished for many years and any possible changes in fishing effort associated with any alternative are unlikely to further degrade habitat beyond its current state. However, none of the alternatives are expected to result in any improvements to current habitat conditions, and continued fishing effort does limit the recovery potential of some currently degraded areas. Therefore, the alternatives are expected to result in slight negative impacts to the physical environment due to the prevention of recovery of previously impacted habitats.

Because alternative 2B could result in higher catch opportunities through less frequent and reduced discard paybacks compared to alternative 2A (No Action/*status quo*), it would be expected to have slightly more negative impacts on habitat. However, both alternatives would have a slightly negative impact on habitat due to the prevention of habitat recovery and the difference in actual effort under alternatives 2A and 2B does not meaningfully affect the magnitude of the impacts on habitat recovery potential (Box ES-2; section 7.2).

Impacts to Protected Resources

These alternatives do not result in any direct impacts to the commercial summer flounder, scup and black sea bass fisheries, particularly regarding changes in commercial fishing effort. However, these alternatives would result in indirect impacts by potentially modifying the magnitude of any paybacks and reductions to the established commercial quotas due to higher than anticipated discards. Specifically, alternative 2B would reduce paybacks due to discard overages, depending upon stock condition, which could increase commercial catch opportunities and the potential for interactions with protected resources relative to no action (alternative 2A) being taken.

The impacts on protected resources are driven primarily by commercial bottom trawl and pot/trap gear, since these gear types are responsible for the overwhelming majority of the total summer flounder, scup and black sea bass commercial catch and have the potential to impact protected resources. The continued operation of the summer flounder, scup and black sea bass commercial trawl and pot/trap fisheries are likely to result in some level of continued interaction with protected species and therefore both alternatives will have potential negative impacts on Endangered Species Act (ESA)-listed and Marine Mammal Protection Act (MMPA) protected species.

Overall, both alternatives will have potential impacts on protected resources ranging from slight positive to slight negative, with slight positive to slight negative impacts likely on non-ESA listed marine mammals and slight negative impacts likely for ESA-listed species. Because effort will continue to be constrained by established quotas and is not expected to increase beyond that considered when implementing these quotas, both alternatives are expected to have similar magnitudes of slight positive to slight negative impacts on protected resources; however, alternative 2B may result in slightly more negative impacts due to the potential for higher commercial catch opportunities through reduced discard paybacks compared to alternative 2A (Box ES-2; section 7.3).

Human Communities/Socioeconomic Impacts

If the commercial ACL was exceeded due to discards, these alternatives consider whether a payback is necessary and, if so, what the magnitude of the payback would be and are, therefore, expected to result in socioeconomic impacts that range from slight positive to slight negative. The No Action/*status quo* alternative would continue pound-for-pound paybacks, regardless of stock condition, which would reduce commercial catch and fishing opportunities and result in slight negative socioeconomic impacts. The preferred alternative (alternative 2B) would consider stock condition to determine a scaled payback amount ranging from no payback to pound-for-pound payback and is expected to result in socioeconomic impacts that range from slight positive to slight negative.

Alternative 2B is expected to have positive socioeconomic impacts compared to the *status quo* alternative because of the likely lower frequency and magnitude of any discard overage paybacks, particularly under high stock biomass conditions. The possible reduction in the frequency and magnitude of discard overage paybacks under this alternative would therefore provide for increased fishing opportunities and economic benefits, up to the established commercial quotas (Box ES-2; Section 7.4).

Box ES-2. Summary of the expected impacts of alternatives considered in this document, relative to current conditions. A minus sign (–) signifies a negative impact, a plus sign (+) signifies a positive impact, and zero (0) indicates a neutral impact. "sl" indicates a minor effect.

Alternative Type	**Alternative**	**Target and Non-Target Species**	**Physical Environment /Habitat/EFH**	**ESA-Listed Protected Species** (endangered or threatened)	**MMPA Protected Species** (not also ESA listed)	**Human Communities** (Socio-economic)
ACL overage evaluation	**Alt. 1A** (No Action/*Status quo*)	Slight + (target); Slight + (non-target)	No Impact	No Impact	No Impact	No Impact
	Alt. 1B	Slight + (target); Slight + (non-target)	No Impact	No Impact	No Impact	No Impact
Non-landing AM payback	**Alt. 2A** (No Action/*Status quo*)	Slight + (target); Slight + (non-target)	Slight -	Slight -	Slight + to Slight -	Slight -
	Alt. 2B	Slight + (target); Slight + (non-target)	Slight -	Slight -	Slight + to Slight -	Slight + to Slight -

1.2.3. Cumulative Impacts and Conclusions

The Council analyzed the impacts of the alternatives presented in this document on the biological environment, physical habitat, protected species, and human communities. When the proposed action (i.e., the set of preferred alternatives) is considered in conjunction with all other impacts from past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative; therefore, there are no significant cumulative effects on the human environment associated with the proposed action (section 7.3).

A description of the expected environmental impacts, as well as any cumulative impacts resulting from each of the alternatives considered in this document, are provided in section 7. The preferred alternatives are not associated with significant impacts to the biological, socioeconomic, or physical environment individually or in conjunction with other actions; therefore, a "Finding of No Significant Impact" is warranted.

2. LIST OF ACRONYMS AND ABBREVIATIONS

ABC	Acceptable Biological Catch
ACL	Annual Catch Limit
ACT	Annual Catch Target
ALWTRP	Atlantic Large Whale Take Reduction Plan
AM	Accountability Measure
ASM	At Sea Monitoring Program
ASMFC	Atlantic States Marine Fisheries Commission
ATGTRS	Atlantic Trawl Gear Take Reduction Strategy
ATGTRT	Atlantic Trawl Gear Take Reduction Team
ASSRT	Atlantic Sturgeon Status Review Team
B_{MSY}	Biomass at MSY
Board	ASMFC Summer Flounder, Scup, and Black Sea Bass Management Board
CEA	Cumulative Effects Analysis
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Commission	Atlantic States Marine Fisheries Commission
Council	Mid-Atlantic Fishery Management Council
CPUE	Catch Per Unit Effort
CV	Coefficient of Variation
DPS	Distinct Population Segment
DPSWG	Data Poor Stocks Working Group
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
F	Fishing Mortality Rate
F_{MSY}	Fishing Mortality Rate at Maximum Sustainable Yield
FMP	Fishery Management Plan
FR	Federal Register
FONSI	Finding of No Significant Impact
GARFO	Greater Atlantic Regional Fisheries Office
GOM	Gulf of Maine
IRFA	Initial Regulatory Flexibility Analysis
LOF	List of Fisheries
MAFMC	Mid-Atlantic Fishery Management Council
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
NEFSC	Northeast Fisheries Science Center
NEFOP	Northeast Fisheries Observer Program
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OFL	Overfishing Limit
OY	Optimum Yield
PBR	Potential Biological Removal
PRA	Paperwork Reduction Act
RFA	Regulatory Flexibility Act
RHL	Recreational Harvest Limit
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop

SBA	Small Business Administration
SSB	Spawning Stock Biomass
SSB_{MSY}	Spawning Stock Biomass at Maximum Sustainable Yield
SSC	Scientific and Statistical Committee
STDN	Sea Turtle Disentanglement Network
USFWS	United States Fish and Wildlife Service
VECs	Valued Ecosystem Components
VTR	Vessel Trip Report

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4. INTRODUCTION AND BACKGROUND

4.1 Purpose and Need for the Action

Accountibility measures (AMs) are management measures that are implemented to prevent Annual Catch Limits (ACLs) from being exceeded or to correct for overages if the ACL is exceeded. The ACLs for summer flounder, scup and black sea bass include both landings and discards, and the sum of the commercial and recreational ACLs for each species is equal to the ABC. Through the current commercial quota monitoring systems, fisheries scientists and managers can accurately account for commercial landings and have the ability to constrain landings to the commercial quota, respectively. This system also provides for the ability to appropriately implement a payback (i.e. quota reduction) due to a quota overage by reducing fishing effort and closing the fishery once a quota is reached. Unfortunately, the ability to control, estimate and account for commercial discards is not as straightforward. A variety of biological, management and market factors can influence the reason and magnitude of commercial discards and predicting commercial discards can be highly uncertain. Given the challenges associated with predicting commercial discards, there is a need to re-consider the existing pound-for-pound payback AM due to discards overages, especially for stocks with high biomass.

The purpose of this framework action is to consider changes to the summer flounder, scup and black sea bass commercial AMs. Specifically, given the difficulties in estimating and predicting commercial discards, the framework provides alternatives to the existing AMs in these commercial fisheries, with a focus on evaluating and accounting for commercial discards. This action will improve stability in these commercial fisheries and provide additional flexibility to the commercial AMs by considering current stock status when implementing a payback, similar to the AMs in place for the recreational sector.

4.2 Background and History of Accountability Measures in the Commercial Summer Flounder, Scup and Black Sea Bass Fisheries

AMs are management measures that are implemented to prevent ACLs from being exceeded or to correct for overages if the ACL is exceeded. AMs are intended to mitigate the negative biological impacts of ACL overages. The commercial AMs currently in place for summer flounder, scup and black sea bass are both proactive and reactive in nature. Proactive AMs, such as in-season measures to close the fishery once a quota (coastwide, quota period or state) is reached, are implemented to prevent the ACL from being exceeded. Reactive AMs are implemented in response to an ACL being exceeded. For summer flounder, scup and black sea bass, reactive AMs currently require pound for pound paybacks through quota deductions in following years, regardless of the circumstances of the overages.

The existing AMs for the commercial summer flounder, scup and black sea bass fisheries were established in the Council’s Omnibus ACL and AMs Amendment (MAFMC 2011) which was approved in 2011 to ensure compliance with 2006 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act. In 2013, recreational AMs for all Council species with recreational fisheries, including summer flounder, scup and black sea bass, were modified to account for the current stock status when determining the appropriate payback, or reactive AM, when the recreational ACL had been exceeded (MAFMC 2013).

The ACLs for summer flounder, scup and black sea bass include both landings and discards, and the sum of the commercial and recreational ACLs for each species is equal to the ABC. The Monitoring Committee is responsible for recommending ACTs, which would implement a reduction in catch and are intended to account for management uncertainty, for the Council and Board's consideration. After accounting for management uncertainty (ACT), projected discards for the commercial fishery are then removed in order to determine the commercial quota. For summer flounder and scup, projected discards are estimated within the stock assessment projections; while black sea projected discards are calculated using the most recent years average discard proportion of the total catch. This framework considered different management responses to quota overages versus ACL overages due to significant differences in our ability to monitor, account for and predict commercial landings versus discards.

The commercial summer flounder, scup and black sea bass quota monitoring systems at both the state and federal level are timely and typically successful in constraining landings to the commercial quotas. The combination of proactive/in-season AMs (state/federal closure authority once quotas are reached) and reactive AMs (pound for pound payback in a following year's quota) have been successful management tools to constrain landings, while providing for fishery flexibility under a range of stock size and quota allocation conditions. From 2012 through 2016, the time period in which ACLs and AMs have been fully implemented, commercial landings for all three species were generally near or below the annual quotas with the only overage occurring for summer flounder which was only 2% over, on average, during that time (Table 1a-c).

Typically, the commercial landings overage AM process is as follows: due to the delay in reconciling landings between the states and the Greater Atlantic Regional Fisheries Office (GARFO), final commercial landings from the previous year and preliminary landings through October of the current year (i.e. final 2016 landing and preliminary 2017 landings through October) are used for quota overage calculations Any commercial quota overages require that the exact amount of the commercial quota overage be deducted from a subsequent year's quota (in this example the 2018 quota). This overage is subtracted from that years ACT. Modifications to commercial sector fishery closures and landings overage AMs were not considered by the Council as part of this action.

Unlike commercial landings, the ability to accurately predict and account for discards in the commercial fisheries is more problematic. In addition to the difficulty in predicting discards, there is also uncertainty and variability in discard estimates. Mandatory fishermen and dealer reporting requirements provide a census of all commercial landings; while discards are expanded estimates developed from observer sampling of a subset of commercial trips. A variety of data sources such as NMFS Northeast Fisheries Observer Program and self-reported discard information from vessel trip reports (VTRs) and a variety of statistical methodologies are used to estimate discards for the various fleets. Lastly, there is also uncertainty in the mortality rate assigned to the discards depending upon the gear used to harvest summer flounder, scup and black sea bass. Some gear specific mortality rates were derived from experimental studies, while others are unknown and determined by expert opinion considering the gear type and how and when the fishery is operating.

A comparison of projected discards developed during the specification setting process, and the estimated total dead discards from the latest stock assessments from 2012 – 2016 was conducted for all three species. This time period represents all years in which ABCs and ACLs have been in place for all three species. The overall performance of discard projections is quite different among all three species (Table 1a-c). On average, projected discards were underestimated and were 18% lower than the estimated discards for summer flounder, overestimated by 17% for scup and underestimated by 87% for black sea bass. There was no specific trend (i.e. consistent over/under estimate of discards) and the inter-annual variability was quite high for all three species. For example, summer flounder estimated discards were nearly 400% higher than those projected in 2013 and were then nearly 15% lower than the projected discards in 2014 (Table 1a-c).

Table 1a - c. Commercial fishery landings performance relative to the commercial quota and comparison between projected and estimated total dead commercial discards from 2012 – 2016 for summer flounder (a), scup (b) and black sea bass (c).

a) Summer flounder

Year	Commercial Landings (mil lb)	Commercial Quota (mil lb)	Percent Over(+) /Under(-) Quota	Projected Discards (mil lb)	Estimated Discards (mil lb)	Percent Over(+) /Under(-) Projected Discards
2012	13.04	12.73	+2%	0.86	1.58	+84%
2013	12.44	11.44	+9%	0.32	1.57	+395%
2014	11.00	10.51	+5%	2.03	1.73	-15%
2015	10.68	11.07	-4%	2.27	1.48	-35%
2016	7.81	8.12	-4%	1.31	1.63	+24%
5-yr Avg.	**10.99**	**10.77**	**+2%**	**1.36**	**1.60**	**+18%**

b) Scup

Year	Commercial Landings (mil lb)	Commercial Quota (mil lb)	Percent Over(+) /Under(-) Quota	Projected Discards (mil lb)	Estimated Discards (mil lb)	Percent Over(+) /Under(-) Projected Discards
2012	14.88	27.91	-47%	3.53	2.21	-37%
2013	17.87	23.53	-24%	5.94	2.87	-52%
2014	15.96	21.95	-27%	5.45	2.21	-59%
2015	17.03	21.23	-20%	2.12	3.97	87%
2016	15.76	20.47	-23%	3.79	6.11	61%
5-yr Avg.	**16.30**	**23.02**	**-29%**	**4.17**	**3.47**	**-17%**

c) Black sea bass

Year	Commercial Landings (mil lb)	Commercial Quota (mil lb)	Percent Over(+) /Under(-) Quota	Projected Discards (mil lb)	Estimated Discards (mil lb)	Percent Over(+) /Under(-) Projected Discards
2012	1.72	1.71	+1%	0.32	0.23	-28%
2013	2.26	2.17	+4%	0.37	0.47	+27%
2014	2.18	2.17	0%	0.37	0.92	+147%
2015	2.29	2.21	+4%	0.39	0.74	+90%
2016	2.50	2.70	-7%	0.44	1.20	+173%
5-yr Avg.	**2.19**	**2.19**	**-0.1%**	**0.38**	**0.71**	**+87%**

The current commercial ACL evaluation system for summer flounder, scup and black sea bass requires a payback for any catch above the ACL. This evaluation assumes the commercial catch is precisely calculated. While there are accurate commercial landings records and a strong relationship between commercial landings and the commercial quota, there is little evidence of a similar relationship between projected and estimated discards. In addition, the estimates of commercial discards can be uncertain and variable but are treated as if they are precisely known when evaluating the commercial catch to the ACL. The pound for pound payback system for landings overages has worked well over the years and provides a predictable response in reducing fishing effort and constraining harvest to the quotas in the following year; however, the ability to predict discards and how discards may change when paybacks are required is much more uncertain. In fact, implementing pound for pound paybacks due to higher than anticipated discards when stock conditions are favorable and at high levels of abundance may contribute to increased discards in certain situations. This is particularly true when the commercial quota is constraining landings and fishing effort and further complicates the ability to predict discards in future fishing years.

Since the establishment of AMs in 2012, there has only been one commercial summer flounder, scup or black sea bass AM implemented due to the ACL being exceeded because of higher than expected discards. This AM was implemented in 2018 in the commercial summer flounder fishery due to the ACL being exceeded in 2016. This AM reduced the 2018 commercial summer flounder quota by 2.9%.

5. MANAGEMENT ALTERNATIVES

There are two sets of alternatives considered by the Council in this framework. One set of alternatives considers different approaches when conducting the commercial ACL overage evaluation and a second set of alternatives considers stock condition when applying a payback due to a non-landing (i.e. discards) ACL overage.

Other than the No Action/*status quo* alternative, the alternatives would treat commercial landings and discards differently for both evaluation and for implementation or response. The commercial summer flounder, scup and black sea bass quota monitoring system is timely and effective at constraining landings to the quota and the payback provisions for landing overages has been a successful deterrent without significant negative consequences to the fishery. Therefore, there are no proposed changes to the current evaluation of commercial landings relative to the commercial quota, or the landings overage repayment.

5.1 ACL Overage Evaluation Alternatives

Depending upon the species, on average from 2012-2016 the commercial quotas for summer flounder, scup and black sea bass account for 85-89% of the commercial ACL and landings account for 77-87% of the total commercial catch. Since the commercial quota and/or landings account for the overwhelming proportion of the ACL and catch, respectively, and the quota monitoring system and existing landings payback provision are successful at constraining landings, a one-year evaluation of the ACL (alternative 1A) may be appropriate. However, alternative 1B would evaluate the commercial ACL using the most recent year of landings and 3-year running average for dead discards to account for the unpredictability and uncertainty in the discard estimates. This approach may help minimize potential negative consequences of uncertain and unpredictable discards and will smooth out some of the variability in the estimates while utilizing the most recent landings and commercial ACL for evaluation.

These alternatives consider which year(s) of catch information to be used when evaluating if the commercial ACL was exceeded. These alternatives do not specify management action(s) if it was determined the ACL was exceeded. The non-landing payback alternatives considered in this document (sections 5.2 and 7.2) would define what the management response would be if the ACL were exceeded to due discards. These alternatives would continue the current state of the fishery and would not modify the commercial quotas and would not change fishing effort.

5.1.1. Alternative 1A (Preferred): No Action/*Status quo* - ACL evaluation using a single year of catch information

Under this alternative, the current regulatory language would remain. It is as follows: *The commercial sector ACL will be evaluated based on a single-year examination of total catch (landings and dead discards). Both landings and dead discards will be evaluated in determining if the commercial sector ACL has been exceeded.*

The commercial sector ACL is comprised of both landings and discards and the current ACL evaluation considers a single-year examination of commercial catch to the ACL. In practice, because of the lag in finalizing commercial catch estimates, the single year examination is typically applied to the ACL two years out (e.g. 2015 evaluation applied to the 2017 ACL). If the ACL was exceeded due to landings in excess of the quota (coastwide, state or quota period depending upon fishery), the overage would be deducted from the appropriate following year quota as prescribed in regulation. If the ACL overage was not due to landings, or if the ACL overage could not be completely accounted for through a landings payback, then the ACL was exceeded due to the one year of higher than projected discards and would require a payback at the ACL level.

As discussed in section 5.1.3 below, a comparison of the two ACL overage evaluation alternatives based on past fishery performance revealed little or no difference between the two approaches for scup and summer flounder, respectively, and a modest difference for black sea bass. Using the method outlined under alternative 1B resulted in lower discard estimates and lower ACL overages and therefore, less payback would have been required when compared to the preferred alternative 1A (No action/*status quo*) ACL evaluation. However, the higher discard estimates and ACL overages under the preferred alternative 1A were occurring as the black sea bass stock was rapidly growing and expanding. While alternative 1B resulted in lower the ACL overages during this time but, under these circumstances, this approach may have dampened important biological signals in the stock (e.g. recruitment events, stock biomass changes). Sudden and continued changes in discards may provide valuable information about the stock and can help inform potential management changes or the need for science and assessment updates.

Given the minimal to no difference between the two ACL overage evaluation alternatives and the potential to dampen important biological information and inflate discard estimates in subsequent years using a three-year moving discard average, the Council recommend continuing to use the *status quo*, single year landings and discards, ACL evaluation approach (alternative 1A). Increasing the ability to more accurately predict commercial discards, along with the existing ability to accurately monitor commercial landings, would reduce the frequency and magnitude of commercial ACL overages.

5.1.2. Alternative 1B (Non-Preferred): Commercial sector ACL evaluation based on single year examination of landings and 3-year moving average of discards for total catch

Under this alternative, the commercial sector ACL would be evaluated based on a single-year examination of landings and a 3-year moving average of dead discards to calculate total commercial catch. Both landings (one-year) and dead discards (3-year moving average) would be evaluated to determine if the commercial ACL had been exceeded. As described under Alternative 1A, if the ACL was exceeded because of landings in excess of the quota, the overage would be deducted from the following year quota. If the overage was not due to landings, or if the overage could not be completely accounted for through a landings payback, then the ACL was exceeded due to 3-year moving average discard estimate and would require a payback at the ACL level.

5.1.3. Comparison of ACL overage evaluation alternatives

Commercial ACL evaluations were conducted using the approach outlined under alternative 1B and were compared to the *status quo* (alternative 1A). Since ACLs were first implemented in 2012, the 3-year moving average for discards under alternative 1B was phased in beginning in 2012 in this analysis. Therefore, the evaluation for 2012 was the same for both alternatives. Beginning in 2013, under alternative 1B, the 2013 commercial landings and the average 2012-2013 estimated discards were compared to the 2013 ACL. For 2014 under alternative 1B, the 2014 commercial landings and the average 2012-2014 estimated discards were compared to the 2014 ACL. For all subsequent years, the preceding year commercial landings and preceding 3-year average estimated discards were compared to the preceding ACL.

Given the differences in discard projections and the unique situation for each species (increasing or decreasing population size) and for each commercial fishery (constraining or non-limiting quotas), there is no consistent trend across all species when comparing alternative 1B to the *status quo* alternative. For summer flounder, the ACL evaluation was nearly identical between *status quo* and alternative 1B with both indicating the ACL was exceeded by 5.4%, on average, from 2012 - 2016 (Table 2a). For scup, the commercial ACL was not exceeded in any year from 2012 – 2016 under either ACL evaluation. Alternative 1B resulted in a slightly higher underage, 31.9% on average, compared to the *status quo*, 29.8% on average (Table 2b). For black sea bass, the differences are more substantial between alternative 1B and *status quo*. The ACL was exceeded in each year except for 2012 with an average overage of 12.2% under the *status quo* and only 6.1% on average under alternative 1B (Table 2c). The differences between the two alternatives are slightly higher when comparing over the last three years (2014-2016) with the *status quo* resulting in an overage of 17.7% on average and alternative 1B resulting in an overage of 9.8% on average.

Table 2a – c. 2012-2016 commercial sector ACL, commercial landings, estimated dead discards and ACL overage evaluation for the two alternatives for summer flounder (a), scup (b) and black sea bass (c). Positive values indicate the commercial catch exceeded the ACL and negative values indicate commercial catch was below the ACL based upon the ACL evaluation determined under each alternative.

a) Summer flounder

Year	**ACL** (mil lb)	**Landings** (mil lb)	**Estimated Discards** (mil lb)	***Status Quo* ACL Evaluation (% Over/Under)**	**Alternative 1B ACL Evaluation (% Over/Under)**
2012	14.00	13.03	1.58	4.4%	4.4%
2013	12.11	14.49	1.57	32.6%	32.7%
2014	12.87	11.07	1.73	-0.5%	-1.3%
2015	13.34	10.68	1.48	-8.8%	-8.0%
2016	9.43	7.81	1.63	0.1%	-0.1%
12-16 Average	12.35	11.42	1.60	5.4%	5.4%
14-16 Average	11.88	9.85	1.61	-3.5%	-3.5%

b) Scup

Year	**ACL** (mil lb)	**Landings** (mil lb)	**Estimated Discards** (mil lb)	***Status Quo* ACL Evaluation (% Over/Under)**	**Alternative 1B ACL Evaluation (% Over/Under)**
2012	31.89	14.88	2.21	-46.4%	-46.4%
2013	30.19	17.87	2.87	-31.3%	-32.4%
2014	28.07	15.96	2.21	-35.3%	-34.5%
2015	26.35	17.03	3.97	-20.3%	-23.9%
2016	24.26	15.76	6.11	-9.9%	-18.2%
12-16 Average	28.15	16.30	3.47	-29.8%	-31.9%
14-16 Average	26.23	16.25	4.10	-22.4%	-25.9%

c) Black sea bass

Year	**ACL** (mil lb)	**Landings** (mil lb)	**Estimated Discards** (mil lb)	***Status Quo* ACL Evaluation (% Over/Under)**	**Alternative 1B ACL Evaluation (% Over/Under)**
2012	1.98	1.72	0.23	-1.6%	-1.6%
2013	2.60	2.26	0.47	4.8%	0.3%
2014	2.60	2.18	0.92	19.1%	4.5%
2015	2.60	2.29	0.74	16.5%	15.3%
2016	3.15	2.5	1.20	17.6%	9.6%
12-16 Average	2.59	2.19	0.71	12.2%	6.1%
14-16 Average	2.78	2.32	0.95	17.7%	9.8%

5.2 Non-Landing AM Payback

If the evaluation of the ACL as outlined under alternative 1A or 1B indicates the ACL was exceeded and the overage cannot be accommodated by a landings payback, then the overage is due to higher than anticipated discards. The alternatives below consider different approaches as to when a payback would be needed and how much payback would be required if the ACL is exceeded due to discards.

5.2.1 Alternative 2A (Non-Preferred): No Action/*Status Quo* - Pound for pound payback of ACL overage if not accommodated through landings-based AMs

Under this alternative, the regulatory language would remain the same. If an ACL overage is not accommodated through a landings-based AM, then a pound-for-pound payback of a non-landing ACL overage would continue. The current regulatory language is as follows: *In the event that the commercial ACL has been exceeded and the overage has not been accommodated through the landings-based AM, then the exact amount by which the commercial ACL was exceeded, in pounds, will be deducted, as soon as possible, from applicable subsequent single fishing year commercial ACL.*

5.2.2 Alternative 2B (Preferred): Scaled AM payback of discard ACL overage based on stock condition, B/B_{MSY}

As previously mentioned, landings overages and subsequent pound-for-pound repayments will remain regardless of stock condition. Therefore, if the ACL overage was caused by higher than projected discards then, under this alternative, the condition of the stock (B/B_{MSY}) based on the most recent stock assessment information scales the payback amount. Management response to an ACL overage, in terms of the amount of required payback, would differ depending upon stock condition and whether only the commercial ACL, or the commercial ACL and the ABC was exceeded. If the stock in not above Bmsy and the commercial ACL was exceeded and the overage cannot be accommodated through landings-based AMs alone, then a scaled payback would be applied to the remainder of the ACL overage. Similar to the recreational AM scaled payback provisions, the following procedures would be followed:

- If B/Bmsy ≥ 1, no non-landing pound-for-pound payback is needed
- If 1 ≥ B/Bmsy ≥ ½ and the stock is not under a rebuilding plan, then the following non-landing payback is applied:
  - If the commercial ACL is exceeded but the ABC is not exceeded, no non-landing pound-for-pound payback is needed
  - If both the commercial ACL and ABC are exceeded, then a single-year adjustment to the commercial ACT will be made, as specified below:
    - The ACT will be reduced by the exact amount, in pounds, of the product of the non-landing overage and the payback coefficient based on B/Bmsy
    - The calculation for the for the payback amount, in pounds, would be as follows: (overage amount) * (Bmsy – B) / ½ Bmsy

If B/Bmsy ≤ ½, stock is under a rebuilding plan, or biological reference points are unknown then the non-landing payback is pound-for-pound.

Based on the latest stock assessment information (see section 6.1 below), current scup and black sea bass biomass estimates are well above B_{MSY} and, under alternative 2B, would not require a payback if the ACL was exceeded due to discards. Summer flounder biomass estimates are currently below B_{MSY} but greater than ½ B_{MSY} and would require a scaled payback if the commercial ACL and ABC was exceeded due to discards. As new or update assessments are conducted, the updated biomass estimates will be used to determine the appropriate payback if discards were responsible for exceeding the ACL.

6. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The affected environment consists of those physical, biological, and human components of the environment expected to experience impacts if any of the actions considered in this document were to be implemented. This document focuses on four aspects of the affected environment, which are defined as valued ecosystem components (VECs).

The VECs include:

- Managed species (i.e. summer flounder, scup and black sea bass) and non-target species
- Physical habitat
- Protected species
- Human communities

The following sections describe the recent condition of the VECs.

6.1 Managed Species and Non-Target Species

The following sections briefly describe the recent biological conditions of the summer flounder, scup and black sea bass stocks and other stocks commonly caught in the commercial fisheries targeting summer flounder, scup and black sea bass.

6.1.1. Summer Flounder

The management unit for summer flounder (*Paralichthys dentatus*) consists of the U.S. waters in the western Atlantic Ocean from the southern border of North Carolina northward to the U.S.-Canadian border.

Summer flounder are a demersal flatfish which spawn during the fall and winter over the open ocean areas of the continental shelf. From October to May, larvae and postlarvae migrate inshore, entering coastal and estuarine nursery areas. Juveniles are distributed inshore and in many estuaries throughout the range of the species during spring, summer, and fall. Adult summer flounder exhibit strong seasonal inshore-offshore movements, normally inhabiting shallow coastal and estuarine waters during the warmer months of the year and remaining offshore during the colder months.

Summer flounder habitat includes pelagic waters, demersal waters, saltmarsh creeks, seagrass beds, mudflats, and open bay areas from the Gulf of Maine through North Carolina. Summer flounder are opportunistic feeders; their prey includes a variety of fish and crustaceans. While the natural predators of adult summer flounder are not fully documented, larger predators (e.g., large sharks, rays, and monkfish) probably include summer flounder in their diets (Packer et al. 1999).

Spawning occurs during autumn and early winter, and the larvae are transported toward coastal areas by prevailing water currents. Development of post larvae and juveniles occurs primarily within bays and estuarine areas. Most fish are sexually mature by age 2. Summer flounder exhibit sexual dimorphism by size; most of the largest fish are females. Females can attain lengths over 90 cm (36 in) and weights up to 11.8 kg (26 lbs.; NEFSC 2011c). Recent NEFSC trawl survey data indicate that while female summer flounder grow faster (reaching a larger size at the same age), the sexes attain about the same maximum age (currently age 15 at 56 cm for males, and age 14 at 65 cm for females). Unsexed commercial fishery samples currently indicate a maximum age of 17 for an 85 cm fish (M. Terceiro, personal communication, January 2017).

The most recent stock assessment for summer flounder was completed in July 2016 (Terceiro 2016). This update indicated that the summer flounder stock was not overfished, but overfishing was occurring in 2015 relative to the biological reference points from the 2013 benchmark assessment. The fishing mortality rate in 2015 was estimated to be 0.390, 26% above the fishing mortality threshold reference point of 0.309. SSB was estimated to be 36,151 mt in 2015, 58% of the SSB target of 62,396 mt, and 16% above the SSB threshold of 31,198 mt. Due to a number of consecutive years of below average recruitment and higher than anticipated fishing mortality rates, summer flounder SSB has steadily declined from its peak in 2003 (Figure 1). The 2016 update shows that recruitment of age 0 fish was below the time series average (41 million fish at age 0; 1982-2015) each year from 2010 through 2015. Initial estimates of recruitment were overestimated in several of the most recent years. For example, in the 2015 update, 2014 recruitment appeared average, but has since been adjusted downward with the most recent update. Recruitment in 2015 is also estimated to be below average at 23 million fish (Terceiro 2016).

A data update completed in 2017 with catch, landings and survey indices data through 2016 indicates that there is little likelihood that a substantial change in stock status occurred since the 2016 assessment update (Terceiro 2017a).

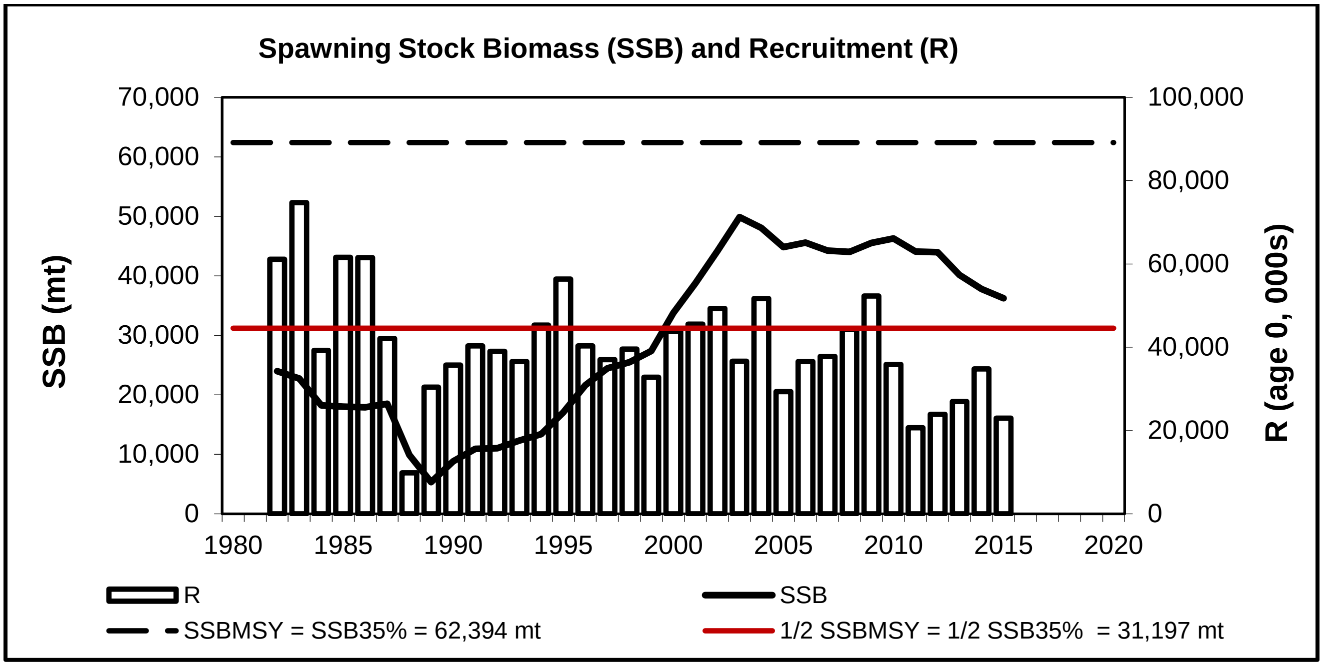

Figure 1: Summer flounder spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars) by calendar year, 1982-2015. The horizontal dashed line is the 2013 SAW 57 biomass target reference point proxy, the horizontal red line is the biomass threshold reference point proxy (Terceiro 2016).

