2024-2025 Summer Flounder and Scup Specifications
Environmental Assessment

December 2023

Prepared by the
Mid-Atlantic Fishery Management Council
in cooperation with the
National Marine Fisheries Service

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201
Dover, DE 19901
(302) 674-2331 tel.
(302) 674-5399 fax

National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930
(978) 281-9315 tel.
(978) 281-9135 fax

Initial submission to NMFS: October 6, 2023
Revisions submitted to NMFS: November 30, 2023
FONSI Signed: December 12, 2023

1. EXECUTIVE SUMMARY

This document was prepared by the Mid-Atlantic Fishery Management Council (the Council or MAFMC) 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.

The purpose of this action is to implement commercial quotas and recreational harvest limits (RHLs) for the summer flounder and scup fisheries for 2024-2025. These measures are necessary to prevent overfishing and ensure that annual catch limits (ACLs) are not exceeded.

This document describes all evaluated management alternatives (Section 5) and their expected impacts on four aspects of the affected environment, which are defined as valued ecosystem components (VECs; Sections 6 and 7). The expected impacts of the alternatives on the VECs are derived from consideration of both the current conditions of the VECs and expected changes in fishing effort under each alternative.

1.1. Summary of 2024-2025 Summer Flounder Quota and RHL Alternatives and Impacts

The 2024-2025 summer flounder alternatives are summarized in Table 1 and described in more detail in Section 5.1. Their expected impacts on the VECs are summarized in Table 2 and described in more detail in Section 7. Alternative 1A is the status quo alternative and includes summer flounder catch and landings limits identical to those implemented for 2023 (88 Federal Register 11, 1/3/2023). Alternative 1B is the preferred alternative, and includes catch and landings limits recommended by the Council and the Atlantic States Marine Fisheries Commission's (Commission or ASMFC) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) in August 2023. Alternative 1B is based on the recommendations of the Council's Scientific and Statistical Committee (SSC), which are based on the best available scientific information and are intended to prevent overfishing. Alternative 1C is the least restrictive alternative for summer flounder and includes a commercial quota and RHL that are 25% higher than those under alternative 1A. Alternative 1D is the most restrictive alternative and includes a commercial quota and RHL that are the lowest landings limits implemented over the past ten years. As shown in Table 1, the commercial quota and RHL under all alternatives would be held constant across the two years of specifications (2024 and 2025).

Under summer flounder alternatives 1A and 1C, it was assumed that commercial landings in 2024-2025 would be similar to recent levels (ranging from 9.44 to 12.53 million pounds from 2020-2022), which is moderately to substantially lower than the 2024-2025 commercial quotas under these two alternatives (Table 1). It was assumed that the commercial quota under these two alternatives would not be constraining given this difference, and because of the commercial fishery's notable underharvest of their quota since 2019. Commercial summer flounder harvest appears to be limited more by some combination of availability, market factors, or other management factors, rather than by the quota. This is expected to continue to be the case under alternatives with higher quotas, i.e., alternatives 1A and 1C. In contrast, alternatives 1B and 1D are expected to be limiting to the commercial fishery and would result in moderate to substantial reductions in commercial effort in 2024-2025 compared to recent levels.

Assumptions about recreational effort and harvest are complicated by the new process for setting recreational management measures known as the Percent Change Approach. As described in Section 7, there are several unknowns regarding how recreational management measures will be

modified for 2024-2025, as the RHLs are only one input to that determination.[1] Based on the RHLs under each alternative, and assuming projected harvest under the existing measures would be similar to recent levels, a likely outcome of the Percent Change Approach was assumed. For summer flounder, it was assumed that alternative 1A would result in either a 10% liberalization in harvest and effort, or a 10% reduction. Alternative 1B was more likely to result in a 10% reduction in harvest, while alternative 1C would likely result in a 10% liberalization. Alternative 1D would be expected to result in an uncertain magnitude of reduction, but likely greater than 10% and not to exceed 40%.

These assumptions about changes in fishing effort are further described in the introduction to Section 7, and were used to determine the expected impacts described in that section for each VEC, as summarized below.

Table 1: 2024-2025 summer flounder commercial quota and RHLs under alternatives 1A-1D.

2024-2025 Alternatives	**Commercial quota** (mil lb)	**RHL** (mil lb)
Alternative 1A (Status quo, i.e., 2023)	15.27	10.62
1B (preferred; based on Aug 2023 Council/Board recs)	8.79	6.35
Alternative 1C (least restrictive – 25% higher than status quo/2023)	19.09	13.23
Alternative 1D (most restrictive - lowest in last 10 years)	5.66	3.77

Impacts of 2024-2025 Summer Flounder Catch and Landings limit Alternatives on Summer Flounder and Non-Target Species

Based on the assumptions about changes in effort under each alternative for summer flounder, it was assumed the total allowable landings specified under alternatives 1A (status quo) and 1C (least restrictive) would be unlikely to be achieved. However, if landings stayed at recent levels under these alternatives, they would still be higher than the total allowable landings associated with the SSC's ABC recommendations for 2024-2025. As such, alternatives 1A and 1C are likely to result in continued overfishing for summer flounder, with the potential to move the stock closer to an overfished state. As such, alternatives 1A and 1C would be expected to have slight to moderate negative impacts on the summer flounder stock, depending on the degree to which the SSC's catch limit recommendations were exceeded by actual fishing effort. Alternative 1B (preferred) is based on the recommendations of the SSC for the 2024-2025 fishing years and is intended to prevent overfishing. As such, this alternative is designed to prevent the stock from becoming overfished and is expected to have moderate positive impacts on summer flounder. Similarly, alternative 1D (most restrictive) is more conservative than needed to prevent overfishing on summer flounder and would also be expected to have moderate positive impacts on the stock.

[1] See the Percent Change Approach overview table and possible outcomes at: https://www.mafmc.org/s/HCR-Percent-Change-Table.pdf.

Alternative 1D has the lowest expected fishing effort and fishing mortality for summer flounder and therefore is expected to result in the highest positive impacts to summer flounder, followed by alternatives 1B, 1A, and 1C.

For non-target species, alternatives 1A and 1C are expected to result in levels of fishing effort similar to that observed recent years. Alternative 1B would require slight reductions in recreational effort and moderate reductions in commercial effort. Alternative 1D would require moderate to substantial reductions in fishing effort and would be expected to reduce interactions with non-target species. However, none of the effort levels described here for any of the alternatives are expected to result in a change in the stock status of any commercial or recreational non-target species. It is expected that alternatives 1A-1D, under the assumptions of potential effort changes described in this document, would be expected to have impacts on non-target species that range from slight negative for non-target species which currently have a negative stock status (i.e., those tautog regions that are overfished and/or experiencing overfishing) to moderate positive for non-target species with a currently positive stock status (i.e., all other non-target species identified in Section 6.1.3, with the exception of sea robins, which have an unknown status). Of the four summer flounder alternatives, alternative 1D has the highest potential for positive impacts to non-target species, followed by alternatives 1B, 1A, and 1C.

Impacts of 2024-2025 Summer Flounder Catch and Landings limit Alternatives on Physical Habitat

The summer flounder fisheries operate in areas that have been fished for many years by many fisheries. The summer flounder alternatives (i.e., alternatives 1A-1D) are expected to result in changes in commercial fishing effort ranging from substantial reductions in fishing effort (under alternative 1D) to possible slight increases or similar landings to 2022 (alternatives 1A and 1C). Alternative 1B includes an expected moderate reduction in effort. The magnitude of the expected reduction in recreational fishing effort varies depending on the expected outcome of the Percent Change Approach, ranging from a moderate reduction in recreational effort to a possible 10% liberalization in effort. Recreational hook and line gear generally has much lesser impacts on physical habitat than bottom otter trawl gear, the dominant gear type in the commercial summer flounder fishery. None of the alternatives are expected to change the methods of fishing or the areas fished. The expected levels of commercial and recreational fishing effort under all summer flounder alternatives are unlikely to further degrade habitat beyond its current state. Continued commercial and recreational fishing under all summer flounder alternatives is expected to result in slight negative impacts to habitat due to continued interactions between fishing gear and physical habitat.

Of the four summer flounder alternatives, alternative 1D is expected to result in the lowest total (i.e., commercial and recreational) fishing effort; therefore, the expected slight negative impacts to habitat are lowest in magnitude under alternative 1D, followed by alternatives 1B, 1A, and 1C.

Impacts of 2024-2025 Summer Flounder Catch and Landings Limit Alternatives on Protected Species

As described in more detail in Section 6.2.3, bottom trawl gear is the predominant gear type used in the commercial fishery. As interactions between this gear type and ESA listed species and/or MMPA protected species have been observed, operation of the commercial summer flounder fishery has the potential to interact with these species. Based on documented interactions between

hook and line gear and some protected species, the recreational fishery also has the potential to interact with certain protected species (see Section 6.3.3).

The continued operation of the commercial and recreational summer flounder fisheries under all alternatives is expected to result in some level of continued interaction risk for protected species. Any interaction with an ESA-listed species or an MMPA protected species which is not at a sustainable level (i.e., PBR level has been exceeded), is considered a negative impact, even under reduced fishing effort levels. Summer flounder alternatives 1A and 1C are expected to have negligible to low moderate negative impacts for those species, while alternatives 1B and 1D are expected to have negligible to slight negative impacts for those species. Some MMPA and ESA-listed species have not had documented interactions with the primary commercial summer flounder gear types (e.g., large whales (except minke) and bottom trawls) and alternatives 1A-1D are expected to have negligible impacts for those species. The potential for slight increases in recreational effort may lead to slight to low moderate negative impacts for those non-ESA listed marine mammal species in poor condition (i.e., Bottlenose dolphin, WNA Northern and Southern Migratory Coastal Stocks).

For non-ESA listed marine mammal 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 in the fishery previously may have indirect positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal. Alternatives 1A and 1C are expected to result in slight negative to low moderate positive impacts for these species, depending on the species and the response of the commercial or recreational fishery to these higher quota alternatives. Alternatives 1B and 1D are expected to result in impacts ranging from negligible to low moderate positive for marine mammals which have not had their PBR levels exceeded by maintaining those stocks at sustainable levels.

In summary, alternatives 1A-1D are expected to have potential impacts on protected species ranging from low moderate negative to low moderate positive, with low moderate negative to low moderate positive impacts likely on non-ESA listed marine mammals and negligible to low moderate negative impacts likely for ESA-listed species. Of the four summer flounder alternatives, alternative 1D has the potential for the lowest fishing effort; therefore, it is expected to have the lowest potential for negative impacts to protected species, followed in order by alternatives 1B, 1A, and 1C.

Socioeconomic Impacts of 2024-2025 Summer Flounder Catch and Landings limit Alternatives

Alternative 1A would be expected to result in landings and revenues similar to recent years, given that the commercial quota has not been limiting in recent years. This would be expected to result in continued moderate positive impacts to the commercial fishery and its associated communities. For the recreational fishery, a 10% increase or decrease in harvest and effort under the Percent Change Approach is possible. A decrease of this magnitude would be expected to result in slight negative impacts to the recreational sector due to slight decreases in for-hire trips and revenues, as well as in angler satisfaction. Similarly, a 10% increase in harvest would result in slight positive impacts to the recreational sector for similar reasons.

Alternative 1B would require moderate reductions in commercial landings and revenues compared to recent levels, which would likely be partially offset by expected increases in price. Impacts to the commercial sector would also vary by vessel and by state, given changes in regulations by state

in response to reduced quotas, market conditions that vary regionally, and individual commercial operators making different business decisions in response to reduced quotas. Overall, alternative 1B is expected to have moderate negative impacts to the commercial sector. For the recreational fishery, the expected 10% decrease in harvest and effort under alternative 1B would be expected to result in slight negative impacts to the recreational sector due to slight decreases in for-hire trips and revenues, as well as in angler satisfaction.

Alternative 1C would not be constraining to the commercial fishery if recent trends continue, as the commercial fishery has underharvested their limits in recent years for uncertain reasons; possibly due to a combination of lower availability, market factors, and non-quota management factors. Similar to alternative 1A, by allowing for continued levels of commercial harvest compared to recent years this alternative is expected to have continued moderate positive socioeconomic impacts for the commercial fishery. For the recreational fishery, alternative 1C is likely to result in a 10% liberalization in harvest, which would allow for a slight increase in harvest, party/charter trips targeting summer flounder, increased party/charter revenues, and increased angler satisfaction compared to recent levels. As such, alternative 1C is expected to result in slight positive impacts to recreational communities.

Alternative 1D would require a reduction in the commercial fishery of about 64% relative to 2022 landings levels. Negative socioeconomic impacts of such a reduction resulting from reduced commercial revenues may be partially offset by expected increases in price. State regulations would need to be adjusted to prevent quota overages, reducing access to quota by individual vessels. Negative economic impacts of this alternative are expected to vary by state and also at the vessel and dealer level. Overall, this alternative would be expected to result in high negative (but not significant) impacts to the commercial fishery. For the recreational fishery, this alternative would require up to a 40% reduction in recreational harvest under the Percent Change Approach. This would be expected to result in reduced recreational harvest of summer flounder, reduced party/charter trips targeting summer flounder, reduced party/charter revenues, and reduced angler satisfaction compared to recent levels. Due to the uncertain magnitude of the needed decrease, this alternative would be expected to result in slight to high negative impacts for the recreational fishery.

Summary of Summer Flounder Alternatives Impacts

Table 2: Expected impacts of 2024-2025 Summer Flounder quotas and RHLs under alternatives 1A-1D on each VEC, relative to current conditions. A minus sign (–) signifies a negative impact and a plus sign (+) signifies a positive impact. "Mod" refers to a moderate impact and "Sl" refers to a slight impact. None of the impacts are expected to be significant. Cells are shaded to show relative rankings of the alternatives from greatest positive/least negative to least positive/most negative expected impacts on each VEC. Green refers to the most positive/least negative, followed in order by yellow, orange, and red. All expected impacts are described in detail in Section 7.

Alt.	Target and Non-Target Species		Habitat	Protected Species		Human Communities	
	Summer Flounder	**Non-Target Species**		**ESA-Listed** (endangered or threatened)	**Marine Mammals** (not ESA listed)	**Commercial Fishery**	**Recreational Fishery**
1A (Status quo)	Sl - to Mod -	Sl - to Mod +	Sl -	Negligible to Low Mod -	Low Mod - to Low Mod +	Mod +	Sl – to Sl +
1B (Preferred)	Mod +	Sl - to Mod +	Sl -	Negligible to Sl -	Sl - to Low Mod +	Mod -	Sl -
1C (Least Restrictive)	Sl - to Mod -	Sl - to Mod +	Sl -	Negligible to Low Mod -	Low Mod - to Low Mod +	Mod +	Sl +
1D (Most restrictive)	Mod +	Sl - to Mod +	Sl -	Negligible to Sl -	Sl - to Low Mod +	High -	Sl - to High -

1.2. Summary of 2024-2025 Scup Catch and Landings Limit Alternatives and Impacts

The 2024-2025 scup alternatives are summarized in Table 3 and described in more detail in Section 5.2. Their expected impacts on the VECs are summarized in Table 4 and described in more detail in section . Alternative 1A is the status quo alternative and includes scup catch and landings limits identical to those implemented for 2023 (88 Federal Register 11, 1/3/2023). Alternative 1B is the preferred alternative and includes catch and landings limits recommended by the Council and Board in August 2023. Alternative 1B is based on the recommendations of the SSC, which are based on the best available scientific information and are intended to prevent overfishing. Alternative 2C is the least restrictive alternative for scup and includes a commercial quota and RHL that are 25% higher than the 2024 alternative 2B. Alternative 2D is the most restrictive alternative and includes a commercial quota and RHL that is 25% lower than alternative 2A. As shown in Table 3, the Council and Board recommended varying limits across 2024-2025 as their preferred alternative. The other scup alternatives (2A, 2C, and 2D) are not preferred. They include constant limits across the two years for ease of comparison.

Under all scup alternatives, it was assumed that 2024-2025 commercial landings would be similar to recent year landings. Under this assumption, it was assumed that commercial landings would only reach the commercial quota under a single alternative considered in this document, alternative 2D (most restrictive). Commercial scup harvest appears to be limited more by market demand than by the quota. This is expected to continue to be the case under all alternatives for 2024-2025 scup catch and landing limits. However, assumptions about recreational effort and harvest as

described under summer flounder depend on the outcomes of the Percent Change Approach. As described in Section 7, there are several unknowns regarding how measures will be modified for 2024-2025, as the RHLs are only one input to that determination.[2] Based on the RHLs under each alternative, and assuming projected harvest under the existing measures would be similar to recent levels, a likely outcome of the Percent Change Approach was assumed. For scup, it was assumed that alternative 2A, 2B, and 2D are all likely to result in a 10% reduction in harvest, while alternative 1C would likely result in a 10% liberalization.

These assumptions about changes in fishing effort are further described in the introduction to Section 7, and were used to determine the expected impacts described in that section for each VEC, as summarized below.