6.1.2. Scup

Scup are a schooling, demersal (i.e., bottom-dwelling) species. They are found in a variety of habitats in the Mid-Atlantic. Essential fish habitat (EFH) for scup includes demersal waters, areas with sandy or muddy bottoms, mussel beds, and sea grass beds from the Gulf of Maine through Cape Hatteras, North Carolina. Scup undertake extensive seasonal migrations between coastal and offshore waters. They are mostly found in estuaries and coastal waters during the spring and summer. Larger individuals tend to arrive in inshore areas in the spring before smaller individuals. They move offshore and to the south, to outer continental shelf waters south of New Jersey in the fall and winter (Steimle et al. 1999, NEFSC 2015).

Scup was under a formal rebuilding plan from 2005 through 2009. NMFS declared the scup stock rebuilt in 2009 based on the findings of the Data Poor Stocks Working Group (DPSWG), which completed a benchmark stock assessment for scup in 2008 (DPSWG 2009).

The most recent benchmark stock assessment for scup took place in 2015 as part of the 60th Stock Assessment Work Group and Stock Assessment Review Committee (SAW/SARC 60) and included data through 2014 (NEFSC 2015a). A stock assessment update was conducted in 2017 with catch and survey data through 2016. The update assessment found that scup was not overfished and overfishing was not occurring in 2016 relative to the biological reference points from the benchmark assessment (Terceiro 2017b). SSB was very low and averaged around 19.38

million pounds from the early 1980's and late 1990's and then steadily increased from 2000 to a peak in 2011 when it reached 513.80 million pounds. SSB has declined since its peak in 2011 but remains very high and increased slightly in 2016 (Figure 2). The model-estimated SSB in 2016 was 396.60 million pounds (179,898 mt), 2.1 times SSB at maximum sustainable yield, SSB_{MSY} = 192.47 million pounds (87,302 mt).

The fishing mortality rate (F) in 2016 was 0.139, which is 37% below the fishing mortality threshold reference point ($F_{MSY\ PROXY}$ = F40%) of 0.220 (Terceiro 2017). Fishing mortality was very high in the 1980's and mid-1990's, typically greater than 1.0, but declined in 1995 and has stabilized since 2001 (Figure 3). Fishing mortality has been below the $F_{MSY\ PROXY}$ reference point for the last 17 years. The average recruitment from 1984 to 2016 is 121 million fish at age 0. The 2015 year class is currently estimated to be large at 252 million fish, while the 2016 year class is currently estimated to be below average at 65 million fish (Figure 3).

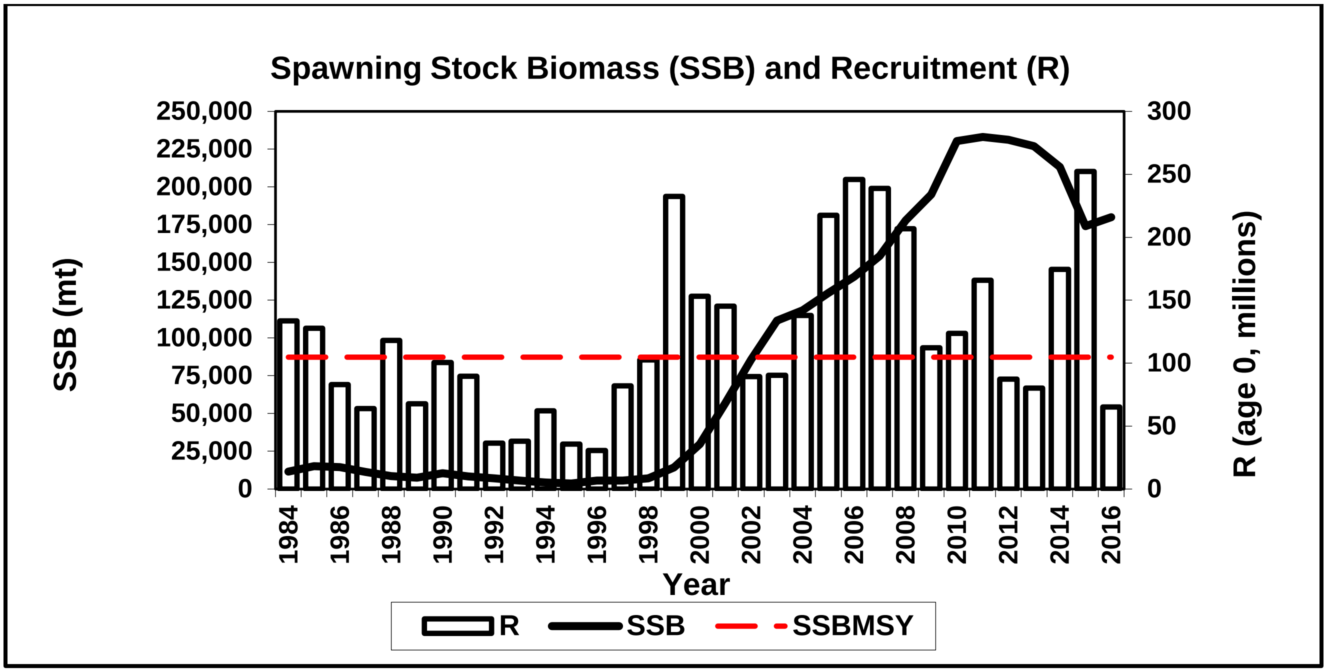

Figure 2: Spawning Stock Biomass (SSB; solid line) and Recruitment (R at age 0; vertical bars) for scup from the 2017 update stock assessment (Terceiro 2017b). The horizontal dashed line is the SSB_{MSY} proxy = $SSB_{40\%}$ = 87,302 mt (NEFSC 2015).

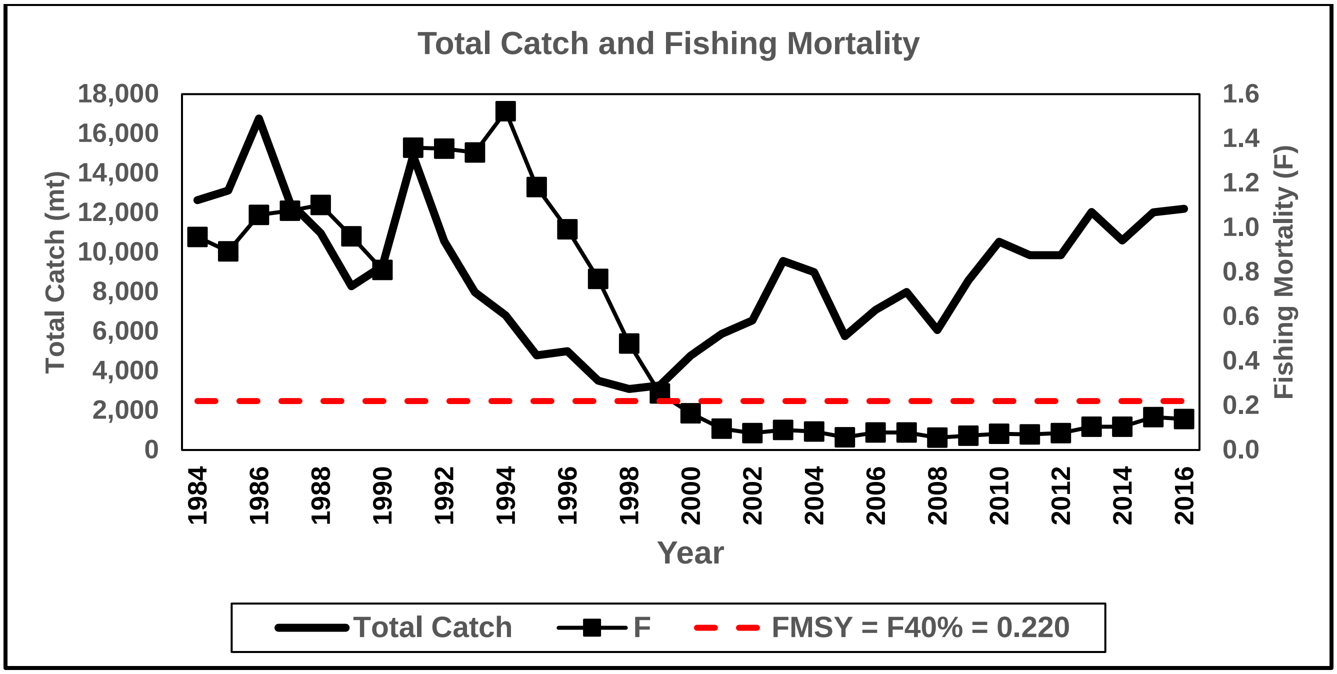

Figure 3: Total fishery catch and fishing mortality (F at age 3) for scup from the 2017 stock assessment update (Terceiro 2017b). The horizontal dashed line is the F_{MSY} proxy = $F_{40\%}$ = 0.220 (NEFSC 2015).

6.1.3. Black Sea Bass

Black sea bass are protogynous hermaphrodites, meaning the majority are born females and some individuals later transition to males. Black sea bass are commonly associated with physical structures such as reefs, although they utilize a variety of habitats including open bottom. Both their protogynous life history and structure-orienting behavior have posed challenges for prior analytical assessments of this species. The 2016 benchmark stock assessment working group (NEFSC 2017) spent a great deal of time analyzing and simulating various datasets to gain a better understanding on how these life history characteristics impact the assessment and the black sea bass population.

Regarding the protogynous life history, results indicate the stock is more robust to exploitation than previously thought due to factors such as a sex ratio that is not highly skewed and the contribution of secondary males to spawning success. Typical protogynous hermaphrodites start as nearly all females and transition with age and size to nearly all males. This makes these species highly susceptible to overexploitation as a fishery selectively removes the larger males, therefore increasing sex change rates and reducing productivity. Age data from the NEFSC winter and spring trawl survey indicates sex ratios within the north Atlantic black sea bass stock (Cape Hatteras, NC to Canada) are not as highly skewed with a female to male ratio of 70/30 for the youngest and smallest sea bass and a 45/65 ratio for the largest and oldest sea bass. A simulation model was also developed (Blaylock and Shepherd 2016) that evaluated black sea bass vulnerability to fisheries exploitation given its unique life history characteristics. Results from this analysis highlight the importance of secondary males, and therefore less reliance on dominant males, in the spawning success of sea bass. This spawning characteristic of north Atlantic black sea bass is more similar to a typical gonochoristic species (e.g., summer flounder or scup) and therefore improves its resiliency to exploitation compared to other species with a typical protogynous life history. As a result of this information, SSB calculations were defined as combined male and female mature biomass.

Most stock assessments of mid-Atlantic species rely heavily on data collected during the NEFSC's biannual bottom trawl survey and other state conducted fishery independent trawl surveys. A closer examination of trawl catches from these surveys shows there is no significant difference in the number or length frequency of sea bass caught near physical habitat (e.g. reefs) or up to distances 11 miles from the physical habitat, indicating trawl surveys are viable surveys that can be appropriately used as tuning indices in the stock assessment.

The northern stock of black sea bass (i.e., black sea bass north of Cape Hatteras, North Carolina) was under a rebuilding plan from 2000 until 2009. Black sea bass were declared rebuilt based on the findings of the Data Poor Stocks Working Group (DPSWG), which performed a benchmark stock assessment for black sea bass in 2008 (DPSWG 2009).

The most recent benchmark stock assessment for black sea bass was completed in December 2016. This assessment indicated that the black sea bass stock north of Cape Hatteras, NC was not overfished and overfishing was not occurring in 2015. SSB averaged around 6 million pounds from the late 1980's and early 1990's and then steadily increased from 1997 to 2002 when it reached 18.7 million pounds. There was then a decline in SSB until 2007 (8.9 million pounds), followed by a steady increase through 2015 with SSB at its highest level estimated (Figure 4). The model-estimated SSB in 2015 was 48.89 million pounds (22,176 mt), 2.3 times SSB at maximum sustainable yield, SSB_{MSY} = 21.31 million pounds (9,667 mt).

The fishing mortality rate (F) in 2015 was 0.27, below the fishing mortality threshold reference point ($F_{MSY\ PROXY}$ = F40%) of 0.36 (NEFSC 2017). Fishing mortality was very high in the early 1990's, typically greater than 1.0, but declined and stabilized after 1997 once black sea bass was added to the FMP. Fishing mortality has been below the $FMSY_{PROXY}$ reference point for the last five years (Figure 5). Model estimated recruitment was relatively constant throughout the time series except for large peaks from the 1999 and 2011 year classes. Average recruitment from 1989 – 2015 was 24.3 million fish with the 1999 year class estimated at 37.3 fish and the 2011 year class estimated at 68.9 million fish. Since 2012, recruitment has been average with the latest cohort (2014 year class) estimated to be 24.9 million fish.

A data update (i.e. updated catch, landings, and survey indices through 2016) was conducted in 2017 and indicates that black sea bass biomass continues to be high, and the 2015 year class appears to be above average.

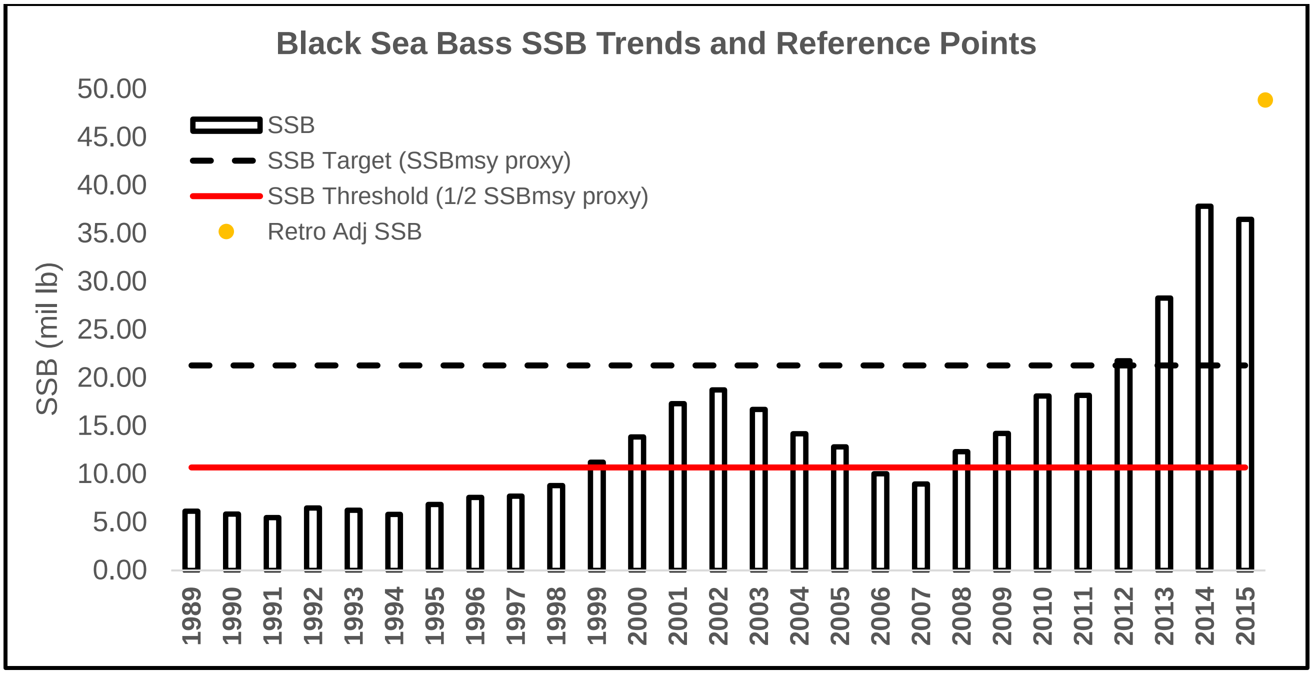

Figure 4: Spawning stock biomass, both mature male and female biomass, of black sea bass from 1989 to 2015 and biomass reference points from the 2016 benchmark stock assessment (NEFSC 2017). The 2015 retro-adjusted spawning stock biomass value was generated to correct for the retrospective bias present in the assessment model and is used as the estimate to compare to the reference points.

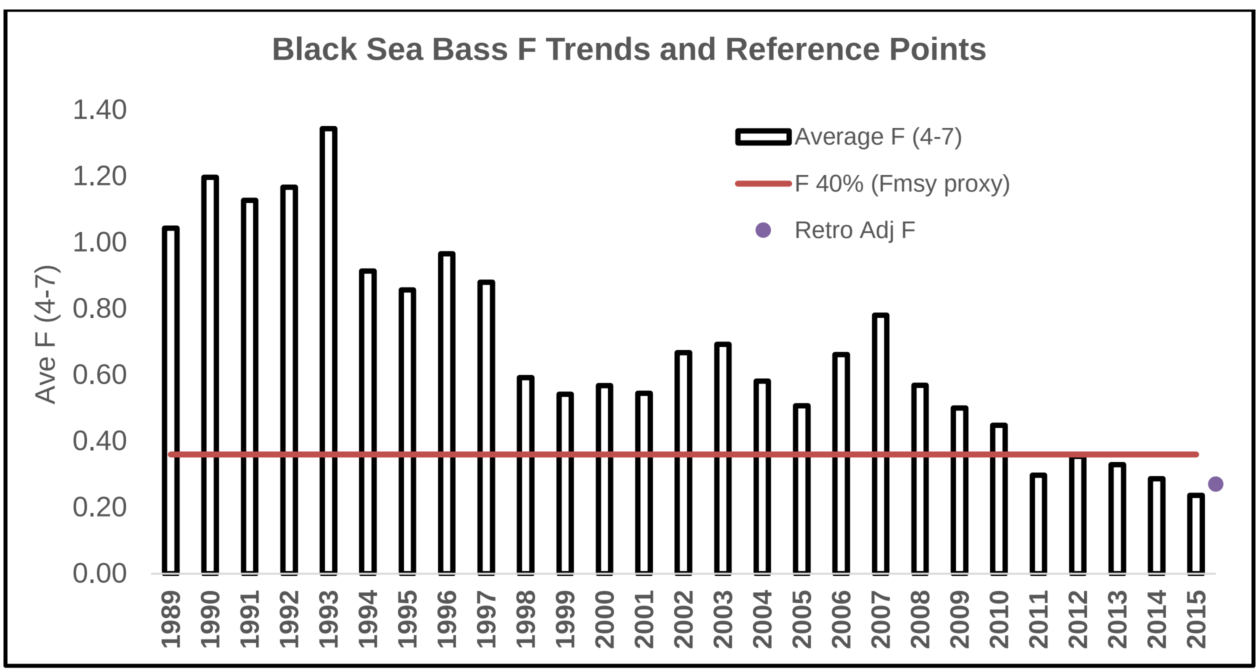

Figure 5: Fishing mortality rate on black sea bass ages 4-7 and the $F_{MSY\ PROXY}$ reference point from the 2016 benchmark stock assessment. The 2015 retro-adjusted fishing mortality rate

value was generated to correct for the retrospective bias present in the assessment model and is used as the estimate to compare to the reference points.

6.1.4. Non-Target Species

Non-target species are those species caught incidentally while targeting other species. Non-target species may be retained or discarded. This action is specific to the commercial summer flounder, scup and black sea bass fisheries and therefore non-target species encountered in the recreational fisheries are not considered in this document. This section describes the non-target species commonly caught in the commercial summer flounder, scup and black sea bass fisheries and summarizes their management status and stock status.

For many species, associated non-target species can be difficult to quantify and can change from year to year or over longer time series, based on many factors such as changing regulations, fluctuations in stock conditions, shifting species distributions, and changing economic conditions. The commercial summer flounder, scup and black sea bass fisheries change seasonally with changes in fish distribution and can be a mixed fishery. In general, all three species are found closer to shore during warmer months and further offshore during cooler months. Therefore, all three species, particularly in the trawl fishery, are caught or even secondarily targeted on directed trips for one of the three species. In many cases, commercial fishermen are permitted for all three species and have the ability to land all three species on a directed scup trip, depending upon the season and state regulations.

For all three commercial fisheries, the Northeast Fisheries Observer Program (NEFOP) data from 2012-2016 were used to identify the major species caught incidentally on commercial trawl trips where summer flounder, scup or black sea bass comprised the majority of the landings on a particular commercial fishing trip. For commercial summer flounder fishery, the non-target species making up at least 2% of the total catch weight over that time period include little skate, spiny dogfish, clearnose skate, winter skate, unknown skate, Northern sea robin, barndoor skate, and black sea bass on commercial trawl trips in which summer flounder comprised over 50% of the landings (by weight; a proxy for directed summer flounder trips) (Figure 6).

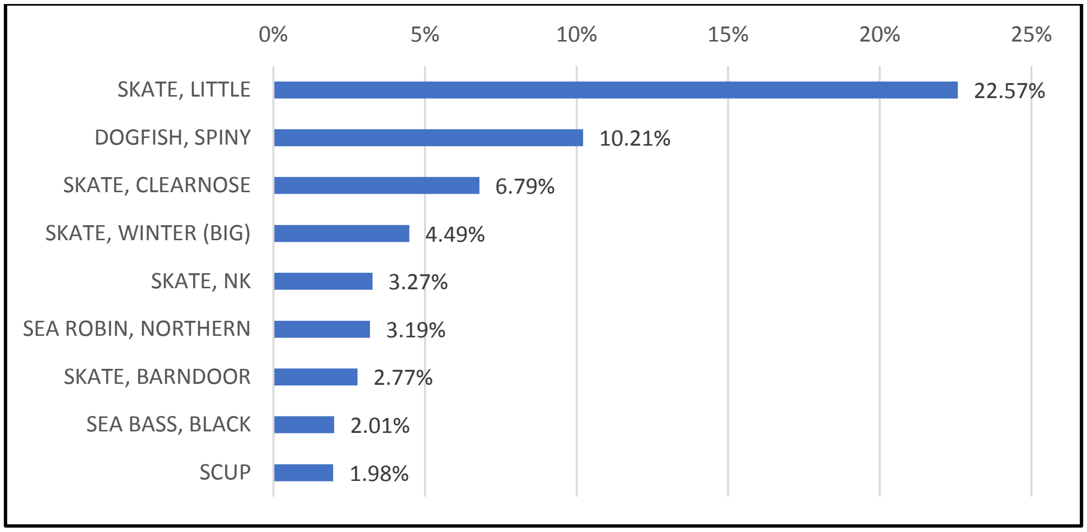

Figure 6: Most commonly caught fish species on observed hauls where summer flounder comprised >50% of the catch by weight, 2012-2016. Source: NEFOP data as of July 2016.

For the commercial scup trawl fishery, the NEFOP data indicates that spiny dogfish, little skate, black sea bass, summer flounder, striped sea robin, longfin squid, butterfish, northern sea robin, winter skate, and silver hake were the 10 most commonly caught species, respectively, on observed trips for which scup made up at least 75% of the landings (by weight; a proxy for directed scup trips). Spiny dogfish accounted for 12% of the total catch while the other nine species accounted for anywhere from 3% - 1% of the overall catch (Figure 7). Therefore, under this definition of a directed scup trip, non-target species comprise a relatively small portion of the overall catch in the commercial scup trawl fishery.

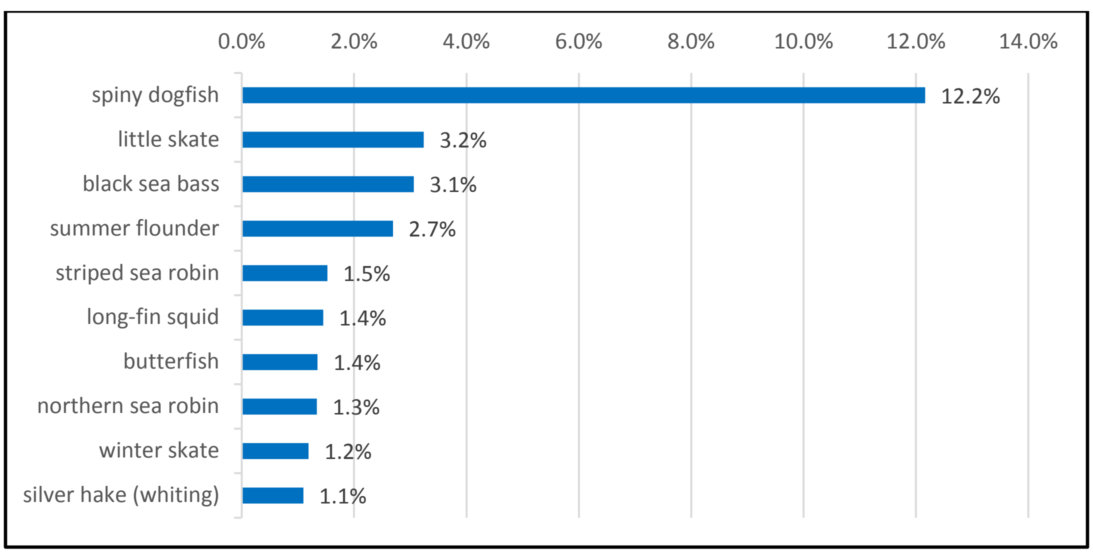

Figure 7: Ten most commonly caught species on observed hauls where scup comprised >75% of the catch by weight, 2012-2016. Source: NEFOP data as of July 2016.

For the commercial black sea bass trawl fishery, the NEFOP data indicates that spiny dogfish, sea robins (striped, northern, and unclassified), scup, summer flounder and skates (little and unclassified) were the most commonly caught species on trips for which black sea bass made up at least 75% of the landings (by weight; a proxy for directed black sea bass trips). Outside of spiny dogfish and the sea robin species, all other non-targeted species accounted for 2% or less of the overall catch on directed black sea bass trawl trips (Figure 8).

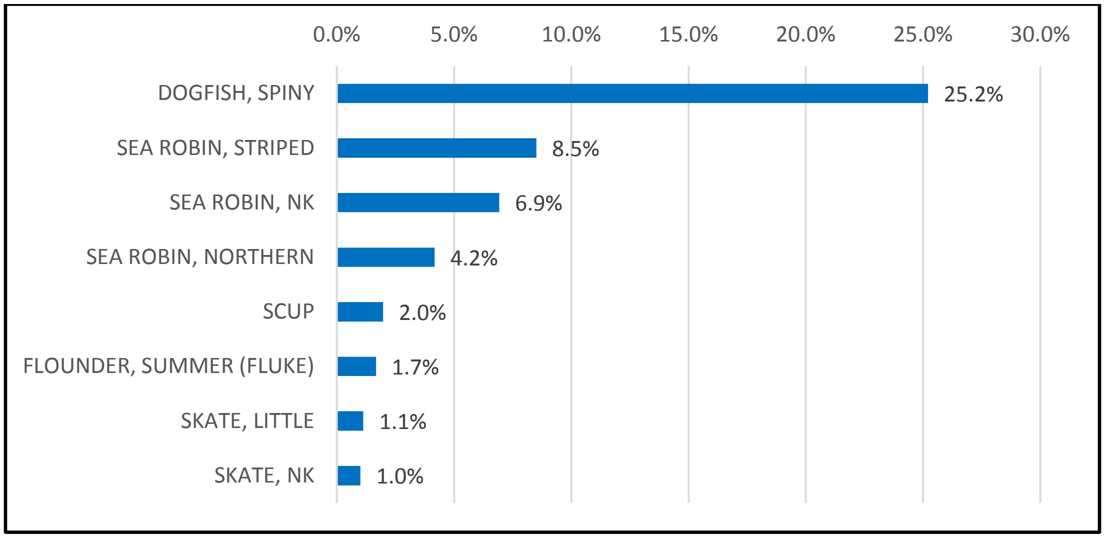

Figure 8: Most commonly caught fish species on observed hauls where black sea bass comprised >75% of catch by weight, 2012-2016. Source: NEFOP data as of July 2016.

All non-target species identified across all three fisheries, except northern and striped sea robins, are managed by the Mid-Atlantic or New England Fishery Management Councils and/or the ASMFC. Northern and striped sea robins are not managed.

Status of Non-Target Species

The stock status and management status of the non-target species identified above are briefly described below. Management measures for the Mid-Atlantic and New England Fishery Management Council managed species include accountability measures (AMs) which address overages in annual catch limits (ACLs) through reductions in landings limits in following years. AMs for all these species, except longfin squid, take discards into account. These measures help to mitigate negative impacts from discards in the commercial summer flounder, scup and black sea bass fisheries, and other fisheries.

The Northeast skate complex fishery is managed by the New England Council and includes seven skate species, including the four non-target species identified here (little, clearnose, winter, barndoor). The stock status relies for each skate species entirely on the annual NMFS trawl survey and the fishing mortality reference points are based on changes in survey biomass indices. According to the latest survey index information available (NEFMC 2018), none of these four species is overfished and overfishing is not occurring.

Spiny dogfish are jointly managed by the MAFMC and the NEFMC; the Commission also has a complementary FMP for state waters. The most recent assessment update was in 2015, which found that the stock is not overfished nor subject to overfishing. SSB was estimated to be 106% of the target B_{MSY} proxy in 2015 (MAFMC 2016).

Butterfish and longfin squid are managed by the Mid-Atlantic Council under the Atlantic Mackerel, Squid and Butterfish FMP. According to the 2017 butterfish update assessment (Adams 2017) with data through 2016, butterfish is not overfished and overfishing is not occurring. The overfishing status of longfin squid is unknown; however, the stock is not overfished and it appears to be lightly exploited (Hendrickson 2017).

Silver hake is managed by the New England Council as part of the Small Mesh Multispecies (whiting) FMP. The stock assessment update for calendar year 2016 shows that silver hake are not overfished and overfishing is not occurring.

Northern and striped sea robins have not been assessed, therefore their overfished and overfishing status is unknown. Sea robins are not managed directly at the federal or state level.

6.2 Physical Environment and Essential Fish Habitat

The physical, chemical, biological, and geological components of benthic and pelagic environments are important aspects of habitat for marine species and have implications for reproduction, growth, and survival of marine species. The following sections briefly describe key aspects of physical habitats which may be impacted by the alternatives considered in this document. This information is largely drawn from Stevenson et al. (2004), unless otherwise noted.

6.2.1 Physical Environment

Summer flounder, scup and black sea bass inhabit the northeast U.S. shelf ecosystem, which includes the area from the Gulf of Maine south to Cape Hatteras, extending seaward from the coast to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream. The northeast shelf ecosystem includes the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope.

The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types. Georges 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 strong 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.

The continental slope begins at the continental shelf break and continues eastward with increasing depth until it becomes the continental rise. It is fairly homogenous, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley, and in areas of glacially rafted hard bottom. The continental shelf in this region was shaped largely by sea level fluctuations caused by past ice ages. The shelf's basic morphology and sediments derive from the retreat of the last ice sheet and the subsequent rise in sea level. Currents and waves have since modified this basic structure.

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

The shelf slopes gently from shore out to between 100 and 200 km offshore where it transforms to the slope (100 - 200 m water depth) at the shelf break. Numerous canyons incise the slope and some cut up onto the shelf itself. The primary morphological features of the shelf include shelf valleys and channels, shoal massifs, scarps, and sand ridges and swales. Most of these structures are relic except for some sand ridges and smaller sand-formed features. Shelf valleys and slope canyons were formed by rivers of glacier outwash that deposited sediments on the outer shelf edge as they entered the ocean. Most valleys cut about 10 m into the shelf; however, the Hudson Shelf Valley is about 35 m deep. The valleys were partially filled as the glacier melted and retreated across the shelf. The glacier also left behind a lengthy scarp near the shelf break from Chesapeake Bay north to the eastern end of Long Island. Shoal retreat massifs were produced by extensive deposition at a cape or estuary mouth. Massifs were also formed as estuaries retreated across the shelf.

Some sand ridges are more modern in origin than the shelf's glaciated morphology. Their formation is not well understood; however, they appear to develop from the sediments that erode from the shore face. They maintain their shape, so it is assumed that they are in equilibrium with modern current and storm regimes. They are usually grouped, with heights of about 10 m, lengths of 10 - 50 km and spacing of 2 km. Ridges are usually oriented at a slight angle towards shore, running in length from northeast to southwest. The seaward face usually has the steepest slope. Sand ridges are often covered with smaller similar forms such as sand waves, megaripples, and ripples. Swales occur between sand ridges. Since ridges are higher than the adjacent swales, they are exposed to more energy from water currents and experience more sediment mobility than swales. Ridges tend to contain less fine sand, silt and clay while relatively sheltered swales contain more of the finer particles. Swales have greater benthic macrofaunal density, species richness and biomass, due in part to the increased abundance of detrital food and the less physically rigorous conditions.