Based on these assumptions, alternative 2A (status quo) would be expected to result in status quo levels of commercial scup fishing effort and landings, but a slight reduction in recreational fishing effort and landings. Alternative 2B (preferred) would be expected to result in similar commercial and recreational effort and landings as alternative 2A. Alternative 2C (least restrictive) would likely result in similar levels of commercial fishing effort as 2A and 2B, given commercial scup harvest currently appears to be limited more by market demand than by the quota, and slightly increased levels of recreational fishing effort and landings pending the outcome of the Percent Change Approach. Alternative 2D (most restrictive) would be expected to result in a reduction in both commercial and recreational fishing effort and landings. Under all scup alternatives, it is not expected that fishing effort would substantially shift or expand in geographic area or seasonality.

Table 3: 2024-2025 scup commercial quotas and RHLs under alternatives 2A-2D.

Alternative	Commercial quota (mil lbs.)		RHL (mil lbs.)	
	2024	2025	2024	2025
2A (status quo)	14.01		9.27	
2B (preferred)	21.15	18.80	13.18	11.84
2C (least restrictive)	26.44		16.48	
2D (most restrictive)	10.51		6.95	

Impacts of 2024-2025 Scup Catch and Landings Limit Alternatives on Summer Flounder and Non-Target Species

As described in more detail in Section 7.1.2, all scup alternatives are expected to result in moderate positive impacts on scup in 2024-2025, as they are expected to maintain biomass levels above the target level and are not expected to result in overfishing. For the commercial fishery, all scup alternatives are likely to result in status quo or a slight decrease in commercial effort and landings. Alternatives 2A (status quo), 2B (preferred), and 2D (most restrictive) would be expected to result in a decrease in recreational fishing effort and landings, and although alternative 2C (least restrictive) would be expected to result in an increase in recreational effort, due to the likely outcome of the Percent Change Approach the increase is unlikely to be substantial.

[2] See the Percent Change Approach overview table and possible outcomes at: https://www.mafmc.org/s/HCR-Percent-Change-Table.pdf.

None of the scup alternatives are expected to result in a change in the stock status of any non-target species; therefore, as described in more detail in Section 7.1.2., alternatives 2A-2D are all expected to have slight negative impacts on those non-target species with currently negative stock status and slight positive impacts on all non-target species with currently positive stock status. These impacts are expected to be similar under all scup alternatives, including the least restrictive alternative (i.e., alternative 2C). As described in Section 6.1.3, only spiny dogfish accounted for 5% or more of total catch on scup trips. Spiny dogfish are managed at the state and federal levels. Management measures for this species include ACLs and AMs which take into account discards in all commercial fisheries. If the ACLs for spiny dogfish are exceeded due to landings or discards, then AMs can be implemented to mitigate any negative impacts to the stock. Spiny dogfish are not overfished and overfishing is not occurring based on the most recent stock assessment information. For all these reasons, the expected levels of fishing effort under all scup alternatives are not expected to change the stock status of any commercial non-target species.

Impacts of 2024-2025 Scup Catch and Landings Limit Alternatives on Physical Habitat

As described in more detail in Section 7.2.2, all scup alternatives are expected to have slight negative habitat impacts due to continued interactions between fishing gear and physical habitats. As previously stated, compared to current conditions, status quo commercial fishing effort are expected under alternatives 2A (status quo), 2B (preferred), and 2C (least restrictive), while a decrease in commercial fishing effort is expected under alternative 2D (most restrictive). Reductions in recreational fishing effort are expected under alternatives 2A, 2B, and 2D. Recreational fishing effort under alternative 2C could increase slightly given the likely outcome of the Percent Change Approach. None of these changes in fishing effort are expected to result in additional impacts beyond those caused in recent years by the scup fisheries and many other fisheries which operate in the same areas. They are not expected to result in impacts to habitats which were previously not impacted by fishing activities. However, under all scup alternatives, some level of commercial and recreational fishing effort will continue to occur, and fishing gear will continue to impact physical habitat. For these reasons, alternatives 2A-2D are all expected to have slight negative impacts to physical habitat. Due to expected differences in fishing effort, the magnitude of the expected slight negative impacts on habitat are expected to be greatest under alternative 2C, followed by alternatives 2B and 2A, and 2D.

Impacts of 2024-2025 Scup Catch and Landings Limit Alternatives on Protected Species

As described in more detail in Section 6.2.3, bottom trawl gear is the predominant gear type used in the commercial scup fishery. The commercial scup fishery also uses pots/trap gear, although this gear type is used to a lesser extent to land scup (about 3% of commercial scup landings in 2022). As interactions between these gear types and ESA listed species and/or MMPA protected species have been observed or documented, operation of the commercial scup fishery has the potential to interact with these species. Based on documented interactions between hook and line gear and some protected species, the recreational fishery also has the potential to interact with certain protected species (see Section 6.3.3).

The continued operation of the commercial and recreational scup fisheries under all alternatives is expected to result in some level of continued interaction risk for protected species. Any interaction with an ESA-listed species or an MMPA protected species which is not at a sustainable level (i.e., PBR level has been exceeded), is considered a negative impact, even under reduced fishing effort

levels; therefore, all scup alternatives are expected to have negligible to slight negative impacts for those species.

For non-ESA listed marine mammal 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 in the fishery previously may have indirect positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal. None of the scup alternatives are expected to result in a substantial increase in fishing effort; therefore, new or elevated interactions to non-listed marine mammal species in good condition are not expected. Therefore, alternatives 2A-2D are all expected to result in slight negative to low moderate positive impacts for marine mammals which have not had their PBR levels exceeded by maintaining those stocks at sustainable levels.

In summary, alternatives 2A-2D are expected to have potential impacts on protected species ranging from slight negative to low moderate positive, with slight negative to low moderate positive impacts likely on non-ESA listed marine mammals and negligible to slight negative impacts likely for ESA-listed species. Of the four scup alternatives, alternative 2D has the potential for the lowest fishing effort; therefore, it is expected to have the lowest potential for negative impacts to protected species, followed by alternatives 2A, 2B and 2C (which are all expected to result in similar impacts).

Socioeconomic Impacts of 2024-2025 Scup Catch and Landings Limit Alternatives

As described in more detail in Section 7.4.2, alternatives 2A (status quo), 2B (preferred) and 2C (least restrictive) are expected to result in status quo levels in commercial landings and thus status quo commercial scup revenues compared to recent years. Given scup are a valuable commercial species (6.4.2), by allowing status quo landings and revenue these expected status quo commercial landings and revenues are expected to result in moderate positive socioeconomic impacts for the commercial fishery. Alternative 2D (most restrictive); however, is expected to result in slight to moderate negative socioeconomic impacts for the commercial fishery given it would require an approximately 13% reduction in commercial landings compared to recent levels.

Impacts to the recreational fishery would vary depending on the outcome of the Percent Change Approach for 2024-2025, with the most likely outcome being a 10% reduction in harvest for alternatives 2A, 2B, and 2D, and a 10% liberalization in harvest for alternative 2C. This document does not consider recreational management measures for 2024-2025. Any changes to those measures would be made through a separate action. As alternatives 2A, 2B, and 2D are all expected to require slight decreases in recreational harvest compared to recent levels, they are all expected to result in reduced recreational fishing opportunities, reduced for-hire revenues, and reduced angler satisfaction. Therefore, alternatives 2A, 2B, and 2D are expected to result in slight negative socioeconomic impacts for the recreational fishery. While alternative 2C is expected to result in slight positive socioeconomic impacts for the recreational fishery.

Due to expected differences in commercial and recreational landings across alternatives 2A-2D, and thus expected differences in commercial and for-hire revenues, fishing opportunities, and angler satisfaction, alternative 2C, is expected to have a similar positive socioeconomic impact for the commercial fishery and the least negative impacts for the recreational fishery, followed by alternatives 2B and 2C (which are expected to have similar impacts), and 2D.

Summary of Scup Alternatives Impacts

Table 4: Expected impacts of 2024-2025 scup quotas and RHLs under alternatives 2A-2D on each VEC, relative to current conditions. A minus sign (–) signifies a negative impact and a plus sign (+) signifies a positive impact. "Mod" refers to a moderate impact and "Sl" refers to a slight impact. None of the impacts are expected to be significant. Cells are shaded to show relative rankings of the alternatives from greatest positive/least negative to least positive/most negative expected impacts on each VEC. Green refers to the most positive/least negative, followed in order by yellow, orange, and red. All expected impacts are described in detail in Section 7.

Alt.	Target and Non-Target Species		Habitat	Protected Species		Human Communities	
	Scup	**Non-Target Species**	**Habitat**	**ESA-Listed** (endangered or threatened)	**Marine Mammals** (not ESA listed)	**Commercial Fishery**	**Recreational Fishery**
2A (Status quo)	Mod +	Sl - to Mod +	Sl -	Negligible to Sl -	Sl - to Low Mod +	Mod+	Sl -
2B (preferred)	Mod +	Sl - to Mod +	Sl -	Negligible to Sl -	Sl - to Low Mod +	Mod +	Sl -
2C (least restrictive)	Sl + to Mod+	Sl - to Mod+	Sl -	Negligible to Sl -	Sl - to Low Mod +	Mod +	Sl - to Sl +
2D (most restrictive)	Mod +	Sl - to Mod+	Sl -	Negligible to Sl -	Sl - to Low Mod +	Sl - to Mod -	Sl -

1.3. Cumulative Impacts

The Council analyzed the impacts of all alternatives on target and non-target species, physical habitat, protected species, and human communities. When the proposed action (i.e., all 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, no significant cumulative effects are associated with the proposed action (Section 7.5).

1.4. Conclusions

A description of the expected environmental impacts and any cumulative impacts resulting from each of the alternatives 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
AO	Administrative Order
AP	Advisory Panel
ASMFC	Atlantic States Marine Fisheries Commission
ASSRT	Atlantic Sturgeon Status Review Team
BMSY	Biomass at MSY
Board	ASMFC Summer Flounder, Scup, and Black Sea Bass Management Board
CEA	Cumulative Effects Analysis
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
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
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
GARFO	Greater Atlantic Regional Fisheries Office
GOM	Gulf of Maine
ITS	Incidental Take Statement
LOF	List of Fisheries
MAFMC	Mid-Atlantic Fishery Management Council
MC	Monitoring Committee
MMPA	Marine Mammal Protection Act
MRFSS	Marine Recreational Fisheries Statistical Survey
MRIP	Marine Recreational Information Program
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
NAO	National Oceanic and Atmospheric Administration Administrative Order
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
RDM	Recreational Demand Model
RHL	Recreational Harvest Limit

SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SI	Serious Injury
SSB	Spawning Stock Biomass
SSB_{MSY}	Spawning Stock Biomass at Maximum Sustainable Yield
SSC	Scientific and Statistical Committee
STDN	Sea Turtle Disentanglement Network
TED	Turtle Excluder Device
USFWS	United States Fish and Wildlife Service
VECs	Valued Ecosystem Components
VTR	Vessel Trip Report

3. TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

4. INTRODUCTION AND BACKGROUND

4.1. The Specifications Process

The purpose of this action is to implement 2024-2025 catch and landings limits for these species based on the best scientific information available as recommended by the Council's SSC. This action is needed to prevent overfishing and achieve optimum yield in these fisheries.

Summer flounder and scup annual catch and landings limits may be specified for multiple years at a time, but they do not automatically roll over from one year to the next. There are currently no limits in place for these fisheries beyond the 2023 fishing year. In order to meet the FMP objectives and requirements of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), commercial quotas and RHLs must be in place by January 1 of each year. The preferred alternatives described in this document are based on the August 2023 recommendations of the Council, which are derived from the SSC's July 2023 recommendations for ABCs developed to prevent overfishing using the best scientific information available.

4.2. The Specifications Process

The summer flounder and scup fisheries are cooperatively managed by the Council and the Atlantic States Marine Fisheries Commission (ASMFC or Commission). The Council and the Commission's Summer Flounder, Scup, and Black Sea Bass Management Board (the Board) meet jointly each year to consider the recommendations of the SSC and the Summer Flounder, Scup, and Black Sea Bass Monitoring Committee, as well as input from Advisory Panel members, and other information, before making recommendations for annual commercial quotas, RHLs, and other management measures for all three species (collectively referred to as annual specifications).[3] The Council submits their recommended specifications to the NMFS Greater Atlantic Regional Administrator to consider for implementation. The Regional Administrator will review the recommendations in this document and may revise them, if necessary, to achieve objectives the objectives of the Summer Flounder, Scup, and Black Sea Bass FMP and meet statutory requirements.

The general process used by the SSC, Monitoring Committee, Council, and Board to develop 2024-2025 catch and landings limit recommendations is described in the next sections. More details on how the alternatives in this document were developed can be found in Section 5.

Catch and Landings Limits

The MSA requires that the Council's SSC provide recommendations for ABCs, prevention of overfishing, and maximum sustainable yield (MSY). Each year the SSC meets to recommend new or review existing ABCs for summer flounder and scup. The Council's catch limit recommendations cannot exceed the ABCs recommended by the SSC.

The summer flounder and scup ABCs are divided into commercial and recreational annual catch limits (ACLs) based on the allocation percentages defined in the FMP. For summer flounder, 55%

[3] More details on the SSC, MC, and Advisory Panel recommendations relevant to this action can be found at https://www.mafmc.org/briefing/august-2023.

of the total ABC is allocated to the commercial fishery as a commercial ACL and 45% to the recreational fishery as a recreational ACL. For scup, 65% of the total ABC is allocated to the commercial fishery as a commercial ACL and 35% to the recreational fishery as a recreational ACL. Sector-specific annual catch targets (ACTs) are set less than or equal to the ACLs to account for management uncertainty. The commercial quota and RHL are derived from the sector-specific ACTs by subtracting expected discards (Figure 1and Figure 2).

The Monitoring Committee is responsible for developing recommendations to the Council on management measures, including ACTs and expected levels of discards, to achieve the recommended catch limits for each species. Summer flounder and scup catch and landings limits are established on an annual basis for up to three years at a time, based on stock size projections for upcoming years.

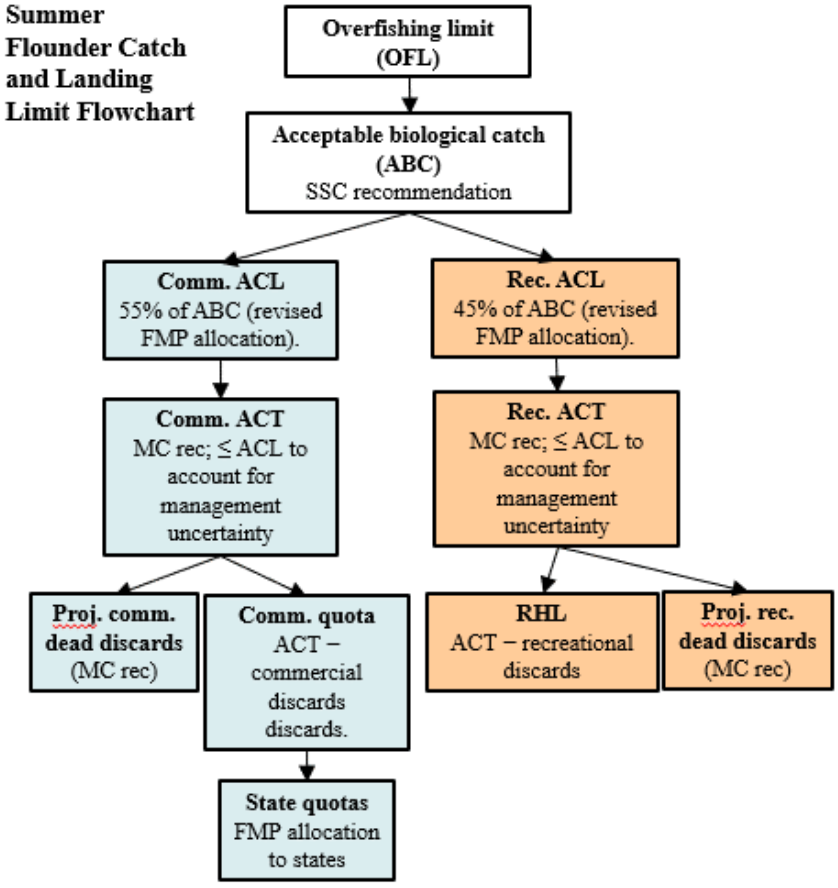


Figure 1: Catch and landings limit flowchart for summer flounder.