Sand waves are usually found in patches of 5 - 10 with heights of about 2 m, lengths of 50 - 100 m and 1 - 2 km between patches. Sand waves are primarily found on the inner shelf, and often observed on sides of sand ridges. They may remain intact over several seasons. Megaripples occur on sand waves or separately on the inner or central shelf. During the winter storm season, they may cover as much as 15% of the inner shelf. They tend to form in large patches and usually have lengths of 3 - 5 m with heights of 0.5 - 1 m. Megaripples tend to survive for less than a season. They can form during a storm and reshape the upper 50 - 100 cm of the sediments within a few hours. Ripples are also found everywhere on the shelf and appear or disappear within hours or days, depending upon storms and currents. Ripples usually have lengths of about 1 - 150 cm and heights of a few centimeters.

Sediments are uniformly distributed over the shelf in this region. A sheet of sand and gravel varying in thickness from 0 - 10 m covers most of the shelf. The mean bottom flow from the constant southwesterly current is not fast enough to move sand, so sediment transport must be episodic. Net sediment movement is in the same southwesterly direction as the current. The sands are mostly medium to coarse grains, with finer sand in the Hudson Shelf Valley and on the outer shelf. Mud is rare over most of the shelf, but is common in the Hudson Shelf Valley. Occasionally relic estuarine mud deposits are re-exposed in the swales between sand ridges. Fine sediment content increases rapidly at the shelf break, which is sometimes called the "mud line," and sediments are 70 - 100% fine on the slope. On the slope, silty sand, silt, and clay predominate (Stevenson et al. 2004).

Greene et al. (2010) identified and described Ecological Marine Units (EMUs) in New England and the Mid-Atlantic based on sediment type, seabed form (a combination of slope and relative depth)[1], and benthic organisms.[2] According to this classification scheme, the sediment composition off New England and the Mid-Atlantic is about 68% sand, 26% gravel, and 6% silt/mud. The seafloor is classified as about 52% flat, 26% depression, 19% slope, and 3% steep (Table 3).

Artificial reefs are another significant Mid-Atlantic habitat. These localized areas of hard structure were formed by shipwrecks, lost cargoes, disposed solid materials, shoreline jetties and groins, submerged pipelines, cables, and other materials (Steimle and Zetlin 2000). While some of these materials were deposited specifically for use as fish habitat, most have an alternative primary purpose; however, they have all become an integral part of the coastal and shelf ecosystem. In general, reefs are important for attachment sites, shelter, and food for many species, and fish predators such as tunas may be attracted by prey aggregations, or may be behaviorally attracted to the reef structure.

Like all the world's oceans, the western North Atlantic is experiencing changes to the physical environment as a result of global climate change. These changes include warming temperatures; sea level rise; ocean acidification; changes in stream flow, ocean circulation, and sediment deposition; and increased frequency, intensity, and duration of extreme climate events. These changes in physical habitat can impact the metabolic rate and other biological processes of marine species. As such, these changes have implications for the distribution and productivity of many marine species. Several studies demonstrate that the distribution and productivity of several species in the Mid-Atlantic have changed over time, likely because of changes in physical habitat conditions such as temperature (e.g. Weinberg 2005, Lucey and Nye 2010, Nye et al. 2011, Pinsky et al. 2013, Gaichas et al. 2015).

[1] Seabed form contains the categories of depression, mid flat, high flat, low slope, side slope, high slope, and steep slope.

[2] See Greene et al. 2010 for a description of the methodology used to define EMUs.

Table 3: Composition of Ecological Marine Units (EMUs) off New England and the Mid-Atlantic (Greene et al. 2010). EMUs which account for less than 1% of the surface area of these regions are not shown.

Ecological Marine Unit	Percent Coverage
High Flat Sand	13%
Moderate Flat Sand	10%
High Flat Gravel	8%
Side Slope Sand	6%
Somewhat Deep Flat Sand	5%
Low Slope Sand	5%
Moderate Depression Sand	4%
Very Shallow Flat Sand	4%
Side Slope Silt/Mud	4%
Moderate Flat Gravel	4%
Deeper Depression Sand	4%
Shallow Depression Sand	3%
Very Shallow Depression Sand	3%
Deeper Depression Gravel	3%
Shallow Flat Sand	3%
Steep Sand	3%
Side Slope Gravel	3%
High Flat Silt/Mud	2%
Shallow Depression Gravel	2%
Low Slope Gravel	2%
Moderate Depression Gravel	2%
Somewhat Deep Depression Sand	2%
Deeper Flat Sand	1%
Shallow Flat Gravel	1%
Deep Depression Gravel	1%
Deepest Depression Sand	1%
Very Shallow Depression Gravel	1%

6.2.2 Essential Fish Habitat (EFH)

The MSA defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (MSA section 3). The MSA requires that Councils describe and identify EFH for managed species and "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" (MSA section 303 (a)(7)).

The broad definition of EFH has led the Mid-Atlantic and the New England Fishery Management Councils to identify EFH throughout most of the Northeast U.S. Shelf Ecosystem, ranging from areas out to the shelf break to wetlands, streams, and rivers. Table 4 summarizes EFH in the northeast shelf ecosystem for federally-managed species and life stages that are vulnerable to bottom tending fishing gear.

Table 4: Essential Fish Habitat descriptions for federally-managed species/life stages that are vulnerable to bottom tending fishing gear in the U.S. northeast shelf ecosystem.

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
American plaice	juvenile	GOM, including estuaries from Passamaquoddy Bay to Saco Bay, ME and from Massachusetts Bay to Cape Cod Bay	45 - 150	Fine grained sediments, sand, or gravel
American plaice	adult	GOM, including estuaries from Passamaquoddy Bay to Saco Bay, ME and from Massachusetts Bay to Cape Cod Bay	45 - 175	Fine grained sediments, sand, or gravel
Atlantic cod	juvenile	GOM, GB, eastern portion of continental shelf off SNE, these estuaries: Passamaquoddy Bay to Saco Bay, Massachusetts Bay, Boston Harbor, Cape Cod Bay, Buzzards Bay	25 - 75	Cobble or gravel
Atlantic cod	adult	GOM, GB, eastern portion of continental shelf off SNE, 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	GOM and GB	20 - 60	Sand, gravel, or clay
Atl halibut	adult	GOM and GB	100 - 700	Sand, gravel, or clay
Barndoor skate	juvenile/ adult	Eastern GOM, GB, SNE, Mid-Atlantic Bight to Hudson Canyon	l0-750, most < 150	Mud, gravel, and sand
Black sea bass	juvenile	GOM to Cape Hatteras, NC, 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	GOM to Cape Hatteras, NC, 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	GOM, along continental shelf to Cape Hatteras, NC, including the estuaries from Hudson River/Raritan Bay south to the Chesapeake Bay mainstem	0 – 500, most < 111	Soft bottom and rocky or gravelly bottom
Haddock	juvenile	GB, GOM, and Mid-Atlantic south to Delaware Bay	35 - 100	Pebble and gravel
Haddock	adult	GB, eastern side of Nantucket Shoals, and throughout GOM	40 - 150	Broken ground, pebbles, smooth hard sand, and smooth areas between rocky patches
Little skate	juvenile/ adult	GB through Mid-Atlantic Bight to Cape Hatteras, NC; includes estuaries from Buzzards Bay south to mainstem Chesapeake Bay	0-137, most 73 - 91	Sandy or gravelly substrate or mud
Ocean pout	eggs	GOM, GB, SNE, 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	GOM, GB, SNE, 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

Species	**Life Stage**	**Geographic Area of EFH**	**Depth (meters)**	**Bottom Type**
Ocean pout	adult	GOM, GB, SNE, Mid-Atlantic south to Delaware Bay and the following estuaries: Passamaquoddy Bay to Saco Bay, MA Bay, Boston Harbor, and Cape Cod Bay	< 80	Smooth bottom near rocks or algae
Pollock	adult	GOME, GB, SNE, and Mid-Atlantic south to New Jersey and the following estuaries: Passamaquoddy Bay, Damariscotta R., MA Bay, Cape Cod Bay, Long Island Sound	15 – 365	Hard bottom habitats including artificial reefs
Red hake	juvenile	GOM, GB, continental shelf off SNE, and Mid-Atlantic south to Cape Hatteras, including the following estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, MA Bay to Cape Cod Bay; Buzzards Bay to CT River, Hudson River, Raritan Bay, and Chesapeake Bay	< 100	Shell fragments, including areas with an abundance of live scallops
Red hake	adult	GOM, GB, continental shelf off SNE, Mid-Atlantic south to Cape Hatteras, these estuaries: Passamaquoddy Bay to Saco Bay, Great Bay, MA Bay to Cape Cod Bay; Buzzards Bay to CT River, Hudson River, Raritan Bay, Delaware Bay, and Chesapeake Bay	10 - 130	In sand and mud, in depressions
Redfish	juvenile	GOM, southern edge of GB	25 - 400	Silt, mud, or hard bottom
Redfish	adult	GOM, southern edge of GB	50 - 350	Silt, mud, or hard bottom
Rosette skate	juvenile/ adult	Nantucket shoals and southern edge of GB to Cape Hatteras, NC	33-530, most 74-274	Soft substrate, including sand/mud bottoms
Scup	juvenile/ adult	GOM to Cape Hatteras, NC, including the following estuaries: MA 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	GOM, GB, continental shelf off SNE, Mid-Atlantic south to Cape Hatteras and the following estuaries: Passamaquoddy Bay to Casco Bay, ME, MA Bay to Cape Cod Bay	20 – 270	All substrate types
Summer Flounder	juvenile/ adult	GOM 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 GOM	31–874, most 110-457	Soft mud (silt and clay), sand, broken shells, gravel and pebbles
Thorny skate	juvenile/ adult	GOM and GB	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	GOM, southern edge of GB, SNE to Mid-Atlantic and the following estuaries: Passamaquoddy Bay, ME to Great Bay, NH, Massachusetts Bay to Cape Cod Bay	5 - 225	Seagrass beds, mud, or fine grained sand
Winter flounder	adult	GB, inshore areas of GOM, SNE, Mid- Atlantic south to Delaware Bay and the estuaries from Passamaquoddy Bay, ME to Chincoteague Bay, VA	1 - 100	Mud, sand, and gravel

Species	Life Stage	Geographic Area of EFH	Depth (meters)	Bottom Type
Winter skate	juvenile/ adult	Cape Cod Bay, GB, SNE shelf through Mid-Atlantic Bight to North Carolina; includes the estuaries from Buzzards Bay south to the Chesapeake Bay mainstem	0 - 371, most < 111	Sand and gravel or mud
Witch flounder	juvenile	GOM, outer continental shelf from GB south to Cape Hatteras	50 - 450 to 1500	Fine grained substrate
Witch flounder	adult	GOME, outer continental shelf from GB south to Chesapeake Bay	25 - 300	Fine grained substrate
Yellowtail flounder	adult	GB, GOM, SNE and Mid-Atlantic south to Delaware Bay and these estuaries: Sheepscot River and Casco Bay, ME, MA Bay to Cape Cod Bay	20 - 50	Sand or sand and mud

6.2.3 Fishery Impact Considerations

Only those gear types which contact the bottom impact physical habitat. The bottom otter trawl is the predominant gear type in the commercial summer flounder, scup and black sea bass fisheries. Vessel Trip Report (VTR) data for 2016 indicate that bottom otter trawl gear accounted for 95% of the commercial summer flounder landings, 97% of the commercial scup landings and 65% of the commercial black sea bass landings. Pots and traps accounted for 26% of the black sea bass landings in 2016. Other gear types such as hand lines, pound nets and gill nets are also commonly used in these commercial fisheries but account for a much smaller percentage of commercial landings. Recreational hook and line gears are generally understood to have minimal impacts on physical habitat and EFH in this region and this action is specific to commercial summer flounder, scup and black sea bass fisheries; therefore, recreational gear interactions are not considered here.

Although commercial fishing, in particular bottom otter trawl, affects fisheries habitat, the alternatives considered in this document are primarily administrative in nature and would not modify the manner in which these commercial fisheries operate. However, some of the alternatives in this action may have indirect effects on fishing activity (i.e. reducing a payback of observed catch overages which could increase catch opportunities relative to no action being taken) and are therefore considered in this document. Conclusions relevant for this action are briefly summarized below with a focus on bottom trawl and pot/trap gear since these are the predominant gear type used to harvest summer flounder, scup and black sea bass.

Otter trawl doors can create furrows in sand, mud, and gravel/rocky substrates. Studies have found furrow depths that range from 2 to 10 cm. Bottom trawl gear can also re-suspend and disperse surface sediments and can smooth topographic features. It can also result in reduced abundance, and in some cases reduced diversity, of benthic species such as nematodes, polychaetes, and bivalves. It can also have short-term positive ecological impacts such as increased food value and increased chlorophyll production in surface sediments. The duration of these impacts varies by sediment type, depth, and frequency of the impact (e.g. a single trawl tow vs. repeated tows). Some studies have documented effects that lasted only a few months. Other studies found effects that lasted up to 18 months. Impacts tend to have shorter durations in dynamic environments with less structured bottom composition compared to less dynamic environments with structured bottom. Shallower water, stronger bottom currents, more wave action, finer-grained sediments, and higher frequencies of natural disturbance are characteristics that make environments more dynamic (Stevenson et al. 2004).

Compared to otter trawls and dredges, Stevenson et al. (2004) summarized fewer studies on other bottom tending gears such as traps. Morgan and Chuenpagdee (2003) found that the impacts of bottom gill nets, traps, and longlines were generally limited to warm or shallow-water environments with rooted aquatic vegetation or “live bottom” environments (e.g. coral reefs). These impacts were of a lesser degree than those from bottom trawls and dredges. Eno et al. (2001) found that traps can bend, smother, and uproot sea pens in soft sediments; however, sea pen communities were largely able to recover within a few days of the impact.

Black sea bass traps in the Mid-Atlantic are commonly fished in strings of multiple traps. Stevens et al. (2016) found that the act of deploying a black sea bass trap can result in habitat impacts if the trap lands on sensitive habitat. Dragging the traps across the seafloor, as is required when strings of multiple traps are retrieved, significantly increases the likelihood of habitat impacts. When traps are dragged across the seafloor during retrieval they can drag over and bury epifauna such as corals and sea whips, and can overturn cobble. The last trap in a string to be retrieved has the greatest impacts on benthic habitats because it drags across the seafloor for the longest duration of time. A single trap can impact habitat multiple times per set if it is dragged over multiple patches of corals or other benthic organisms. (Stevens et al. 2016).

The Mid-Atlantic Council developed some fishery management actions with the sole intent of protecting marine habitats. For example, in Amendment 9 to the Mackerel, Squids, and Butterfish FMP, the Council determined that bottom trawls used in Atlantic mackerel, longfin and *Illex* squid, and butterfish fisheries have the potential to adversely affect EFH for some federally-managed fisheries (MAFMC 2008). As a result of Amendment 9, closures to squid trawling were developed for portions of Lydonia and Oceanographer Canyons. Subsequent closures were implemented in these and Veatch and Norfolk Canyons to protect tilefish EFH by prohibiting all bottom trawling activity. In addition, amendment 16 to the Mackerel, Squid, and Butterfish FMP prohibits the use of all bottom-tending gear in fifteen discrete zones and one broad zone where deep sea corals are known or highly likely to occur (81 Federal Register 90246, December 14, 2016).

Actions implemented in the Summer Flounder, Scup, and Black Sea Bass FMP that affected species with overlapping EFH were considered Amendment 13 (MAFMC 2002). The analysis in Amendment 13 indicated that no management measures were needed to minimize impacts to EFH because the trawl fisheries for summer flounder, scup, and black sea bass in Federal waters are conducted primarily in high energy mobile sand and bottom habitat where gear impacts are minimal and/or temporary in nature.

6.3 ESA and MMPA Protected Species

Numerous protected species inhabit the affected environment of the Summer Flounder, Scup, and Black Sea Bass FMP (Table 5) and have the potential to be affected by the proposed action (i.e., there have been observed/documented interactions in the fishery or with gear type(s) similar to those used in the fishery (pot/trap and bottom trawl gear)). These species are under NMFS jurisdiction and are afforded protection under the Endangered Species Act (ESA) of 1973 and/or the Marine Mammal Protection Act (MMPA) of 1972.

Cusk, alewife, and blueback herring are NMFS "candidate species" under the ESA. Candidate species are those petitioned species for which NMFS has determined that listing may be warranted under the ESA and those species for which NMFS has initiated an ESA status review through an announcement in the Federal Register. If a species is proposed for listing the conference provisions under Section 7 of the ESA apply (see 50 CFR 402.10); however, candidate species receive no substantive or procedural protection under the ESA. As a result, these species will not be discussed further in this and the following sections; however, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on candidate species from any proposed action. Additional information on cusk, alewife, and blueback herring can be found at: http://www.nmfs.noaa.gov/pr/species/esa/candidate.htm.

Table 5: Species protected under the ESA and/or MMPA that may occur in the Affected Environment of the commercial summer flounder, scup and/or black sea bass fisheries. Marine mammal species (cetaceans and pinnipeds) italicized and in bold are considered MMPA strategic stocks.[1]

Species	Status	Potentially affected by this action?
Cetaceans		
North Atlantic right whale (Eubalaena glacialis)	***Endangered***	***Yes***
Humpback whale, West Indies DPS (Megaptera novaeangliae)	Protected (MMPA)	Yes
Fin whale (Balaenoptera physalus)	***Endangered***	***Yes***
Sei whale (Balaenoptera borealis)	***Endangered***	***Yes***
Blue whale (Balaenoptera musculus)	***Endangered***	***No***
Sperm whale (Physeter macrocephalus	***Endangered***	***No***
Minke whale (*Balaenoptera acutorostrata*)	Protected (MMPA)	Yes
Pilot whale (Globicephala spp.)[2]	***Protected (MMPA)***	***Yes***
Pygmy sperm whale (*Kogia breviceps*)	Protected (MMPA)	No
Dwarf sperm whale (*Kogia sima*)	Protected (MMPA)	No
Risso's dolphin (*Grampus griseus*)	Protected (MMPA)	Yes
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected (MMPA)	Yes
Short Beaked Common dolphin (*Delphinus delphis*)	Protected (MMPA)	Yes
Atlantic Spotted dolphin (*Stenella frontalis*)	Protected (MMPA)	No
Striped dolphin (*Stenella coeruleoalba*)	Protected (MMPA)	No
Bottlenose dolphin (Tursiops truncatus)[3]	***Protected (MMPA)***	***Yes***
Harbor porpoise (*Phocoena phocoena*)	Protected (MMPA)	Yes
Sea Turtles		
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered	Yes
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered	Yes
Green sea turtle, North Atlantic DPS (*Chelonia mydas*)	Threatened	Yes
Loggerhead sea turtle (*Caretta caretta*), Northwest Atlantic Ocean DPS	Threatened	Yes
Hawksbill sea turtle (*Eretmochelys imbricate*)	Endangered	No
Fish		
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered	No
Atlantic salmon (*Salmo salar*)	Endangered	Yes
Atlantic sturgeon *(Acipenser oxyrinchus)*		
Gulf of Maine DPS	Threatened	Yes
New York Bight DPS, Chesapeake Bay DPS, Carolina DPS & South Atlantic DPS	Endangered	Yes
Cusk (*Brosme brosme)*	Candidate	Yes
Alewife *(Alosa pseudoharengus)*	Candidate	Yes
Blueback herring *(Alosa aestivalis)*	Candidate	Yes
Pinnipeds		
Harbor seal (*Phoca vitulina*)	Protected (MMPA)	Yes
Gray seal (*Halichoerus grypus*)	Protected (MMPA)	Yes
Harp seal (*Phoca groenlandicus*)	Protected (MMPA)	Yes
Hooded seal (*Cystophora cristata*)	Protected (MMPA)	Yes
Critical Habitat		
North Atlantic Right Whale	ESA (Protected)	No
Northwest Atlantic DPS of Loggerhead Sea Turtle	ESA (Protected)	No

[1] A strategic stock is defined under the MMPA as a marine mammal stock for which: (1) the level of direct human-caused mortality exceeds the potential biological removal level; (2) based on the best available scientific information, is declining and is likely to be listed as a threatened species under the ESA within the foreseeable future; and/or (3) is listed as a threatened or endangered species under the ESA, or is designated as depleted under the MMPA (Section 3 of the MMPA of 1972).

Species	Status	Potentially affected by this action?
[2] There are 2 species of pilot whales: short finned (*G. melas melas*) and long finned (*G. macrorhynchus*). Due to the difficulties in identifying the species at sea, they are often just referred to as *Globicephala spp*. [3] This includes the Western North Atlantic Offshore, Northern Migratory Coastal, and Southern Migratory Coastal Stocks of Bottlenose Dolphins. See marine mammal stock assessment reports (http://www.nmfs.noaa.gov/pr/sars/region.htm) for further details.		

6.3.1 Species and Critical Habitat Not Likely to be Affected by the Proposed Action

Based on available information, it has been determined that this action is not likely to affect multiple ESA listed and/or marine mammal protected species (see Table 5). Further, this action is not likely to adversely affect any critical habitat for the species listed in Table 5. This determination was made because either the occurrence of the species is not known to overlap with the summer flounder, scup, and black sea bass fisheries and/or there have never been documented interactions between the species and the primary gear type (i.e., pot/trap and bottom trawl) used to prosecute the summer flounder, scup, and black sea bass fisheries fishery (NMFS 2013; Palmer 2017; NMFS NEFSC FSB 2015, 2016, 2017; see http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html and http://www.nmfs.noaa.gov/pr/sars/region.htm). In the case of critical habitat, this determination has been made because the summer flounder, scup, and black sea bass fisheries will not affect the essential physical and biological features of North Atlantic right whale or loggerhead (Northwest Atlantic Distinct Population Segment, or DPS) critical habitat and, and therefore, will not result in the destruction or adverse modification of either species critical habitat (NMFS 2013; NMFS 2014a; NMFS 2015a,b).

6.3.2 Species Potentially Affected by the Proposed Action

Table 5 provides a list of protected sea turtle, marine mammal, and fish species present in the affected environment of the summer flounder, scup and black sea bass fisheries, and that may also be affected by the operation of these fisheries; that is, have the potential to become entangled or bycaught in the fishing gear primarily used to prosecute the fisheries (i.e. pot/trap and bottom trawl gear). To aid in the identification of MMPA protected species potentially affected by the action, the MMPA List of Fisheries and marine mammal stock assessment reports for the Atlantic Region were referenced (http://www.nmfs.noaa.gov/pr/sars/region.htm; http://www.nmfs.noaa.gov/pr/interactions/fisheries/lof.html).

To aid in identifying ESA listed species potentially affected by the action, the 2013 Biological Opinion issued by NMFS on the operation of seven commercial fisheries, including the Summer Flounder, Scup, and Black Sea Bass FMP, and its impact on ESA listed species was referenced (NMFS 2013). The 2013 Opinion, which considered the best available information on ESA listed species and observed or documented ESA listed species interactions with gear types used to prosecute the seven FMPs (e.g., gillnet, bottom trawl, and pot/trap), concluded that the seven fisheries may adversely affect, but was not likely to jeopardize the continued existence of any ESA listed species. The Opinion included an incidental take statement (ITS) authorizing the take of specific numbers of ESA listed species of sea turtles, Atlantic salmon, and Atlantic sturgeon. Reasonable and prudent measures and terms and conditions were also issued with the ITS to minimize impacts of any incidental take.

Up until recently, the 2013 Opinion remained in effect; however, new information on North Atlantic right whales has been made available that may reveal effects of the fisheries analyzed in the 2013 Opinion that may not have been previously considered. As a result, per an October 17, 2017, ESA 7(a)(2)/7(d) memo issued by NMFS, the 2013 Opinion has been reinitiated. However, the October 17, 2017, memo concludes that allowing these fisheries to continue during the reinitiation period will not increase the likelihood of interactions with ESA listed species above the amount that would otherwise occur if consultation had not been reinitiated, and therefore, the continuation of these fisheries during the reinitiation period would not be likely to jeopardize the continued existence of any ESA listed species. Until replaced, the Summer Flounder, Scup, and Black Sea Bass FMP is currently covered by the incidental take statement authorized in NMFS 2013 Opinion.

As the primary concern for both MMPA protected and ESA listed species is the potential for the fishery to interact (e.g., bycatch, entanglement) with these species it is necessary to consider (1) species occurrence in the affected environment of the fishery and how the fishery will overlap in time and space with this occurrence; and (2) data and observed records of protected species interaction with particular fishing gear types, in order to understand the potential risk of an interaction. Information on species occurrence in the affected environment of the summer flounder, scup and black sea bass fisheries are provided below, while information on protected species interactions with specific fishery gear is provided in section 6.3.3.

6.3.2.1 Sea Turtles

Both hard shell and leatherback sea turtles are known to migrate through the waters of the Northwest Atlantic continental shelf. This section contains a brief summary of the occurrence and distribution of sea turtles in the affected environment of the black sea bass fishery. Additional background information on the range-wide status of affected sea turtles species, as well as a description and life history of each of these species, can be found in a number of published documents, including sea turtle status reviews and biological reports (NMFS and USFWS 1995; Hirth 1997; TEWG 1998, 2000, 2007, 2009; NMFS and USFWS 2007a, 2007b; Conant et al. 2009; NMFS and USFWS 2013), and recovery plans for the loggerhead sea turtle (Northwest Atlantic DPS; NMFS and USFWS 2008), leatherback sea turtle (NMFS and USFWS 1992, 1998a), Kemp’s ridley sea turtle (NMFS et al. 2011), and green sea turtle (NMFS and USFWS 1991, 1998b).

Hard-shelled sea turtles:

In U.S. Northwest Atlantic waters, hard-shelled turtles commonly occur throughout the continental shelf from Florida to Cape Cod, MA, although their presence varies with the seasons due to changes in water temperature (Braun-McNeill et al. 2008; Braun & Epperly 1996; Epperly et al. 1995a,b; Mitchell et al. 2003; Shoop & Kenney 1992; TEWG 2009; Blumenthal et al. 2006; Braun-McNeill & Epperly 2004; Griffin et al. 2013; Hawkes et al. 2006; Hawkes et al. 2011; Mansfield et al. 2009; McClellan & Read 2007; Mitchell et al. 2003; Morreale & Standora 2005). As coastal water temperatures warm in the spring, loggerheads begin to migrate to inshore waters of the southeast United States and also move up the Atlantic Coast (Braun-McNeill & Epperly 2004; Epperly et al. 1995a,b,c; Griffin et al. 2013; Morreale & Standora 2005), occurring in Virginia foraging areas as early as late April and on the most northern foraging grounds in the Gulf of Maine (GOM) in June (Shoop & Kenney 1992). The trend is reversed in the fall as water temperatures cool. The majority leave the Gulf of Maine by September, but some remain in Mid-

Atlantic and Northeast areas until November. By December, sea turtles have migrated south to waters offshore of North Carolina, particularly south of Cape Hatteras, and further south, although hard-shelled sea turtles can occur year-round in waters off Cape Hatteras and south (Epperly et al. 1995b; Griffin et al. 2013; Hawkes et al. 2011; Shoop & Kenney 1992).

Leatherback sea turtles:

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

6.3.2.2 Large Whales

Large whales, such as humpback, North Atlantic right, fin, sei, and minke whales are found throughout the waters of the Northwest Atlantic Ocean and in the area of operation for the commercial summer flounder, scup and black sea bass fisheries. In general, these species follow an annual pattern of migration between low latitude (south of 35ºN) wintering/calving grounds and high latitude spring/summer foraging grounds (primarily north of 41ºN; Hayes et al. 2017; NMFS 1991, 2005, 2010, 2011, 2012). This is a simplification of whale movements, particularly as it relates to winter movements. It is unknown if all individuals of a population migrate to low latitudes in the winter, although increasing evidence suggests that for some species (e.g., right and humpback whales), some portion of the population remains in higher latitudes throughout the winter (Brown et al. 2002; Clapham et al. 1993; Cole et al. 2013; Khan et al. 2010, 2011, 2012; Khan et al. 2009; NOAA 2008; Swingle et al. 1993; Vu et al. 2012; Waring et al. 2016). Although further research is needed to provide a clearer understanding of large whale movements and distribution in the winter, the distribution and movements of large whales to foraging grounds in the spring/summer is well understood. Large whales consistently return to these foraging areas each year, therefore these areas can be considered important areas for whales (Baumgartner et al. 2003; Baumgartner & Mate 2003; Brown et al. 2002; Kenney 2001; Kenney et al. 1986; Kenney et al. 1995; Mayo & Marx 1990; Payne et al. 1986; Payne et al. 1990; Schilling et al. 1992). For additional information on the biology, status, and range wide distribution of each whale species please refer to: Hayes et. al. 2017; NMFS 1991, 2005, 2010, 2011, 2012, and marine mammal stock assessment reports provided at: http://www.nmfs.noaa.gov/pr/sars/region.htm.

6.3.2.3 Small Cetaceans

Table 5 lists the small cetaceans that may occur in the affected environment of the commercial summer flounder, scup and black sea bass fisheries. Small cetaceans can be found throughout the year in the Northwest Atlantic Ocean; however, within this range, there are seasonal shifts in species distribution and abundance. For additional information on the biology and range wide distribution of each species of small cetacean provided in Table 5, please refer to the marine mammal stock assessment reports provided at: http://www.nmfs.noaa.gov/pr/sars/region.htm.

6.3.2.4 Pinnipeds

Table 5 lists the species of pinnipeds that occur in the affected environment of the commercial summer flounder, scup and black sea bass fisheries. Pinnipeds are found in the nearshore, coastal waters of the Northwest Atlantic Ocean. They are primarily found throughout the year or seasonally from New Jersey to Maine; however, increasing evidence indicates that some species (e.g., harbor seals) may be extending their range seasonally into waters as far south as Cape Hatteras, North Carolina (35^{o}N) (Waring *et al*. 2007, 2014a; Hayes *et al*. 2017). For additional information on the biology, status, and range-wide distribution of each species of pinniped please refer to Waring *et al*. (2007), Waring *et al*. (2014a), and Hayes *et al*. 2017.

6.3.2.5 Atlantic sturgeon

Table 5 lists the five DPSs of Atlantic sturgeon likely to occur in the Greater Atlantic Region. The marine range of U.S. Atlantic sturgeon extends from Labrador, Canada, to Cape Canaveral, Florida. All five DPSs of Atlantic sturgeon have the potential to be located anywhere in this marine range (ASSRT 2007; Dovel and Berggren 1983; Dadswell et al. 1984; Kynard et al. 2000; Stein et al. 2004a; Dadswell 2006; Laney et al. 2007; Dunton et al. 2010, 2012, 2015; Erickson et al. 2011; Wirgin et al. 2012; Waldman et al. 2013; O'Leary et al. 2014; Wirgin et al. 2015a,b; ASMFC 2017). Based on fishery-independent and dependent data, as well as data collected from tracking and tagging studies, in the marine environment, Atlantic sturgeon appear to primarily occur inshore of the 50 meter depth contour (Stein et al. 2004 a,b; Erickson et al. 2011; Dunton et al. 2010; ASMFC 2017); however, Atlantic sturgeon are not restricted to these depths, as excursions into deeper continental shelf waters have been documented (Timoshkin 1968; Collins and Smith 1997; Stein et al. 2004a,b; Dunton et al. 2010; Erickson et al. 2011). Data from fishery-independent surveys and tagging and tracking studies also indicate that Atlantic sturgeon may undertake seasonal movements along the coast (Dunton et al. 2010; Erickson et al. 2011; Wipplehauser 2012); however, there is no evidence to date that all Atlantic sturgeon make these seasonal movements and therefore, may be present throughout the marine environment throughout the year. For additional information on the biology, status, and range wide distribution of each distinct population segment (DPS) of Atlantic sturgeon please refer to 77 FR 5880 and 77 FR 5914, as well as the Atlantic Sturgeon Status Review Team's (ASSRT) 2007 status review of Atlantic sturgeon (ASSRT 2007) and the Atlantic States Marine Fisheries Commission 2017 Atlantic Sturgeon Benchmark Stock Assessment and Peer Review Report (ASMFC 2017).

6.3.2.6 Atlantic Salmon (Gulf of Maine DPS)

The wild populations of Atlantic salmon are listed as endangered under the ESA. Their freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River, while the marine range of the Gulf of Maine DPS extends from the Gulf of Maine (primarily northern portion of the Gulf of Maine) to the coast of Greenland (NMFS and USFWS 2005, 2016; Fay *et al*. 2006). In general, smolts, post-smolts, and adult Atlantic salmon may be present in the Gulf of Maine and coastal waters of Maine in the spring (beginning in April), and adults may be present throughout the summer and fall months (Baum 1997; Fay *et al*. 2006; USASAC 2013; Hyvarinen *et al.* 2006; Lacroix and McCurdy 1996; Lacroix *et al.* 2004, 2005; Reddin 1985; Reddin and Short 1991; Reddin and Friedland 1993, Sheehan *et al.* 2012; NMFS and USFWS 2005, 2016; Fay *et al*. 2006). For additional information on the on the biology, status, and range-wide distribution of the Gulf of Maine DPS of Atlantic salmon please refer to NMFS and USFWS 2005, 2016; Fay *et al*. 2006.

6.3.3 Interactions between Fishing Gear and Protected Species

Protected species are vulnerable to interactions with various types of fishing gear, with interaction risks associated with gear type, quantity, and soak or tow time. Available information on gear interactions with a given species (or species group) is provided in the sections below. These sections are not a comprehensive review of all fishing gear types known to interact with a given species; emphasis is placed on bottom trawl and pot/trap gear as these gear types accounts for at least 92% of commercial summer flounder, scup and black sea bass landings each year. Records of recreational hook and line interactions with protected resources are limited and this action applies to only the commercial sector with no anticipated effects on the recreational sector; therefore, recreational gear interactions with protected species are not considered here.

6.3.3.1 Commercial Fisheries Interactions

The commercial summer flounder, scup, and black sea bass fisheries are prosecuted primarily with bottom otter trawl and trap/pot gear. Protected species listed in Table 5 are known to interact with one or more of these gear types.

6.3.3.2 Sea Turtles

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

Green, Kemp's ridley, leatherback, loggerhead, and unidentified sea turtles have been documented interacting with bottom trawl gear. However, estimates are available only for loggerhead sea turtles. Warden (2011a) estimated that from 2005-2008, the average annual loggerhead interactions in bottom trawl gear in the Mid-Atlantic[3] was 292 (CV=0.13, 95% CI=221-369), with an additional 61 loggerheads (CV=0.17, 95% CI=41-83) interacting with trawls, but released through a Turtle Excluder Device (TED). Of the 292 average annual observable loggerhead interactions, approximately 44 of those were adult equivalents (Warden 2011a).[4] Most recently, Murray (2015) estimated that from 2009-2013, the total average annual loggerhead interactions in bottom trawl gear in the Mid-Atlantic[5] was 231 (CV=0.13, 95% CI=182-298). Of the 231 average annual observable loggerhead interactions, approximately 33 of those were adult equivalents (Murray 2015). Bycatch estimates provided in Warden (2011a) and Murray (2015) represent a decrease from the average annual loggerhead bycatch in bottom otter trawls during 1996-2004, which Murray (2008) estimated at 616 sea turtles (CV=0.23, 95% CI over the nine-year period: 367-890). This decrease is likely due to decreased fishing effort in high-interaction areas (Warden

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[3] Warden (2011a) defined the Mid-Atlantic as south of Cape Cod, Massachusetts, to approximately the North Carolina/South Carolina border.

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

[5] Murray (2015) defined the Mid-Atlantic as the boundaries of the Mid-Atlantic Ecological Production; roughly waters west of 71ºW to the North Carolina/South Carolina border)

2011a). Warden (2011b), also estimated total loggerhead interactions (with bottom otter trawl gear) attributable to managed species from 2005-2008. Using Northeast Fisheries Observer Program (NEFOP) data, Warden (2011b) developed a generalized additive model of loggerhead interaction rates, which were then applied to VTRs to estimate total interactions on each VTR trip. The total loggerhead interactions on each trip were then assigned to the individual managed species that were landed on the trip (as reported in VTR data; Warden 2011b). For instance, an estimated average annual take of one loggerhead (95% CI=1-3; estimated observable, and unobservable but quantifiable) was attributed to the scup fishery. Murray (2015) provided similar estimates of loggerhead interactions by managed fished species from 2009-2013. Specifically, estimated average annual take of four loggerheads (95% CI=2-7) was attributed to the scup fishery (Murray 2015).

As described above, the summer flounder fishery has a high incidence of sea turtle takes in bottom trawl gear, particularly in waters off Virginia and North Carolina. To address this issue, Turtle Excluder Devices (TEDs) have been required in the summer flounder fishery since 1992, specifically in the summer flounder fishery sea turtle protection area.[6] This area is bounded on the north by a line extending along 37°05'N (Cape Charles, VA) and on the south by a line extending out from the North Carolina-South Carolina border. Vessels north of Oregon Inlet, NC, are exempt from the TED requirement from January 15 through March 15 each year (50 CFR 223.206); while vessels operating south of Oregon Inlet, NC, are required to have TEDs year round.[7] In 2003, NMFS issued a final rule to amend the TED regulations to enhance their effectiveness in the Atlantic and Gulf Areas of the southeastern United States by requiring an escape opening designed to exclude leatherbacks as well as large loggerhead and green turtles (68 FR 8456).

Pot/Trap Gear: Leatherback, loggerhead, green and Kemp's ridley sea turtles are known to interact with trap/pot gear. Interactions are primarily associated with entanglement in vertical lines, although sea turtles can also become entangled in groundline or surface systems. Records of stranded or entangled sea turtles indicate that fishing gear can wrap around the neck, flipper, or body of the sea turtle and severely restrict swimming or feeding (Balazs 1985; Sea Turtle Disentanglement Network (STDN) and Sea Turtle Stranding and Salvage Network (STSSN) unpublished data). As a result, sea turtles can incur serious injuries and in some cases, mortality immediately or at a later time.

NMFS Northeast Region Sea Turtle Disentanglement Network's (STDN) database, a component of the Sea Turtle Stranding and Salvage Network, provides the most complete dataset of sea entanglements. Based on information provided in this database, a total of 333 sea turtle entanglements in vertical line gear were reported to the STDN and NMFS GARFO between 2002 and 2016 (STDN 2016).[8] Of the 333 reports, 316 were classified as probable or confirmed vertical line gear entanglement. Out of the 316 confirmed and probable entanglement events, there were 147 cases in which the gear type associated with the entanglement could be assigned to a specific fishery. The majority of interactions involved leatherback sea turtles (130) followed by loggerhead

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[6] TEDs allow sea turtles to escape the trawl net, reducing injury and mortality resulting from capture in the net.

[7] For a map delineating the summer flounder fishery-sea turtle protection area, please see: http://www.greateratlantic.fisheries.noaa.gov/educational_resources/gis/data/shapefiles/Summer_Flounder_Fishery-Sea_Turtle_Protection_Area/Summer_Flounder_Fishery-Sea_Turtle_Protection_Area_MAP.pdf.

[8] Data for 2016 was only available through September; data through the remainder of 2016 is still being processed.

(16), and green (1) sea turtles. Of the 130 leatherbacks, 68.5 % of the vertical line interactions involved gear associated with the lobster fishery (vertical line), 17.7 % the whelk fishery, 7.7% the sea bass fishery, 2.3 % the crab fishery, 1.5 % the conch fishery, 1.5% research, and 0.77 % whelk and lobster fishery (both trap/pots present). Of the 16 loggerheads, 56.3% involved interactions with vertical line associated with the whelk fishery and 43.8% the crab fishery. The one green sea turtle case involved an interaction with vertical line associated with the whelk fishery.

6.3.3.3 Atlantic Sturgeon

Bottom Trawl Gear: Atlantic sturgeon are known to interact with bottom trawl gear and have been observed (NEFOP and At-Sea Monitoring Program (ASM)) in this gear type over the last 27 years (NMFS NEFSC FSB 2015, 2016, 2017). Reviewing NEFOP observed data, since 1989, five confirmed Atlantic sturgeon have been observed in bottom otter trawl gear where the primary species being targeted was scup (NMFS NEFSC FSB 2015, 2016, 2017). To understand the interaction risk between bottom otter trawls and Atlantic sturgeon, there are three documents that use data collected by the NEFOP to describe bycatch of Atlantic sturgeon: Stein et al. (2004b); ASMFC (2007); and Miller and Shepard (2011). None of these provide estimates of Atlantic sturgeon bycatch by DPS. Information provided in all three documents indicate that sturgeon bycatch occurs in bottom otter trawl gear, with the most recent document estimating, based on fishery observer data and VTR data from 2006-2010, that annual bycatch of Atlantic sturgeon in bottom trawl gear was 1,342 animals (Miller and Shepard 2011). Specifically, Miller and Shepard (2011) observed Atlantic sturgeon interactions in trawl gear with small (< 5.5 inches) and large (≥ 5.5 inches) mesh sizes.[9] Although Atlantic sturgeon were observed to interact with trawl gear with various mesh sizes, based on observer data, Miller and Shepard (2011) concluded that, in general, trawl gear posed less of a mortality risk to Atlantic sturgeon than gillnet gear. Estimated mortality rates in gillnet gear were 20.0%, while those in otter trawl gear were 5.0% (Miller and Shepard 2011; NMFS 2013). Similar conclusions were reached in Stein et al. 2004b and ASMFC 2007. However, an important consideration to the findings of Stein *et al*. (2004b), ASMFC (2007), and Miller and Shepard (2011) is that observed mortality is considered a minimum of what actually occurs and therefore, the conclusions reached by Stein *et al*. (2004b), ASMFC (2007), and Miller and Shepard (2011) are not reflective of the total mortality associated with either gear type. As a result, until additional studies are conducted, it is remains uncertain what the overall impacts to Atlantic sturgeon survival are from trawl interactions (Beardsall et al. (2013) and therefore, trawls should not be discounted as a form of gear that poses a mortality risk to Atlantic sturgeon. Further, even if an animal is released alive, pursuant to the ESA, any Atlantic sturgeon interaction with fishing gear is considered take.

Pot/Trap Gear: To date, there have been no documented pot/trap interactions with Atlantic sturgeon (NMFS NEFSC FSB 2015, 2016, 2017).

6.3.3.4 Atlantic Salmon

[9] The minimum mesh size bottom otter trawls targeting summer flounder, scup and black sea bass are 5.5”, 5.0”, and 4.5” respectively.

Bottom Trawl Gear: The NEFOP and ASM Program documented a total of 15 individual salmon incidentally caught on over 60,000 observed commercial fishing trips from 1989 through August 2013 (NMFS 2013; Kocik et al. 2014). Four out of the 15 individual salmon were observed bycaught in bottom otter trawl gear, the remainder were observed in gillnet gear (Kocik, personal communication; NMFS 2013). This suggests that interactions with Atlantic salmon are rare events (NMFS 2013; Kocik et al. 2014).

Pot/Trap Gear: To date, there have been no documented pot/trap interactions with Atlantic salmon (NMFS NEFSC FSB 2015, 2016, 2017).

6.3.3.5 Marine Mammals

Some species of marine mammals have also been observed seriously injured or killed in bottom trawl or trap/pot gear. Pursuant to the MMPA, NMFS publishes a List of Fisheries (LOF) annually, classifying U.S. commercial fisheries into one of three categories based on the relative frequency of incidental serious injuries and/or mortalities of marine mammals in each fishery (i.e., Category I=frequent; Category II=occasional; Category III=remote likelihood or no known interactions; 83 FR 5349, February 7, 2018). The summer flounder, scup, and black sea bass fisheries are categorized within the LOF based on gear type (Table 6).

Table 6. Commercial Fisheries Classification based on 2018 List of Fisheries (83 FR 5349 (February 7, 2018). An (*) indicates those species driving the fisheries classification.

Resource	**Gears**	**LOF**	**Species Observed Seriously Injured/Killed**
Summer flounder, scup, and black sea bass	Mid-Atlantic bottom trawl fishery	Cat. II	Bottlenose (offshore stock), short beaked common*, Risso's*, and white-sided dolphins; gray seal and harbor seals
	Northeast bottom trawl	Cat. II	Bottlenose (offshore stock), Risso's, short beaked common, and white-sided* dolphins; harbor porpoise; harbor, gray, and harp seals; long-finned pilot whales.
Scup and black sea bass	Atlantic mixed species trap/pot fishery	Cat. II	Fin and humpback whales

6.3.3.6 Large Whales

Bottom Trawl Gear: With the exception of one species, there have been no observed interactions with large whales and bottom trawl gear. The one exception is minke whales, which have been observed seriously injured or killed in trawl gear. To date, bottom trawl interactions have only been observed in the northeast bottom trawl fisheries. From the period of 2008-2012, the estimated annual mortality attributed to this fishery was 7.8 minke whales for 2008 and zero minke whales from 2009-2012; no serious injuries were reported during this time (Waring et al. 2015). Based on this information, from 2008-2012, the estimated annual average minke whale mortality and serious injury attributed to the northeast bottom trawl fishery was 1.6 (CV=0.69) whales (Waring et al. 2015). Lyssikatos (2015) estimated that from 2008-2013, mean annual serious injuries and mortalities from the northeast bottom trawl fishery were 1.40 (CV=0.58) minke whales. Serious injury and mortality records for minke whales in U.S. waters from 2010-2014 showed zero interactions with bottom trawl (northeast or Mid-Atlantic) gear (Henry et al. 2016; Hayes et al. 2017).

Based on above information, bottom trawl gear is likely to pose a low interaction risk to any large whale species. Should an interaction occur, serious injury or mortality to any large whale is possible; however, relative to other gear types, such as fixed gear, trawl gear represents a low source serious injury or mortality to any large whale (Henry et al. 2016; Hayes et al. 2017).

Pot/Trap Gear: The greatest entanglement risk to large whales is posed by fixed fishing gear (e.g., trap/pot gear, sink gillnet gear) with vertical or ground lines that rise into the water column (Johnson *et al*. 2005; NMFS 2014b; Kenney and Hartley 2001; Hartley *et al*. 2003; Whittingham *et al*. 2005a,b; Hayes et. al 2017). Interactions resulting in serious injury to and mortality of large whales have been observed in this gear type (Hayes et. al. 2017; NMFS 2014b; Henry et al. 2017). Due to the incidences of interactions with vertical lines associated with fixed fishing gear, such as trap/pot gear, in addition to the endangered status of the species being affected most by these gear types (North Atlantic right whale and fin whale), pursuant to the MMPA, these large whale species were designated as strategic stocks.[10]

Section 118(f)(1) of the MMPA requires the preparation and implementation of a Take Reduction Plan (TRP) for any strategic marine mammal stock that interacts with Category I or II fisheries. As a result, to address and mitigate the risk of large whale entanglement in fixed fishing gear comprised of vertical line, including gillnet gear and trap/pot gear, the Atlantic Large Whale Take Reduction Plan (ALWTRP) was implemented.[11]

The ALWTRP identifies gear modification requirements and restrictions for Category I and II trap/pot fisheries in the Northeast, Mid-Atlantic, and Southeast regions of the U.S. (designated management areas); these fisheries must comply with all regulations of the ALWTRP.[12] For

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

[11] The ALWTRP was implemented in 1997. Since 1997, the ALWTRP has been modified several times, including the Sinking Groundline Rule and Vertical Line Rules (72 FR 57104, October 5, 2007; 79 FR 36586, June 27, 2014; 79 FR 73848, December 12, 2014; 80 FR 14345, March 19, 2015; 80 FR 30367, May 28, 2015).

[12] The fisheries currently regulated under the ALWTRP include: Northeast/Mid-Atlantic American lobster trap/pot; Atlantic blue crab trap/pot; Atlantic mixed species trap/pot; Northeast sink gillnet; Northeast anchored float gillnet;

further details on the gear modification requirements, restrictions, and management areas under the ALWTRP please see: http://www.greateratlantic.fisheries.noaa.gov/Protected/whaletrp/.

6.3.3.7 Small Cetaceans and Pinnipeds

Bottom Trawl Gear: Small cetacean and pinniped species have been observed seriously injured and killed in bottom trawl gear and have been observed taken in this gear type on trips targeting summer flounder and scup (Table 7; Lyssikatos 2015, Waring et al. 2014a,b; Hayes et al. 2017; http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html).[13] Total annual bycatch mortality in Northeast and Mid-Atlantic commercial bottom trawl trips (considers all FMPs) from 2008-2013 is provided in Lyssikatos (2015). The highest annual bycatch mortality in bottom trawl gear (Northeast and Mid-Atlantic combined) was observed for short beaked common dolphins, followed by Atlantic white-sided dolphins, gray seals, risso's dolphins, long-finned pilot whales, bottlenose dolphins, harbor seals, harbor porpoise, and harp seals (Lyssikatos 2015).

In 2006, based on observed mid-water trawl interactions with long-finned pilot whales, short - finned pilot whales, common dolphins, and white sided dolphins, the Atlantic Trawl Gear Take Reduction Team (ATGTRT) was convened to address the incidental mortality and serious injury of these species incidental to bottom and mid-water trawl fisheries operating in both the Northeast and Mid-Atlantic regions. Because none of the marine mammal stocks of concern to the ATGTRT are classified as a "strategic stock", nor do they currently interact with a Category I fishery, it was determined at the time that development of a take reduction plan was not necessary. In lieu of a take reduction plan, the ATGTRT agreed to develop an Atlantic Trawl Gear Take Reduction Strategy (ATGTRS). The ATGTRS identifies informational and research tasks, as well as education and outreach needs, to provide the basis for decreasing mortalities and serious injuries of marine mammals to insignificant levels approaching zero mortality and serious injury rates. The ATGTRS also identifies several voluntary measures that can be adopted by certain trawl fishing sectors to potentially reduce the incidental capture of marine mammals. For additional details, visit: http://www.greateratlantic.fisheries.noaa.gov/Protected/mmp/atgtrp/

Pot/Trap Gear: Over the past several years, observer coverage has been limited for trap/pot fisheries. In the absence of extensive observer data for these fisheries, stranding data provides the next best source of information on species interactions with trap/pot gear. Stranding data underestimates the extent of human-related mortality and serious injury because not all of the marine mammals that die or are seriously injured in human interactions are discovered, reported, or show signs of entanglement. Additionally, if gear is present, it is often difficult to definitively attribute the animal's death or serious injury to the gear interaction, or to a specific fishery. Therefore, the conclusions below should be taken with these considerations in mind.

Northeast drift gillnet; Mid-Atlantic gillnet; Southeastern U.S. Atlantic shark gillnet; and Southeast Atlantic gillnet (NMFS 2014b).

[13] For additional information on small cetacean and pinniped interactions prior to those provided in Hayes et al. 2017, see: http://www.nmfs.noaa.gov/pr/sars/region.htm

Table 5 provides the list of small cetacean and pinniped species that may occur and be affected by the summer flounder, scup, and black sea bass fisheries. Of these species, only several bottlenose dolphin stocks have been identified as species at risk of becoming seriously injured or killed by trap/pot gear. Stranding data provides the best source of information on species interaction history with these gear types. Based on stranding data from 2007-2013, estimated mean annual mortality for each stock was less than one animal (Waring et al. 2014a; Waring et al. 2016).[14] Based on this and the best available information, pot/trap gear is not expected to pose an interaction risk to pinniped species, and interaction risks to small cetaceans (specifically bottlenose dolphins) are expected to be low. Should an interaction with a small cetacean occur, serious injury or mortality to the animal is possible; however, relative to other gear types discussed above (i.e., bottom trawl gear), trap/pot gear represents a low source serious injury or mortality to any small cetacean (Palmer 2017).

6.4 Human Communities

Summer flounder, scup and black sea bass support important commercial fisheries. In 2016, 7.81 million pounds of summer flounder, 15.75 million pounds of scup and 2.59 million pounds of black sea bass were landed by commercial fishermen from Maine through North Carolina.

6.4.1 Summer Flounder Commercial Fishery

Summer flounder support an extensive commercial fishery along the Atlantic Coast, principally from Massachusetts through North Carolina.

Commercial landings of summer flounder peaked in 1984 at 37.77 million pounds and reached a low of 7.81 million pounds in 2016, corresponding to 96% of the 2016 commercial quota (Figure 9).

In federal waters, a moratorium permit is required to fish commercially for summer flounder. Permit data for 2016 indicate that 773 vessels held commercial permits for summer flounder.

The commercial quota is divided among the states based on the allocation percentages given in Table 7 and each state sets measures to achieve their state-specific commercial quotas.

Vessel Trip Report (VTR) data for 2016 indicate that the bulk of the summer flounder landings were taken by bottom otter trawls (95 percent). Beam trawls (other, non-shrimp) accounted for approximately 1.4% of the landings, and other gear types (e.g., scallop trawls, sink gill nets, hand lines, and scallop dredges) each accounted for 1 percent or less of landings. Current regulations

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[14] Stranding data provided in Waring *et al*. 2015a and Hayes et al. 2017 were not considered in estimating mean annual mortality as not all bottlenose dolphin stocks are addressed in this stock assessment report. As all bottlenose dolphin stocks are considered in Waring *et al.* (2014a) and Waring *et al*. (2016), these stock assessment reports were used to estimate mean annual mortality. Estimates of mean annual mortality were calculated based on the total number of animals that stranded between 2007-2013, and that were determined to have incurred serious injuries or mortality as result of interacting with trap/pot gear. Please note, for bottlenose dolphin stocks, Waring *et al*. (2014a) and Waring *et al*. (2016) provides two categories for trap/pot gear: (Atlantic blue) crab pot, and other pot gear. We combined the two to get an overall number of interactions associated with trap/pot gear in general. In addition, any animals released alive with no serious injuries were not included in the estimate. Also, if maximum or minimum number of animals stranded were provided, to be conservative, we considered the maximum estimated number in calculating our mean annual estimate of mortality.

require a 14-inch total length minimum fish size in the commercial fishery. Trawl nets are required to have 5.5-inch diamond or 6-inch square minimum mesh in the entire net for vessels possessing more than the threshold amount of summer flounder (i.e., 200 lb from November 1-April 30 and 100 lb from May 1-October 31).

VTR data were also used to identify all NMFS statistical areas that accounted for more than 5 percent of the summer flounder commercial catch in 2016 (Table 8; Figure 10). Statistical area 616 was responsible for the highest percentage of the catch (24%; Table 8). While statistical area 539 accounted for only 4.3% of 2016 summer flounder catch, this area had the highest number of trips that caught summer flounder (2,648 trips). Note that discards on VTRs are self-reported.

For the years 1994 through 2016, NMFS dealer data indicate that summer flounder total ex-vessel revenue (adjusted to 2016 dollars to account for inflation) from Maine to North Carolina ranged from a low of $20.74 million in 1996 to a high of $33.88 million in 2004. The adjusted mean price per pound for summer flounder ranged from a low of $1.70 in 2011 (in 2016 dollars) to a high of $3.54 in 2016. In 2016, 7.81 million pounds of summer flounder were landed generating $27.65 million in total ex-vessel revenue (an average of $3.54 per pound; Figure 11).

At least 100,000 lb of summer flounder were landed by commercial fishermen at each of 16 ports in seven states in 2016. These 16 ports accounted for approximately 85% of all 2016 commercial summer flounder landings. Point Judith, RI and Beaufort, NC were the leading ports in 2016 in terms of pounds of summer flounder landed, while Point Judith, RI was the leading port in terms of the number of vessels landing summer flounder (Table 9).

Over 200 federally permitted dealers from Maine through North Carolina bought summer flounder in 2016. More dealers bought summer flounder in New York than in any other state (Table 10). All dealers bought approximately $27.65 million worth of summer flounder in 2016.

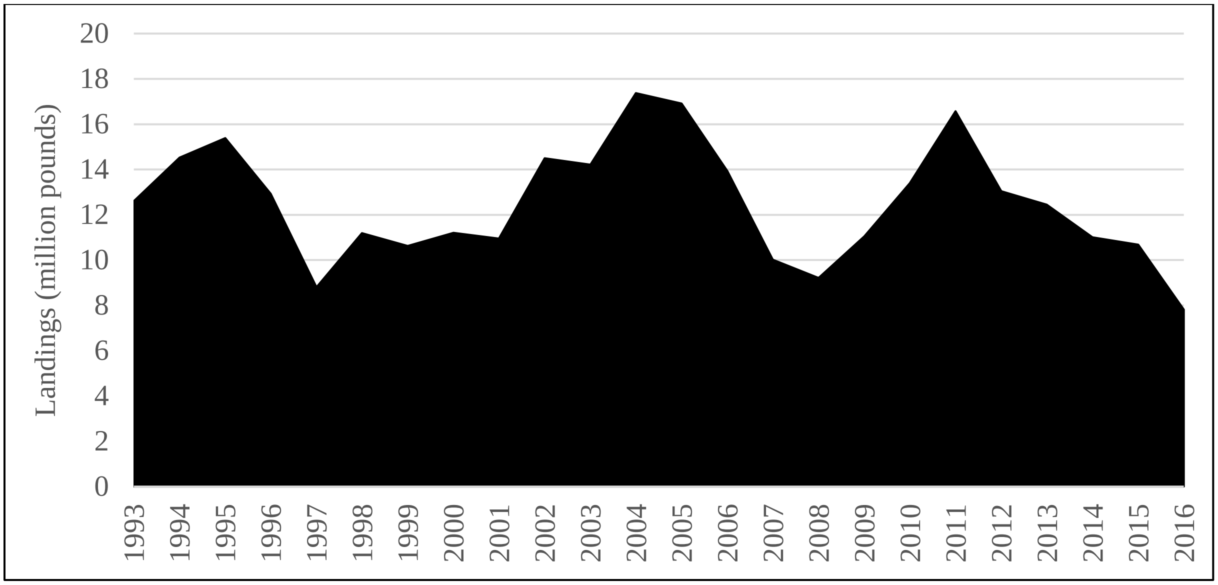

Figure 9: Summer flounder commercial landings, 1993-2016. Source: M. Terceiro, personal communication, July 2016 and Terceiro 2017a.

Table 7: State-by-state percent share of commercial summer flounder allocation.

State	Allocation (%)
ME	0.04756
NH	0.00046
MA	6.82046
RI	15.68298
CT	2.25708
NY	7.64699
NJ	16.72499
DE	0.01779
MD	2.03910
VA	21.31676
NC	27.44584
Total	100

Table 8: Statistical areas that accounted for at least 5 percent of the total summer flounder catch in 2016, with associated number of trips.

Statistical Area	Percent of 2016 Commercial Summer Flounder Catch	Number of Trips
616	24%	710
537	20%	1,862
613	16%	2,122
612	8%	1,573

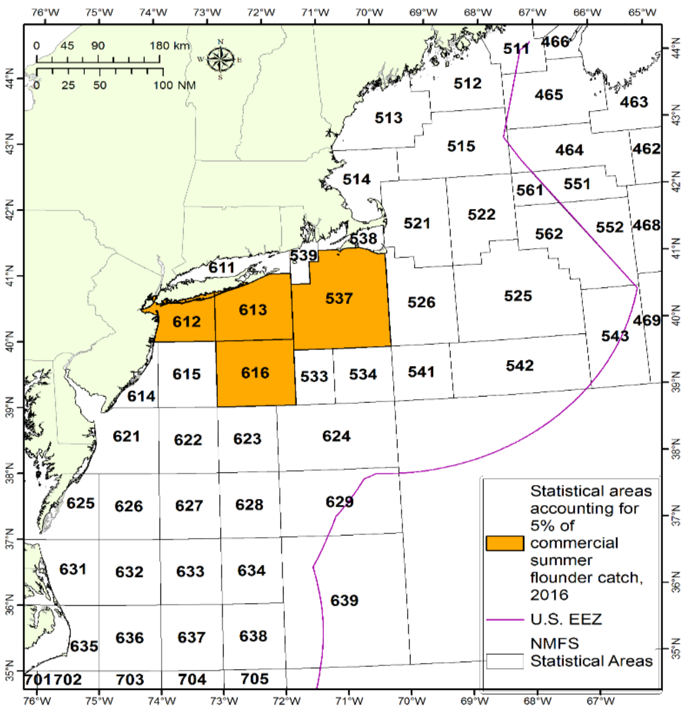

Figure 10: NMFS Statistical Areas, highlighting those that each accounted for more than 5% of the commercial summer flounder catch in 2016.

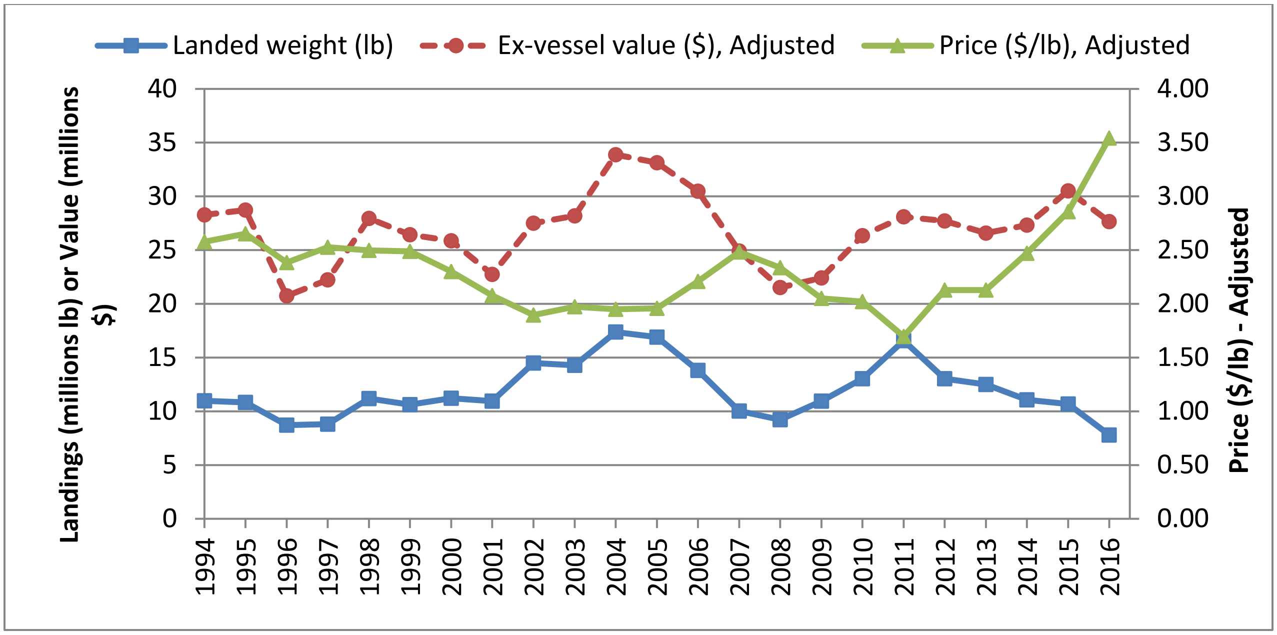

Figure 11: Landings, ex-vessel value, and price per pound for summer flounder, Maine through North Carolina, 1994-2016. Ex-vessel value and price are adjusted to real 2016 dollars.

Table 9: Ports reporting at least 100,000 lb of summer flounder in 2016, and the corresponding percentage of total 2016 commercial summer flounder landings and number of vessels.

Port	Summer Flounder Landings (lb)	% of 2016 commercial summer flounder landings	Number of vessels
POINT JUDITH, RI	1,141,576	15	138
BEAUFORT, NC	1,068,695	14	62
HAMPTON, VA	884,459	11	65
PT. PLEASANT, NJ	501,223	6	49
NEWPORT NEWS, VA	447,319	6	38
BELFORD, NJ	417,596	5	24
MONTAUK, NY	344,737	4	68
HOBUCKEN, NC	270,669	3	12
WANCHESE, NC	270,121	3	20
NEW BEDFORD, MA	251,381	3	65
CAPE MAY, NJ	236,361	3	58
ORIENTAL, NC	220,502	3	10
CHINCOTEAGUE, VA	205,592	3	25
ENGELHARD, NC	189,583	2	9
STONINGTON, CT	110,718	1	19
LONG BEACH/BARNEGAT LIGHT, NJ	109,493	1	21

Table 10: Dealers reporting buying summer flounder, by state in 2016. C=Confidential.

State	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number Of Dealers	32	33	13	48	30	C	7	16	29

6.4.2 Scup Commercial Fishery

In 2016, 15.75 million pounds of scup were landed by commercial fishermen from Maine through North Carolina. The total ex-vessel value in 2016 was $10.70 million, resulting in an average price per pound of $0.68. Recreational anglers landed an estimated 4.26 million pounds of scup in 2016. Commercial landings have been fairly stable since 2011 (Figure 12).

There is a strong relationship between the amount of commercial scup landed in a given year and the average price per pound. As commercial landings increase, price generally decreases (Figure 13). The highest average price per pound over the past two decades was $1.46 ($2.17 in 2016 dollars) and occurred in 1998. The lowest mean price per pound was in 2013 at $0.55 ($0.50 in 2016 dollars).

The commercial scup fishery operates year-round, taking place mostly in federal waters during the winter months and mostly in state waters during the summer. A coast-wide commercial quota is allocated between three quota periods, known as the winter I, summer, and winter II quota periods (Table 11). These seasonal quota periods were established to ensure that both smaller day boats, which typically operate near shore in the summer months, and larger vessels operating offshore in the winter months can land scup before the annual quota is reached. Effective April 2018, the Council and Commission modified the dates to the quota periods for the first time since they were first implemented in 1997. These changes modified the dates of the Summer quota period to May 1 – September 30 and the Winter II period to October 1 – December 31.

A moratorium permit is required to fish commercially for scup. In 2016, 632 vessels held commercial moratorium permits for scup. Over 173 federally-permitted dealers from Maine through North Carolina purchased scup in 2016. More dealers in New York purchased scup than in any other state (Table 12).

VTR data include captains' self-reported best estimates of catch, including landings, discards, and locations. In 2016, about 97% of the commercial scup landings reported on VTRs by federal commercial permit holders from Maine to North Carolina were caught with bottom otter trawls. Gillnets accounted for about 1% of the landings. All other gear types each accounted for less than 1% of the 2016 commercial scup landings.

VTR data suggest that NMFS statistical areas 537, 613, and 616 were responsible for the largest percentage of commercial scup catch in 2016. Statistical area 539, off Rhode Island, had the highest number of trips which caught scup (Table 13; Figure 14).

In 2016, at least 100,000 pounds of scup were landed by fishermen in 15 ports in 6 states. These ports accounted for approximately 91% of all 2016 commercial scup landings. Point Judith, Rhode Island was the leading port, both in terms of landings and number of vessels landing scup.