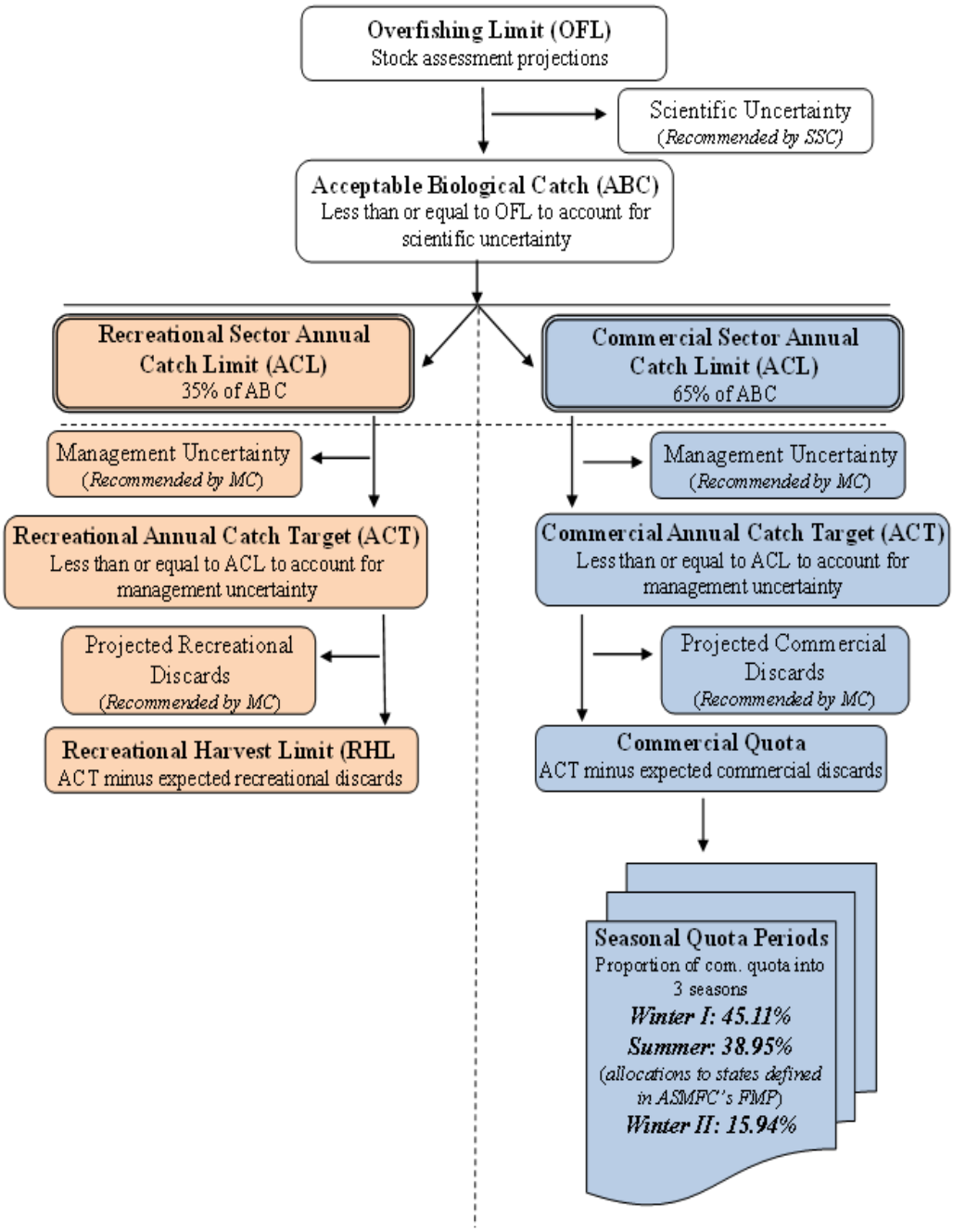


Figure 2: Current catch and landing limit flowchart for scup, updated to reflect commercial/recreational allocation revisions that became effective in 2023.

Accountability Measures

In addition to catch and landings limits, these fisheries also have Accountability Measures (AMs) which are intended to prevent ACLs from being exceeded and measures that correct or mitigate ACL overages when they occur. The commercial AMs include in-season monitoring and closure mechanisms at various levels depending on the species and the circumstances, as well as potential paybacks for landings and/or discards overages, depending on the circumstances. Recreational

AMs include adjustments to the management measures (bag limits, size limits, and season) for the upcoming fishing years, if necessary, to allow recreational harvest to meet, but not exceed the relevant harvest target, and possible responses to exceeding the most recent three-year average recreational ACL, depending on stock status and which limits are exceeded. The details of the AMs for these species are described here: https://www.mafmc.org/s/Accountability-Measures-fluke-scup-BSB_May2023.pdf.

Commercial Management Measures

A specific list of commercial management measures, as defined in the FMP, is reviewed annually as part of the specifications process. These measures include commercial size limits, possession limits, minimum mesh sizes and other gear requirements, possession limits triggering the minimum mesh size, and exemptions to gear restrictions. In August 2023, the Council and Board reviewed and did not recommend any modifications to these measures for summer flounder or scup. Thus, no changes to the commercial measures, other than the commercial quotas for 2024 and 2025, are proposed through this action.

Recreational Management Measures

Adjustments to recreational management measures (possession limits, minimum fish sizes, and open seasons) are considered each year in the fall. These measures are used to control fishing effort and constrain harvest. Recreational management measures for the upcoming year(s) are typically considered several months after the catch and landings limits are adopted, due to the timing of availability of recreational data for the current year and to allow for consideration of the most recent information possible. As such, this document does not address recreational management measures for 2024-2025. Any revisions to recreational management measures will be addressed through separate actions with associated public comment opportunities.

In June 2022, the Council and the Policy Board approved a new process for setting recreational measures called the Percent Change Approach,[4] which became effective in 2023. Under this approach, measures aim to achieve a specified percent change in harvest compared to the expectation of harvest in the upcoming year(s) under current measures. Unlike the previous process, the recreational measures no longer aim to achieve but not exceed the RHL. Instead, measures will aim to achieve a different level of harvest, which will vary based on the following two factors: 1) A confidence interval (CI) around an estimate of expected harvest in the upcoming two years under current measures compared to the average RHL for the upcoming two years and 2) biomass compared to the target level, as defined by the most recent stock assessment.

The Percent Change Approach also allows recreational measures to remain unchanged across two years, aligned with the timing of updated management track stock assessments, which are expected to be available every other year. However, measures were set on a one-year cycle for 2023 given that 2023 is an interim year for the management track assessments. This process will be used for a two-year cycle starting with 2024-2025.

The Percent Change Approach will sunset after the 2025 fishing year with the goal of using an improved process for setting 2026 recreational measures. A management action to consider the appropriate replacement for the Percent Change Approach is currently in development.

[4] See action documents and additional information at https://www.mafmc.org/actions/hcr-framework-addenda.

5. MANAGEMENT ALTERNATIVES

The alternatives described below include 2024-2025 catch and landings limits for summer flounder (alternative set 1) and scup (alternative set 2). These catch and landings limits are provisional and may be adjusted by NMFS in the final rule to implement these measures, including adjustments to account for ACL overages that were not previously accounted for.

5.1. Alternative Set 1: 2024-2025 Summer Flounder Catch and Landings Limits

The following sections describe the four alternatives analyzed in this document for 2024-2025 summer flounder catch and landings limits. As described below, the commercial quota and RHL under all alternatives would be identical across the two years.

5.1.1 Alternative 1A: Status Quo Summer Flounder Catch and Landings Limits (Non-Preferred)

Under this alternative, the currently implemented 2023 summer flounder catch and landings limits would be maintained in 2024 and 2025 (Table 5). This would result in a commercial quota of 15.27 million pounds and an RHL of 10.62 million pounds in each year. These landings limits are based on the July 2021 stock assessment update (NEFSC 2021a), the SSC's July 2021 ABC recommendations, and the Council and Board's August 2021 recommendations.

This alternative is not the preferred alternative for 2024-2025 summer flounder catch and landings limits because it does not consider the 2023 management track stock assessment projections, SSC recommended ABCs, and Council and Board recommended catch and landings limits; therefore, it is not based on the best available science.

Table 5: Catch and landings limit calculations (in millions of pounds and metric tons) for the status quo alternative for summer flounder (alternative 1A; based on current 2023 limits).

Measure	mil lb.	mt	Basis
OFL	34.98	15,865	Stock assessment projections from 2021 management track assessment
ABC	33.12	15,021	July 2021 SSC recommendation
ABC dead discards	7.23	3,279	NEFSC projections; averaged 2022-2023
Com. ACL	18.21	8,262	55% of ABC (revised commercial allocation)
Com. ACT	18.21	8,262	No deduction from ACL for management uncertainty
Expected com. dead discards	2.95	1,336	41% of ABC dead discards portion, based on 2017-2019 average % dead discards by sector
Com. quota	15.27	6,925	Comm. ACT, minus expected comm. dead discards
Rec. ACL	14.90	6,759	45% of ABC (revised recreational allocation)
Rec. ACT	14.90	6,759	No deduction from ACL for management uncertainty
Expected rec. dead discards	4.28	1,942	59% of ABC dead discards portion, based on 2017-2019 average % dead discards by sector
RHL	10.62	4,817	Rec. ACT minus expected rec. dead discards

5.1.2 Alternative 1B: Preferred Summer Flounder 2024-2025 Catch and Landings Limits

Preferred alternative 1B includes the 2024-2025 summer flounder catch and landings limits recommended by the Council and Board in August 2023 as shown in **Table 6**. Their recommendations are based on the constant 2024-2025 ABCs recommended by the SSC. The ABCs are based on an SSC-modified OFL CV of 60% and application of the Council's risk policy using a projected B/B_{MSY} below 100% in each year. This results in a probability of overfishing (P*) of 0.377 in 2024 and 0.322 in 2025. More information on the SSC's recommendation is available in the July 2023 SSC meeting summary (MAFMC 2023c).

The Council and Board accepted the Monitoring Committee's recommendation that the commercial and recreational ACTs be set equal to the sector-specific ACLs as well as their recommendation for methodology to project expected dead discards in each sector. Expected discards are removed from the sector-specific ACTs to derive the commercial quotas and RHLs. Total expected discards are estimated from the ABC projections received from the NEFSC and apportioned to the commercial and recreational fisheries based on a 3-year moving average proportion of dead discards by sector. In this case, 2020-2022 dead discard data indicate that 56% of dead discards came from the recreational fishery and 44% from the commercial fishery. This is consistent with past practice for summer flounder.

Additional information on the Monitoring Committee's rationale can be found in their July 2023 meeting report (MAFMC 2023d) and the staff recommendation memo for summer flounder (MAFMC 2023a).

Table 6: Catch and landings limit calculations (in millions of pounds and metric tons) for the preferred alternative for summer flounder in 2024-2025 (alternative 1B).

Measure	2024-2025 Constant Limits		Basis
	mil lb	mt	
OFL	22.98 (2024) 24.97 (2025)	10,422 (2024) 11,325 (2025)	Stock assessment projections/SSC Recommendations
ABC	19.32	8,761	SSC Recommendations
ABC dead disc.	4.18	1,895	NEFSC projections; (varying or averaged depending on approach)
Com. ACL	10.62	4,819	55% of ABC (revised commercial allocation)
Com. ACT	10.62	4,819	No deduction from ACL for management uncertainty
Expected Com. Dead Disc	1.83	831	44% of ABC dead discards portion, based on 2020-2022 average % dead discards by sector
Com. quota	**8.79**	3,987	Comm. ACT, minus expected comm. dead discards
Rec. ACL	8.69	3,942	45% of ABC (revised recreational allocation)
Rec. ACT	8.69	3,942	No deduction from ACL for management uncertainty
Expected rec. dead disc.	2.35	1,064	56% of ABC dead discards portion, based on 2020-2022 average % dead discards by sector
RHL	**6.35**	2,879	Rec. ACT minus expected rec. dead discards

5.1.3 Alternative 1C: Least Restrictive Summer Flounder Catch and Landings Limit (Non-Preferred)

The least restrictive alternative for summer flounder (alternative 1C) was calculated by increasing the commercial quota and RHL under Alternative 1A by 25%, in order to provide a reasonable range of landings limits to analyze given the current stock condition. This allows the analysis to give a fuller picture of the expected impacts of a range of landings limits. The 2024-2025 commercial quota under this alternative would be 19.09 million pounds and the RHL would be 13.23 million pounds.

Under this alternative, only a commercial quota and RHL (landings limits) are provided, without associated catch limits and OFLs, as this alternative was strictly calculated by increasing the commercial quota and RHL of the status quo alternative. Changes in the commercial quotas and RHLs are the focus of the impacts analysis in Section 7; therefore, a meaningful comparison can be done without providing ABCs, ACLs, and ACTs for all alternatives.

This alternative is not the preferred alternative for 2024-2025 scup catch and landings limits because it does not consider the 2023 management track stock assessment projections, SSC

recommended ABCs, and Council and Board recommended catch and landings limits; therefore, it is not based on the best available science.

5.1.4 Alternative 1D: Most Restrictive Summer Flounder Catch and Landings Limits (Non-Preferred)

The most restrictive alternative for summer flounder (alternative 1D) was calculated by selecting the lowest commercial quota and RHL over the past 10 years, in order to provide a reasonable range of landings limits to analyze given the current stock condition. This allows the analysis to give a fuller picture of the expected impacts of a range of landing limits. The lowest limits in the past 10 years, which occurred in 2017, also happen to be the lowest limits set since commercial quotas and RHLs were first implemented for summer flounder in 1993. The 2024-2025 commercial quota under this alternative would be 5.66 million pounds and the RHL would be 3.77 million pounds.

Under this alternative, only commercial quota and RHL (landings limits) are provided, without associated catch limits and OFLs, as this alternative was strictly calculated by reducing the commercial quota and RHL of the preferred alternative. Changes in the commercial quotas and RHLs are the focus of the impacts analysis in Section 7; therefore, a meaningful comparison can be done without providing ABCs, ACLs, and ACTs for all alternatives.

This alternative is not the preferred alternative for 2024-2025 summer flounder catch and landings limits because it does not consider the 2023 management track stock assessment projections, SSC recommended ABCs, and Council and Board recommended catch and landings limits; therefore, it is not based on the best available science.

5.2. Alternative Set 2: 2024-2025 Scup Catch and Landings Limits

The following sections describe the four alternatives analyzed in this document for 2024-2025 scup catch and landings limits. As described below, the commercial quota and RHL under alternatives 2A, 2C, and 2D would be identical in 2024 and 2025, but would vary across the two years under alternative 2B. The Council and Board recommended varying catch and landings limits across 2024-2025 as their preferred alternative. To ensure that the probability of overfishing remained below 50% in each year, the SSC was required to recommend annually varying ABCs for 2024 and 2025 and could not recommend a constant ABC across the two years (an average of the varying ABCs). The other scup alternatives (i.e., alternatives 2A, 2C, and 2D) are not preferred. They include constant catch and landings limits across the two years for ease of comparison.

5.2.1 Alternative 2A: Status Quo Scup 2024-2025 Catch and Landings Limits (Non-Preferred)

Alternative 2A includes the currently implemented 2023 scup catch and landings limits. Under this alternative, these catch and landings limits would apply in both 2024 and 2025. The catch and landings limits under this alternative are shown in Table 7. They are based on the 2022 recommendations of the SSC, Monitoring Committee, Council, and Board. The biomass projections provided with the 2021 management track assessment serve as the basis for these catch and landings limits. The ABC is based on an SSC-modified OFL CV of 60% and the Council's risk policy for a species with a biomass level above B_{MSY}.

This alternative is not the preferred alternative for 2024-2025 scup catch and landings limits because it does not account for the 2023 management track stock assessment results and the SSC's most recent ABC recommendation; therefore, it is not based on the best available science.

Table 7: Catch and landings limit calculations (in millions of pounds and metric tons) for the status quo alternative for scup (alternative 2A; based on current 2023 limits).

Measure	Mil lb.	MT	Basis
OFL	30.09	13,648	Stock assessment projections from 2021 management track assessment
ABC	29.67	13,460	July 2021 SSC recommendation
ABC dead discards	6.39	2,900	NEFSC projections
Commercial ACL	19.29	8,749	65% of ABC (revised commercial allocation)
Commercial ACT	19.29	8,749	No deduction from ACL for management uncertainty
Expected commercial dead discards	5.28	2,394	82.6% of ABC discards (avg. proportion of dead discards from commercial fishery, 2017-2019)
Commercial quota	14.01	6,355	Commercial ACT minus discards
Recreational ACL	10.39	4,711	35% of ABC (revised recreational allocation)
Recreational ACT	10.39	4,711	No deduction from ACL for management uncertainty
Expected recreational dead discards	1.12	506	17.4% of the ABC discards (avg. proportion of dead discards from rec. fishery, 2017-2019)
RHL	9.27	4,205	Recreational ACT minus discards

5.2.2 Alternative 2B: Preferred Scup 2024-2025 Catch and Landings Limits

Alternative 2B includes the 2024-2025 scup catch and landings limits recommended by the Council and Board in August 2023 as shown in Table 8. This is the preferred alternative for scup. Their recommendations are based on the varying 2024-2025 ABCs recommended by the SSC. The ABCs are based on an SSC-modified OFL CV of 100% and the Council's risk policy for a species with a typical life history and biomass level above B_{MSY}, resulting in a less than 49% probability of overfishing. More information on the SSC's recommendation is available in the July 2023 SSC meeting summary (MAFMC 2023c).