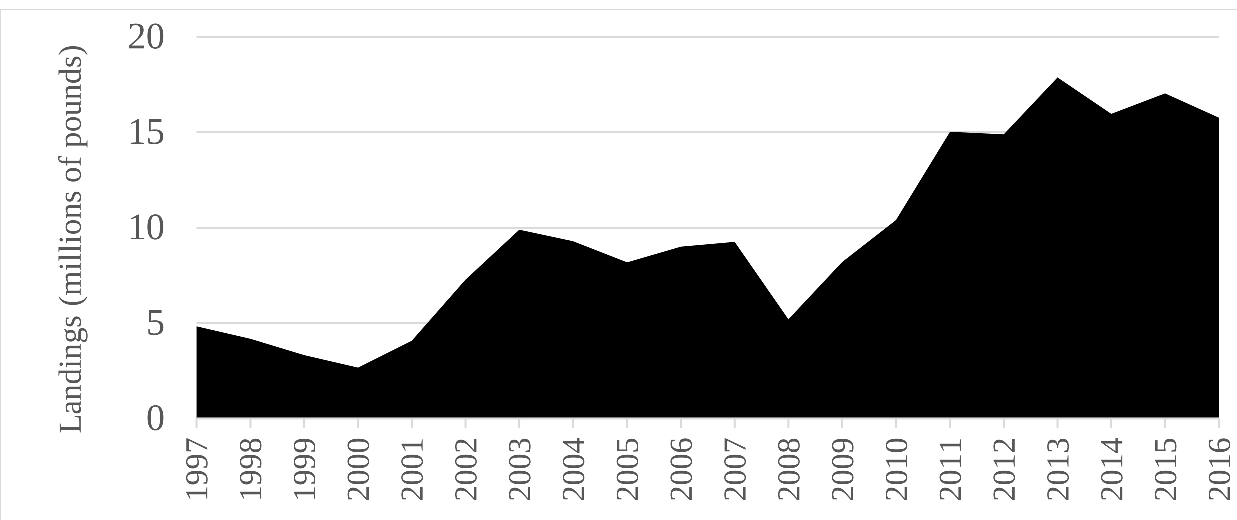

Figure 12: Commercial scup landings, Maine through North Carolina, 1998-2016, in millions of pounds.

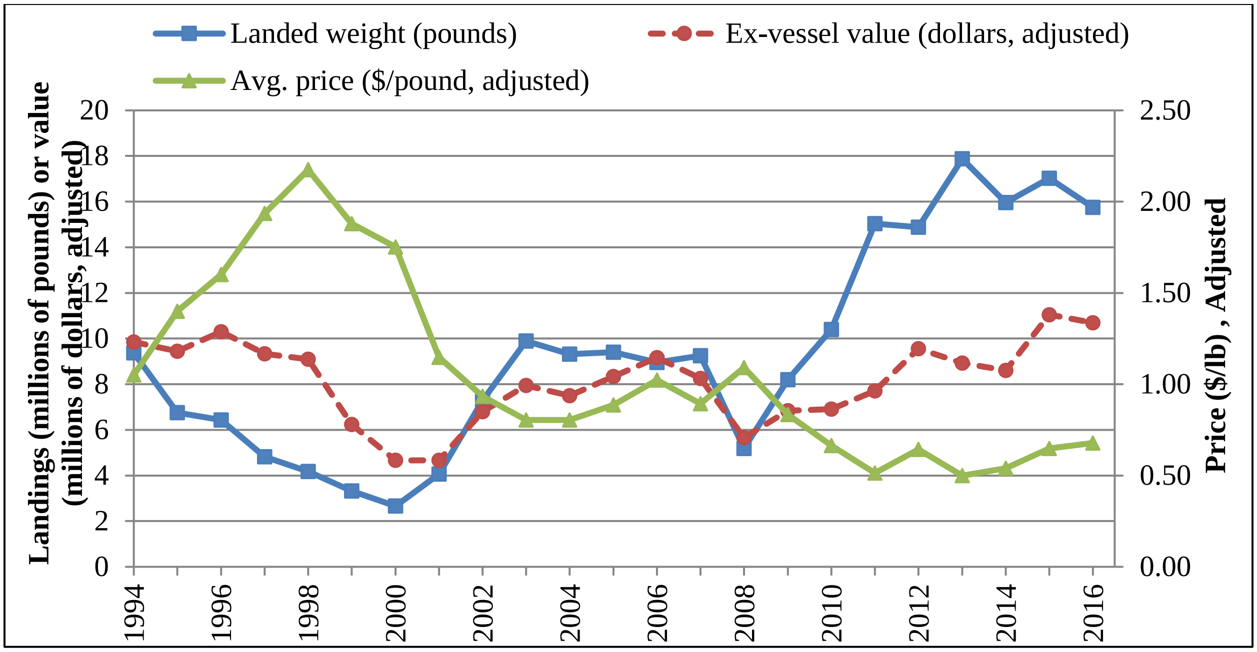

Figure 13: Landings, ex-vessel value, and price for scup from Maine through North Carolina, 1994-2016. Ex-vessel value and price are adjusted to show real 2016 dollars.

Table 11: Dates, allocations, and possession limits for the commercial scup quota periods.

Quota Period	Dates	% of comm. quota allocated	Possession limit
Winter I	January 1 – April 30	45.11%	50,000 pounds, until 80% of winter I allocation is reached, then reduced to 1,000 pounds.
Summer	May 1 – September 30	38.95%	State-specific
Winter II	October 1 – December 31	15.94%	12,000 pounds. If winter I quota is not reached, the winter II possession limit increases by 1,500 pounds for every 500,000 pounds of scup not landed during winter I.

Table 12: Commercial fish dealers, by state, which reported buying scup in 2016. C = confidential.

State	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of dealers	C	34	33	16	42	23	C	5	10	10

Table 13: Statistical areas that accounted for at least 5% of the total commercial scup catch in 2016, with associated number of trips, according to VTR data.

Statistical Area	Percent of 2016 Commercial Scup Catch	Number of Trips
537	29%	1,671
613	18%	1,449
616	16%	404
539	15%	2,372
611	9%	2,005

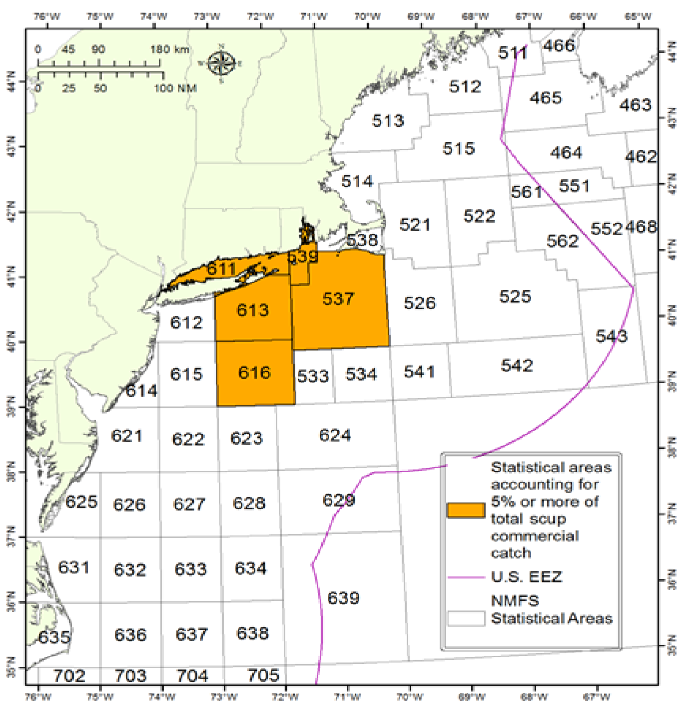

Figure 14: NMFS Statistical Areas, highlighting those that each accounted for more than 5% of the commercial scup catch in 2016.

6.4.3 Black Sea Bass Commercial Fishery

Commercial landings of black sea bass peaked in 1987 at 3.61 million pounds, and reached a low of 1.18 million pounds in 2009 (Figure 15). In 2016, commercial fishermen landed 2.59 million pounds of black sea bass (corresponding to 96% of the commercial quota), an increase from 2.29 million lb in 2015 which corresponds to an increase in the 2016 quota.

A moratorium permit is required to fish commercially for black sea bass in federal waters. In 2016, 673 vessels held federal commercial black sea bass permits.

The minimum commercial size limit for black sea bass of 11 inches total length has been in place since 2002. The Commission divides the black sea bass commercial quota among the states based on the allocation percentages given in Table 14, and states set measures to achieve their state-specific commercial quotas.

Vessel Trip Report (VTR) data for 2016 indicate that 65% of the commercial black sea bass caught by federal permit holders from Maine to North Carolina was caught with bottom otter trawl gear. About 22% were caught with fish pots and traps, 5% in offshore lobster traps, 4% with hand lines and 2% assigned to beam otter trawls. Other gear types accounted for just over 1% each of total commercial landings.

Any federally-permitted vessel which uses otter trawl gear and catches more than 500 pounds of black sea bass from January through March, or more than 100 pounds from April through December, must use nets with a minimum mesh size of 4.5-inch diamond mesh applied throughout the codend for at least 75 continuous meshes forward of the end of the net. Pots and traps used to target black sea bass commercially must have two escape vents with degradable hinges in the section known as the parlor. The escape vents must measure 1.375 inches by 5.75 inches if rectangular, 2 inches by 2 inches if square, or have a diameter of 2.5 inches if circular.

A review of the VTR data suggest that statistical area 616 was responsible for the largest percentage of commercial black sea bass catch in 2016 (Table 15, Figure 16). While statistical area 539 accounted for only 4.6% of 2016 black sea bass catch, this area had the highest number of trips that caught black sea bass (1,378 trips), accounting for 16.3% of all trips. It should be noted that discards on VTR’s are self-reported.

Over the past two decades, total black sea bass ex-vessel value (adjusted to 2016 dollars to account for inflation) from Maine to North Carolina has ranged from a low of $3.33 million in 1994 and reached a time series high in 2016 with an ex-vessel vlaue of of $9.26 million. Black sea bass reached its lowest adjusted average annual price per pound in 1996, at $1.65 ($1.14 in 1996 dollars), and its highest adjusted average annual price per pound in 2016, at $3.58 (Figure 17).

In 2016, 2.59 million pounds of black sea bass were landed in the commercial fishery, generating $9.26 million in revenues at an average price of $3.58 per pound (Figure 17). Landings, ex-vessel value and price per pound are all increases from 2015.

At least 100,000 pounds of black sea bass were landed in each of nine ports in seven east coast states in 2016. These nine ports accounted for nearly 61% of all commercial black sea bass landings in 2016 (Table 16).

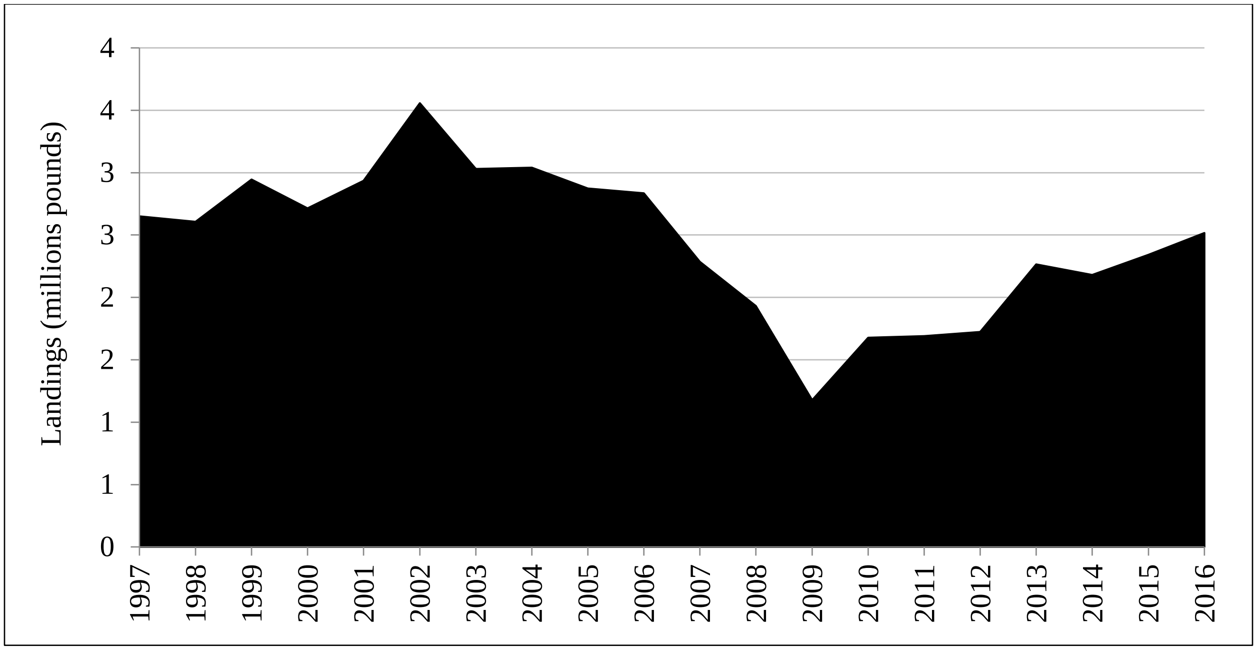

Figure 15: Commercial black sea bass landings, Maine through North Carolina, 1997-2016, in millions of pounds.

Table 14: Allocation of commercial black sea bass quota among states established in the Commission's FMP.

State	Allocation (percent)
Maine	0.5
New Hampshire	0.5
Massachusetts	13.0
Rhode Island	11.0
Connecticut	1.0
New York	7.0
New Jersey	20.0
Delaware	5.0
Maryland	11.0
Virginia	20.0
North Carolina	11.0
Total	100

Table 15: Statistical areas that accounted for at least 5% of the total commercial black sea bass catch in 2016, with associated number of trips.

Statistical Area	Percent of 2016 Commercial Black Sea Bass Catch	Number of Trips
616	34%	492
621	11%	318
613	11%	933
537	9%	921
615	8%	158

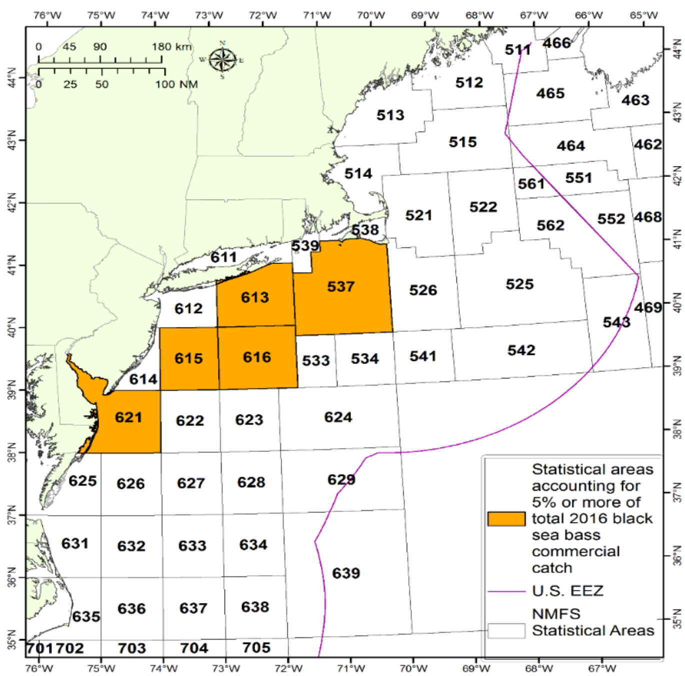

Figure 16: NMFS Statistical Areas, highlighting those that each accounted for more than 5% of the commercial black sea bass catch in 2016.

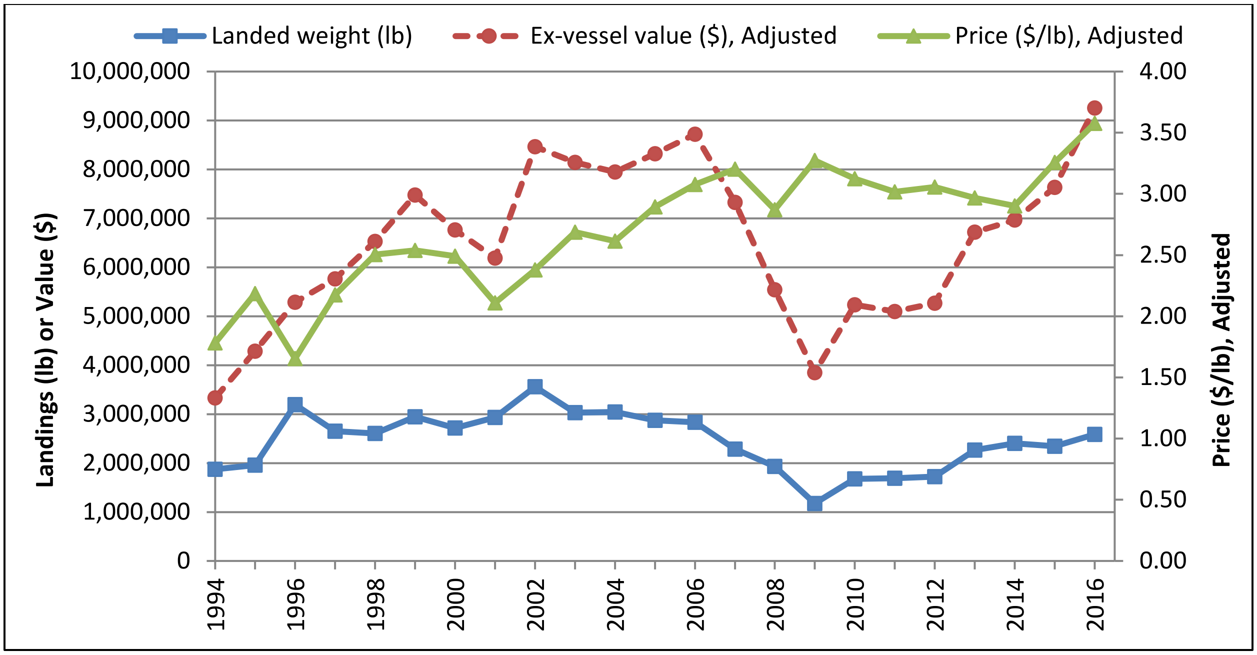

Figure 17: Landings, ex-vessel value, and price for black sea bass, from Maine through North Carolina, 1994-2016. Ex-vessel value and price are adjusted to real 2016 dollars.

Table 16: Ports reporting at least 100,000 lb of black sea bass landings in 2016, and corresponding percentage of total 2016 commercial black sea bass landings.

Port name	Pounds of black sea bass landed	% of total commercial black sea bass landed	Number of vessels landing black sea bass
HAMPTON, VA	238,435	9.2	39
PT. PLEASANT, NJ	237,355	9.2	39
OCEAN CITY, MD	232,039	9.0	7
POINT JUDITH, RI	208,962	8.1	133
CAPE MAY, NJ	151,608	5.9	39
CHINCOTEAGUE, VA	141,663	5.5	10
NEW BEDFORD, MA	136,399	5.3	49
MONTAUK, NY	108,590	4.2	88
BEAUFORT, NC	104,916	4.1	47

7 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

This section summarizes the expected impacts of each of the management alternatives (section 5) on the four VECs:

- Summer flounder, scup, black sea bass and non-target species
- Physical habitat and EFH

- Protected species
- Human communities

This EA analyzes the expected impacts of each alternative on each VEC. When considering impacts on each VEC, the alternatives are compared to the current condition of the VEC. The alternatives are also compared to each other. The No Action alternatives describe what would happen if no action were taken and would have the same outcome as *status quo* management. The No Action/*status quo* alternatives assume that the current management regimes and fishery operations will continue into the future. The No Action/*status quo* alternative does not necessarily imply no impact. Impacts to the VECs could still occur if no action is taken, as is explained in more detail in the following sections.

The expected impacts are described both in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). Table 17 summarizes the main guidelines used for each VEC to determine the magnitude and direction of the impacts described in this section. The expected impacts to each VEC are derived from both consideration of the current condition of the VEC and the expected changes in the characteristics and prosecution of the fishery under each of the alternatives. It is not possible to quantify with confidence how these factors will change under each alternative; therefore, expected changes are estimated and/or described qualitatively.

The recent conditions of the VECs include the biological conditions of the target stocks, non-target stocks, and protected species over the most recent five years (sections 6.1 and 6.3). They also include the fishing practices and levels of effort and landings in the commercial summer flounder, scup and black sea bass fisheries over the most recent five years, as well as the economic characteristics of the fisheries over the most recent three to five years (depending on the dataset; section 6.4). The recent conditions of the VECs also include recent levels of habitat availability and quality (section 6.2). The current condition of each VEC is described in Table 18.

The commercial summer flounder, scup and black sea bass quota monitoring systems at both the state and federal level are timely and typically successful in constraining landings to the commercial quota. The combination of proactive/in-season AMs (state/federal closure authority once quotas are reached) and reactive AMs (pound for pound payback in a following year's quota) have been successful management tools to constrain landings, while providing for fishery flexibility under a range of stock size and quota allocation conditions. From 2012 through 2016, the time period in which ACLs and AMs have been implemented, landings for all three species were generally near or below the annual quotas with the only overage occurring for summer flounder which was only 2% over, on average, during that time.

Commercial fishing effort is largely determined by the established commercial quotas for each of these fisheries. In general, fishing effort increases as commercial quotas increase and will decrease as quotas decrease, although changes in effort likely do not occur at the same rate as changes in the quota (i.e. a 50% change in quota does not likely mean a 50% change in fishing effort). Because current management measures are successful at constraining landings to the commercial quotas, the associated fishing effort and impacts under the established quotas are expected to be similar to those described in the analysis of catch and landings limits (most recently for summer flounder, in the November 2016 Supplemental Environmental Assessment; for scup in the December 2017 Environmental Assessment (EA); and for black sea bass, in the April 2017 EA).

The alternatives considered here do not modify the existing commercial quotas set through the standard specification setting process; therefore, fishing effort is expected to be similar to that analyzed in the specification documents for these fisheries and are expected to be similar across all alternatives. The proposed alternatives likely do not have any immediate impacts, but rather affect the management framework for future accountability actions. Evaluating the indirect impacts of the alternatives considers the potential for increased or decreased commercial catches and opportunities relative to no action being taken. For example, alternative 2B would reduce possible paybacks of observed discards overages, under certain stock conditions, and would tend to increase commercial catch opportunities compared to no action being taken. Again, the potential changes in catch opportunities associated with this specific alternative are likely to be relatively minor and are in relation to the *status quo* and would not allow more catch or effort compared to the commercial quotas and ACLs previously analyzed in the specification documents.

The alternatives are not compared to a theoretical condition where the fisheries are not operating. These fisheries have occurred for many decades and are expected to continue into the foreseeable future. The nature and extent of the management programs for these fisheries have been examined in detail in EAs and Environmental Impact Statements (EISs) prepared for previously implemented management actions under the Summer Flounder, Scup, and Black Sea Bass FMP.

When considering overall impacts on each VEC, not all components of the summer flounder, scup and black sea bass fisheries are weighted equally in drawing conclusions about the magnitude and direction of impacts. Only the commercial component of these fisheries is considered in this document. This action does not propose any modifications to the recreational measures, and the alternatives considered to modify commercial AMs are not expected to affect the recreational fishery in a manner that would change the impacts for any of the VECs considered.

The bottom otter trawl is the predominant gear type in the commercial summer flounder, scup and black sea bass fisheries. VTR data for 2016 indicate that bottom otter trawl gear accounted for 95% of the commercial summer flounder landings, 97% of the commercial scup landings and 65% of the commercial black sea bass landings. Pots and traps accounted for 26% of the black sea bass landings in 2016. Other gear types such as hand lines, pound nets and gill nets are also used in these commercial fisheries but account for a much smaller percentage of commercial landings. Therefore, the conclusions and relative impacts, particularly for the physical habitat and protected resources VECs, are weighted more heavily toward bottom trawl and pot/trap gear since these are the dominant gear types used to harvest summer flounder, scup and black sea bass.

In general, alternatives which may result in overfishing or an overfished status for target and non-target species may have negative biological impacts for those species, compared to the current condition of the VEC. Conversely, alternatives which may result in a decrease in fishing effort, resulting in ending overfishing or rebuilding to the biomass target, may result in positive impacts for those species by resulting in a decrease in fishing mortality (Table 17).

For the physical environment and habitat, alternatives that improve the quality or quantity of habitat or allow for recovery are expected to have positive impacts. Alternatives that degrade the quality or quantity, or increase disturbance of habitat are expected to have negative impacts (Table 17). Most habitat areas where summer flounder, scup and black sea bass are fished have been heavily fished by multiple fishing fleets over many decades and are unlikely to see a measurable improvement in their condition in response to any possible shifts in effort in a single fishery. The alternatives considered here do not modify the existing commercial quotas and will likely have little effect on fleet dynamics or fishing effort. Therefore, these alternatives will likely have no impact on the current habitat conditions but would allow for continued commercial operations which would limit any improvements to habitat condition.

For protected species, consideration is given to both ESA-listed species and MMPA-protected species. ESA-listed species include populations of fish, marine mammals, or turtles at risk of extinction (endangered) or endangerment (threatened). For endangered or threatened species, any action that results in interactions with or take of ESA-listed resources is expected to have negative impacts, including actions that reduce interactions. Actions expected to result in positive impacts on ESA-listed species include only those that contain specific measures to ensure no interactions with protected species (i.e., no take). By definition, all species listed under the ESA are in poor condition and any take has the potential to negatively impact that species' recovery. Under the MMPA, the stock condition of each protected species varies, but all are in need of protection.

For marine mammal stocks/species that have their potential biological removal (PBR) level reached or exceeded, negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), actions not expected to change fishing behavior or effort such that interaction risks increase relative to what has been in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal (Table 17). Thus, the overall impacts on the protected resources VEC for each alternative take into account impacts on ESA-listed species, impacts on non-ESA listed marine mammal stocks in good condition (i.e., PBR level has not been exceeded), and non-ESA listed marine mammal stocks that have exceeded or are in danger of exceeding their PBR level. Similar to the conclusion on habitat, the alternatives considered here will likely have little effect on fleet dynamics or fishing effort; therefore, these alternatives will likely have no impact on current protected resource conditions but would allow for continued commercial operations which will continue to interact with protected species and result in takes of those species.

Socioeconomic impacts are considered primarily in relation to potential changes in landings and prices, and by extension, revenues, compared to the current fishery conditions. Alternatives which could lead to increased availability of target species and/or an increase in catch per unit effort (CPUE) could lead to increased landings for particular communities or for the fishery as a whole. Alternatives which could result in an increase in landings, through the prevention of paybacks, are generally considered to have positive socioeconomic impacts because they could result in increased revenues (for fishing businesses as well as shoreside businesses); however, if an increase in landings leads to a decrease in price or a decrease in SSB for any of the landed species, then negative socioeconomic impacts could occur (Table 17).

Table 17: General definitions for impacts and qualifiers relative to resource condition (i.e., baselines) summarized in Table 18 below.

General Definitions				
VEC	**Resource Condition**	**Impact of Action**		
		Positive (+)	Negative (-)	No Impact (0)
Target and non-target Species	Overfished status defined by the MSA	Alternatives that would maintain or are projected to result in a stock status above an overfished condition*	Alternatives that would maintain or are projected to result in a stock status below an overfished condition*	Alternatives that do not impact stock / populations
ESA-listed protected species (endangered or threatened)	Populations at risk of extinction (endangered) or endangerment (threatened)	Alternatives that contain specific measures to ensure no interactions with protected species (i.e., no take)	Alternatives that result in interactions/take of listed species, including actions that reduce interactions	Alternatives that do not impact ESA listed species
MMPA protected species (not also ESA listed)	Stock health may vary but populations remain impacted	Alternatives that maintain takes below PBR and approaching the Zero Mortality Rate Goal	Alternatives that result in interactions with/take of marine mammals that could result in takes above PBR	Alternatives that do not impact MMPA protected species
Physical environment / habitat / EFH	Many habitats degraded from historical effort and slow recovery time (see condition of the resources table for details)	Alternatives that improve the quality or quantity of habitat or allow for recovery	Alternatives that degrade the quality/quantity or increase disturbance of habitat	Alternatives that do not impact habitat quality
Human communities (socioeconomic)	Highly variable but generally stable in recent years (see condition of the resources table for details)	Alternatives that increase revenue and social well-being of fishermen and/or communities	Alternatives that decrease revenue and social well-being of fishermen and/or communities	Alternatives that do not impact revenue and social well-being of fishermen and/or communities
	Impact Qualifiers			
A range of impact qualifiers is used to indicate any existing uncertainty	Negligible	To such a small degree to be indistinguishable from no impact		
	Slight (sl), as in slight positive or slight negative	To a lesser degree / minor		
	Moderate (M) positive or negative	To an average degree (i.e., more than “slight”, but not “high”)		
	High (H), as in high positive or high negative	To a substantial degree (not significant unless stated)		
	Significant (in the case of an EIS)	Affecting the resource condition to a great degree, see 40 CFR 1508.27.		
	Likely	Some degree of uncertainty associated with the impact		

*Actions that will substantially increase or decrease stock size, but do not change a stock status may have different impacts depending on the particular action and stock. Meaningful differences between alternatives may be illustrated by using another resource attribute aside from the MSA status, but this must be justified within the impact analysis.

Table 18: Baseline conditions of VECs considered in this action, as summarized in Section 6.

<table>
<tr><th colspan="2" rowspan="2">VEC</th><th colspan="2">Baseline Condition</th></tr>
<tr><th>Status/Trends, Overfishing?</th><th>Status/Trends, Overfished?</th></tr>
<tr><td rowspan="3">Target stocks (section 6.1.1)</td><td>Summer flounder</td><td>Yes</td><td>No</td></tr>
<tr><td>Scup</td><td>No</td><td>No</td></tr>
<tr><td>Black sea bass</td><td>No</td><td>No</td></tr>
<tr><td rowspan="10">Non-target species (principal species listed in section 6.1.2)</td><td>Spiny dogfish</td><td>No</td><td>No</td></tr>
<tr><td>Little skate</td><td>No</td><td>No</td></tr>
<tr><td>Clearnose skate</td><td>No</td><td>No</td></tr>
<tr><td>Striped sea robin</td><td>Unassessed</td><td>Unassessed</td></tr>
<tr><td>Winter skate</td><td>No</td><td>No</td></tr>
<tr><td>Northern sea robin</td><td>Unassessed</td><td>Unassessed</td></tr>
<tr><td>Barndoor skate</td><td>No</td><td>No</td></tr>
<tr><td>Butterfish</td><td>No</td><td>No</td></tr>
<tr><td>Longfin squid</td><td>Unknown</td><td>No</td></tr>
<tr><td>Silver hake</td><td>No</td><td>No</td></tr>
<tr><td colspan="2">Habitat (section 6.2)</td><td colspan="2">Commercial fishing impacts are complex and variable and typically adverse; Non-fishing activities had historically negative but site-specific effects on habitat quality.</td></tr>
<tr><td rowspan="5">Protected resources (section 6.3)</td><td>Sea turtles</td><td colspan="2">Leatherback and Kemp’s ridley sea turtles are classified as endangered under the ESA; loggerhead (NW Atlantic DPS) and green (North Atlantic DPS) sea turtles are classified as threatened.</td></tr>
<tr><td>Fish</td><td colspan="2">Atlantic salmon, shortnose sturgeon, and the New York Bight, Chesapeake, Carolina, and South Atlantic DPSs of Atlantic sturgeon are classified as endangered under the ESA; the Atlantic sturgeon Gulf of Maine DPS is listed as threatened; cusk are a candidate species</td></tr>
<tr><td>Large whales</td><td colspan="2">All large whales in the Northwest Atlantic are protected under the MMPA. North Atlantic right, fin, blue, sei, and sperm whales are also listed as endangered under the ESA. Pursuant to section 118 of the MMPA, the Large Whale Take Reduction Plan was implemented to reduce humpback, North Atlantic right, and fin whale entanglement in vertical lines associated with fixed fishing gear (sink gillnet and trap/pot) and sinking groundlines.</td></tr>
<tr><td>Small cetaceans</td><td colspan="2">Pilot whales, dolphins, and harbor porpoise are all protected under the MMPA. Pursuant to section 118 of the MMPA, the HPTRP and BDTRP was implemented to reduce bycatch of harbor porpoise and bottlenose dolphin stocks, respectively, in gillnet gear.</td></tr>
<tr><td>Pinnipeds</td><td colspan="2">Gray, harbor, hooded, and harp seals are protected under the MMPA.</td></tr>
<tr><td colspan="2">Human communities (section 6.4)</td><td colspan="2">Summer flounder, scup and black sea bass support large commercial fisheries. In 2016, commercial harvest was 7.81 million lb for summer flounder worth an estimated ex-vessel value of $27.7 million. For scup, commercial harvest was 15.75 million lb with an ex-vessel value of $10.7 million. For black sea bass, commercial harvest was 2.59 million lb with an ex-vessel value of $9.3 million. There were 773 vessels that held a commercial moratorium permit for summer flounder, 632 for scup and 673 for black sea bass. Over 200 federally-permitted dealers purchased summer flounder, 173 purchased scup and 207 purchased black sea bass.</td></tr>
</table>

Table 19: Summary of summer flounder, scup and black sea bass commercial accountability measure alternatives considered in this document.

Alternative Type	Alternative	Summary of Alternative
ACL overage evaluation	**Alternative 1A:** (Preferred: No Action/*status quo*)	Commercial sector ACL evaluation based on single year examination of total commercial catch (landings and discards)
	Alternative 1B: (Non-preferred)	Commercial sector ACL evaluation based on single year examination of landings and 3-year moving average of discards for total catch
Non-landing AM payback	**Alternative 2A:** (Non-preferred: No Action/*status quo*)	Pound for pound payback of ACL overage if not accommodated through landings-based AMs
	Alternative 2B: (Preferred)	Scaled AM payback of discard ACL overage based on stock condition (B/B_{MSY})

7.1 ACL Overage Evaluation Alternatives

The two alternatives discussed here consider which year(s) of commercial catch information to include in an annual evaluation of the commercial sector ACL. Neither of these alternatives specify the management response, so neither is associated with a direct impact. In summary, alternative 1A (No Action/*status quo*) uses a single year of landing and discard information to compare to the ACL while alternative 1B uses a single year of landings and a three-year running average of discards to compare to the ACL. Greater detail on each alternative, including a comparison of the calculations associated with each alternative, is provided in section 5 above.