The Council and Board accepted the Monitoring Committee's recommendation that the commercial and recreational ACTs be set equal to the sector-specific ACLs, consistent with past years' recommendations. The Monitoring Committee agreed that the monitoring and fishery closure system is timely and has typically been successful in holding commercial landings close to the quota and that recreational management uncertainty is best considered when developing recreational minimum fish sizes, possession limits, and open seasons, which are typically analyzed through separate actions than those that implement the RHL.

The Council and Board accepted the Monitoring Committee's recommendation for expected discards in 2024 and 2025. Expected discards are removed from the sector-specific ACTs to derive the commercial quotas and RHLs. Total expected discards are estimated from the ABC projections received from the NEFSC and apportioned to the commercial and recreational fisheries based on a 3-year moving average proportion of dead discards by sector. In this case, 2020-2022 dead discard data indicate that 77.3% of dead discards came from the commercial sector and 22.7% from the recreational sector. This is consistent with past practice for scup.

Additional information on the Monitoring Committee's rationale can be found in their July 2023 meeting report (MAFMC 2023d) and the staff recommendation memo for scup (MAFMC 2023b).

Table 8: Catch and landings limit calculations (in millions of pounds and metric tons) for the preferred alternative for scup in 2024-2025 (alternative 2B).

Measure	2024		2025		Basis
	mil lbs.	mt	mil lbs.	mt	
OFL	44.74	20,295	40.58	18,408	Stock assessment projections from 2023 management track assessment
ABC	43.82	19,876	39.74	18,028	July 2023 SSC recommendation
ABC discards	9.49	4,304	9.10	4,129	NEFSC projections
Commercia ACL	28.48	12,919	25.83	11,718	65% of ABC
Commercial ACT	28.48	12,919	25.83	11,718	No deduction from ACL for management uncertainty
Projected commercial discards	7.33	3,327	7.04	3,192	77.3% of ABC discards (avg. % of dead discards from commercial fishery, 2020-2022)
Commercial quota	21.15	9,592	18.80	8,526	Com. ACT minus projected com. discards

Recreational ACL	15.34	6,957	13.91	6,310	35% of ABC
Recreational ACT	15.34	6,957	13.91	6,310	No deduction from ACL for management uncertainty
Projected recreational discards	2.15	977	2.07	937	22.7% of the ABC discards (avg. % of dead discards from rec. fishery, 2020-2022)
RHL	13.18	5,980	11.84	5,373	Rec. ACT minus projected rec. discards

5.2.3 Alternative 2C: Least Restrictive Scup 2024-2025 Catch and Landings Limits (Non-Preferred)

The least restrictive alternative for scup (alternative 2C) was calculated by increasing the preferred 2024 commercial quota and RHL under alternative 2B by 25%. This was done in order to provide a reasonable range of landings limits to analyze given the current stock condition. This allows the analysis to give a fuller picture of the expected impacts of a range of landings limits. Under this alternative, the 2024-2025 commercial quota would be 26.44 million pounds and the RHL would be 16.48 million pounds.

This alternative is not the preferred alternative for 2024-2025 scup catch and landings limits because it does not account for the 2023 management track assessment results and the SSC's most recent ABC recommendation; therefore, it is not based on the best available science.

5.2.4 Alternative 2D: Most Restrictive Scup 2024-2025 Catch and Landings Limits (Non-Preferred)

The most restrictive alternative for scup (alternative 2D) was calculated by decreasing the commercial quota and RHL under alternative 2A (status quo) by 25%. This was done in order to provide a reasonable range of landings limits to analyze given the current stock condition. This allows the analysis to give a fuller picture of the expected impacts of a range of landings limits. Under this alternative, the 2024-2025 commercial quota would be 10.51 million pounds and the RHL would be 6.95 million pounds.

This alternative is not the preferred alternative for 2024-2025 scup catch and landings limits because it does not account for the 2023 management track assessment results and the SSC's most recent ABC recommendation; therefore, it is not based on the best available science.

5.3. True No Action Alternative

The National Oceanic and Atmospheric Administration (NOAA) Administrative Order (AO) 216-6A Companion Manual states that an environmental assessment must consider a reasonable range of alternatives to the proposed action, including a "no action" alternative. Consideration of the no action alternative is important because it shows what would happen if the proposed action is not taken; however, defining exactly what is meant by the no action alternative is often difficult. The President's Council on Environmental Quality has explained that there are two distinct interpretations of "no action." One interpretation is essentially the status quo, meaning no change from the current management. The other interpretation is when a proposed action simply does not take place. Determining the no action alternative for the annual commercial quotas and RHLs summer flounder and scup is more complicated than either of these interpretations suggest.

Status quo management for summer flounder and scup includes a set of indefinite (i.e., in force until otherwise changed) management measures, including commercial and recreational minimum fish sizes, bag limits, and reporting requirements. These measures will remain in place even if the catch and landings limits proposed in this document are not implemented. Catch and landings limits for this fishery are specific to each fishing year; the FMP does not allow for roll-over provisions if catch and landings limits are not implemented for a given year. There are currently no catch and landings limits in place for summer founder or scup beyond 2023; thus, if the proposed commercial quotas and RHLs are not implemented, these fisheries would operate without an identified cap on allowable catch and landings starting on January 1, 2024. Similarly, if no

limits were implemented prior to the 2025 fishing year, there would be no cap on landings starting January 1, 2025. For this reason, the true no action alternatives for 2024-2025 commercial quotas and RHLs are not equivalent to the status quo (alternatives 1A and 2A). If specifications are not implemented, some measures will remain in place, but the overall management program will not be identical to that of 2023.

For the purposes of this EA, the true no action alternative for commercial quotas and RHLs is defined as follows: (1) no proposed specifications for the 2024-2025 fisheries will be published; (2) the indefinite management measures (minimum fish sizes, bag limits, possession limits, permit and reporting requirements, etc.) will remain unchanged; and (3) there will be no cap on the allowable annual catch (i.e., no ACLs) and landings (i.e., no commercial quotas or RHLs) for these fisheries as of January 1, 2024. The only regulatory controls on fishing effort and harvests in 2024 and 2025 would be the indefinite measures.[5]

The true no action alternative has substantial implications for the summer flounder and scup fisheries. It would not allow NMFS to specify and implement ACLs, commercial quotas, and RHLs for 2024-2025, as required by Federal regulations (50 CFR part 648) and the MSA. The no action alternative is thus inconsistent with the goals and objectives of the FMP, as well as its implementing regulations. It may result in overfishing or cause the ACLs to be exceeded and thus is inconsistent with the MSA. For these reasons, the true no action alternative is not considered reasonable and is not analyzed further in this document. The alternatives for summer flounder and scup commercial quotas and RHLs are thus compared to the status quo alternatives as opposed to the true no action alternatives. The status quo alternatives are equivalent to the 2023 catch and landings limits for both species.

5.4. Considered But Rejected Alternatives

During their August 2023 meeting, the Council and Board adopted constant 2024-2025 limits for summer flounder. They also considered, but not adopt, limits that would have varied over the two years. The NEFSC provided the SSC with OFL and ABC projections for both varying ABCs from 2024-2025, as well as a constant approach where the 2024-2025 ABCs are identical. In recent years, the Council and Board have requested the ability to determine which approach is more appropriate from a policy standpoint; therefore, the SSC was requested to provide recommendations for both approaches. Following the staff and Monitoring Committee recommendations, the Council and Board adopted the constant ABC approach for 2024-2025 such that the catch and landings limits are held constant over the two years. The rationale for this approach was that this approach provided additional stability and predictability for the fishing industry, and also decreased the magnitude of the reduction (and therefore disruption to the fishing industry) needed between 2023 and 2024. Both approaches result in very similar projected biomass at the end of the two years and a similar average probability of overfishing across the two years. Additional details about the measures associated with the varying approach can be found in the July 2023 SSC report[6] and July 27, 2023 Monitoring Committee meeting summary.[7]

---

[5] Descriptions of the regulations as detailed in the CFR are available at: http://www.greateratlantic.fisheries.noaa.gov/.
[6] Available at: https://www.mafmc.org/s/Final_July-24-26-SSC-Meeting_Report-to-Council-phzr.pdf.
[7] Available at: https://www.mafmc.org/s/SFSBSB-MC-Mtg-Summary-27July2023.pdf.

For scup, the constant ABC approach for 2024 and 2025 would have led to an ABC recommendation for 2025 associated with a probability of overfishing (P*) value = 0.511, which is inconsistent with the Council's risk policy and would not be expected to have a reasonable chance of preventing overfishing. The SSC was precluded from setting an ABC expected to result in overfishing in any one year; therefore, only ABCs associated with the traditional (variable) approach were recommended by the SSC and considered by the Council.

Limits associated with the varying approach for summer flounder and the constant approach for scup are not analyzed further in this document.

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; Beanlands and Duinker 1984).

The VECs include:

- Summer flounder, scup, 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 and scup stocks (Sections 6.1.1 and 6.1.2) and non-target species (Section 6.1.3). Black sea bass are described in more detail than other non-target species given that they are managed under the same FMP as summer flounder and scup.

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 over 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 predators of adult summer flounder are not fully documented, larger predators such as 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. Recent Northeast Fisheries Science Center (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 16 at 56 cm and 60 cm for males, and age 15 at 72 cm for females). Unsexed commercial

fishery samples currently indicate a maximum age of 17 for a 72 cm fish (likely a female) and 20 for a 57 cm fish (likely a male; M. Terceiro, personal communication, May 2022).

In June 2023, the NEFSC provided the 2023 MTA for summer flounder using data through 2022, based on the model developed through the 66th Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC) in 2018. The 2023 MTA[8] revised the biological reference points for spawning stock biomass (SSB) and fishing mortality (F). As summarized in Table 2 of the MTA, the SSB target decreased from 104.5 million pounds (55,217 mt) to 90.38 million pounds (49,561 mt), while F threshold increased from 0.422 to 0.451. The new overfished threshold is ½ $SSB_{MSY\ proxy}$ = ½ $SSB_{35\%}$ = 54.63 million pounds (24,781 mt; Figure 3). Assessment results indicate that the summer flounder stock was not overfished, but that that overfishing was occurring in 2022.

SSB has generally decreased since 2003 and was estimated to be 90.38 million lb (40,994 mt) in 2022, about 83% of the updated biomass target reference point $SSB_{MSY\ proxy}$ = 109.26 million lb (49,561 mt). The 2021 MTA had estimated that stock biomass was at 86% of the previous SSB target.

Fishing mortality on the fully selected age 4 fish ranged between 0.756 and 1.601 during 1982-1996, followed by a period of decreasing F to a low of 0.257 in 2007. Post-2007, F rates increased but have been relatively stable since 2011. F in 2022 was estimated at 0.464, 103% of the updated fishing mortality threshold reference point ($F_{MSY\ proxy}$ = $F_{35\%}$ = 0.451; Figure 4). The 2021 MTA had estimated that F was at 81% of the previous overfishing threshold.

Average recruitment from 1982 to 2022 is 51 million fish at age 0. Recruitment of juvenile summer flounder has been below-average from 2011-2022, ranging from 27 to 43 million fish and averaging 36 million fish. The driving factors behind this period of below average recruitment have not been identified. While the 2018 year class was originally estimated to be above average (estimated in the previous assessment at 61 million fish), the 2023 MTA revised the recruitment estimate down to 43 million fish. Recruitment estimates for 2019-2022 range from 36 to 42 million fish at age 0, all below the time series average and near or slightly above the recent average.

[8] https://www.mafmc.org/s/e_Summer_flounder_MTA_2023_06_08.pdf

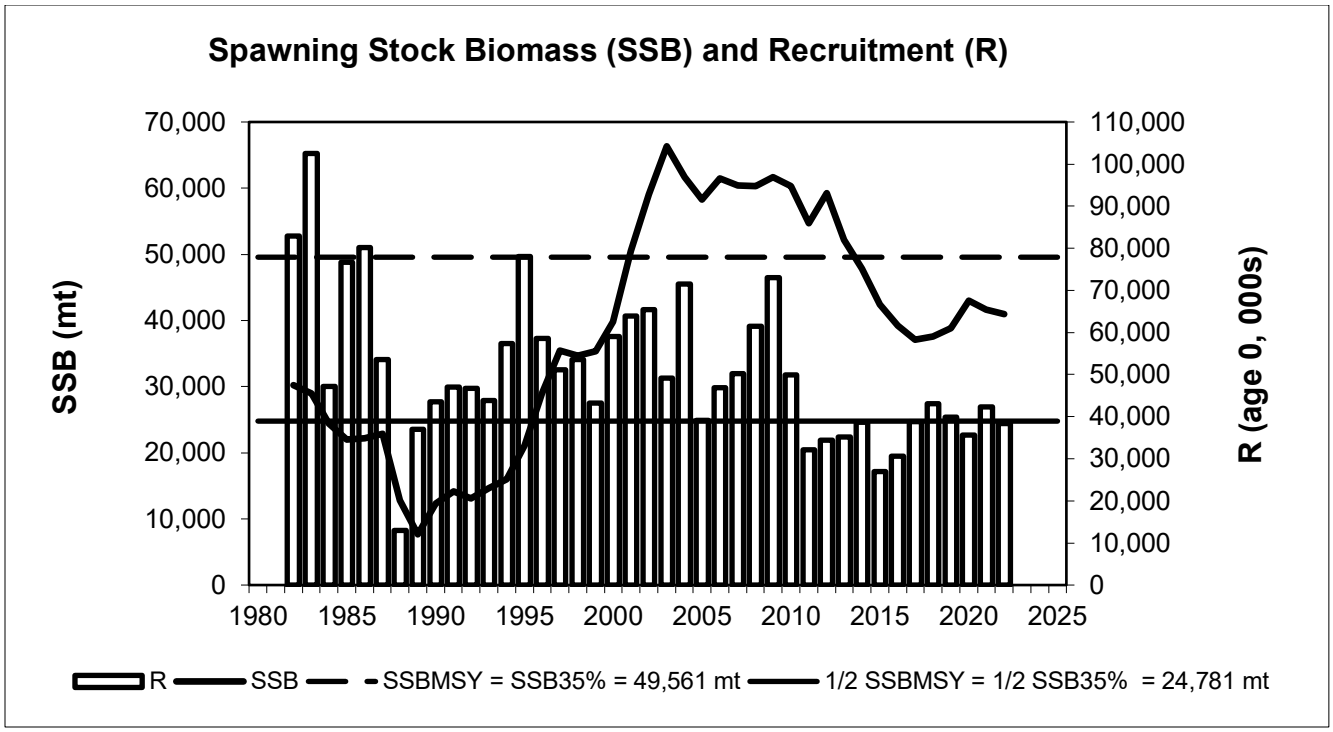


Figure 3: Summer flounder spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars),1982-2022. The horizontal dashed line is the updated target biomass reference point. The horizontal solid line is the updated threshold biomass reference point. Source: 2023 management track assessment.

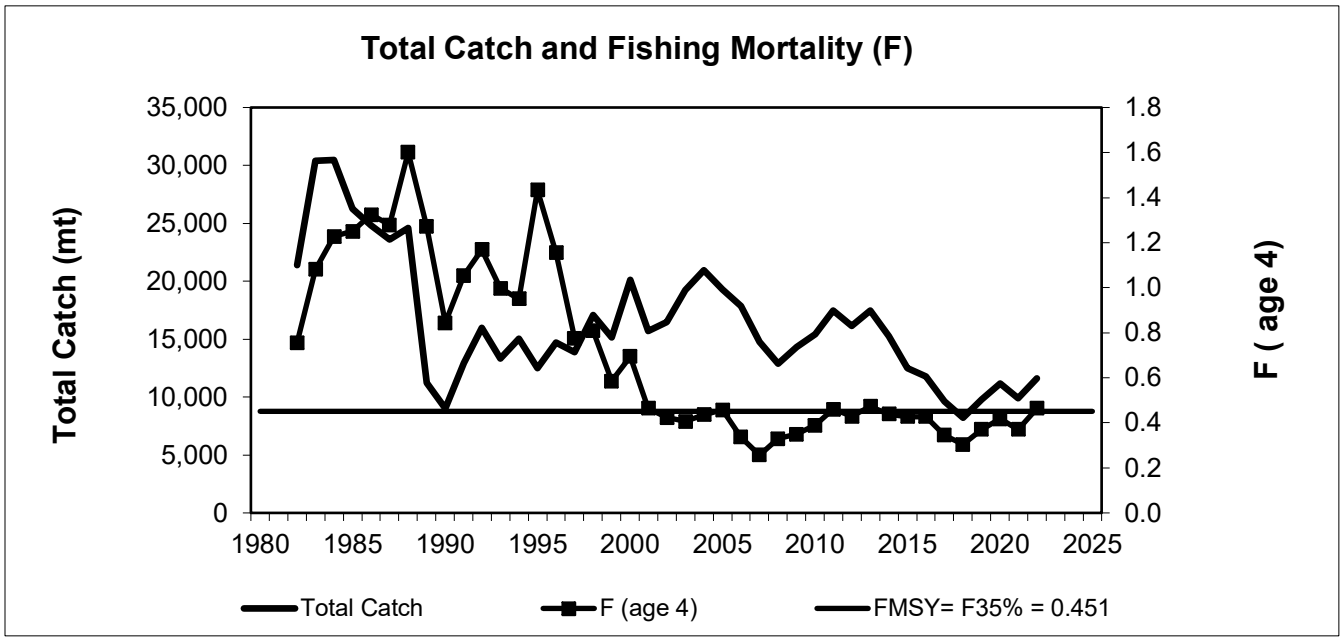


Figure 4: Total fishery catch (metric tons; mt; solid line) and fully-recruited fishing mortality (F, peak at age 4; squares) of summer flounder, 1982-2022. The horizontal solid line is the updated fishing mortality reference point. Source: 2023 management track assessment.

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. Scup EFH 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).

About 50% of scup are sexually mature at two years of age and about 17 cm (about 7 inches) total length. Nearly all scup older than three years of age are sexually mature. Scup reach a maximum age of at least 14 years. They may live as long as 20 years; however, few scup older than 7 years are caught in the Mid-Atlantic (Steimle et al. 1999, NEFSC 2015).

Adult scup are benthic feeders. They consume a variety of prey, including small crustaceans (including zooplankton), polychaetes, mollusks, small squid, vegetable detritus, insect larvae, hydroids, sand dollars, and small fish. The NEFSC's food habits database lists several predators of scup, including several shark species, skates, silver hake, bluefish, summer flounder, black sea bass, weakfish, lizardfish, king mackerel, and monkfish (Steimle et al. 1999).

In June 2023, the NEFSC provided the 2023 management track assessment for scup. This assessment retained the model structure of the previous benchmark stock assessment, completed in 2015,[9] and incorporated fishery catch and fishery-independent survey data through 2022.

The updated fishing mortality (F) reference point is F_{MSY} proxy = $F_{40\%}$ = 0.190 and the updated spawning stock biomass (SSB) reference point is SSB_{MSY} proxy = $SSB_{40\%}$ = 173.27 million pounds (78,593 mt). The minimum biomass threshold of ½ SSB_{MSY} proxy = ½ $SSB_{40\%}$ = 86.64 million pounds (39,297 mt).

According to the 2023 assessment, the scup stock from Cape Hatteras, North Carolina extending north to the US-Canada border was not overfished and overfishing was not occurring in 2022.[10] Retrospective adjustments were made to the model results. The retrospective adjustments increased the SSB estimate and decreased the F estimate. Adjusted values are used in the projections and management. Adjustments have not been required in previous scup assessment given retrospective patterns were not strong in previous assessment. From the 2023 management track assessment, adjusted SSB was estimated to be about 425 million pounds (193,087 mt) in 2022, about 2.5 times the SSB_{MSY} proxy reference point of 173.27 million pounds (78,593 mt), meaning that the stock was not overfished in 2022. There was a notable increasing trend in SSB since the early 2000s; however, in recent years SSB has declined from a peak in 2017 (Figure 5).

Adjusted fishing mortality on fully selected age 4 scup was 0.098 in 2022, about 52% of the F_{MSY} proxy reference point of 0.190 (Figure 6), meaning that overfishing was not occurring in 2022.

[9] 60th Northeast Stock Assessment Workshop (2015) assessment report and peer review summaries are available at: https://repository.library.noaa.gov/view/noaa/4975

[10] Available at: https://apps-nefsc.fisheries.noaa.gov/saw/sasi.php

The 2015 year class is estimated to be the largest in the time series at 569 million fish, while the 2017-2022 year classes are estimated to be below average (Figure 6).

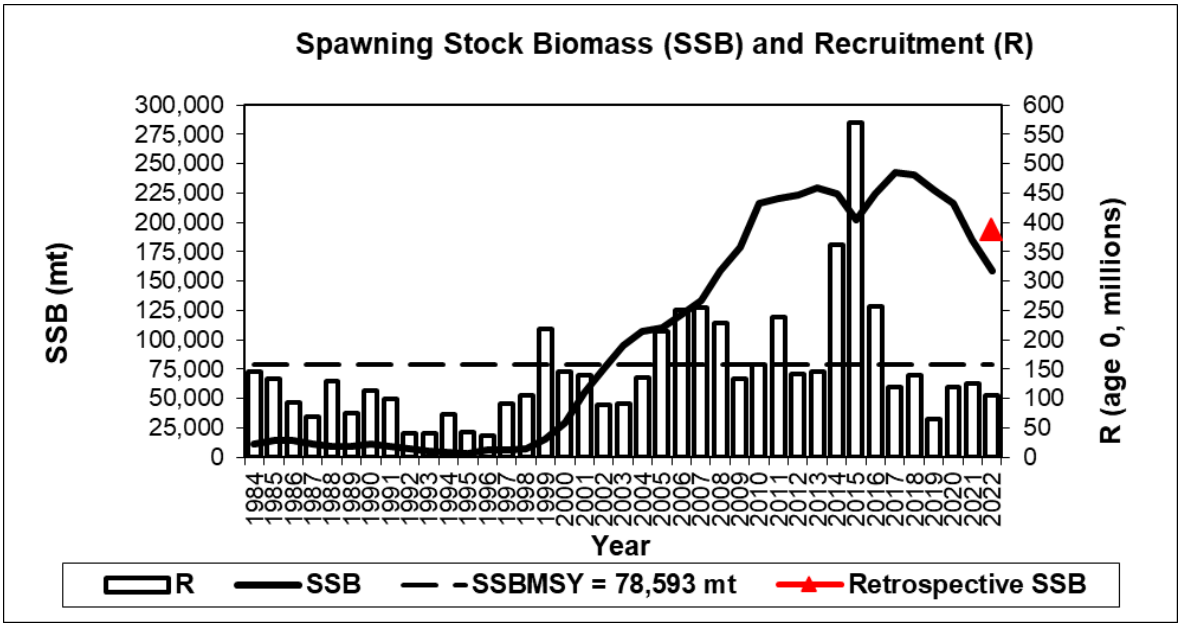


Figure 5: Scup spawning stock biomass and recruitment, 1984-2019. The horizontal dashed line represents the biomass target from the 2023 management track stock assessment. Adjusted SSB in 2022 for comparison against the SSBMSY proxy reference point is 193,087 mt.

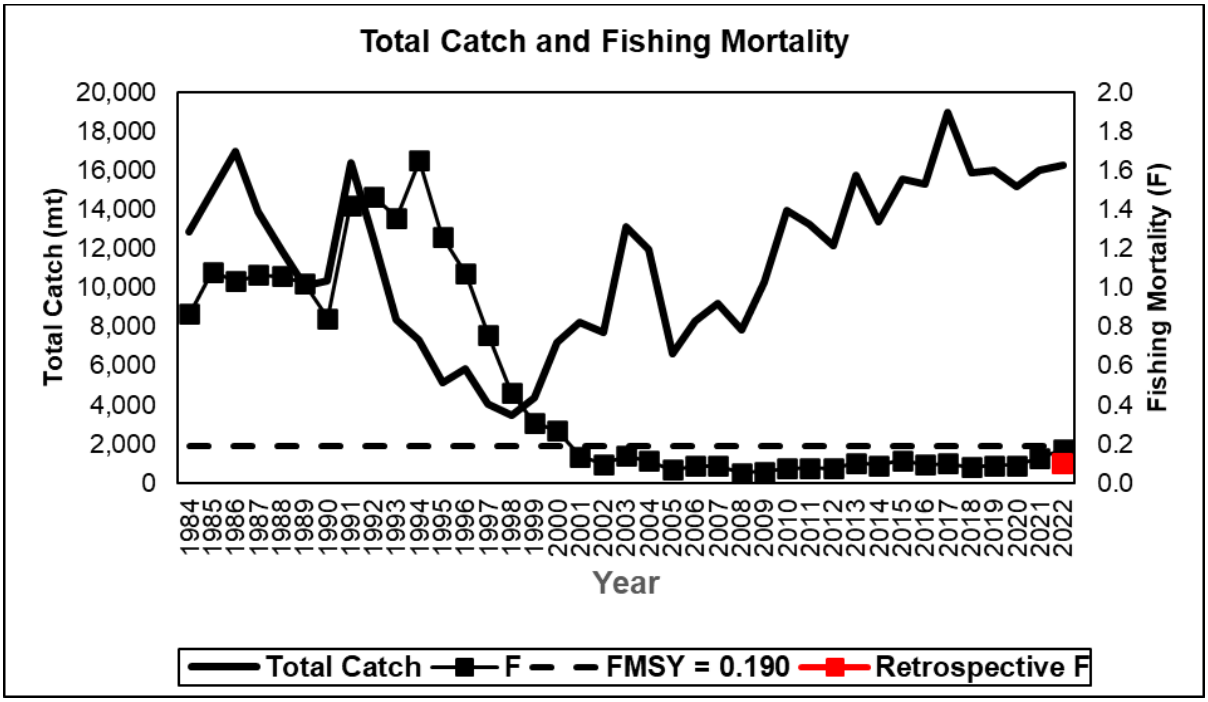


Figure 6: Total fishery catch and fishing mortality rate (F) for fully selected age 4 scup, 1984-2019. The horizontal dashed line is the fishing mortality reference point from the 2023 management track stock assessment. The red square is the retrospectively adjusted fishing mortality value for 2022. The adjusted value is used in management.

6.1.3 Non-Target Species

The following sections describe non-target species in the commercial and recreational summer flounder and scup fisheries. Non-target species are those species caught incidentally while targeting other species. Non-target species may be retained or discarded.

7.3.2.2 6.1.3.1 Identification of Non-Target Species

It can be difficult to develop accurate quantitative estimates of catch of non-target species. The intended target species for any given tow or set is not always obvious. Fishermen may intend to target one or multiple species and the intended target species may change mid-trip. For example, the seasonal distributions of summer flounder, scup, and black sea bass are generally similar, and these species are often caught together. It is not always clear from the data which species is the primary target, which is a secondary target, and which species are not targeted but are sometimes landed if caught incidentally.

In addition, there are limitations to the data used to examine catch and discards (i.e., observer and vessel trip report [VTR] data). Observer data are available only for commercial fisheries and may not be representative of all fishing activity due to limited coverage and potential differences in behavior when observers are present. VTR data are available for commercial and for-hire fisheries. VTR data can be uncertain as they are based on fishermen's self-reported best estimates of catch, which are not intended to be precise measurements. MRIP is the only source of recreational catch and discard data for private recreational anglers participating in the summer flounder and scup fisheries. For these reasons, a combination of quantitative and qualitative data was used here to identify non-target species in the summer flounder and scup fisheries.

Northeast Fisheries Observer Program (NEFOP) data from 2017-2022 were analyzed to identify species caught on observed commercial trips for which summer flounder or scup made up at least 75% of the landings (by weight; a proxy for directed trips). Using this definition of a non-target species, the most common non-target species in the summer flounder fishery include little skate, northern sea robin, winter skate, clearnose skate, and spiny dogfish. The most common non-target species in the commercial scup fishery include spiny dogfish, northern sea robin, little skate, summer flounder, and black sea bass (Table 9). With the exception of little skate in the summer flounder fishery, non-target species typically comprised a small portion of the overall catch on these trips. All of these species, with the exception of the 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.

Table 9: Percent of non-target species caught in observed trawls where summer flounder or scup made up at least 75% of the observed landings, 2017-2022. Only those non-target species comprising at least 2% of the non-target catch for at least one of the species are listed.

Species	% of total catch on summer flounder observed directed trips, 2017-2022[a]	% of total catch on scup observed directed trips, 2017-2022[a]
SKATE, LITTLE	19.5%	3.1%
SEA ROBIN, NORTHERN	6.4%	3.6%
SKATE, WINTER (BIG)	6.3%	1.0%
SKATE, CLEARNOSE	4.6%	0.5%
DOGFISH, SPINY	4.5%	8.3%
MONKFISH (GOOSEFISH)	2.7%	0.4%
SCUP	2.6%	--
SKATE, BARNDOOR	2.5%	0.5%
DOGFISH, SMOOTH	2.3%	1.0%
SKATE, NK	2.1%	0.8%
FLOUNDER, SUMMER (FLUKE)	--	2.6%
SEA BASS, BLACK	1.6%	2.5%

[a] Percentages shown are aggregate totals over 2017-2022 and do not reflect the percentages of non-target species caught on individual trips. This analysis describes only observed trips and has not been expanded to the fishery as a whole.

A species guild approach was used to examine non-target species interactions in the recreational summer flounder and scup fisheries from Maine through Virginia. The Council and NMFS staff working on this document determined that it is not necessary to update this analysis for every relevant Council action. Therefore, the most recent previously completed analysis for each species was used. For summer flounder, scup, and black sea bass, the most recent analysis was completed in early 2022 and used MRIP data from 2017 through October 2021 (2021 data were preliminary).

Based on this analysis, sea robins, black sea bass, scup, smooth dogfish, and bluefish were highly correlated with summer flounder in the recreational fishery. Black sea bass, sea robins, summer flounder, bluefish, and tautog were highly correlated with recreational scup catch.

6.1.3.2 Current Condition of Non-Target Species

Black Sea Bass

Black sea bass are distributed from the Gulf of Maine through the Gulf of Mexico. Genetic studies have identified three stocks within that range. The "northern stock" is found from the Gulf of Maine through Cape Hatteras, North Carolina and is managed by the Mid-Atlantic Fishery Management Council. The stocks in the South Atlantic and Gulf of Mexico are not managed by the Mid-Atlantic Council.

The most recent stock status information for black sea bass is available from a management track assessment which was peer reviewed and accepted in June 2021. This assessment incorporated fishery data and fishery-independent survey data through 2019. Data from 2020 were not incorporated due to significant gaps in some data sets due to the COVID-19 pandemic and the time required to consider how to best address those gaps. Terminal year estimates of spawning stock

biomass, fishing mortality, and recruitment were adjusted for internal model retrospective error. The retrospectively adjusted values are compared against the reference points and used in management.

Due to the lack of a stock/recruit relationship, a direct calculation of maximum sustainable yield (MSY) and associated reference points (F and SSB) is not feasible and proxy reference points were used. SSB calculations and SSB reference points account for mature males and females.

The 2021 management track assessment indicated that the black sea bass stock was not overfished and overfishing was not occurring in 2019. Spawning stock biomass in 2019 was estimated at about 2.1 times the target level. Fishing mortality in 2019 was estimated to be 15% below the threshold level that defines overfishing (Table 10, Figure 7, Figure 8).

According to the 2021 management track assessment, the 2011 year class (i.e., fish spawned in 2011) was estimated to be the largest in the time series and the 2015 year class was the second largest. The 2017 year class was well below the 1989-2018 average, but the 2018 year class was above average at (Figure 2). The 2018 year class is the most recent year class for which estimates are currently available.

The NEFSC provides "data updates" in the interim years between management track assessments. Data updates include information on fishery catches and fishery-independent survey indices through the prior year. A data update with fishery catch and survey indices through 2022 is expected to be provided in time for the July 2023 SSC and Monitoring Committee meetings.

A research track assessment is currently in development and is scheduled for peer review in October 2023. Stock status will be updated through a subsequent management track assessment in June 2024.

Table 10: Black sea bass biological reference points from the 2021 management track stock assessment.