7.1.1 Impacts on Target and Non-Target Species

Neither of the alternatives would modify the annual commercial summer flounder, scup or black sea bass quotas. Under both alternatives, these quotas would continue to serve as an upper bound for annual landings, and landing-based AMs would continue to be used to address quota overages when they occur. The annual quotas are based on the best available scientific information and are intended to prevent overfishing.[15] By serving as an upper bound for landings, the annual commercial quotas will continue to limit and control fishing effort to levels determined to be appropriate by the SSC and Monitoring Committee. As such, both alternatives are expected to have positive impacts on the summer flounder, scup and black sea bass stocks by continuing to prevent overfishing and maintaining the rebuilt status of the stocks.

All of the non-target species that are most commonly caught on directed summer flounder, scup and black sea bass trips have a healthy stock status, with the exception of northern and striped sea robins which are unassessed. These alternatives simply specify the year(s) of catch information to be used for the ACL evaluation and would not directly modify commercial quotas and fishing effort. Therefore, these alternatives are likely to have a positive impact non-target species caught in these commercial fisheries by maintaining their current positive stock status.

The overall positive biological impacts on summer flounder, scup, black sea bass, and non-target resources are expected to be similar across both alternatives. Alternative 1A (No Action/*status quo*) may result in calculations that would require greater (i.e. higher) paybacks and therefore lower catches in a subsequent year and would therefore be expected to have slightly more positive biological impacts compared to alternative 1B. Neither alternative is expected to impact the stock status of non-target species caught in the directed summer flounder, scup and black sea bass fisheries and would therefore have slightly positive impacts.

Alternative 1A (Preferred): No Action/Status Quo – ACL evaluation using a single year of catch information

Under the No Action/*status quo* alternative, the ACL overage evaluation would continue to use a single year of commercial catch (landings and discards) to compare to the commercial sector ACL. If the ACL was exceeded due to landings in excess of the quota (coastwide, state or quota period depending upon fishery), the overage would be deducted from the appropriate following year quota as prescribed in regulation. If the ACL overage was not due to landings, or if the ACL overage

[15] The process used to develop these quotas is described in detail in MAFMC 2015.

could not be completely accounted for through a landings payback, then the ACL was exceeded due to discards and would require a payback.

Because commercial discards can be highly variable and uncertain, alternative 1A could result in higher paybacks in a subsequent year, compared to alternative 1B, due to a higher than anticipated discard estimate. As described in detail in section 5.1.3., a comparison of the two ACL overage evaluation alternatives based on past fishery performance revealed no difference in the calculations for summer flounder; therefore, any management response would have been the same under either alternative. There was a slight (3%) difference in the calculations for scup; however, both evaluations for scup determined the ACL was not exceeded and therefore a payback would not have been required under either calculation. A modest (7.9%) difference for black sea bass was calculated with higher overages calculated under alternative 1A. This alternative could provide greater short-term biological benefits through larger reductions in the commercial catch in a particular year; however, mid or long terms benefits of taking a greater reduction in one year versus smaller reductions over several years is likely negligible.

The preferred alternative would not modify the existing commercial quotas for summer flounder, scup and black sea bass and commercial effort would continue to be constrained by the established quotas. Therefore, this alternative is expected to have a slight positive impact by maintaining the current stock status and conditions for the target species. Similar to the target species, this alternative will have a slight positive impact by maintaining the positive stock status of non-target species caught in the commercial summer flounder, scup and black sea bass fisheries since this alternative does not specifically modify the existing quotas and will not change fishing effort.

As described above, a comparison of the two alternatives revealed little or no difference between the two ACL evaluation approaches. Therefore, both alternatives would likely have similar magnitude of impacts on target and non-target species.

Alternative 1B: Non-preferred – ACL evaluation using a 3-year moving average for discards and a single year for landings

Under alternative 2B, the commercial sector ACL would be evaluated based on a single-year examination of landings and a 3-year moving average of dead discards to calculate total commercial catch. As described under alternative 1A, if the ACL was exceeded because of landings in excess of the quota, the overage would be deducted from the following year quota. If the overage was not due to landings, or if the overage could not be completely accounted for through a landings payback, then the ACL was exceeded due to discards and would require a payback. Using a three-year moving average discard estimate may help minimize potential impacts of uncertain and unpredictable discards and will smooth out some of the variability is the estimates while continuing to use the most recent landings for the commercial ACL for evaluation.

As mentioned above, a comparison of the two ACL overage evaluation alternatives was conducted and revealed little or no difference between the two approaches for scup and summer flounder, respectively, and a modest difference for black sea bass, based on recent fishery performance (section 5.1.3). Using a three-year moving average resulted in lower discard estimates and lower ACL overages and therefore, less payback would have been required when compared to the *status quo* (single year) ACL evaluation. However, the higher discard estimates and ACL overages under the *status quo* alternative were occurring as the black sea bass stock was rapidly growing and expanding. Using a three-year moving average discard estimate lowered the ACL overages during this time but this approach, under these circumstances, may have dampened important biological signals in the stock (e.g. recruitment events, stock biomass changes). Sudden and continued changes in discards may provide valuable information about the stock and can help inform potential management changes or the need for science and assessment updates.

As with alternative 1A, this would not modify the existing commercial quotas for summer flounder, scup and black sea bass and commercial effort would continue to be constrained by the established quotas. Therefore, this alternative is expected to have a slight positive impact by maintaining the current stock status and conditions for the target species. Given that commercial quotas are not specifically modified, and effort is not expected to change under any of the alternatives, slight positive impacts on non-target species are expected by maintaining their current positive stock status.

7.1.2 Impacts to Physical Habitat and EFH

The bottom otter trawl is the predominant gear type in the commercial summer flounder, scup and black sea bass fisheries. This is followed by pots and traps, particularly in the commercial black sea bass fishery.

Although commercial fishing, in particular bottom otter trawl, affects fisheries habitat, the ACL overage evaluation alternatives considered here would not modify the manner in which these commercial fisheries operate and do not modify the existing commercial summer flounder, scup or black sea bass quotas. These alternatives simply specify either one year or a three-year running average of commercial discard information will be used, along with commercial landings, to determine if the commercial sector ACL was exceeded. These alternatives simply determine if the ACL was exceeded and its magnitude, but they do not specify what management action(s) should be taken to address any overage.

Therefore, both the *status quo* alternative (alternative 1A) and alternative 1B would continue to conduct an ACL overage evaluation and would have no direct and measurable habitat impacts.

7.1.3 Impacts to Protected Resources

The commercial summer flounder, scup, and black sea bass fisheries are prosecuted primarily with bottom otter trawl and trap/pot gear and are known to interact with a number of protected species (see section 6.3).

Similar to the habitat conclusions above, although commercial fishing gear interacts and results in the take of protected species, the ACL overage evaluation alternatives considered here would not modify the manner in which these commercial fisheries operate. These alternatives simply specify if either one year or a three-year running average of commercial discard information will be used, along with commercial landings, to determine if the commercial sector ACL was exceeded. These alternatives strictly determine if the ACL was exceeded and its magnitude, but they do not specify what management action(s) should be taken to address any overage. These alternatives do not modify the existing commercial quotas and fishing effort is not expected to change under either alternative.

Therefore, both the *status quo* alternative (alternative 1A) and alternative 1B would continue to conduct an ACL overage evaluation and would have no direct and measurable impacts on protected resources.

7.1.4 Impacts to Human Communities

The catch information used to evaluate commercial ACL overages can affect the magnitude and frequency of an overage and, if required, the subsequent payback differently. When evaluating the two alternatives from the standpoint of maximizing the social and economic benefits, the merits of the approaches are not straightforward and are related to whether or not AM paybacks, and their magnitude, are needed. For example, there are trade-offs associated with using a three-year moving average discard estimate associated with alternative 1B. This approach will decrease the impact of an ACL overage initially if there is an increase in estimated discards from one year to the next; but it may also maintain the impact (i.e. calculate a higher discard amount) in subsequent years if discards decline or drop off significantly. This may lead to an ACL overage in certain years and therefore require a payback when it would otherwise not be needed. However, the *status quo* approach (alternative 1A) of using a single year of catch data may require a greater reduction in the commercial quota for one year if the ACL is exceeded because of high discards when compared to alternative 1B. Therefore, there are trade-offs in considering the potential impacts to the human communities associated with taking a larger reduction in one year (alternative 1A) versus smaller reductions but over a greater number of years (alternative 1B).

Overall, neither alternative is expected to have measurable or direct socioeconomic impacts. These alternatives are strictly consider which year(s) of catch information to be used when evaluating if the commercial ACL was exceeded. These alternatives do not specify management action(s) if it was determined the ACL was exceeded. The non-landing payback alternatives considered in section 7.2 would define what the management response would be if the ACL were exceeded to due discards. Therefore, both the *status quo* alternative (alternative 1A) and alternative 1B would continue to conduct an ACL overage evaluation and would have no direct socioeconomic impacts.

Alternative 1A (Preferred): No Action/Status Quo – ACL evaluation using a single year of catch information

Based on past fishery performance, a comparison of the ACL evaluation alternatives would have resulted in no change in actual implementation, in terms of when a payback was required or in how much of a payback was needed, when an ACL was exceeded due to higher than projected discards for summer flounder and scup (section 5.1.3). For black sea bass, alternative 1B resulted in lower ACL overages than alternative 1A (*status quo*) and therefore less payback would have been required if alternative 1B was used. However, the results for black sea bass occurred when black sea bass abundance was increasing, and landing limits were low, which lead to increasing discards due to closures because the quota was caught. If commercial black sea bass discards begin to drop or stabilize, ACL overages due to discards would be lower using the *status quo* evaluation by not continuing to use higher discard calculations in the ACL evaluation.

Using the current ACL overage evaluation process, since 2012 there has only been one commercial summer flounder, scup or black sea bass AM implemented due to the ACL being exceeded because of higher than expected discards. This AM was implemented in 2018 in the commercial summer flounder fishery due to the ACL being exceeded in 2016. This AM reduced the 2018 commercial summer flounder quota by 2.9%.

This alternative would result in greater single year overages which, if paybacks were required, would result in greater reductions in the commercial catch, compared to alternative 1B. This may result in negative socioeconomic impacts due to decreased revenue and fishing opportunities.

However, these negative impacts should be short-term (i.e. a single year) provided the ACL is not continually exceeded due to higher than anticipated discards.

Overall, this alternative is not expected to have direct socioeconomic impacts. Compared to alternative 1B, alternative 1A is expected to have similar socioeconomic impacts, both in terms of magnitude and direction. Alternative 1A results in the potential for larger short-term negative impacts but long-term positive impacts when compared to alternative 1B.

Alternative 1B: Non-preferred – ACL evaluation using a 3-year moving average for discards and a single year for landings

Alternative 1B accounts for variability and uncertainty in the discard estimates by using a three-year moving average discard estimate. This approach may help minimize potential short-term negative socioeconomic consequences of uncertain and unpredictable discards and will smooth out some of the variability in the estimates and reduce the magnitude of potential ACL overages and subsequent paybacks, if required. This could help reduce the payback in a given year which would provide slightly positive socioeconomic impacts by allowing for higher commercial landings and opportunities in that year than would be possible under the No Action/*status quo* alternative (alternative 1A). However, as mentioned above, there are trade-offs associated with these alternatives. While Alternative 1B will decrease the impact of an ACL overage initially if there is a significant jump in estimated discards; it may also maintain the impact (i.e. calculate a higher discard amount) in subsequent years if discards decline or drop off significantly. This may lead to an ACL overage in certain years and therefore require a payback when it would otherwise not be needed.

Overall, this alternative is not expected to have direct socioeconomic impacts. Compared to alternative 1A, alternative 1B is expected to have similar socioeconomic impacts, both in terms of magnitude and direction. Alternative 1B results in the potential for larger short-term positive impacts but long-term negative impacts when compared to alternative 1A.

7.2 Non-landing accountability measure alternatives

If the evaluation of the ACL as outlined under the alternatives above indicates the ACL was exceeded and the overage cannot be accommodated by a landings payback, then the overage is due to higher than anticipated discards. The two alternatives evaluated here consider stock condition (B/B_{MSY}) when determining if a payback would be needed and how much payback would be required.

The alternatives considered here do not modify the existing commercial quotas (i.e. increase above those recommended by the SSC and Monitoring Committee) and while associated paybacks and subsequent reductions in the commercial quota may be different between the alternatives, depending upon stock condition, those differences are likely not significant enough in most years to have any meaningful impact on the overall commercial fishing effort. For example, the 2018 AM in the commercial summer flounder fishery (the only non-landing AM applied since 2012 when AMs were implemented) reduced the commercial quota by 191,218 pounds, or by 2.9%, using the current pound-for-pound payback associated with alternative 2A. Applying the same AM to the procedures outlined under alternative 2B (a scaled payback due to current summer flounder stock biomass and exceeding the commercial ACL and ABC) would have resulted in a reduction in the 2018 commercial summer flounder quota by 160,860 pounds, or 2.4%. This results in a 30,358 pound difference between the two alternatives. Even if the current summer flounder stock biomass was greater than B_{MSY} and no reduction to the commercial quota was necessary as prescribed under alternative 2B, the differences in the overall quota would likely not have any meaningful impact on total fishing effort; therefore, commercial fishing effort is expected to be similar across both alternatives.

7.2.1 Impacts to Target and Non-Target Species

Both alternatives are expected to have slight positive impacts on summer flounder, scup, black sea and non-target species, relative to the current condition of each VEC.

For the target species, both alternatives are expected to have positive impacts, given that both alternatives do not modify the existing best available scientifically based commercial quotas and are intended to prevent overfishing. These quotas would continue to serve as an upper bound for annual landings, and landing-based AMs would continue to be used to address quota overages when they occur. Commercial landings will continue to be constrained by the existing quotas which will continue to limit and control commercial fishing effort.

The alternatives are unlikely to have a meaningful impact on non-target species caught in the directed summer flounder, scup and black sea bass fisheries. With the exception of northern and striped sea robins which are currently unassessed, all of the species that are caught on directed summer flounder, scup and black sea bass trips have a healthy stock status and removals are accounted for and constrained by ACLs and AMs for those species (see section 6.1.4). Given the likelihood that fishing effort is not expected to change substantially under either alternative (see introduction to section 7.2 above), impacts on non-target species are expected to be slightly positive by not impacting the current stock status for those species.

When compared to each other, under more favorable stock conditions (i.e. above the biomass target or threshold), alternative 2B may be less precautionary because the frequency and magnitude of the discard overage paybacks will be lower than alternative 2A (No action/*status quo*). Therefore, alternative 2A is expected to have greater positive impacts to target and non-target species than alternative 2B. Impacts specific to each alternative are described below.

Alternative 2A (Non-Preferred): No Action/Status Quo – Pound for pound payback of ACL overage if not accommodated through landings-based AMs

Under this alternative, if a commercial ACL overage is not accommodated through a landings-based AM, then a pound-for-pound payback of a non-landing ACL overage regardless of stock condition would continue to be required regardless of stock status. Commercial landings would continue to be closely monitored and the fishery would be closed if the quota (coastwide, regional and/or state) is reached. Pound-for-pound paybacks of quota overages would also continue. These paybacks would reduce the existing commercial quotas which are based in the best available science and are intended to prevent overfishing. In recent years, commercial summer flounder, scup and black sea bass quotas comprised 85% - 89% of the commercial ACL. Under this alternative, commercial fishing effort will continue to be constrained by the existing quotas. While implementing pound-for-pound paybacks due to higher than anticipated discards when stock conditions are favorable and at high levels may contribute to increased discards in certain situations (i.e. reduced quotas may lead to quicker fishery closures due to the quotas being reached); overall this alternative is expected to have a slight positive impacts on the summer flounder, scup and black sea bass stocks relative to the resource condition by helping to prevent overfishing and prevent these stocks from becoming overfished.

Since this alternative would maintain the existing non-landing ACL overage payback AM, it is anticipated that interactions with non-target species in the commercial summer flounder, scup and black sea bass fisheries will likely remain similar to what has been observed recently. Since 2012, the 2018 commercial summer flounder AM was the only non-landing AM implemented for these three fisheries. Of the species commonly caught on directed summer flounder, scup or black sea bass trips (see section 6.1.3), none are considered overfished. Therefore, the No Action/*status quo* alternative is not expected to negatively impact the stock status of any non-target species and result in slight positive impacts.

When compared to alternative 2B, the No Action/*status quo* alternative is expected to have slightly greater positive impacts for both target, particularly those with high biomass, and non-target stocks due to the potential for more frequent and greater magnitude reductions in the commercial quota and, therefore, lower commercial effort and landings. However, as discussed in section 7.2.1 above, these differences are likely to be minimal.

Alternative 2B (Preferred): Scaled AM payback of discard ACL overage based on stock condition (B/ B_{MSY})

Under the preferred alternative, the management response to a non-landing ACL overage, in terms of the amount of required payback, would differ depending upon stock condition and whether only the commercial ACL, or the commercial ACL and the ABC was exceeded. This approach would allow for fluctuations in commercial discards when stock conditions are positive (not overfished and not overfishing) and implement more aggressive paybacks when stock conditions warrant additional protection and management response. This approach should not change or shift commercial fishing effort in these commercial fisheries. From 2012-2016, landings account for 77-87% of the total commercial catch for these three fisheries and, except for scup, nearly 100% of the commercial quota is harvested in any given year. Therefore, these commercial fisheries will continue to be constrained by the commercial quotas that are established and the landings-based overage repayment will continue. Application of this approach only to the non-landing portion of the commercial ACL will not negatively impact those stocks whose biomass is high and above B_{MSY} and a more precautionary approach would be implemented for those stocks that are overfished, rebuilding or below the target biomass and would require increased paybacks as stock conditions worsen, such that long term negative impacts would be avoided. Overall this alternative is expected to have slight positive impacts on the summer flounder, scup and black sea bass stocks relative to the current resource conditions by helping to prevent overfishing and prevent these stocks from becoming overfished. In addition, in years when the commercial ACL is exceeded, the final commercial catch estimates will be incorporated into future stock assessment and would accounted for in setting future commercial quotas.

Similar to the rationale provided under alternative 2A, this alternative is not expected to negatively impact the stock status of any non-target species. Commercial fishing effort in these three fisheries will continue to be constrained by the established commercial quotas. In addition, as described in section 6.1.4, most non-target species make up a relatively low percentage of the total catch on directed summer flounder, scup or black sea bass trips and none of the non-target species are overfished. Therefore, slight positive impacts to non-target species is expected.

When compared to No Action/*status quo* alternative, alternative 2B is expected to have slightly less positive impacts for both target, particularly those with high biomass, and non-target stocks due to less frequent and lower magnitude reductions in the commercial quota and, therefore, higher commercial landings. However, as discussed in section 7.2.1 above, these differences are likely to be minimal.

7.2.2 Impacts to Physical Habitat and EFH

These alternatives are generally administrative in nature and specify when a payback would be needed and how much payback would be required due to a non-landing ACL overage. These alternatives may result in different indirect impacts to the commercial summer flounder, scup and black sea bass fisheries, by modifying commercial quotas through reductions (i.e. paybacks). Therefore, these alternatives may reduce future catch and fishing opportunities compared to the catch and opportunity realized under the previously analyzed commercial quotas.

The commercial summer flounder, scup and black sea bass fisheries operate in areas that have been fished for many years and any possible reductions in fishing effort, or continued fishing effort at current levels, associated with any alternative are unlikely to further degrade habitat beyond its current state. However, none of the alternatives are expected to result in any improvements to current habitat conditions, and continued fishing effort does limit the recovery potential of some currently degraded areas. Therefore, the alternatives are expected to result in slight negative impacts to the physical environment due to the prevention of recovery of previously impacted habitats.

Alternative 2A (Non-Preferred): No Action/Status Quo – Pound for pound payback of ACL overage if not accommodated through landings-based AMs

Under the No Action/*status quo* alternative, pound-for-pound paybacks would continue to be required, regardless of stock size, if the commercial ACL is exceeded due to higher than anticipated discards. As mentioned previously, only one non-landing ACL overage AM has been triggered since 2012 when AMs were first implemented. Since this alternative would only reduce the existing commercial quotas if an AM is triggered, fishing effort is not expected to change or may even decline depending upon the magnitude of the payback under this alternative. Given this, habitat impacts wouldn't be expected to differ substantially from what has been analyzed in the specification documents implementing these commercial quotas, even if paybacks resulted in a slight decrease in effort. However, as described above, slight negative impacts to habitat may occur due to the prevention of habitat recovery in fished areas.

When compared to alternative 2B, the No Action/*status quo* alternative is expected to have slightly less negative habitat impacts due to the potential for more frequent and greater magnitude reductions in the commercial quota and, therefore, lower commercial landings and fishing effort. However, as discussed in section 7.2.1 above, these differences are likely to be minimal because fishing effort is not expected to substantially differ in a manner that meaningfully impacts habitat under either alternative.

Alternative 2B (Preferred): Scaled AM payback of discard ACL overage based on stock condition (B/B_{MSY})

As with alternative 2A, the preferred alternative is expected to have potential slight negative impacts on habitat relative to current conditions, due to the prevention of habitat recovery in fished areas. As described above, this impact is expected to be slightly more negative, particularly for high biomass stocks, than the No Action/*status quo* alternative because there is the potential for less frequent and lower magnitude reductions in the commercial quota and, therefore, higher commercial effort. However, these differences are likely to be minimal.

7.2.3 Impacts to Protected Resources

As described in section 7.0, the commercial summer flounder, scup and black sea bass fisheries primarily use bottom trawls. This is followed by pots/traps, particularly in the commercial black sea bass fishery. Protected species (ESA listed and MMPA protected) are known to interact with both gear types (section 6.3).

As described in the introduction to section 7, the impacts on protected resources may vary between ESA-listed and MMPA-protected species. For ESA-listed species, any action that could result in take of ESA-listed species is expected to have negative impacts, including actions that reduce interactions. Under the MMPA, the impacts of the proposed alternatives would vary based on the stock condition of each protected species and the potential for each alternative to impact fishing effort. For marine mammal stocks/species that have their PBR level reached or exceeded, negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), any action not expected to change fishing behavior or effort such that interaction risks increase relative to what has been seen in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal (Table 17). Taking the latter into consideration, the overall impacts on the protected resources VEC for each alternative take into account impacts on ESA-listed species, impacts on marine mammal stocks in good condition (i.e., PBR level has not been exceeded), and marine mammal stocks that have reached or exceeded their PBR level.

Overall, both alternatives will have potential impacts on protected resources ranging from slight positive to moderate negative, with slight positive to moderate negative impacts likely on non-ESA listed marine mammals and moderate negative impacts likely for ESA-listed species. These alternatives consider when a payback would be needed and how much payback would be required if the commercial ACL is exceeded due to higher than anticipated discards. Both alternatives would only potentially reduce an established commercial quota; therefore, effort is not expected to increase and may, depending upon the magnitude of the AM triggered, reduce fishing effort. Both alternatives would have similar magnitudes of slight positive to moderate negative impacts on protected resources. Compared to each other, alternative 2A may result in slightly less negative impacts due to the potential for more frequent and greater magnitude reductions in the commercial quota and, therefore, lower commercial landings and fishing effort.

Alternative 2A (Non-Preferred): No Action/Status Quo – Pound for pound payback of ACL overage if not accommodated through landings-based AMs

Protected species are known to interact with bottom otter trawls and pot/trap gear, the two primary gear types used in the commercial summer flounder, scup and black sea bass fisheries. Therefore, protected resources have the potential to be affected by alternative 2A. However, as described in the introduction to section 7, this alternative is expected to result in impacts, even if paybacks resulted in a slight decrease in effort, similar to those analyzed when the existing summer flounder, scup and black sea bass catch and landings limits were established. This alternative would only reduce the established commercial quota if a non-landing AM was triggered and a pound-for-pound payback was implemented. Taking this into consideration, impacts to protected species (ESA listed and MMPA protected) are provided below.

MMPA (Non-ESA Listed) Species Impacts

The commercial summer flounder, scup and black sea bass fishery overlaps with the distribution of non-ESA listed species of marine mammals (cetaceans and pinnipeds). As a result, marine mammal interactions with fishing gear used to prosecute the commercial summer flounder, scup and black sea bass fisheries are possible (i.e., otter trawl and pot/trap gear, see section 6.3). Ascertaining the risk of an interaction and the resultant potential impacts on marine mammals is uncertain because quantitative analyses have not been performed and data are limited (section 6.3). However, we have considered, the most recent (2010-2014) information on marine mammal interactions with commercial fisheries (Hayes *et al*. 2017; https://www.nefsc.noaa.gov/fsb/take_reports/nefop.html).

Aside from pilot whales and several stocks of bottlenose dolphin, there has been no indication that takes of non-ESA listed species of marine mammals in commercial fisheries have reached levels which would result in the inability of each species population to sustain itself. Specifically, from 2010-2014, aside from pilot whales and several stocks of bottlenose dolphin, the PBR level has not been exceeded for any of the non-ESA listed marine mammal species identified in section 6.3 (Hayes *et al*. 2017). Although pilot whales and several stocks of bottlenose dolphin have experienced levels of take that resulted in the exceedance of each species PBR level, take reduction strategies and/or plans have been implemented to reduce bycatch in the fisheries affecting these species (Atlantic Trawl Gear Take Reduction Strategy, Pelagic Longline Take Reduction Plan effective May 19, 2009 (74 FR 23349); Bottlenose Dolphin Take Reduction Plan, effective April 26, 2006 (71 FR 24776)). These efforts are still in place and are continuing to assist in decreasing bycatch levels for these species. Although NEFOP observer reports (https://www.nefsc.noaa.gov/fsb/take_reports/nefop.html) and the most recent five years of information presented in Hayes et al. (2017) are a collective representation of commercial fisheries interactions with non-ESA listed species of marine mammals, and do not address the effects of the summer flounder, scup and blacks sea bass fisheries specifically, the information does demonstrate that thus far, operation of any fishery has not resulted in a collective level of take that threatens the continued existence of non-ESA listed marine mammal populations, aside from pilot whales and bottlenose dolphins.

Taking into consideration the above information, and the fact that there are non-listed marine mammal stocks/species whose populations may or may not be at optimum sustainable levels, impacts of alternative 2A on non-ESA listed marine mammal species are likely to range from moderate negative to slight positive. As noted above, there are some marine mammal stocks/species that are experiencing levels of interactions that have resulted in exceedance of their PBR levels. These stocks/populations are not at an optimum sustainable level and therefore, the continued existence of these stocks/species is at risk. As a result, any potential for an interaction is a detriment to the species/stocks ability to recover from this condition. As interactions with non-ESA listed marine mammals are possible even with the potential to reduce effort through quota reductions associated with alternative 2A, for these species/stocks, alternative 2A is likely to result in moderate negative impacts to these non-listed marine mammal stocks/species.

Alternatively, there are also many non-ESA listed marine mammals that, even with continued fishery interactions, are maintaining an optimum sustainable level (i.e., PBR levels have not been exceeded) over the last several years. For these stocks/species, it appears that the fishery management measures that have been in place over this timeframe have resulted in levels of effort that equate to interaction levels that are not expected to impair the stocks/species ability to remain at an optimum sustainable level. These fishery management measures, therefore, have resulted in indirect slight positive impacts to these non-ESA listed marine mammal species/stocks. Should future fishery management actions maintain similar operating condition as they have over the past several years, it is expected that these slight positive impacts would remain. Thus, given that alternative 2A is not expected to significantly change fishing effort in any given year relative to the *status quo*, the impacts of alternative 2A on these non-ESA listed species of marine mammals are expected to be slight positive (i.e., continuation of current operating conditions is not expected to result in exceedance of any of these stocks/species PBR level).

Based on this information, overall alternative 2A is expected to have slight negative (for species/stocks with takes above PBR levels) to slight positive impacts (for species/stocks with takes below PBR levels) on non-ESA listed species of marine mammals.

ESA Listed Species Impacts

As mentioned previously, the summer flounder, scup and black sea bass fisheries are primarily prosecuted with bottom trawl and pot/trap gear. As provided in section 6.3.3.1, ESA listed species of sea turtles, Atlantic sturgeon, Atlantic salmon and large whales are vulnerable to interactions with bottom trawl and/or pot/trap gear, with interactions often resulting in the serious injury or mortality to the species. Based on this, the summer flounder, scup and black sea bass fisheries have the potential to interact with these species and therefore, result in some level some level of negative impacts to ESA listed species. Taking into consideration fishing behavior/effort under the No Action/*status quo* alternative, as well the fact that interaction risks with protected species are strongly associated with the amount of gear in the water, gear soak or tow time, as well as the area of overlap, either in space or time, of the gear and a protected species (with risk of an interaction increasing with increases in of any or all of these factors), we determined the level of negative impacts to ESA listed species to be moderate. Below, we provide support for this determination.

As described in the introduction to section 7, alternative 2A would not increase the commercial summer flounder, scup or black sea bass quotas and would potentially reduce these quotas if a non-landing ACL overage AM were triggered and a pound-for-pound payback were implemented. This situation has occurred once since 2012 when AMs were first implemented. Therefore, this preferred alternative is not expected to result in higher effort in these fisheries and fishing behavior and effort in the commercial summer flounder, scup and black sea bass fisheries are expected to remain similar to what has been observed recently in these fisheries. Specifically, the number of pots/traps and bottom trawls in the water, tow or soak times, and area fished are not expected change significantly from current operating conditions. As noted above, interactions with protected species are strongly associated with the amount of gear in the water, gear soak or tow time, as well as the area of overlap, either in space or time, of the gear and a protected species. Continuation of “status quo” fishing behavior/effort is not expected to change any of these operating conditions and therefore, the impacts of alternative 2A on ESA listed species is expected to be slight negative.

Overall Impacts on Protected Resources

Overall, alternative 2A is expected to have slight positive to slight negative impacts on protected resources, with slight negative to slight positive impacts likely on non-ESA listed marine mammals and slight negative impacts likely for ESA-listed species.

Compared to alternative 2B, the No Action/*status quo* alternative is expected to have slightly positive impacts on protected species due to the potential for more frequent and greater magnitude reductions in the commercial quota and, therefore, lower commercial landings and fishing effort. However, as discussed in section 7.2.1 above, these differences are likely to be minimal because fishing effort is not expected to substantially differ in a manner that meaningfully impacts protected resources under either alternative.

Alternative 2B (Preferred): Scaled AM payback of discard ACL overage based on stock condition (B/ B_{MSY})

Impacts of preferred alternative 2B on protected species are expected to be similar in magnitude as those under the No Action/*status quo* alternative (non-preferred; section 7.3.1), given that under both alternatives, the commercial quota and the associated fishing effort are expected to be similar. As with alternative 2A, the established commercial quotas would only be reduced under this alternative. The frequency and magnitude of those reductions, particularly for stocks with high biomass, would be lower than those observed under alternative 2A but these differences are likely to be minimal. Based on this, the overall impacts of alternative 2B on protected species are expected to be slight positive to slight negative, with slight negative to slight positive impacts likely on marine mammals (non-ESA listed) and slight negative impacts likely for ESA-listed species. For information and rationale to support this conclusion see section 7.3.1.

Compared to alternative 2A, alternative 2B is expected to have slight negative impacts to protected species due to the potential for less frequent and lower magnitude reductions in the commercial quota and, therefore, the potential for higher commercial landings and fishing effort. It should be noted that this conclusion of “higher” commercial landings and effort are only in relation to alternative 2A and do not indicate increasing quotas or effort beyond the implemented and analyzed commercial quotas. As discussed in section 7.2.1 above, these differences are likely to be minimal because fishing effort is not expected to substantially differ in a manner that meaningfully impacts protected resources under either alternative.

7.2.4 Impacts to Human Communities

The alternatives considered here do not specifically modify the existing commercial quotas and commercial landings will continue to be constrained by the existing quotas. However, these alternatives would result, under certain circumstances, in different paybacks and reductions in the commercial quota if the ACL was exceeded due to higher than anticipated discards. Alternative 2B would apply a scaled payback of the discard overage that would allow for fluctuations in commercial discards when stock conditions are positive (not overfished and not overfishing) and implement more aggressive paybacks when stock conditions warrant additional protection and management response. Alternative 2B would minimize punitive paybacks when stocks are at high biomass levels which would result in positive socioeconomic impacts by minimizing quota reductions, providing for increased stability in commercial landings and increasing commercial opportunities. Implementing pound-for-pound paybacks (alternative 2A) due to higher than anticipated discards when stock conditions are favorable and at high levels of abundance would result in slight negative socioeconomic impacts by reducing commercial landings and opportunity without much of a biological benefit to the stock. Therefore, it is expected that alternative 2A would result in slight negative and alternative 2B slight positive socioeconomic impacts.

As discussed previously, there has only been one non-landing based AM implemented in the commercial summer flounder, scup or black sea bass fisheries since 2012 when AM were first established (2018 commercial summer flounder fishery). Comparing the application of this one AM payback between the two alternatives results in a 0.5% difference in the coastwide quota. Therefore, under this example, the differences in the overall quota would likely not have any meaningful impact on commercial landings. If stock conditions are more favorable and a non-landing AM payback in necessary, the differences between the two approaches could be more substantial.

Preferred alternative 2B is expected to have positive socioeconomic impacts compared to the No Action/*status quo* alternative because of the likely lower frequency and magnitude of any discard overage paybacks, particularly under high stock biomass conditions. The possible reduction in the frequency and magnitude of punitive discard overage paybacks under this alternative would therefore provide for increased fishing opportunities and economic benefits, up to the established commercial quota.