	Spawning stock biomass	**Fishing mortality rate (F)**
Target	31.84 mil lb (14,441 mt)	N/A
Threshold	15.92 mil lb (7,221 mt)	0.46
Terminal year estimate (2019)	65.53 mil lb (29,769 mt) [a] 2.1 times target level	0.39[a] 15% below threshold level
Status	**Not overfished**	**Overfishing not occurring**

[a] Adjusted for retrospective bias

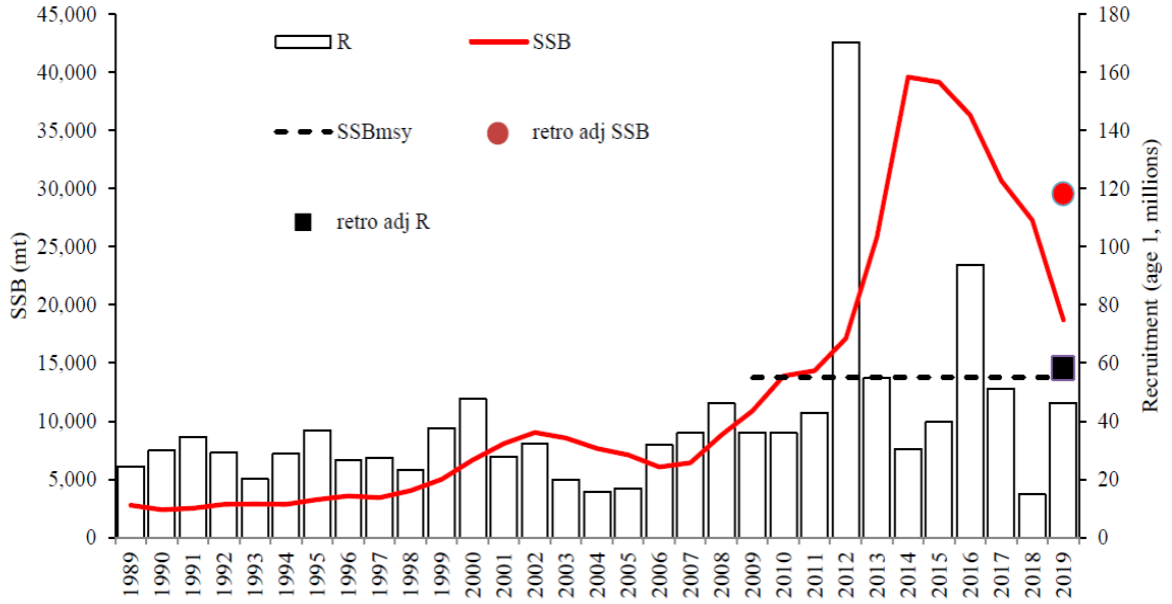


Figure 7: Black sea bass spawning stock biomass (SSB; solid line) and recruitment at age 1 (R; vertical bars), 1989-2019. The horizontal dashed line is the updated SSB_{MSY} proxy = $SSB_{40\%}$ =14,441 mt. SSB and recruitment estimates for 2019 were adjusted for a retrospective pattern in the stock assessment (red circle and black square, respectively). Adjusted values are used in management. Source: 2021 management track assessment.

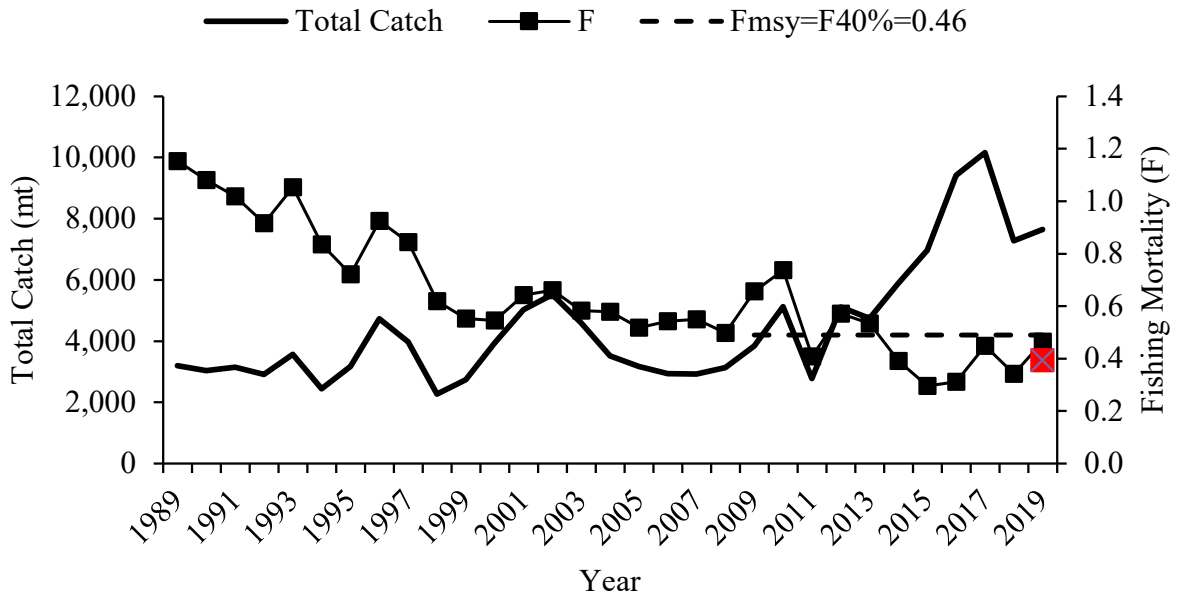


Figure 8: Total fishery catch (metric tons; mt; solid line) and fishing mortality (F, peak at age 6-7; squares) for black sea bass. The horizontal dashed line is the updated F_{MSY} proxy = $F_{40\%}$ = 0.46. The red square is the retrospectively adjusted fishing mortality value for 2019. The adjusted value is used in management. Source: 2021 management track assessment.

Other Commercial Non-Target Species

The status of commercial non-target species relevant to this action is described below and summarized in **Table 11**.

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 2023 (pending final peer review as of September 2023), which found that the stock is not overfished nor subject to overfishing. The Spawning Output was estimated to be 101% of the target in 2022 (NEFSC 2023.

Smooth dogfish are jointly managed by ASMFC as a part of the Atlantic Coastal Sharks management plan and NMFS as a part of the Atlantic Shark Highly Migratory Species management plan. According to the most recent assessment, the stock is not overfished and overfishing is not occurring (SEDAR 2015).

Monkfish are jointly managed by the NEFMC and the MAFMC. The most recent assessment changed the overfishing and overfished status to unknown in 2022 given the previous assessment that supported stock status used an aging method that was later determined to be inappropriate for monkfish. An index-based method is currently used for catch advice but does not support a new stock status determination.

The **Northeast skate complex** includes seven skate species: *Leucoraja ocellata* (winter skate); *Dipturis laevis* (barndoor skate); *Amblyraja radiata* (thorny skate); *Malacoraja senta* (smooth skate); *Leucoraja erinacea* (little skate); *Raja eglanteria* (clearnose skate); and *Leucoraja garmani* (rosette skate). Little skate, clearnose skate, barndoor skate, and winter skate are the primary skate species identified as non-target species in the summer flounder and scup fisheries. Skate are mostly harvested incidentally in trawl and gillnet fisheries targeting groundfish, monkfish, and scallops. The fishing mortality reference points for skates are based on changes in biomass indices from the NEFSC bottom trawl survey. If the three-year moving average of the survey biomass index for a skate species declines by more than the average CV of the survey time series, then fishing mortality is assumed to be greater than F_{MSY} and it is concluded that overfishing is occurring (NEFMC 2018). None of the skate species identified as non-target species in the commercial summer flounder and scup fisheries (i.e., little, clearnose, barndoor, and winter skates) are overfished or experiencing overfishing (NEFMC 2018). An update management track assessment is expected in 2023, however, final results are pending peer review as of September 2023.

Northern and striped sea robins are not currently managed and have not been assessed, therefore their overfished and overfishing status is unknown (Table 11).

Table 11: Most recent stock status information for commercial non-target species identified in this action.

Species	Stock biomass status	Fishing mortality rate status	Management
Summer Flounder	Not overfished in 2022; SSB estimated at 83% of biomass target	Overfishing was occurring in 2022; F estimated at 103% of F_{MSY}	Mid-Atlantic Council and Commission
Scup	Not overfished in 2022; SSB estimated at 246% of biomass target	Overfishing not occurring in 2022; F estimated at 48% below F_{MSY}	Mid-Atlantic Council and Commission
Black Sea Bass (Northern Stock)	Not overfished in 2019; SSB_{2018} estimated at 210% of biomass target	Overfishing not occurring in 2019; F estimated at 15% below F_{MSY}	Mid-Atlantic Council and Commission
Spiny Dogfish	Not overfished in 2017; SSB estimated at 67% of biomass target	Overfishing not occurring in 2017; F_{2015} estimated at 17% below F_{MSY}	Mid-Atlantic Council, New England Council, and Commission
NE Skate Complex *Little Skate* *Winter Skate* *Clearnose Skate* *Barndoor Skate*	Not overfished (see text)	Overfishing not occurring (see text)	New England Fishery Management Council
Northern Sea Robin	Unknown (not assessed)	Unknown (not assessed)	None
Striped Sea Robin	Unknown (not assessed)	Unknown (not assessed)	None
Monkfish	Unknown (see text)	Unknown (see text)	Mid-Atlantic Council and New England Council
Smooth Dogfish (Atlantic Region Stock)	Not overfished in 2015; $SSF_{2012}>SSF_{MSY}$ (1.96-2.81)	Overfishing not occurring in 2015; $F_{2012}<F_{MSY}$ (0.61-0.99)	NMFS Atlantic Highly Migratory Species and Commission

Other Recreational Non-Target Species

The status of recreational non-target species relevant to this action is described below and summarized in Table 12. The status and management of summer flounder, scup, black sea bass, smooth dogfish, and Northern and striped sea robin are described above for commercial non-target species. Additional information is provided below for bluefish and tautog, which were identified as non-target species in the recreational fisheries for summer flounder and scup but not for the commercial fisheries.

Bluefish are jointly managed by the MAFMC and the ASMFC. The June 2023 Management Track Assessment built upon the 2022 research track assessment and found that the bluefish stock was not overfished and overfishing was not occurring in 2022 (Figures 3 and 4; Table 4). Spawning stock biomass (SSB) in 2022 was estimated to be 52,747 mt which is 60% of the biomass target

(SSBMSY proxy = 88,131 mt). The 2022 fully selected fishing mortality was estimated to be 0.152 which is 64% of the overfishing threshold (FMSY proxy = 0.239).

Tautog are managed by the ASMFC. The latest assessment update (ASMFC 2021) assessed four regions (Massachusetts/Rhode Island, Long Island Sound, New Jersey/New York Bight, and Delaware/Maryland/Virginia) using landings and index data through 2020. The stock status for each region is described in Table 46.

Based on the most recent stock status information for these species, bluefish, scup, black sea bass, smooth dogfish, and three of the four assessed regions for tautog are not overfished or experiencing overfishing. Summer flounder is not overfished, but overfishing is occurring. The New Jersey/New York Bight region of tautog is overfished, but overfishing is not occurring. The stock status of northern and striped sea robins is unknown as these species have not been assessed. All but the two unassessed species are managed by the Mid-Atlantic Council, Commission, and/or NMFS (Table 12). The stock assessments for all assessed species account for discards and incidental catch in other fisheries. As required by the MSA, management of all Council species includes AMs for ACL overages. AMs consider discards and help mitigate negative impacts from discards.

Table 12. Most recent stock status information for non-target species in the recreational summer flounder and scup fisheries, as well as management body for each species.

Species	Stock status	Management
Summer flounder	Not overfished, **overfishing is occurring**	Mid-Atlantic Council and Commission
Scup	Not overfished, overfishing not occurring	Mid-Atlantic Council and Commission
Black sea bass	Not overfished, overfishing not occurring	Mid-Atlantic Council and Commission
Bluefish	Not overfished*, overfishing not occurring	Mid-Atlantic Council and Commission
Smooth dogfish	Not overfished, overfishing not occurring	NMFS and Commission
Tautog *MA/RI* *Long Island Sound* *NJ/New York Bight* *DE/MD/VA*	 Not overfished, overfishing not occurring Not overfished, overfishing not occurring **Overfished**, overfishing not occurring Not overfished, overfishing not occurring	Commission
Northern sea robin	Unknown (not assessed)	Unmanaged
Striped sea robin	Unknown (not assessed)	Unmanaged

*As of the 2023 bluefish MTA, the stock is no longer overfished but has not rebuilt to target reference points and will remain under a rebuilding plan.

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 drawn from Stevenson et al. (2004), unless otherwise noted.

6.2.1 Physical Environment

Summer flounder and scup inhabit the northeast U.S. shelf ecosystem, which extends from the coast to the edge of the continental shelf from the Gulf of Maine through Cape Hatteras, 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 (Figure 9).

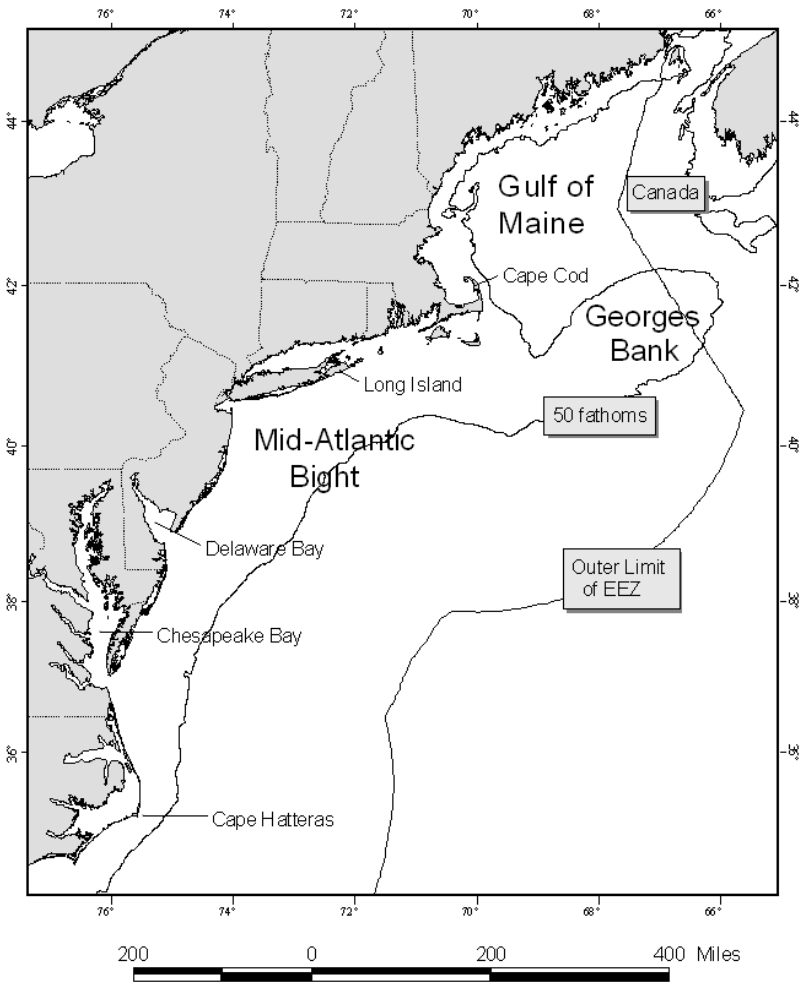


Figure 9: Northeast U.S. Shelf Ecosystem.

The Gulf of Maine is a semi-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 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 in New England and the Mid-Atlantic based on sediment type, seabed form (a combination of slope and relative depth) [11], and benthic organisms. 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.

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 due to 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).

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

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

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 13 summarizes EFH within the affected area of this action for federally managed species and life stages that are vulnerable to bottom tending fishing gear. EFH maps and text descriptions for these species and life stages can be found at www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper.

Table 13. Geographic distributions and habitat characteristics of EFH designations for benthic fish and shellfish species within the affected environment of the action.