Alternative 2A (Non-Preferred): No Action/Status Quo – Pound for pound payback of ACL overage if not accommodated through landings-based AMs

The No Action/*status quo* alternative would continue a pound-for-pound payback of a non-landing ACL overage, regardless of stock condition. While the pound-for-pound payback system for landings overages has worked well over the years and provides a predictable response in reducing fishing effort and constraining harvest to the established quotas in the following year without substantially negatively affecting the commercial fishery; the ability to predict discards and how discards may change when paybacks are required is much more uncertain. These non-landing ACL overage paybacks likely have limited biological value when stock condition is positive (i.e. not overfished and overfishing not occurring) and biomass is high. This alternative, under certain stock conditions, would reduce commercial quotas and restrict landings and fishing opportunities when not necessary from a biological perspective and therefore would result in slight negative socioeconomic impacts.

When compared to alternative 2B, the No Action/status quo alternative is expected to have socioeconomic impacts that are negative because of the likely increased frequency and greater magnitude of any discard overage paybacks, particularly under high stock biomass conditions. This would result in decreased fishing opportunities and reduced economic benefits when compared to alternative 2B.

Alternative 2B (Preferred): Scaled AM payback of discard ACL overage based on stock condition (B/B_{MSY})

The preferred alternative 2B would implement a scaled payback of the discard overage that would allow for fluctuations in commercial discards when stock conditions are positive (not overfished and not overfishing) and implement more aggressive paybacks when stock conditions warrant additional protection and management response. Evaluating the application of an AM for non-landing overages based on stock condition considers the health of the resource, increases fishing opportunities when appropriate, and implements appropriate paybacks to the commercial industry when stock conditions necessitate a response. The preferred alternative, under certain stock conditions, would minimize the frequency and magnitude of non-landing ACL overage repayments and therefore would result in slight positive socioeconomic impacts, compared to the No Action/*status quo* alternative. Preferred alternative 2B is expected to have positive socioeconomic impacts compared to the No Action/*status quo* alternative. The possible reduction in the frequency and magnitude of discard overage paybacks under this alternative would therefore provide for increased fishing opportunities and economic benefits, up to the established commercial quota.

7.3 Cumulative Effects Analysis

A cumulative effects analysis (CEA) is required by the Council on Environmental Quality (CEQ; 40 CFR part 1508.7). The purpose of CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective. Rather, the intent is to focus on those effects that are truly meaningful. A formal cumulative impact assessment is not necessarily required under NEPA as part of an EA if the significance of cumulative impacts have been considered (U.S. EPA 1999). The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed summer flounder, scup and black sea bass fisheries.

7.3.1 Consideration of the VECs

The following sections discuss the significance of the cumulative effects on the following VECs:

- Managed resource (summer flounder, scup and black sea bass) and non-target species
- Physical environment
- Protected species
- Human communities

7.3.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the commercial harvest of summer flounder, scup and black sea bass. The Western Atlantic Ocean is the core geographic scope for each of the VECs. The core geographic scopes for the managed species are the management units (section 6.1). For non-target species, those ranges may be expanded and would depend on the range of each species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ but includes all habitat utilized by summer flounder, scup, black sea bass and non-target species in the Western Atlantic Ocean. The core geographic scope for protected species is their range in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities in coastal states from Maine through North Carolina directly involved in the harvest or processing of the managed species (section 6.4).

7.3.3 Temporal Boundaries

The temporal scope of past and present actions is primarily focused on actions that occurred after FMP implementation (1988 for summer flounder and 1996 for both scup and black sea bass). For protected species, the scope of past and present actions is focused on the 1980s and 1990s (when NMFS began generating stock assessments for marine mammals and sea turtles that inhabit waters of the U.S. EEZ) through the present. The temporal scope of future actions for all VECs extends about five years (2022) into the future beyond the analyzed time frame of the alternatives described in this document. The dynamic nature of resource management for these species and lack of information on projects that may occur in the future make it difficult to predict impacts beyond this timeframe with any certainty. The impacts discussed in section 7.3.5 are focused on the cumulative effects of the proposed action in combination with the relevant past, present, and reasonably foreseeable future actions over these time scales.

7.3.4 Actions Other Than Those Proposed in this Document

The impacts of the alternatives considered in this document are described in sections 7.1 through 7.4. Table 20 presents meaningful past (P), present (Pr), or reasonably foreseeable future (RFF) actions other than those considered in this document. The impacts of these actions are described qualitatively as the actual impacts are too complex to be quantified in a meaningful way. When any of these abbreviations (P, Pr, or RFF), occur together it indicates that some past actions are still relevant to the present and/or future actions.

Fishery Management Actions

Summer Flounder, Scup, and Black Sea Bass FMP Actions

Past, present, and reasonably foreseeable future actions for summer flounder, scup, and black sea bass management include the establishment of the original FMPs, all subsequent amendments and frameworks, and the setting of annual specifications (annual catch limits and measures to constrain catch and harvest). The historical management practices of the Council have resulted in overall positive impacts on the health of the summer flounder, scup and black sea bass stocks (section 7.3.5.1). The Council has taken many actions to manage the associated commercial and recreational fisheries. The MSA is the statutory basis for federal fisheries management. To the degree with which this regulatory regime is complied, the cumulative impacts of past, present, and reasonably foreseeable future federal fishery management actions on the VECs should generally be associated with positive long-term outcomes. Constraining fishing effort through regulatory actions can have negative short-term socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should, in the long-term, promote positive effects on human communities.

Other FMP Actions

In addition to the summer flounder, scup, and black sea bass FMP, there are many other FMPs and associated fishery management actions for other species that have impacted these VECs over the temporal scale described in section 7.3.3. These include FMPs managed by the Mid-Atlantic Fishery Management Council, New England Fishery Management Council, Atlantic States Marine Fisheries Commission, and to a lesser extent the South Atlantic Fishery Management Council. Omnibus amendments are also frequently developed to amend multiple FMPs at once. Actions associated with other FMPs and omnibus amendments have included measures to regulate fishing effort for other species, measures to protect habitat and forage species, and fishery monitoring and reporting requirements.

As with the summer flounder, scup, and black sea bass actions described above, other FMP actions developed by Fishery Management Councils or GARFO have been developed in compliance with the MSA and have had positive long-term cumulative impacts on managed and non-target species, habitat, and protected resources because they constrain fishing effort and manage stocks at sustainable levels. However, constraining fishing effort through regulatory actions can have negative short-term socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should, in the long-term, promote positive effects on human communities.

Non-Fishing Impacts

Other Human Activities

Non-fishing activities that introduce chemical pollutants, sewage, or suspended sediment into the marine environment or result in changes in water temperature, salinity, or dissolved oxygen, pose a risk to all VECs. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas where they occur. Examples of these activities include agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging, and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and as such may indirectly constrain the sustainability of managed species, non-target species, and protected species. Decreased habitat suitability tends to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that reduce fishing effort could negatively impact human communities. The overall impact on the affected species and their habitats on a population level is unknown, but likely to range from no impact to low negative, depending on the population, since a large portion of these populations have a limited or minor exposure to these local non-fishing perturbations.

Non-fishing activities permitted under other Federal agencies (e.g. beach nourishment, offshore wind facilities, etc.) require examinations of potential impacts on the VECs. The MSA imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH (50 CFR 600.930). The eight regional fishery management councils engage in this review process by making comments and recommendations on federal or state actions that may affect habitat for their managed species and by commenting on actions likely to substantially affect habitat.

In addition to the activities above, in recent years, offshore wind energy and oil and gas exploration have become more relevant activities in the Greater Atlantic region that are expected to impact all VECs, as described below. For potential biological impacts of wind, the turbines and cables may influence water currents and electromagnetic fields, respectively, which can affect patterns of movement for various species (target, non-target, protected). Habitats directly at the turbine and cable sites would be affected, and there could be scouring concerns around turbines. Impacts on human communities in a general sense will be mixed – there will be economic benefits in the form of jobs associated with construction and maintenance, and replacement of some electricity generated using fossil fuels with renewable sources. But there may be negative effects on fishing activities in terms of effort displacement, or making fishing more difficult or expensive near the turbines or cables.

For oil and gas, this timeframe would include leasing and possible surveys. Seismic surveys impact the acoustic environment within which marine species live, and have uncertain effects on fish behaviors that could cumulatively lead to negative population level impacts. The science on this is fairly uncertain. If marine resources are affected by seismic, then so in turn the fishermen targeting these resources would be affected. However, there would be an economic component in the form of increased jobs where there may be some positive effects on human communities.

While there are currently no operational wind farms in Mid-Atlantic waters, potential offshore wind energy sites have been identified off of Virginia, Maryland, New Jersey, Delaware, and New York, and there are several proposals to develop wind farms in both nearshore and offshore waters. In New England, offshore wind project construction south of Massachusetts/Rhode Island may begin as early as 2019 (three projects including Vineyard Wind, Bay State Wind, and South Fork Wind Farm). Additional areas have been leased and will have site assessment activities in the next few years. These projects could have low negative impacts on EFH, as well as summer flounder, scup and black sea bass, non-target species, and fishing communities if there are any negative impacts on those resources. Furthermore, there could be negative impacts on protected species of birds and marine mammals if they interact with the wind farms.

The overall impact of offshore wind energy and oil and gas exploration on the affected species and their habitats on a population level is unknown, but likely to range from no impact to moderate negative, depending on the number and locations of projects that occur, as well as the effects of mitigation efforts.

Global Climate Change

Global climate change affects all components of marine ecosystems, including human communities. Physical changes that are occurring and will continue to occur to these systems include sea-level rise, changes in sediment deposition; changes in ocean circulation; increased frequency, intensity and duration of extreme climate events; changing ocean chemistry, and warming ocean temperatures. Emerging evidence demonstrates that these physical changes are resulting in direct and indirect ecological responses within marine ecosystems which may alter the fundamental production characteristics of marine systems (Stenseth et al. 2002). Climate change will potentially exacerbate the stresses imposed by fishing and other non-fishing human activities and stressors.

Results from the Northeast Fisheries Climate Vulnerability Assessment indicate that climate change could have impacts on Council-managed species that range from negative to positive, depending on the adaptability of each species to the changing environment (Hare et al. 2016). Based on this assessment, summer flounder was determined to have a moderate vulnerability to climate change. The exposure of summer flounder to the effects of climate change was determined to be “very high” due to the impacts of ocean surface temperature, ocean acidification, and air temperature. Exposure to all three factors occur during all life stages. Summer flounder is an obligate estuarine-dependent species. Spawning occurs on the shelf and juveniles inhabit estuaries. Adults make seasonal north-south migrations exposing them to changing condition inshore and offshore. The distributional vulnerability of summer flounder was ranked as "high," given that summer flounder spawn in shelf waters and eggs and larvae are broadly dispersed. Adults use a range of habitats including estuarine, coastal, and shelf. The life history of the species has a strong potential to enable shifts in distribution. Summer flounder were thus determined to have low biological sensitivity to climate change.

This assessment determined scup had a moderate vulnerability to climate change. Similar to summer flounder and black sea bass, the exposure of scup to the effects of climate change was determined to be “very high” due to the impacts of ocean surface temperature, ocean acidification, and air temperature. Exposure to all three factors occur during all life stages. Scup spawn in coastal waters and early life stages are typically found in nearshore waters. Adults make seasonal onshore-offshore migrations. Also similar to summer flounder and black sea bass, the distributional vulnerability was ranked as “high” with two attributes indicated vulnerability to distribution shift. As adults, Scup are mobile and make seasonal onshore-offshore migrations. Scup are also habitat generalists, but are commonly found around structured habitats (Hare et. al. 2016)[16].

The same assessment indicated that black sea bass has a high overall vulnerability to climate change. As with summer flounder and scup, the exposure of black sea bass to the effects of climate change was determined to be "very high" due to the impacts of ocean surface temperature, ocean acidification, and air temperature. Exposure to all three factors occurs during all life stages. Black sea bass occur in coastal areas during warm months and migrate offshore in cold months and thus are exposed to changes occurring both in offshore and inshore waters. The distributional vulnerability for black sea bass was also rated as "high." The biological sensitivity of black sea bass to climate change was ranked as "moderate" (Hare et al. 2016).[16]

Overall, climate change is expected to have impacts that range from positive to negative depending on the species. However, future mitigation and adaptation strategies to climate change may mitigate some of these impacts. The science of predicting, evaluating, monitoring and categorizing these changes continues to evolve.

[16] Climate vulnerability profiles for individual species are available at: https://www.st.nmfs.noaa.gov/ecosystems/climate/northeast-fish-and-shellfish-climate-vulnerability/index

Table 20: Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this document).

Action	Description	Impacts on Summer Flounder, Scup, Black Sea Bass and Non-Target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF **Original Summer Flounder, Scup, and Black Sea Bass FMP and subsequent FMP Amendments and Frameworks**	Established and modified commercial and recreational management measures	**Direct Positive** Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	**Indirect Positive** Reduced fishing effort, implemented gear requirements and restricted areas	**Indirect Positive** Regulated fishing effort, implemented gear requirements	**Mixed** Benefited some domestic businesses; negative impacts on some participants due to limited access and constraints on landings and revenues
P, Pr, RFF **Specifications for managed resources**	Establish quotas, recreational harvest limits, and other fishery regulations (commercial and recreational)	**Direct Positive** Regulatory tool to specify catch limits, and other regulations; allows response to annual stock updates	**Indirect Positive** Reduced effort levels; gear requirements and restricted areas	**Indirect Positive** Regulated fishing effort; gear requirements	**Mixed** Benefited some domestic businesses; negative impacts on some participants due to limited access and constraints on landings and revenues
P, Pr, RFF **Other FMPs and Omnibus Actions**	Regulating fishing effort in other FMPs, habitat and forage species protection, industry monitoring and reporting	**Direct and Indirect Positive** Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	**Indirect Positive** Reduced fishing effort, implemented gear requirements	**Indirect Positive** Regulated fishing effort, implemented gear requirements	**Mixed** Benefited some domestic businesses; negative impacts on some participants due to limited access and constraints on landings and revenues
P, Pr, RFF **Agricultural runoff**	Nutrients applied to agricultural land are introduced into aquatic systems	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource

Table 20 (continued): Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this document).

Action	Description	Impacts on Summer Flounder, Scup, Black Sea Bass and Non-Target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF **Climate change**	Wide-ranging impacts including changes in ocean chemistry, temperatures, sea-level, and ocean circulation; increased frequency, intensity, and duration of extreme climate events.	**Negative to positive** Some species will benefit, others will see negative impacts, depending on the adaptability of each species to the changing environment	**Negative to positive** Decreased habitat quality, suitability and/or availability for some species; increased quality/suitability/availability for others	**Negative to positive** Depending on impacts to habitat and prey availability	**Negative to positive** Depending on resiliency of individual communities and mitigation/adaptation
P, Pr, RFF **Port maintenance**	Dredging of coastal, port and harbor areas for port maintenance	**Indirect Negative** Dependent on mitigation effects	**Direct Negative** Dependent on mitigation effects	**Direct and Indirect Negative** Potential interactions with protected species; reduced habitat quality/availability; dependent on mitigation efforts	**Mixed** Dependent on economic benefits to ports and mitigation of potential negative environmental effects
P, Pr, RFF **Convening of Take Reduction Teams (periodically)**	Recommend measures to reduce mortality and injury to marine mammals and sea turtles	**Indirect Positive** Will improve data quality for monitoring total removals; Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Direct Positive** Reducing amount of gear in water could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues

Table 20 (continued): Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this document).

Action	Description	Impacts on Summer Flounder and Black Sea Bass and Non-Target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF **Beach nourishment**	Offshore mining of sand for beaches and placement of sand to nourish beach shorelines	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Direct and Indirect Negative** Reduced habitat quality; dredge interactions; dependent on mitigation efforts	**Mixed** Positive for mining companies, tourism; possibly negative for fishing industry if reduced landings result from negative habitat impacts
P, Pr, RFF **Marine transportation**	Expansion of port facilities, vessel operations and recreational marinas	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Direct and Indirect Negative** Reduced habitat quality/availability; potential for interactions (ship strikes) with protected species	**Mixed** Positive for some interests, potential displacement for others
P, Pr, RFF **Offshore disposal of dredged materials**	Disposal of dredged materials	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality; dependent on mitigation efforts	**Indirect Negative** Possible reduced landings due to reduced availability resulting from negative habitat impacts
P, Pr, RFF **Renewable and Non-renewable Offshore and Nearshore Energy Development**	Transportation of oil, gas, and electricity through pipelines & cables; Construction of oil platforms, wind facilities, liquefied natural gas facilities; Additional port development infrastructure	**Indirect Negative** Dependent on mitigation effects	**Direct Negative** Reduced habitat quality; offshore platforms may benefit structure-oriented fish species habitat	**Direct and Indirect Negative** Reduced habitat quality; Sound Exposure (physical injury or behavioral harassment); dependent on mitigation efforts	**Mixed** Dependent on mitigation effects

7.3.5 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account. The following section describes the expected effects of these actions on each VEC.

7.3.5.1 Magnitude and Significance of Cumulative Effects on Managed Species and Non-Target Species

Those past, present, and reasonably foreseeable future actions which may impact target species (summer flounder, scup and black sea bass) and non-target species, and the direction of those potential impacts, are summarized in Table 20. The indirectly negative actions described in Table 20 are localized in nearshore and marine areas where the projects occur; therefore, the magnitude of those impacts on the managed resources is expected to be limited due to limited exposure to the populations at large. Agricultural runoff may be much broader in scope and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on productivity of the managed resources is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions taken through the respective FMPs and the annual specifications process have had a positive cumulative effect on the managed resources. It is anticipated that the future management actions described in Table 20 will have additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect the ecosystem services on the productivity of managed species depends. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to the managed resources have had positive cumulative effects.

Catch limits, commercial quotas and recreational harvest limits for each of the managed species have been specified to ensure that these rebuilt stocks are managed sustainably and that measures are consistent with the objectives of the FMP under the guidance of the MSA. Commercial management measures such as those described in this document (e.g. quotas, quota monitoring and closures) are designed to ensure that catch and landings limits are not exceeded. The impacts of annual specification of management measures are largely dependent on how effective those measures are in meeting the objectives of preventing overfishing and achieving optimum yield, and on the extent to which mitigating measures are effective. The proposed actions described in this document would positively reinforce the past and anticipated positive cumulative effects on the managed resources by achieving the objectives specified in the respective FMPs. Therefore, the proposed action would not have any significant effect on the managed resources individually or in conjunction with other anthropogenic activities (Table 20).

7.3.5.2 Magnitude and Significance of Cumulative Effects on Physical Environment

Those past, present, and reasonably foreseeable future actions which may impact the physical environment and habitat (including EFH), and the direction of those potential impacts, are summarized in Table 20. The direct and indirect negative actions described in Table 20 are localized in nearshore and marine project areas where they occur; therefore, the magnitude of those impacts on habitat is expected to be limited due to limited exposure of habitat at large. Agricultural runoff may be much broader in scope and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on habitat is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact NMFS' managed resources and the habitat on which they rely prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of direct and indirect negative impacts those actions could have on habitat utilized by species under NMFS' jurisdiction.

Past fishery management actions taken through the respective FMPs and annual specifications process have had positive cumulative effects on habitat. The actions have constrained fishing effort both at a large scale and locally and have implemented gear requirements which may reduce impacts on habitat. As required under these FMP actions, EFH and Habitat Areas of Particular Concern were designated for the managed resources. It is anticipated that the future management actions described in Table 20 will result in additional direct or indirect positive effects on habitat through actions which protect EFH and protect ecosystem services on which these species' productivity depends. These impacts could be broad in scope. All the VECs are interrelated; therefore, the linkages among habitat quality, managed resources and non-target species productivity, and associated fishery yields should be considered. For habitat, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and will likely continue to be, taken to improve the condition of habitat. Some actions, such as coastal population growth and climate change may indirectly impact habitat and ecosystem productivity; however, these actions are beyond the scope of NMFS and Council management. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had neutral to positive cumulative effects.

The proposed actions described in this document are largely administrative in nature and would not significantly change the past and anticipated cumulative effects on habitat and thus would not have any significant effect on habitat individually or in conjunction with other anthropogenic activities (Table 20).

7.3.5.3 Magnitude and Significance of Cumulative Effects on Protected Species

Those past, present, and reasonably foreseeable future actions which may impact protected species, and the direction of those impacts, are summarized in Table 20. The indirectly negative actions described in Table 20 are localized in nearshore and marine project areas where they occur; therefore, the magnitude of those impacts on protected species is expected to be limited due to limited exposure of the populations at large. Agricultural runoff may be much broader in scope and the impacts of nutrient inputs to the coastal system may be larger in magnitude; however, the impact on protected species is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact protected species prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on protected species under NMFS' jurisdiction.

Given their life history dynamics, large changes in protected species abundance over long time periods, and the multiple and wide-ranging fisheries management actions that have occurred, the cumulative impacts on protected species were evaluated over a long-time frame (i.e., from the 1970's through the present). While some protected species are doing better than others, overall the trend of stock condition for protected resources has improved over the long-term due to reductions in the number of interactions. Past fishery management actions taken through the respective FMPs and annual specifications process have contributed to this long-term trend toward positive cumulative effect on protected species through the reduction of fishing effort (and thus reduction in potential interactions) and implementation of gear requirements. It is anticipated that future management actions, described in Table 20, will result in additional indirect positive effects on protected species. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to protected species have had a positive cumulative effect.

The proposed actions described in this document are largely administrative in nature and would not change the past and anticipated cumulative effects on protected species and thus would not have any significant effect on protected species individually or in conjunction with other anthropogenic activities (Table 20). Overall, actions have had, or will have, positive impacts on protected species.

7.3.5.4 Magnitude and Significance of Cumulative Effects on Human Communities

Those past, present, and reasonably foreseeable future actions which may impact human communities and the direction of those potential impacts are summarized in Table 20. The indirectly negative actions described in Table 20 are localized in nearshore areas and marine project areas where they occur; therefore, the magnitude of those impacts on human communities is expected to be limited in scope. Those actions may displace fishermen from project areas. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal ecosystem may larger in magnitude. This may result in indirect negative impacts on human communities by reducing resource availability; however, this effect is not quantifiable.

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on human communities.

Past fishery management actions taken through the respective FMPs and annual specifications process have had both positive and negative cumulative effects by benefiting domestic fisheries through sustainable fishery management practices while also sometimes reducing the availability of the resource to fishery participants. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions described in Table 20 will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on the human communities could occur if management actions result in reduced revenues. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had overall positive cumulative effects.

Catch limits, commercial quotas, and recreational harvest limits for each of the managed species have been specified to ensure that these rebuilt stocks are managed in a sustainable manner and that management measures are consistent with the objectives of the FMPs under the guidance of the MSA. The impacts from annual specification of management measures on the managed species are largely dependent on how effective those measures are in meeting their intended objectives and the extent to which mitigating measures are effective.

Overages may alter the timing of commercial fishery revenues such that revenues can be realized a year earlier. Impacts to some fishermen may be caused by unexpected reductions in their opportunities to earn revenues from commercial fisheries in the year during which the overages are deducted. Similarly, recreational fisheries may have decreased harvest opportunities due to reduced harvest limits as a result of overages and more restrictive management measures (e.g. minimum fish size, possession limits, fishing seasons) implemented to address overages. As mentioned in section 4.2, commercial summer flounder, scup and black sea bass landings were generally near or below the annual quotas with the only overage occurring for summer flounder which was only 2% over, on average, from 2012-2016. In addition, the only non-landing AM implemented since 2012 occurred in 2018 in the commercial summer flounder fishery which reduced the 2018 commercial quota by 2.9%.

Despite the potential for negative short-term effects on human communities, positive long-term effects are expected due to the long-term sustainability of the managed stocks. Overall, the proposed actions described in this document would not change the past and anticipated cumulative effects on human communities and thus, would not have any significant effect on human communities individually, or in conjunction with other anthropogenic activities (Table 20).

7.3.6 Preferred Action on all the VECs

The Council's preferred alternatives (i.e. the proposed action) are described in section 5.0. The direct and indirect impacts of the proposed action on the VECs are described in sections 7.1 through 7.4 and is summarized in Table 21. The magnitude and significance of the cumulative effects, including additive and synergistic effects of the proposed actions, as well as past, present, and future actions, have been taken into account.

When considered in conjunction with all other pressures placed on the fisheries by past, present, and reasonably foreseeable future actions, the preferred alternatives are not expected to result in any significant impacts, positive or negative. The ACL overage evaluation alternatives specify the year(s) of commercial catch data to be used in the ACL evaluation and do not specify any specific management response; therefore, impacts should be similar or have no impact compared to those observed in recent years. The non-landing payback alternatives consider different approaches as to when a payback would be needed and how much payback would be required if the ACL was exceeded due to discards and is not expected to meaningfully impact fishing effort. The preferred alternatives are consistent with other management measures that have been implemented in the past for these fisheries. These measures are part of a broader management scheme for the summer flounder, scup and black sea bass fisheries. This management scheme has helped to rebuild stocks and ensure long-term sustainability, while minimizing environmental impacts.

The regulatory atmosphere within which Federal fishery management operates requires that management actions be taken in a manner that will optimize the conditions of managed species, habitat, and human communities. Consistent with NEPA, the MSA requires that management actions be taken only after consideration of impacts to the biological, physical, economic, and social dimensions of the human environment. Given this regulatory environment, and because fishery management actions must strive to create and maintain sustainable resources, impacts on all VECs from past, present and reasonably foreseeable future actions have generally been positive and are expected to continue in that manner for the foreseeable future. This is not to say that some aspects of the VECs are not experiencing impacts, but rather that when considered as a whole and as a result of the management measure implemented in these fisheries, the overall long-term trend is positive (Table 21).

There are no significant cumulative effects associated with the preferred alternatives based on the information and analyses presented in this document and in past FMP documents (Table 21). Cumulatively, through 2022, it is anticipated that the preferred alternatives will result in generally positive impacts on the all VECs. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to the VECs have had no impact to positive cumulative effect.

Table 21. Magnitude and significance of the cumulative, additive, and synergistic effects of the preferred alternatives, as well as past (P), present (PR), and reasonably foreseeable future (RFF) actions.

VEC	Current Status	Net Impact of P, Pr, and RFF Actions	Impact of the Preferred Alternatives	Significant Cumulative Effects
Managed Species	Complex and variable (section 6.1)	Positive (section 7.3.5.1)	Slight positive (sections 7.1.1 and 7.2.1)	**None**
Non-target Species	Complex and variable (section 6.1)	Positive (section 7.3.5.2)	Slight positive (sections 7.1.1 and 7.2.1)	**None**
Habitat	Complex and variable (section 6.2)	No impact to positive (section 7.3.5.2)	Slight negative (sections 7.1.2 and 7.2.2)	**None**
Protected Resources	Complex and variable (section 6.3)	Positive (section 7.3.5.3)	Slight negative to slight positive (sections 7.1.3 and 7.2.3)	**None**
Human Communities	Complex and variable (section 6.4)	Likely mixed (section 7.3.5.4)	Slight negative to slight positive (sections 7.1.4 and 7.2.4)	**None**

8 APPLICABLE LAWS

8.1 Magnuson-Stevens Fishery Conservation and Management Act (MSA)

8.1.1 Compliance with National Standards

Section 301 of the MSA requires that FMPs contain conservation and management measures that are consistent with the ten National Standards.

National Standard 1. Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the OY from each fishery for the U.S. fishing industry.

The proposed action is designed to ensure that OY is achieved by accounting for the variability in discard estimation and also considers stock status (B/B_{MSY}) when determining the appropriateness of applying an accountability measure due to discards.

National Standard 2. Conservation and management measures shall be based upon the best scientific information available.

The proposed action does not directly change commercial quotas in the summer flounder, scup and black sea bass fisheries which are based on the best scientific information available and intended to prevent overfishing. In addition, the analyses conducted in support of the proposed action were conducted using recent discard estimate information from fishing years 2012 through 2016. The data used in the analyses provide the best available information.

National Standard 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 proposed action has no effect on the management units of any stocks of fish included in a Mid-Atlantic FMP.

National Standard 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 U.S. fishermen, such allocation shall be: (1) Fair and equitable to all such fishermen. (2) Reasonably calculated to promote conservation. (3) Carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The proposed action is does not allocate or assign fishing privileges among various U.S. fishermen. The management measures associated with the proposed action would apply equally to all federally permitted vessels in these fisheries.

National Standard 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 action should improve overall efficiency of utilization of fishery resources by appropriately accounting for variation is discard estimation and projections when determining whether AMs should be implemented. Economic allocation was not a factor in the development of this action, nor of the selection of the proposed action from among the alternatives.

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

Variations among, and contingencies in, fisheries, fishery resources, and catches were considered to the extent that the development of the proposed action addressed the uncertainties inherent in discard estimations. The proposed action provides flexibility to allow for appropriate AM determinations while taking into account these uncertainties in addition to current stock status.

National Standard 7. Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

By providing flexibility in AM determinations, this action will minimize costs by allowing instances when AMs are not necessary due to the condition of the stock. This action avoids unnecessary duplications.

National Standard 8. Conservation and management measures shall, consistent with the conservation requirements of the Magnuson-Stevens 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: (1) Provide for the sustained participation of such communities; and (2) To the extent practicable, minimize adverse economic impacts on such communities.

As described in sections 6 and 7, this action is expected to have positive human community impacts.

National Standard 9. Conservation and management measures shall, to the extent practicable: (1) Minimize bycatch; and (2) To the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

The proposed actions are consistent with National Standard 9, because the proposed measures consider all components of the commercial catch, including bycatch.

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

The proposed action should have no impact on safety at sea because it will not change the operation of any fishery.

8.1.2 Compliance with Other Requirements of the MSA

Section 303 of the MSA contains 15 additional required provisions for FMPs, which are discussed below. Any FMP prepared by any Council, or by the Secretary, with respect to any fishery, must comply with these 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 Council's Summer Flounder, Scup and Black Sea Bass FMP has evolved over time and currently use Acceptable Biological Catch (ABC) recommendations from the Council's Scientific and Statistical Committee to sustainably manage these fisheries. Under the umbrella of limiting catch (recreational and commercial) to the ABC, 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/cgibin/text58idx?c=ecfr&SID=1e9802ffddb05d0243d9c657fade956c&rgn=div5&view=text&node=50:12.0.1.1.5&idno=50) and summarized at http://www.greateratlantic.fisheries.noaa.gov/regs/info.html. The proposed action does not modify the summer flounder, scup or black sea bass specified ABCs. The action proposes to minimize the magnitude and frequency of paybacks due to higher than predicted discards without substantively increasing the risk of overfishing. As such, the existing and proposed management measures should continue to promote the long-term health and stability of the fisheries consistent with the MSA.

(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 FMP Amendment and NEPA analysis contains this information. This document also updates relevant summary information in Section 5.

(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 stock assessments that are conducted through a peer-reviewed process at the NMFS Northeast Fisheries Science Center. The available information for summer flounder, scup and black sea bass is summarized in every Amendment and Specifications document – see Section 5. 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, if fish 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 resulting products.

(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.

The proposed action does not modify the methods or types of information specified in previous amendments which require data be submitted to NMFS in the form of vessel monitoring systems (VMS), 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 are no such requests pending, but the FMPs contain 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 of this document summarizes essential fish habitat (EFH) information for summer flounder, scup and black sea bass that has been created for the Council's FMP through previous actions.

(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 on summer flounder, scup and black sea bass to assess the impacts of all alternatives considered. No additional data was deemed needed for effective implementation of the Council's Summer Flounder, Scup and Black Sea Bass FMP.

(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.

Sections 7.1.4 and 7.2.4 of this document provides an assessment of the likely effects on commercial summer flounder, scup and black sea bass fishery participants and communities from the considered actions. The proposed action is expected to result in a range of impacts from slight negative to slight positive impacts for fishery participants depending upon the magnitude and frequency of a required payback.

(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.

The Summer Flounder, Scup and Black Sea Bass FMP depend on stock assessments for each species to develop overfishing/overfished determination criteria. The Council's risk policy should prevent a stock from becoming overfished but if a stock does become overfished, a rebuilding plan would be instituted via an amendment to the Summer Flounder, Scup and Black Sea Bass FMP.

(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 has recently implemented a new SBRM – see http://www.nefsc.noaa.gov/fsb/SBRM/ 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.

Through the annual specifications process the Council evaluates summer flounder, scup and black sea bass recreational discards and considers measures to minimize mortality and ensure the extended survival of such fish as appropriate. The proposed action does not make any changes to the recreational summer flounder, scup and black sea bass provisions and only considered changes to the commercial accountability measures for these fisheries.

(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 Summer Flounder, Scup and Black Sea Bass FMP Amendment and NEPA analysis contains this information. This document also updates relevant summary information in section 6.

(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.

No rebuilding plans are active, or necessary, for summer flounder, scup or black sea bass stocks.

(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 summer flounder, scup and black sea bass specifications process addresses this requirement. 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, described in section 4 of this document. The modifications proposed in this action would retain annual catch limits that avoid overfishing and retain the existing landing-based accountability measures. While the proposed action would modify the existing accountability measures associated with discards, they are not expected to result in overfishing and would require increased paybacks as stock conditions decline.

8.1.3 Essential Fish Habitat Assessment

EFH assessments are required for any action that is expected to have an adverse impact on EFH, even if the impact is only minimal and/or temporary in nature (50 CFR Part 600.920 (e) (1-5)).

Description of Action

As previously described, the proposed action provides different approaches when conducting the commercial ACL overage evaluation and considers stock condition when applying a payback due to a non-landing (i.e. discards) ACL overage. These actions are largely administrative in nature and no other modifications to the management measures are proposed through this action. The proposed action is described in more detail in section 4 and section 5.1.

Potential Adverse Effects of the Action on EFH

The types of habitat impacts caused by the gears used in commercial summer flounder, scup and black sea bass fisheries (predominantly bottom otter trawl and followed by pot/trap gear, particularly in the black sea bass fishery) are summarized in section 6.2.3.

As described in section 7, the alternatives considered here do not modify the existing commercial quotas and will likely have little effect on fleet dynamics or fishing effort. The ACL overage evaluation alternatives considered here are administrative in nature and would not modify the manner in which these commercial fisheries operate and would have no impact on habitat, including EFH. The non-landing payback alternatives may result in different indirect impacts to the commercial summer flounder, scup and black sea bass fisheries, by modifying commercial quotas through reductions (i.e. paybacks) which may reduce future catch and fishing opportunities compared to the catch and opportunity realized under the previously analyzed commercial quotas.

The habitats that are impacted by commercial summer flounder, scup and black sea bass fisheries have been impacted by many fisheries over many years. The levels of fishing effort expected under the proposed action are not expected to cause additional habitat damage, but they are expected to limit the recovery of previously impacted areas. For these reasons, the proposed action is expected to have slight negative impacts on habitat and EFH.

Proposed Measures to Avoid, Minimize, or Mitigate Adverse Impacts of This Action

Measures in the Summer Flounder, Scup, and Black Sea Bass FMP which impact EFH were considered Amendment 13 (MAFMC 2002). The analysis in Amendment 13 indicated that no management measures were needed to minimize impacts to EFH because the trawl fisheries for summer flounder, scup, and black sea bass in Federal waters are conducted primarily in high energy mobile sand habitat where gear impacts are minimal and/or temporary in nature. These gears have minimal adverse impacts on EFH in the region (Stevenson et al. 2004). These characteristics of the fisheries have not changed since Amendment 13. None of the alternatives included in this document were designed to avoid, minimize, or mitigate adverse impacts on EFH.

Section 6.2.3. lists examples of management measures previously implemented by the Council with the intent of minimizing the impacts of various fisheries on habitat; however, none of these measures substantially restrict the commercial summer flounder, scup and black sea bass fisheries.

Conclusions

Overall, the proposed action is expected to have slight negative impacts on EFH.

8.2 NEPA Finding of No Significant Impact (FONSI)

The Council on Environmental Quality (CEQ) Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 CFR 1508.27). In addition, the Companion Manual for NOAA Administrative Order 216-6A provides sixteen criteria (the same ten as the CEQ Regulations and six additional) for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?

The proposed commercial accountability measure alternatives are not expected to result in significant impacts on any of the VECs, nor will they result in overall significant effects, either beneficial or adverse. The preferred alternatives do not have any direct impacts on these commercial fisheries and would maintain the existing ACL evaluation process of using a single year of catch information and would modify non-landing ACL overage paybacks based on stock condition (B/B_{MSY}). These alternatives are consistent with FMP objectives and the FMP mandate to constrain commercial harvest to the annual commercial quotas for each species. The proposed actions do not modify the existing commercial quotas and are not expected to meaningfully result in any significant changes in fishing effort. Commercial fishing effort will continue to be constrained by the commercial quotas that are in place and these quotas are designed to prevent the target stock (summer flounder, scup and black sea bass) from becoming overfished and to prevent overfishing from occurring. As described in sections 7.1.1 and 7.2.1, both alternatives are expected to have positive impacts on the summer flounder, scup and black sea bass stocks by continuing to prevent overfishing and maintaining the rebuilt status of the stocks. All of the non-target species that are most commonly caught on directed summer flounder, scup and black sea bass trips have a positive stock status, with the exception of northern and striped sea robins which are unassessed. These alternatives are likely to have a positive impact non-target species caught in these commercial fisheries by maintaining their current positive stock status. The continued operation of the summer flounder, scup and black sea bass commercial trawl and pot/trap fisheries are likely to result in some level of continued interaction with protected species and therefore both alternatives will have potential negative impacts on Endangered Species Act (ESA)-listed and Marine Mammal Protection Act (MMPA) protected species. However, the proposed action is not expected to result in increased interactions between fishing gear and protected species (sections 7.1.3 and 7.2.3). Similar to the conclusions for protected species, the proposed action is not expected to increase interactions between fishing gear and physical habitat (sections 7.1.2 and 7.2.2). The impacts on habitat are driven primarily by commercial bottom trawl and pot/trap gear, since these gear types are responsible for the overwhelming majority of the total summer flounder, scup and black sea bass commercial catch. The commercial summer flounder, scup and black sea bass fisheries operate in areas that have been fished for many years and any possible changes in fishing effort associated with any alternative are unlikely to further degrade habitat beyond its current state. The preferred non-landing AM payback (alternative 2B) would, under certain stock conditions, minimize the frequency and magnitude of non-landing ACL overage repayments and could provide for increased fishing opportunities and economic benefits compared to the No Action/*status quo* (section 7.1.4 and 7.2.4). The impacts of this action on all VECs are expected to be similar to the *status quo* measures, which do not currently have significant impacts on the VECs. The proposed action will ensure the long-term sustainability of summer flounder, scup and black sea bass fisheries. The expected impacts of the preferred action are fully described in section 7.

2. Can the proposed action reasonably be expected to significantly affect public health or safety?

The proposed action is not expected to alter the manner in which commercial fishermen conduct fishing activities for the target species, and current fishing behavior does not significantly affect public health or safety. Therefore, no changes in fishing behavior that would affect safety are anticipated. The overall effect of the proposed actions on these fisheries, including the communities in which they operate, will not adversely impact public health or safety.

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

The proposed action is not expected to alter fishing methods or activities or to substantially increase fishing effort. Other types of commercial fishing already occur in the impacted area and although it is possible that historic or cultural resources such as shipwrecks could be present, vessels try to avoid fishing too close to wrecks due to possible loss or entanglement of fishing gear. Therefore, it is not likely that the proposed action would result in substantial impacts to unique areas.

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

The proposed action is based on measures contained in the FMP, which have been in place for many years. The scientific information upon which the annual catch and landings limits are based has been peer reviewed and is the most recent information available. Thus, the measures contained in this action are not expected to be highly controversial.

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

The impacts of the proposed action on the human environment are described in section 7. The proposed action is not expected to alter fishing methods or activities or to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The effects of fishing are well studied and the impacts to managed species, non-target species, and protected resources will continue to be monitored. The proposed action is not expected to have highly uncertain effects or to involve unique or unknown risks on the human environment.

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

The proposed action does not modify the existing commercial summer flounder, scup and black sea bass quotas and is not expected to substantially change fishing effort or the spatial and/or temporal distribution of current fishing effort. When new stock assessments or other biological information on summer flounder, scup and black sea bass and other impacted species become available in the future, specifications (i.e. catch and landing limits) will be adjusted consistent with the FMP and MSA. This new information (i.e. current stock condition) will also be used in the proposed action to determine future payback requirements if the ACL is exceeded due to discards. None of these outcomes results in significant effects, nor do they represent a decision in principle about a future consideration. The impact of any future changes will be analyzed as to their significance in the process of developing and implementing them.

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

As discussed in section 7.3, the proposed action is not expected to have individually insignificant, but cumulatively significant impacts. The synergistic interaction of improvements in the efficiency of the fishery is expected to generate insignificant positive impacts overall. The proposed action, together with past, present, and reasonably foreseeable future actions, is not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment.

8. Can the proposed action reasonably be expected 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 impacts of the proposed action on the human environment are described in section 7. The proposed action is not expected to alter fishing practices. Although there are shipwrecks present in the area where fishing occurs, including some registered on the National Register of Historic Places, vessels typically avoid fishing too close to wrecks due to possible loss or entanglement of fishing gear. Therefore, it is not likely that the proposed action would adversely affect the historic resources listed above.

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

Commercial summer flounder, scup and black sea bass fisheries are predominantly bottom otter trawl, followed by pot/trap gear primarily in the black sea bass fishery. These gear types have the potential to interact with endangered and threatened species (section 6.3.3). As described in sections 7.1.3 and 7.2.3, fishing effort is not expected to change, and *status quo* levels of fishing effort are expected to result in slight negative impacts for ESA-listed species because they are not expected to contribute to the recovery of these populations.

The proposed action is not expected to alter overall fishing operations, lead to a substantial increase in fishing effort, or alter the spatial and/or temporal distribution of current fishing effort (section 7.3) in a manner that would increase interaction rates with protected species.

This action falls within the range of impacts considered in the Batched Fisheries Biological Opinion for the Summer Flounder, Scup, and Black Sea Bass Fishery (December 16, 2013). However, in a memorandum dated October 17, 2017, GARFO's Protected Resources Division reinitiated consultation on the Batched Biological Opinion. As part of the reinitiation, it was determined that allowing this fishery to continue during the reinitiation period will not violate ESA sections 7(a)(2) and 7(d) because it will not increase the likelihood of interactions with protected species above the amount that was previously considered in the 2013 Batched Biological Opinion. Therefore, conducting the proposed action during the reinitiation period would not be likely to jeopardize the continued existence of any whale, sea turtle, Atlantic salmon, or sturgeon species.

As described in sections 6.3, the proposed action is not likely to adversely affect any critical habitat. Commercial summer flounder, scup and black sea bass fisheries will not affect the essential physical and biological features of North Atlantic right whale or loggerhead (Northwest Atlantic DPS) critical habitat and, and therefore, will not result in the destruction or adverse modification of critical habitat (NMFS 2013; NMFS 2014; NMFS 2015a,b).

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

The proposed action is not expected to alter fishing methods or activities such that they 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 (sections 8.3 - 8.10).

11. Can the proposed action reasonably be expected to adversely affect stocks of marine mammals as defined in the Marine Mammal Protection Act?

The proposed action is not expected to alter fishing methods or activities. The proposed action is not expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, this action is not expected to adversely affect MMPA protected species (section 7.3.1).

A variety of gear types are used in the commercial summer flounder, scup and black sea bass fisheries. Bottom otter trawl and trap/pot gear account for the majority of the commercial summer flounder, scup and black sea bass catch and are thus the gears of primary concern for interactions with MMPA protected species (sections 6.2.3 and 6.3.3). The ACL overage evaluation alternatives are administrative in nature, do not specify management action(s) and would not modify the manner in which these commercial fisheries operate. These alternatives would have no impact on MMPA protected resources. The non-landing AM payback alternatives would not increase the commercial summer flounder, scup or black sea bass quotas and would potentially reduce these quotas if a non-landing ACL overage AM were triggered and a payback were implemented. For these reasons (described in detail in sections 7.1.3 and 7.2.3), *status quo* levels of fishing effort are expected to result in moderate negative to slight positive impacts for non-ESA listed marine mammals, depending on the species in question, and moderate negative impacts for ESA-listed marine mammals.

Continuation of “status quo” fishing behavior/effort is not expected to change any of these operating conditions

As described in section 6.3, some marine mammal stocks/species are experiencing levels of interactions that have resulted in exceedance of their PBR levels. These stocks/populations are not at an optimum sustainable level and therefore, the continued existence of these stocks/species is at risk. As a result, any potential for an interaction is a detriment to the species/stocks ability to recover from this condition. As interactions with non-ESA listed marine mammals are possible under the preferred non-landing payback alternative (alternative 2B), for these species/stocks, alternative 2B is likely to result in moderate negative impacts to these non-listed marine mammal stocks/species.

Alternatively, there are also many non-ESA listed marine mammals that, even with continued fishery interactions, are maintaining an optimum sustainable level (i.e., PBR levels have not been exceeded) over the last several years. For these stocks/species, it appears that the fishery management measures that have been in place over this timeframe have resulted in levels of effort that equate to interaction levels that are not expected to impair the stocks/species ability to remain at an optimum sustainable level. These fishery management measures, therefore, have resulted in indirect slight positive impacts to these non-ESA listed marine mammal species/stocks. Should future fishery management actions maintain similar operating condition as they have over the past several years, it is expected that these slight positive impacts would remain. Thus, given that the proposed action is not expected to significantly change fishing effort relative to the *status quo*, the impacts on these non-ESA listed species of marine mammals are expected to be slight positive (i.e., continuation of current operating conditions is not expected to result in exceedance of any of these stocks/species PBR level).

12. Can the proposed action reasonably be expected to adversely affect managed fish species?

The impacts of this action on managed fish species, including target and non-target species, are described in section 7.1. The preferred measures do not directly modify the existing commercial quotas which are designed to prevent overfishing and overfished status of the target stocks (i.e. summer flounder, scup and black sea bass), resulting in expected positive, but insignificant, impacts on these managed resources. There are relatively few non-target fish species that are typically caught in meaningful numbers on directed summer flounder, scup or black sea bass trips and none of these species are overfished, nor are the stocks experiencing overfishing (section 6.1.2). As described in section 7.0, commercial fishing effort is largely determined by the established commercial quotas for each of these fisheries and the proposed action considered here do not modify the existing commercial quotas set through the standard specification setting process; therefore, fishing effort is expected to be similar to that analyzed in the specification documents for these fisheries. The proposed action is not expected to have any significant adverse impacts on managed fish species.

13. Can the proposed action reasonably be expected to adversely affect essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act?

The proposed action is not expected to cause substantial damage to the ocean, coastal habitats, and/or EFH as defined under the MSA and identified in the FMP. The commercial summer flounder, scup, and black sea bass fisheries are prosecuted primarily with bottom otter trawl and trap/pot gear (section 6.2.3). These gear types can adversely impact bottom habitat and EFH. The ACL overage evaluation alternatives are administrative in nature, do not specify management action(s) and would not modify the manner in which these commercial fisheries operate. These alternatives would have no impact on habitat, including EFH. The non-landing AM payback alternatives would not increase the commercial summer flounder, scup or black sea bass quotas and would potentially reduce these quotas if a non-landing ACL overage AM were triggered and a payback were implemented, and *status quo* fishing effort is expected. As described in sections 7.1.2 and 7.2.2, the areas fished for summer flounder, scup and black sea bass have been heavily fished for many years and are unlikely to be degraded further as the result of the *status quo* levels of fishing effort that are expected under the proposed action.

14. Can the proposed action reasonably be expected to adversely affect vulnerable marine or coastal ecosystems, including but not limited to, deep coral ecosystems?

The proposed action is not expected to have significant impacts on the natural or physical environment, including vulnerable marine or coastal ecosystems. The proposed action is not expected to alter fishing methods or activities or to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The areas fished for scup have been fished for many years, and for a variety of species, and this action is not expected to change the core locations of summer flounder, scup and black sea bass fishing activity. While some commercial summer flounder, scup and black sea bass fishing takes place near the continental slope/shelf break where deep sea corals may be found in and around the submarine canyons, much of this area in the Mid-Atlantic is now protected by a prohibition on bottom-tending gear in the Frank R. Lautenberg Deep Sea Coral Protection Area (81 FR 90246; December 14, 2016). The proposed action in this document is not expected to alter summer flounder, scup and black sea bass fishing patterns or activities relative to this protected area or in any other manner that would lead to adverse impacts on deep sea coral or other vulnerable marine or coastal ecosystems.

15. Can the proposed action reasonably be expected to adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)?

The impacts of commercial summer flounder, scup and black sea bass fisheries on biodiversity and ecosystem functioning have not been assessed; however, the impacts to components of the ecosystem (i.e. non-target species, habitat, and protected species) have been considered. As described in section 7, the proposed action does not directly modify the current commercial summer flounder, scup and black sea bass quotas; therefore, fishing effort is expected to be similar to that analyzed in the specification documents for these fisheries. The proposed action is largely administrative in nature and likely do not have any immediate impacts, but rather affect the management framework for future accountability actions. Current fishing practices and levels of effort not likely to negatively impact the stock status of the target and non-target species (sections 7.1.1 and 7.2.1), they are not likely to cause additional habitat damage beyond that previously caused by a variety of fisheries (sections 7.1.2 and 7.2.2), and they are not expected to jeopardize any protected species (sections 7.1.3 and 7.2.3). They are, however, expected to prevent recovery of damaged habitats and are not expected to contribute to the recovery of any endangered or threatened species. For these reasons, the proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area. This action merely implements the commercial catch data to be used in an ACL overage evaluation and the frequency and magnitude of any payback necessary due to the ACL being exceeded from discards.

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

This action provides different approaches when conducting the commercial ACL overage evaluation and considers stock condition when applying a payback due to a non-landing (i.e. discards) ACL overage in the commercial summer flounder, scup and black sea bass fisheries. There is no evidence or indication that these fisheries have ever resulted in the introduction or spread of nonindigenous species. The proposed action is not expected to alter fishing methods or activities and it is not expected to increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, it is highly unlikely that the proposed action would result in the introduction or spread of a non-indigenous species.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for this action, it is hereby determined that the proposed action will not significantly impact the quality of the human environment as described above and in the supporting Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an environmental impact statement for this action is not necessary.

Dan Caless ______________________ 10/9/18 ______

for *Regional Administrator for GARFO, NMFS, NOAA* *Date*

8.3 Endangered Species Act

The batched fisheries Biological Opinion completed on December 16, 2013, concluded that the actions considered would not jeopardize the continued existence of any listed species. On October 17, 2017, NMFS reinitiated consultation on the batched Biological Opinion due to updated information on the decline of Atlantic right whale abundance.

Section 7(d) of the ESA prohibits Federal agencies from making any irreversible or irretrievable commitment of resources with respect to the agency action that would have the effect of foreclosing the formulation or implementation of any reasonable and prudent alternatives during the consultation period. This prohibition is in force until the requirements of section 7(a)(2) have been satisfied. Section 7(d) does not prohibit all aspects of an agency action from proceeding during consultation; non-jeopardizing activities may proceed as long as their implementation would not violate section 7(d). Per the October 17, 2017, memo, it was concluded that allowing those fisheries specified in the batched Biological Opinion to continue during the reinitiation period will not increase the likelihood of interactions with ESA listed species above the amount that would otherwise occur if consultation had not been reinitiated. Based on this, the memo concluded that the continuation of these fisheries during the reinitiation period would not be likely to jeopardize the continued existence of any ESA listed species. Taking this, as well as our analysis of the proposed action into consideration, we do not expect the proposed action, in conjunction with other activities, to result in jeopardy to any ESA listed species.

This action does not represent any irreversible or irretrievable commitment of resources with respect to the FMP that would affect the development or implementation of reasonable and prudent measures during the consultation period. NMFS has discretion to amend its Magnuson- Stevens Act and ESA regulations and may do so at any time subject to the Administrative Procedure Act and other applicable laws. As a result, the Council has preliminarily determined that fishing activities conducted pursuant to this action will not affect endangered and threatened species or critical habitat in any manner beyond what has been considered in prior consultations on this fishery.

8.4 Marine Mammal Protection Act

Section 7.2.3 contain an assessment of the impacts of the proposed action on marine mammals. A final determination of consistency with the MMPA will be made by the agency during rulemaking for this action.

8.5 Coastal Zone Management Act

The Coastal Zone Management Act of 1972, as amended, provides measures for ensuring productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. The Council has developed this specifications document and will submit it to NMFS. NMFS will determine whether the proposed actions are consistent to the maximum extent practicable with the coastal zone management programs for each state (Maine through North Carolina).

8.6 Administrative Procedure Act

Sections 551-553 of the Federal Administrative Procedure Act establish 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 notice and opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of an FMP and subsequent amendments and framework adjustments. There were many opportunities for public review, input, and access to the rulemaking process during the development of the proposed management measures described in this document and during the development of this document. This action was developed through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during the following meetings:

- Council meetings held on February 14-16, 2017 in Kitty Hawk, NC, October 10-12, 2017 in Riverhead, NY and February 13-15, 2018 in Raleigh, NC;

The public will have further opportunity to comment on this document and the proposed management measures once NMFS publishes a request for comments notice in the *Federal Register*.

8.7 Section 515 (Data Quality Act)

Utility of Information Product

This action proposes to modify the commercial AMs for summer flounder, scup, and black sea bass. This document includes a description of the alternatives considered, the preferred action and rationale for selection, and any changes to the implementing regulations of the FMP. As such, this document enables the implementing agency (NMFS) to make a decision on implementation of these changes and this document serves as a supporting document for the proposed rule.

The action contained within this document was developed to be consistent with the FMP, MSA, and other applicable laws, through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during a number of public meetings (section 8.6). The public will have further opportunity to comment on this specifications document once NMFS publishes a request for comments notice in the *Federal Register*.

Integrity of Information Product

This information product meets the standards for integrity under the following types of documents: Other/Discussion (e.g. Confidentiality of Statistics of the MSA; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR 229.11, Confidentiality of information collected under the Marine Mammal Protection Act).

Objectivity of Information Product

The category of information product that applies here is “Natural Resource Plans.” Section 8.0 describes how this document was developed to be consistent with any applicable laws, including MSA. The analyses used to develop the alternatives (i.e. policy choices) are based upon the best scientific information available. The most up to date information was used to develop the EA which evaluates the impacts of those alternatives (section 7.0). The specialists who worked with these core data sets and population assessment models are familiar with the most recent analytical techniques and are familiar with the available data and information relevant to the summer flounder, scup, and black sea bass fisheries.

The review process for this document involves Council, NEFSC, GARFO, and NMFS headquarters. The NEFSC technical review is conducted by senior level scientists with specialties in fisheries ecology, population dynamics and biology, as well as economics and social anthropology. The Council review process involves public meetings at which affected stakeholders can comment on proposed management measures. Review by GARFO is conducted by those with expertise in fisheries management and policy, habitat conservation, protected resources, and compliance with the applicable law. Final approval of the specifications document and clearance of the rule is conducted by staff at NOAA Fisheries Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

8.8 Paperwork Reduction Act (PRA)

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the federal paperwork burden for individuals, small businesses, state and local governments, and other persons, as well as to maximize the usefulness of information collected by the Federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the PRA.

8.9 Relative to Federalism/Executive Order 13132

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

8.10 Regulatory Impact Review (RIR)

Introduction

Executive Order 12866 requires a Regulatory Impact Review (RIR) in order to enhance planning and coordination with respect to new and existing regulations. This Executive Order requires the Office of Management and Budget to review regulatory programs that are considered to be "significant." Section 7 reviews the impacts associated with the proposed actions and found that none of the associated impacts are expected to be significant. This RIR further demonstrates that this action is not a "significant regulatory action" because it will not affect in a material way the economy or a sector of the economy.

Executive Order 12866 requires a review of proposed regulations to determine whether or not the expected effects would be significant, where a significant regulatory action is one that may:

1. Have an annual effect on the economy of $100 million or more, or adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
2. Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
3. Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
4. Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Description of Management Objectives

A complete description of the purpose and objectives of this action is found under section 4 of this document. This action is taken under the authority of the MSA and regulations at 50 CFR part 648.

The objectives of the Summer Flounder, Scup, and Black Sea Bass FMP are as follows:

1. Reduce fishing mortality in the summer flounder, scup, and black sea bass fisheries to ensure that overfishing does not occur;
2. Reduce fishing mortality on immature summer flounder, scup, and black sea bass to increase spawning stock biomass;
3. Improve the yield from the fishery;
4. Promote compatible management regulations between state and federal jurisdictions;
5. Promote uniform and effective enforcement of regulations; and
6. Minimize regulations to achieve the management objectives stated above.

The proposed action is consistent with and does not modify these objectives and is consistent with the recommendations of the Council. There are no expected adverse impacts on yield, management compatibility, or enforcement.

Affected Entities

A description of the entities affected by this action, specifically the stakeholders of the commercial summer flounder, scup and black sea bass fisheries, are presented in Section 6.4 of this document. A description of ports and communities is found in Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP, available at: http://www.mafmc.org/fisheries/fmp/sf-s-bsb. Additional information on "Community Profiles for the Northeast US Fisheries" can be found at: http://www.nefsc.noaa.gov/read/socialsci/communityProfiles.html.

Problem Statement

The purpose of the measures proposed in this action is described in section 4.1 of this document.

Description of the Alternatives

The proposed action is described in section 5 of this document. As described in section 7, the impacts of the proposed action are not expected to be significant for any of the VECs.

The preferred ACL overage evaluation alternative would continue to use a single year of commercial catch (landings and discards) to compare to the commercial sector ACL; while the non-preferred alternative (alternative 1B) would use a three-year moving discard average and single year of landings to compare to the commercial sector ACL. If its determined the ACL was exceeded and the overage was not due to landings, or if the ACL overage could not be completely accounted for through a landings payback, then the ACL was exceeded due to higher than projected discards and would require a payback. Neither of the alternatives considered here modify the existing commercial quotas and neither specify the nature of any management response (i.e. payback), so none are associated with any direct impacts.

When evaluating the two ACL evaluation alternatives from the standpoint of maximizing the social and economic benefits, the merits of the approaches are not straightforward and are related to whether or not AM paybacks, and their magnitude, are needed. For example, there are trade-offs associated with using a single year of catch information (preferred) or a three-year moving average discard estimate (non-preferred). The preferred alternative may require a greater reduction in the commercial quota for one year if the ACL is exceeded because of high discards when compared to the non-preferred alternative; while the non-preferred alternative may decrease the impact of an ACL overage initially if estimated discards increase; but it may also maintain the impact (i.e. calculate a higher discard amount) in subsequent years if discards decline. This may lead to an ACL overage in certain years and therefore require a payback when it would otherwise not be needed. Therefore, there are trade-offs in considering the potential impacts to the human communities associated with taking a larger reduction in one year (*status quo*) versus smaller reductions over a greater number of years (alternative 1B).

The non-landing payback alternatives consider different approaches as to when a payback would be needed and how much payback would be required if the ACL is exceeded due to discards. The preferred alternative (alternative 2B) would modify the current pound-for-pound payback under all circumstances if the ACL overage was caused by higher than projected discards and would consider the condition of the stock (B/B_{MSY}) based on the most recent stock assessment information to scale the payback amount.

The preferred alternative is expected to have positive socioeconomic impacts compared to the *status quo* alternative because of the likely lower frequency and magnitude of any discard overage paybacks, particularly under high stock biomass conditions. The possible reduction in the frequency and magnitude of discard overage paybacks under this alternative would therefore provide for increased fishing opportunities and economic benefits, up to the established commercial quotas

Executive Order 12866 mandates that proposed measures be analyzed below in terms of: (1) changes in net benefits and costs to stakeholders, (2) changes to the distribution of benefits and costs within the industry, (3) changes in income and employment, (4) cumulative impacts of the regulation, and (5) changes in other social concerns. There should not be substantial distributional issues. The cumulative impacts of management and regulations are described in section 7.3 and are not expected to be significant. There are no other expected social concerns.

Determination of Executive Order 12866 Significance

The proposed action does not constitute a significant regulatory action under EO 12866 for the following reasons. The proposed action will not have an annual effect on the economy of more than $100 million and is not predicted to have any adverse impact on commercial fishing vessels, purchasers of seafood products and ports. The change in revenues as a result of the preferred alternative is likely to be minimal but unknown and will certainly be far below $100 million. The total value of all commercial landings in 2016 was approximately $27.65 million for summer flounder, $10.8 million for scup and $9.26 million for black sea bass, as shown in commercial dealer data.

In addition, there should be no interactions with activities of other agencies and no impacts on entitlements, grants, user fees, or loan programs and, as such, does not raise novel legal or policy issues. As such, the Proposed Action is not considered significant as defined by EO 12866.

8.11 Regulatory Flexibility Act Analysis

The Regulatory Flexibility Act (RFA), first enacted in 1980, and codified at 5 U.S.C. 600-611, was designed to place the burden on the government to review all new regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization can have a bearing on its ability to comply with Federal regulations. Major goals of the RFA are: 1) to increase agency awareness and understanding of the impact of their regulations on small business; 2) to require that agencies communicate and explain their findings to the public; and 3) to encourage agencies to use flexibility and to provide regulatory relief to small entities.

The RFA emphasizes predicting significant adverse impacts on small entities as a group distinct from other entities and on the consideration of alternatives that may minimize the impacts, while still achieving the stated objective of the action. When an agency publishes a proposed rule, it must either, (1) certify that the action will not have a significant adverse impact on a substantial number of small entities, and support such a certification declaration with a factual basis, demonstrating this outcome, or, (2) if such a certification cannot be supported by a factual basis, prepare and make available for public review an Initial Regulatory Flexibility Analysis (IRFA) that describes the impact of the proposed rule on small entities.

The sections below provide the supporting analysis to assess whether the proposed regulations will have a "significant impact on a substantial number of small entities."

8.11.1 Basis and Purpose of the Rule

This action is taken under the authority of the MSA and regulations at 50 CFR part 648. A complete description of the purpose and need and objectives of this proposed rule is found in section 4.0. The proposed action would modify the commercial summer flounder, scup, and black sea bass AMs. Section 5 contains a full description of the alternatives analyzed in this section. Additional background information on the alternatives can be found in section 4. As described in sections 4 and 5, the proposed measures are consistent with the recommendations of the Council and are intended to constrain commercial harvest to the annual commercial quota for each species as required by the FMP.

The preferred ACL overage evaluation alternative would continue to use a single year of commercial catch (landings and discards) to compare to the commercial sector ACL. This alternative does not modify the existing commercial quotas and does not specific the nature of a management response. The preferred non-landing payback alternative would modify the current pound-for-pound payback under all circumstances if the ACL overage was caused by higher than projected discards and would consider the condition of the stock (B/B_{MSY}) based on the most recent stock assessment information to scale the payback amount. The proposed measures in the action are largely administrative in nature and are not a substantial departure from the current management regime for all three species.

8.11.2 Description of Regulated Entities

The small entities that would be affected by this action include commercial fishing operations with Federal summer flounder, scup or black sea bass permits. It will not *directly* affect seafood processors, recreational fishing entities, or other entities.

For RFA purposes only, NMFS established a size standard for small business, including their affiliates, whose primary industry is commercial fishing (see 50 CFR 200.2). A business primarily engaged in commercial fishing (North American Industry Classification System code 11411) is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates) and has combined annual receipts not in excess of $11 million for all its affiliated operations worldwide.

A description of the commercial summer flounder, scup and black sea bass fisheries are presented in section 6.0 of this document and section 3.0 of Amendment 13 to the FMP (MAFMC 2002). A description of ports and communities that are dependent on summer flounder, scup or black sea bass is found in section 3.4.2 of Amendment 13 to the FMP. Additional information on "Community Profiles for the Northeast US Fisheries" can be found at: http://www.nefsc.noaa.gov/read/socialsci/communityProfiles.html.

8.11.3 Number of Regulated Commercial Entities

Vessel ownership data[17] were used to identify all individuals who own fishing vessels. Vessels were grouped according to common owners. The resulting groupings were then treated as a fishing business, or affiliates, for purposes of identifying small and large firms.

According to the ownership database, 910 affiliate firms landed summer flounder, scup, and/or black sea bass during 2014-2016, with 906 of those business affiliates categorized as small business and four categorized as large business (Table 22). The three-year average (2014-2016) combined gross receipts (all species combined) for small entities was $329,302,036 and the average summer flounder, scup, and black sea bass receipts was $40,279,746; this indicates that summer flounder, scup, and black sea bass revenues contributed approximately 12.23% of the total gross receipts for these small entities. The four that were categorized as large entities had combined gross receipts of $77,357,274 and average summer flounder, scup, and black sea bass receipts of $2,330,368. As such, summer flounder, scup, and black sea bass receipts as a proportion of gross receipts is 3.01% (slightly lower than the proportion for small business entities). The more immediate impact of the rule may be felt by the firms that are active participants.

Table 22. Small and large entities average revenues and summer flounder, scup, and black sea bass revenues, 2014-2016.

Revenue Millions of dollars(M))	Count of Firms*	Average Gross Receipts (all firms combined)	Average Scup Receipts (all firms combined)	Scup Receipts as a Proportion of Gross Receipts
<0.5 M	752	65,758,412	13,120,630	19.95%
0.5-1M	72	52,588,370	11,203,315	21.30%
1-2M	43	60,533,515	7,963,008	13.15%
2-5M	31	89,253,365	4,319,648	4.84%
5-11M	8	61,168,374	3,673,144	6.00%
>11M	4	77,357,274	2,330,368	3.01%

[17] Affiliate database for 2014-2016 was provided by the NMFS NEFSC Social Science Branch.

Total	910	406,659,310	42,610,114	10.48%

*At the ownership level as described above.

The expected effects of the proposed action were analyzed by employing quantitative approaches to the extent possible. In the current analysis, effects on profitability associated with the proposed management measures should be evaluated by looking at the impact of the proposed measures on individual business entities costs and revenues. Changes in gross revenues are used as a proxy for profitability. Where quantitative data were not available, qualitative analyses were conducted.

8.11.4 Economic Impacts on Commercial Regulated Entities

As discussed throughout this document, the proposed action does not modify the existing commercial summer flounder, scup and black sea bass quotas and is not expected to substantially change fishing effort or the spatial and/or temporal distribution of current fishing effort. The ACL overage evaluation alternatives are strictly administrative in nature and do not specify management action(s) if it was determined the ACL was exceeded and would have no direct economic impacts. If the management response requires a payback because the ACL was exceeded due to discards, these alternatives could affect the magnitude and frequency of an overage. There are economic trade-offs associated with these alternatives which consider taking a larger reduction in one year (preferred alternative 1A) versus smaller reductions but over a greater number of years (alternative 1B).

The preferred non-landing AM payback alternative (alternative 2B) is expected to minimize the frequency and magnitude of non-landing ACL overage repayments and therefore, would result in positive economic impacts, compared to the No Action/*status quo* alternative. This alternative would provide for increased fishing opportunities and economic benefits, up to the established commercial quota in these three fisheries.

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10 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this document, the Council consulted with NMFS, the New England and South Atlantic Fishery Management Councils, USFWS, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils. The advice of NMFS GARFO personnel was sought to ensure compliance with NMFS formatting requirements.

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