Species	Life Stage	Geographic Area	Depth (meters)	Habitat Type and Description
American plaice	Juveniles	Gulf of Maine and bays and estuaries from Passamaquoddy Bay to Saco Bay, Maine and from Massachusetts Bay to Cape Cod Bay, Massachusetts Bay	40-180	Sub-tidal benthic habitats on mud and sand, also found on gravel and sandy substrates bordering bedrock
American plaice	Adults	Gulf of Maine, Georges Bank and bays and estuaries from Passamaquoddy Bay to Saco Bay, Maine and from Massachusetts Bay to Cape Cod Bay, Massachusetts Bay	40-300	Sub-tidal benthic habitats on mud and sand, also gravel and sandy substrates bordering bedrock
Atlantic cod	Juveniles	Gulf of Maine, Georges Bank, and Southern New England, including nearshore waters from eastern Maine to Rhode Island and the following estuaries: Passamaquoddy Bay to Saco Bay; Massachusetts Bay, Boston Harbor, Cape Cod Bay, and Buzzards Bay	Mean high water-120	Structurally-complex intertidal and sub-tidal habitats, including eelgrass, mixed sand and gravel, and rocky habitats (gravel pavements, cobble, and boulder) with and without attached macroalgae and emergent epifauna
Atlantic cod	Adults	Gulf of Maine, Georges Bank, Southern New England, and the Mid-Atlantic to Delaware Bay, including the following estuaries: Passamaquoddy Bay to Saco Bay; Massachusetts Bay, Boston Harbor, Cape Cod Bay, and Buzzards Bay	30-160	Structurally complex sub-tidal hard bottom habitats with gravel, cobble, and boulder substrates with and without emergent epifauna and macroalgae, also sandy substrates and along deeper slopes of ledges
Atlantic halibut	Juveniles & Adults	Gulf of Maine, Georges Bank, and continental slope south of Georges Bank	60-140 and 400-700 on slope	Benthic habitats on sand, gravel, or clay substrates
Atlantic sea scallop	Eggs	Gulf of Maine coastal waters and offshore banks, Georges Bank, and the Mid-Atlantic, including the following estuaries: Passamaquoddy Bay to Sheepscot River; Casco Bay, Massachusetts Bay, and Cape Cod Bay	18-110	Inshore and offshore benthic habitats (see adults)
Atlantic sea scallop	Larvae	Gulf of Maine coastal waters and offshore banks, Georges Bank, and the Mid-Atlantic, including the following estuaries: Passamaquoddy Bay to Sheepscot River; Casco Bay, Massachusetts Bay, and Cape Cod Bay	No information	Inshore and offshore pelagic and benthic habitats: pelagic larvae ("spat"), settle on variety of hard surfaces, including shells, pebbles, and gravel and to macroalgae and other benthic organisms such as hydroids

Species	Life Stage	Geographic Area	Depth (meters)	Habitat Type and Description
Atlantic sea scallop	Juveniles	Gulf of Maine coastal waters and offshore banks, Georges Bank, and the Mid-Atlantic, including the following estuaries: Passamaquoddy Bay to Sheepscot River; Casco Bay, Great Bay, Massachusetts Bay, and Cape Cod Bay	18-110	Benthic habitats initially attached to shells, gravel, and small rocks (pebble, cobble), later free-swimming juveniles found in same habitats as adults
Atlantic sea scallop	Adults	Gulf of Maine coastal waters and offshore banks, Georges Bank, and the Mid-Atlantic, including the following estuaries: Passamaquoddy Bay to Sheepscot River; Casco Bay, Great Bay, Massachusetts Bay, and Cape Cod Bay	18-110	Benthic habitats with sand and gravel substrates
Atlantic surfclams	Juveniles and adults	Continental shelf from southwestern Gulf of Maine to Cape Hatteras, North Carolina	Surf zone to about 61, abundance low >38	In substrate to depth of 3 ft
Atlantic wolffish	Eggs	U.S. waters north of 41˚N latitude and east of 71˚W longitude	<100	Sub-tidal benthic habitats under rocks and boulders in nests
Atlantic wolffish	Juveniles	U.S. waters north of 41˚N latitude and east of 71˚W longitude	70-184	Sub-tidal benthic habitats
Atlantic wolffish	Adults	U.S. waters north of 41˚N latitude and east of 71˚W longitude	<173	A wide variety of sub-tidal sand and gravel substrates once they leave rocky spawning habitats, but not on muddy bottom
Barndoor skate	Juveniles and adults	Primarily on Georges Bank and in Southern New England and on the continental slope	40-400 on shelf and to 750 on slope	Sub-tidal benthic habitats on mud, sand, and gravel substrates
Black sea bass	Juveniles and adults	Continental shelf and estuarine waters from the southwestern Gulf of Maine and Cape Hatteras, North Carolina	Inshore in summer and spring	Benthic habitats with rough bottom, shellfish and eelgrass beds, man-made structures in sandy-shelly areas, also offshore clam beds and shell patches in winter
Clearnose skate	Juveniles	Inner continental shelf from New Jersey to the St. Johns River in Florida and certain bays and certain estuaries including Raritan Bay, inland New Jersey bays, Chesapeake Bay, and Delaware Bays	0-30	Sub-tidal benthic habitats on mud and sand, but also on gravelly and rocky bottom
Clearnose skate	Adults	Inner continental shelf from New Jersey to the St. Johns River in Florida and certain bays and certain estuaries including Raritan Bay, inland New Jersey bays, Chesapeake Bay, and Delaware Bays	0-40	Sub-tidal benthic habitats on mud and sand, but also on gravelly and rocky bottom
Golden tilefish	Juveniles and adults	Outer continental shelf and slope from U.S.-Canada boundary to the Virginia-North Carolina boundary	100-300	Burrows in semi-lithified clay substrate, may also utilize rocks, boulders, scour depressions beneath boulders, and exposed rock ledges as shelter
Haddock	Juveniles	Inshore and offshore waters in the Gulf of Maine, on Georges Bank, and on the continental shelf in the Mid-Atlantic region	40-140 and as shallow as 20 in coastal Gulf of Maine	Sub-tidal benthic habitats on hard sand (particularly smooth patches between rocks), mixed sand and shell, gravelly sand, and gravel

Species	Life Stage	Geographic Area	Depth (meters)	Habitat Type and Description
Haddock	Adults	Offshore waters in the Gulf of Maine, on Georges Bank, and on the continental shelf in Southern New England	50-160	Sub-tidal benthic habitats on hard sand (particularly smooth patches between rocks), mixed sand and shell, gravelly sand, and gravel and adjacent to boulders and cobbles along the margins of rocky reefs
Little skate	Juveniles	Coastal waters in the Gulf of Maine, Georges Bank, and the continental shelf in the Mid-Atlantic region as far south as Delaware Bay, including certain bays and estuaries in the Gulf of Maine	Mean high water-80	Intertidal and sub-tidal benthic habitats on sand and gravel, also found on mud
Little skate	Adults	Coastal waters in the Gulf of Maine, Georges Bank, and the continental shelf in the Mid-Atlantic region as far south as Delaware Bay, including certain bays and estuaries in the Gulf of Maine	Mean high water-100	Intertidal and sub-tidal benthic habitats on sand and gravel, also found on mud
Longfin inshore squid	Eggs	Inshore and offshore waters from Georges Bank southward to Cape Hatteras	Generally <50	Bottom habitats attached to variety of hard bottom types, macroalgae, sand, and mud
Monkfish	Juveniles	Gulf of Maine, outer continental shelf in the Mid-Atlantic, and the continental slope	50-400 in the Mid-Atlantic, 20-400 in the Gulf of Maine, and to 1000 on the slope	Sub-tidal benthic habitats on a variety of habitats, including hard sand, pebbles, gravel, broken shells, and soft mud, also seek shelter among rocks with attached algae
Monkfish	Adults	Gulf of Maine, outer continental shelf in the Mid-Atlantic, and the continental slope	50-400 in the Mid-Atlantic, 20-400 in the Gulf of Maine, and to 1000 on the slope	Sub-tidal benthic habitats on hard sand, pebbles, gravel, broken shells, and soft mud, but seem to prefer soft sediments, and, like juveniles, utilize the edges of rocky areas for feeding
Ocean pout	Eggs	Georges Bank, Gulf of Maine, and the Mid-Atlantic, including certain bays and estuaries in the Gulf of Maine	<100	Sub-tidal hard bottom habitats in sheltered nests, holes, or rocky crevices
Ocean pout	Juveniles	Gulf of Maine, on the continental shelf north of Cape May, New Jersey, on the southern portion of Georges Bank, and including certain bays and estuaries in the Gulf of Maine	Mean high water-120	Intertidal and sub-tidal benthic habitats on a wide variety of substrates, including shells, rocks, algae, soft sediments, sand, and gravel
Ocean pout	Adults	Gulf of Maine, Georges Bank, on the continental shelf north of Cape May, New Jersey, and including certain bays and estuaries in the Gulf of Maine	20-140	Sub-tidal benthic habitats on mud and sand, particularly in association with structure forming habitat types; i.e. shells, gravel, or boulders
Ocean quahogs	Juveniles and adults	Continental shelf from southern New England and Georges Bank to Virginia	9-244	In substrate to depth of 3 ft
Offshore hake	Juveniles	Outer continental shelf and slope from Georges Bank to 34° 40'N	160-750	Pelagic and benthic habitats
Offshore hake	Adults	Outer continental shelf and slope from Georges Bank to 34° 40'N	200-750	Pelagic and benthic habitats

Species	Life Stage	Geographic Area	Depth (meters)	Habitat Type and Description
Pollock	Juveniles	Inshore and offshore waters in the Gulf of Maine (including bays and estuaries in the Gulf of Maine), the Great South Channel, Long Island Sound, and Narragansett Bay, Rhode Island	Mean high water-180 in Gulf of Maine, Long Island Sound, and Narragansett Bay; 40-180 on Georges Bank	Intertidal and sub-tidal pelagic and benthic rocky bottom habitats with attached macroalgae, small juveniles in eelgrass beds, older juveniles move into deeper water habitats also occupied by adults
Pollock	Adults	Offshore Gulf of Maine waters, Massachusetts Bay and Cape Cod Bay, on the southern edge of Georges Bank, and in Long Island Sound	80-300 in Gulf of Maine and on Georges Bank; <80 in Long Island Sound, Cape Cod Bay, and Narragansett Bay	Pelagic and benthic habitats on the tops and edges of offshore banks and shoals with mixed rocky substrates, often with attached macro algae
Red hake	Juveniles	Gulf of Maine, Georges Bank, and the Mid-Atlantic, including Passamaquoddy Bay to Cape Cod Bay in the Gulf of Maine, Buzzards Bay and Narragansett Bay, Long Island Sound, Raritan Bay and the Hudson River, and lower Chesapeake Bay	Mean high water-80	Intertidal and sub-tidal soft bottom habitats, esp those that that provide shelter, such as depressions in muddy substrates, eelgrass, macroalgae, shells, anemone and polychaete tubes, on artificial reefs, and in live bivalves (e.g., scallops)
Red hake	Adults	In the Gulf of Maine, the Great South Channel, and on the outer continental shelf and slope from Georges Bank to North Carolina , including inshore bays and estuaries as far south as Chesapeake Bay	50-750 on shelf and slope, as shallow as 20 inshore	Sub-tidal benthic habitats in shell beds, on soft sediments (usually in depressions), also found on gravel and hard bottom and artificial reefs
Rosette skate	Juveniles and adults	Outer continental shelf from approximately 40˚N to Cape Hatteras, North Carolina	80-400	Benthic habitats with mud and sand substrates
Scup	Juveniles	Continental shelf between southwestern Gulf of Maine and Cape Hatteras, North Carolina and in nearshore and estuarine waters between Massachusetts and Virginia	No information	Benthic habitats, in association with inshore sand and mud substrates, mussel and eelgrass beds
Scup	Adults	Continental shelf and nearshore and estuarine waters between southwestern Gulf of Maine and Cape Hatteras, North Carolina	No information, generally overwinter offshore	Benthic habitats
Silver hake	Juveniles	Gulf of Maine, including certain bays and estuaries, and on the continental shelf as far south as Cape May, New Jersey	40-400 in Gulf of Maine, >10 in Mid-Atlantic	Pelagic and sandy sub-tidal benthic habitats in association with sand-waves, flat sand with amphipod tubes, shells, and in biogenic depressions
Silver hake	Adults	Gulf of Maine, including certain bays and estuaries, the southern portion of Georges Bank, and the outer continental shelf and some shallower coastal locations in the Mid-Atlantic	>35 in Gulf of Maine, 70-400 on Georges Bank and in the Mid-Atlantic	Pelagic and sandy sub-tidal benthic habitats, often in bottom depressions or in association with sand waves and shell fragments, also in mud habitats bordering deep boulder reefs, on over deep boulder reefs in the southwest Gulf of Maine
Smooth skate	Juveniles	Offshore Gulf of Maine, some coastal bays in Maine and New Hampshire, and on the continental slope from Georges Bank to North Carolina	100-400 offshore Gulf of Maine, <100 inshore Gulf of Maine, to 900 on slope	Benthic habitats, mostly on soft mud in deeper areas, but also on sand, broken shells, gravel, and pebbles on offshore banks in the Gulf of Maine

Species	Life Stage	Geographic Area	Depth (meters)	Habitat Type and Description
Smooth skate	Adults	Offshore Gulf of Maine and the continental slope from Georges Bank to North Carolina	100-400 offshore Gulf of Maine, to 900 on slope	Benthic habitats, mostly on soft mud in deeper areas, but also on sand, broken shells, gravel, and pebbles on offshore banks in the Gulf of Maine
Summer flounder	Juveniles	Continental shelf and estuaries from Cape Cod, Massachusetts, to Cape Canaveral, Florida	To maximum 152	Benthic habitats, including inshore estuaries, salt marsh creeks, seagrass beds, mudflats, and open bay areas
Summer flounder	Adults	Continental shelf from Cape Cod, Massachusetts, to Cape Canaveral, Florida, including shallow coastal and estuarine waters during warmer months	To maximum 152 in colder months	Benthic habitats
Spiny dogfish	Juveniles	Primarily the outer continental shelf and slope between Cape Hatteras and Georges Bank and in the Gulf of Maine	Deep water	Pelagic and epibenthic habitats
Spiny dogfish	Female sub-adults	Throughout the region	Wide depth range	Pelagic and epibenthic habitats
Spiny dogfish	Male sub-adults	Primarily in the Gulf of Maine and on the outer continental shelf from Georges Bank to Cape Hatteras	Wide depth range	Pelagic and epibenthic habitats
Spiny dogfish	Female adults	Throughout the region	Wide depth range	Pelagic and epibenthic habitats
Spiny dogfish	Male adults	Throughout the region	Wide depth range	Pelagic and epibenthic habitats
Thorny skate	Juveniles	Offshore Gulf of Maine, some coastal bays in the Gulf of Maine, and on the continental slope from Georges Bank to North Carolina	35-400 offshore Gulf of Maine, <35 inshore Gulf of Maine, to 900 om slope	Benthic habitats on a wide variety of bottom types, including sand, gravel, broken shells, pebbles, and soft mud
Thorny skate	Adults	Offshore Gulf of Maine and on the continental slope from Georges Bank to North Carolina	35-400 offshore Gulf of Maine, <35 inshore Gulf of Maine, to 900 om slope	Benthic habitats on a wide variety of bottom types, including sand, gravel, broken shells, pebbles, and soft mud
White hake	Juveniles	Gulf of Maine, Georges Bank, and Southern New England, including bays and estuaries in the Gulf of Maine	Mean high water - 300	Intertidal and sub-tidal estuarine and marine habitats on fine-grained, sandy substrates in eelgrass, macroalgae, and un-vegetated habitats
White hake	Adults	Gulf of Maine, including coastal bays and estuaries, and the outer continental shelf and slope	100-400 offshore Gulf of Maine, >25 inshore Gulf of Maine, to 900 on slope	Sub-tidal benthic habitats on fine-grained, muddy substrates and in mixed soft and rocky habitats
Windowpane flounder	Juveniles	Estuarine, coastal, and continental shelf waters from the Gulf of Maine to northern Florida, including bays and estuaries from Maine to Maryland	Mean high water - 60	Intertidal and sub-tidal benthic habitats on mud and sand substrates
Windowpane flounder	Adults	Estuarine, coastal, and continental shelf waters from the Gulf of Maine to Cape Hatteras, North Carolina, including bays and estuaries from Maine to Maryland	Mean high water - 70	Intertidal and sub-tidal benthic habitats on mud and sand substrates

Species	Life Stage	Geographic Area	Depth (meters)	Habitat Type and Description
Winter flounder	Eggs	Eastern Maine to Absecon Inlet, New Jersey (39° 22′N) and Georges Bank	0-5 south of Cape Cod, 0-70 Gulf of Maine and Georges Bank	Sub-tidal estuarine and coastal benthic habitats on mud, muddy sand, sand, gravel, submerged aquatic vegetation, and macroalgae
Winter flounder	Juveniles	Coastal Gulf of Maine, Georges Bank, and continental shelf in Southern New England and Mid-Atlantic to Absecon Inlet, New Jersey, including bays and estuaries from eastern Maine to northern New Jersey	Mean high water - 60	Intertidal and sub-tidal benthic habitats on a variety of bottom types, such as mud, sand, rocky substrates with attached macro algae, tidal wetlands, and eelgrass; young-of-the-year juveniles on muddy and sandy sediments in and adjacent to eelgrass and macroalgae, in bottom debris, and in marsh creeks
Winter flounder	Adults	Coastal Gulf of Maine, Georges Bank, and continental shelf in Southern New England and Mid-Atlantic to Absecon Inlet, New Jersey, including bays and estuaries from eastern Maine to northern New Jersey	Mean high water - 70	Intertidal and sub-tidal benthic habitats on muddy and sandy substrates, and on hard bottom on offshore banks; for spawning adults, also see eggs
Winter skate	Juveniles	Coastal waters from eastern Maine to Delaware Bay, including certain bays and estuaries from eastern Maine to Chincoteague Bay, Virginia, and on Georges Bank and the continental shelf in Southern New England and the Mid-Atlantic	0-90	Sub-tidal benthic habitats on sand and gravel substrates, are also found on mud
Winter skate	Adults	Coastal waters from eastern Maine to Delaware Bay, including certain bays and estuaries in Maine and New Hampshire, and on Georges Bank and the continental shelf in Southern New England and the Mid-Atlantic	0-80	Sub-tidal benthic habitats on sand and gravel substrates, are also found on mud
Witch flounder	Juveniles	Gulf of Maine and outer continental shelf and slope	50-400 and to 1500 on slope	Sub-tidal benthic habitats with mud and muddy sand substrates
Witch flounder	Adults	Gulf of Maine and outer continental shelf and slope	35-400 and to 1500 on slope	Sub-tidal benthic habitats with mud and muddy sand substrates
Yellowtail flounder	Juveniles	Gulf of Maine, Georges Bank, and the Mid-Atlantic, including certain bays and estuaries in the Gulf of Maine	20-80	Sub-tidal benthic habitats on sand and muddy sand
Yellowtail flounder	Adults	Gulf of Maine, Georges Bank, and the Mid-Atlantic, including certain bays and estuaries in the Gulf of Maine	25-90	Sub-tidal benthic habitats on sand and sand with mud, shell hash, gravel, and rocks

6.2.3 Fishery Impact Considerations

Only those gear types which contact the bottom impact physical habitat. The actions proposed in this document are relevant to both the commercial and recreational summer founder and scup fisheries. The recreational fisheries for all three species are almost exclusively hook and line fisheries. Recreational hook and line gears generally have minimal impacts on physical habitat and EFH in this region (Stevenson et al. 2004). Weighted hook and line gear can contact the bottom,

but the magnitude and footprint of any impacts resulting from this contact is likely minimal. Thus, the recreational fisheries are expected to have very minor or no impacts on habitat.

The commercial fisheries for all three species are primarily prosecuted with bottom trawl gear (Table 14).

Table 14: Percent of reported commercial summer flounder and scup landings taken by gear category in 2022 based on VTR data.

Gear	Summer Flounder	Scup
Bottom otter trawls	99%	96%
Pots and traps	<1%	3%
Sink gillnets	<1%	<1%
Handlines	<1%	<1%
Other	<1% each	<1% each

Stevenson et al. (2004) compiled a detailed summary of several studies on the impacts of a variety of gear types on marine habitats. Conclusions relevant for this action are briefly summarized below with a focus on bottom trawl gear since this is the predominant gear type used in commercial harvest of all three species.

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 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.

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. Protected Species

Numerous protected species occur in the affected environment of the Summer Flounder, Scup, and Black Sea Bass FMP (Table 15) and have the potential to be impacted by the proposed action (i.e., there have been observed/documented interactions in the fisheries or with gear types similar to those used in the fisheries (e.g., bottom trawl, pot/trap, and hook and line 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 are a 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, cusk 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 can be found at: https://www.fisheries.noaa.gov/species/cusk.

Table 15. Species protected under the ESA and/or MMPA that may occur in the affected environment of the Summer Flounder, Scup, and Black Sea Bass FMP. Marine mammal species italicized and in bold are considered MMPA strategic stocks.[1]

Species	Status	Potentially impacted 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***	***Yes***
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

Species	Status	Potentially impacted by this action?
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, Western North Atlantic (WNA) Offshore Stock(*Tursiops truncatus*)	Protected (MMPA)	*Yes*
Bottlenose dolphin, WNA Northern Migratory Coastal Stock (Tursiops truncatus)	***Protected (MMPA)***	***Yes***
Bottlenose dolphin, WNA Southern Migratory Coastal Stock (Tursiops truncatus)	***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
Giant manta ray (*Manta birostris)*	Threatened	Yes
Oceanic whitetip shark (*Carcharhinus longimanus*)	Threatened	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
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 Designated	No
Northwest Atlantic DPS of Loggerhead Sea Turtle	ESA Designated	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).

[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.*

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

The proposed action considers 2024-2025 specifications for the scup and summer flounder fisheries. Based on available information, it has been determined that this action is not likely to impact multiple ESA listed and/or MMPA protected species or any designated critical habitat (Table 15). This determination has been made because either the occurrence of the species is not known to overlap with the area primarily affected by the action and/or, based on the most recent 10 years of information, there have been no observed or documented interactions between the

species and the primary gear type (i.e., bottom trawl, trap/pot, and hook and line gear) used to prosecute the summer flounder and scup fisheries (Greater Atlantic Region (GAR) Marine Animal Incident Database, unpublished data; NMFS Marine Mammal Stock Assessment Reports (SARs) for the Atlantic Region; NMFS NEFSC observer/sea sampling database, unpublished data; NMFS NEFSC marine mammal (small cetacean, pinniped, baleen whale) serious injury and mortality Reference Documents, Publications, or Technical Memoranda; MMPA List of Fisheries (LOF); NMFS 2021a). [12] In the case of critical habitat, this determination has been made because the action will not affect the essential physical and biological features of critical habitat identified in Table 49 and therefore, will not result in the destruction or adverse modification of any species critical habitat (NMFS 2021a).

6.3.2 Species Potentially Impacted by the Proposed Action

Table 15 provides a list of protected species of sea turtle, marine mammal, and fish species present in the affected environment of the Summer Flounder, Scup, and Black Sea Bass FMP, and that may also be impacted by the proposed action (e.g., have the potential to become entangled or bycaught in the fishing gear used to prosecute the summer flounder and/or scup fisheries). To help identify MMPA protected species potentially impacted by the action, NMFS Marine Mammal SARs for the Atlantic Region, MMPA List of Fisheries (LOF), NMFS (2021b), NMFS NEFSC observer/sea sampling database (unpublished data), and NMFS NEFSC marine mammal (small cetacean, pinniped, baleen whale) serious injury and mortality Reference Documents, Publications, or Technical Memoranda were referenced.

To help identify ESA listed species potentially impacted by the action, the NMFS NEFSC observer/sea sampling, Sea Turtle Disentanglement Network (STDN), and the GAR Marine Animal Incident databases for interactions were queried, and the May 27, 2021, Biological Opinion issued by NMFS was reviewed (NMFS 2021a).

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 FMP and how the fishery (or fisheries) within the FMP 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 FMP and on protected species interactions with specific fishery gear is provided below.

4.1.1.1 Sea Turtles

Below is a brief summary of the status and trends, as well as the occurrence and distribution of sea turtles in the affected environment of the Summer Flounder, Scup, and Black Sea Bass FMP. Additional background information on the range-wide status of affected sea turtles species, as well

---

12

For MMPA protected species, the most recent 10 years of information on estimated bycatch of small cetacean and pinnipeds in commercial fisheries covers the timeframe between 2011-2020; for large baleen whales, confirmed human caused serious injury, mortality, and entanglement reports are from 2012-2021. For ESA listed species, information on observer or documented interactions with fishing gear is from 2013-2022.

as a description and life history of each of these species, can be found in a number of published documents, including NMFS (2021a); sea turtle status reviews and biological reports (NMFS and USFWS 1995; Hirth 1997; Turtle Expert Working Group [TEWG] 1998, 2000, 2007, 2009; NMFS and USFWS 2007a, 2007b; Conant et al. 2009; NMFS and USFWS 2013), and recovery plans for the loggerhead (Northwest Atlantic DPS) sea turtle (NMFS and USFWS 2008), leatherback sea turtle (NMFS and USFWS 1992, 1998a, 2020), Kemp's ridley sea turtle (NMFS et al. 2011), and green sea turtle (NMFS and USFWS 1991, 1998b).

Status and Trends

Four sea turtle species have the potential to be impacted by the proposed action: Northwest Atlantic Ocean DPS of Loggerhead, Kemp's ridley, North Atlantic DPS of green, and leatherback sea turtles (Table 15). Although stock assessments and similar reviews have been completed for sea turtles none have been able to develop a reliable estimate of absolute population size. As a result, nest counts are used to inform population trends for sea turtle species.

For the Northwest Atlantic Ocean DPS of loggerhead sea turtles, there are five unique recovery units that comprise the DPS. Nesting trends for each of these recovery units are variable; however, Florida index nesting beaches comprise most of the nesting in the DPS (https://myfwc.com/research/wildlife/sea-turtles/nesting/beach-survey-totals/). Overall, short-term trends for loggerhead sea turtles (Northwest Atlantic Ocean DPS) have shown increases; however, over the long-term the DPS is considered stable (NMFS 2021a).

For Kemp's ridley sea turtles, from 1980 through 2003, the number of nests at three primary nesting beaches (Rancho Nuevo, Tepehuajes, and Playa Dos) increased 15 percent annually (Heppell et al. 2005); however, due to recent declines in nest counts, decreased survival of immature and adult sea turtles, and updated population modeling, this rate is not expected to continue and therefore, the overall trend is unclear (NMFS and USFWS 2015; Caillouett et al. 2018). In 2019, there were 11,090 nests, a 37.61% decrease from 2018 and a 54.89% decrease from 2017, which had the highest number (24,587) of nests; the reason for this recent decline is uncertain (see NMFS 2021a). Given this and continued anthropogenic threats to the species, according to NMFS (2021a), the species resilience to future perturbation is low.

The North Atlantic DPS of green sea turtle, overall, is showing a positive trend in nesting; however, increases in nester abundance for the North Atlantic DPS in recent years must be viewed cautiously as the datasets represent a fraction of a green sea turtle generation which is between 30 and 40 years (Seminoff et al. 2015). While anthropogenic threats to this species continue, taking into consideration the best available information on the species, NMFS (2021a), concluded that the North Atlantic DPS appears to be somewhat resilient to future perturbations.

Leatherback turtle nesting in the Northwest Atlantic is showing an overall negative trend, with the most notable decrease occurring during the most recent time frame of 2008 to 2017 (NW Atlantic Leatherback Working Group 2018). The leatherback status review in 2020 concluded that leatherbacks are exhibiting an overall decreasing trend in annual nesting activity (NMFS and USFWS, 2020). Given continued anthropogenic threats to the species, according to NMFS (2021a), the species' resilience to additional perturbation both within the Northwest Atlantic and worldwide is low.

Occurrence and Distribution

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; Shoop & Kenney 1992; TEWG 2009; Blumenthal et al. 2006; Braun-McNeill & Epperly 2002; 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 2002; 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 GOM in June (Shoop & Kenney 1992). The trend is reversed in the fall as water temperatures cool. The large majority leave the GOM by September, but some remain in Mid-Atlantic and Northeast areas until late fall (i.e., November). By December, sea turtles have migrated south to waters offshore of North Carolina, particularly south of Cape Hatteras, and further south, although it should be noted that 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: Leatherbacks, a pelagic species, are known to use coastal waters of the U.S. continental shelf and to have a greater tolerance for colder water than hard-shelled sea turtles (James et al. 2005; Eckert et al. 2006; Murphy et al. 2006; NMFS and USFWS 2013; Dodge et al. 2014). Leatherback sea turtles engage in routine migrations between northern temperate and tropical waters (NMFS and USFWS 1992; James et al. 2005; James et al. 2006; Dodge et al. 2014). They are found in more northern waters (i.e., GOM) later in the year (i.e., similar time frame as hard-shelled sea turtles), with most leaving the Northwest Atlantic shelves by mid-November (James et al. 2005; James et al. 2006; Dodge et al. 2014).

4.1.1.2 Large Whales

Status and Trends

Six large whale species have the potential to be impacted by the proposed action: Humpback, North Atlantic right, fin, sei, sperm, and minke whales (Table 15). Review of large whale stock assessment reports covering the period of 2011 through 2020, indicate a decreasing trend for the North Atlantic right whale population; however, for fin, humpback, minke, sperm, and sei whales, it is unknown what the population trajectory is as a trend analysis has not been conducted For additional information on the status of humpback, North Atlantic right, fin, sei, sperm, and minke whales, refer to the NMFS Marine Mammal SARs for the Atlantic Region.

Occurrence and Distribution

Humpback, North Atlantic right, fin, sei, sperm, and minke whales occur in the Northwest Atlantic. Generally speaking, large whales follow an annual pattern of migration between low latitude (south of 35°N) wintering/calving grounds and high latitude spring/summer/fall foraging grounds (primarily north of 41°N; NMFS Marine Mammal SARs for the Atlantic Region); however, this is an oversimplification of whale movements. Survey data, both visual and acoustic, indicate high internal variability in large whale use of some habitats in the Northwest Atlantic, with increasing evidence suggesting that for some species, some portion of the population remains in higher latitudes throughout the winter (Clapham et al. 1993; Davis et at. 2017; Davis et al. 2020; Quintana-Rizzo et al. 2020 ; Swingle et al. 1993; Vu et al. 2012; NMFS Marine Mammal SARs

for the Atlantic Region). Although further research is needed to provide a clearer understanding of large whale movements and distribution throughout the year, especially as environmental conditions continue to change (e.g., Meyer- Gutbrod et al. 2021, 2022), the occurrence of large whales in high latitude foraging grounds in the spring/summer/fall is well understood. Large whales consistently return to these foraging areas each year, therefore these areas can be considered important areas for whales (Davis et al. 2017; Davis et al. 2020; Payne et al. 1986; Payne et al. 1990; Schilling et al. 1992; NMFS Marine Mammal SARs for the Atlantic Region). For additional information on the biology and range wide distribution of humpback, North Atlantic right, fin, sei, sperm, and minke whales, refer to the NMFS Marine Mammal SARs for the Atlantic Region.

4.1.1.3 Small Cetaceans and Pinnipeds

Status and Trends

Risso's, white-sided, short beaked common, and bottlenose dolphins (Western North Atlantic Offshore, Northern Migratory Coastal, and Southern Migratory Coastal stock); long and short – finned pilot whales; and harbor porpoise could be impacted by the proposed action (Table 15). A trend analysis has not been conducted for Risso's, white-sided, short-beaked common dolphins; long-finned pilot whales or harbor porpoise; as a result, the population trajectory for these species is unknown (Hayes et al. 2021). For short-finned pilot whales a generalized linear model indicated no significant trend in the abundance estimates (Hayes *et al.* 2022). For the Western North Atlantic Offshore bottlenose dolphin stock, review of the most recent information on the stock shows no statistically significant trend in population size for this species; however, the high level of uncertainty in the estimates limits the ability to detect a statistically significant trend (Hayes et al. 2021). In regards to the Northern and Southern Migratory Coastal bottlenose dolphin stocks (both considered a strategic stock under the MMPA), the most recent analysis of trends in abundance suggests a probable decline in stock size between 2010–2011 and 2016, concurrent with a large UME in the area; however, there is limited power to evaluate trends given uncertainty in stock distribution, lack of precision in abundance estimates, and a limited number of surveys (Hayes *et al.* 2021).

Table 15 also identifies harbor, gray, harp and hooded seals as having the potential to be impacted by the proposed action. Based on Hayes et al. (2019; 2022), the status of the:

- Western North Atlantic harbor seal and hooded seal, relative to Optimum Sustainable Population (OSP), in the U.S. Atlantic EEZ is unknown;
- gray seal population relative to OSP in U.S. Atlantic EEZ waters is unknown, but the stock's abundance appears to be increasing in Canadian and U.S. waters; and,
- harp seal stock, relative to OSP, in the U.S. Atlantic EEZ is unknown, but the stock's abundance appears to have stabilized.

Occurrence and Distribution

Small cetaceans can be found throughout the year in the Northwest Atlantic Ocean (Maine to Florida); however, within this range, there are seasonal shifts in species distribution and abundance. Pinnipeds 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).

For additional information on the biology and range wide distribution of each species of small cetacean and pinniped, refer to the NMFS Marine Mammal SARs for the Atlantic Region.

4.1.1.4 Atlantic sturgeon

Status and Trends

As provided in Table 15, Atlantic sturgeon (all five DPSs) have the potential to be impacted by the proposed action. Population trends for Atlantic sturgeon are difficult to discern; however, the most recent stock assessment report concludes that Atlantic sturgeon, at both coastwide and DPS level, are depleted relative to historical levels (ASSRT 2007; ASMFC 2017; NMFS 2021a).

Occurrence and Distribution

The marine range of U.S. Atlantic sturgeon extends from Labrador, Canada, to Cape Canaveral, Florida. All five DPSs of Atlantic sturgeon could be located anywhere in this marine range (Altenritter *et al.* 2017; ASMFC 2017; ASSRT 2007; Breece *et al.* 2016; Breece *et al.* 2018a; Dadswell 2006; Dadswell *et al.* 1984; Dovel & Berggren 1983; Dunton *et al.* 2015; Dunton *et al.* 2010; Erickson *et al.* 2011; Hilton *et al.* 2016; Ingram *et al.* 2019; Kazyak *et al.* 2021; Kynard *et al.* 2000; Laney *et al.* 2007; Novak *et al.* 2017; O'Leary *et al.* 2014; Rothermel *et al.* 2020; Stein *et al.* 2004a; Waldman *et al.* 2013; Wippelhauser *et al.* 2017; Wirgin *et al.* 2015a; Wirgin *et al.* 2015b).

Based on fishery-independent and dependent surveys, and data collected from genetic, tracking, and/or tagging studies in the marine environment, Atlantic sturgeon appear to typically occur inshore of the 50 meter depth contour; however, Atlantic sturgeon are not restricted to these depths, as excursions into deeper continental shelf waters have been documented (Altenritter *et al.* 2017; Breece *et al.* 2016; Breece *et al.* 2018b; Collins & Smith 1997; Dunton *et al.* 2010; Erickson *et al.* 2011; Ingram *et al.* 2019; Novak *et al.* 2017; Rothermel *et al.* 2020; Stein *et al.* 2004a,b; Wippelhauser *et al.* 2017). In addition to depth, numerous studies have demonstrated that temperature is a key variable in Atlantic sturgeon presence and distribution in the marine environment (Altenritter *et al.* 2017; Breece *et al.* 2018b; Erickson *et al.* 2011; Ingram *et al.* 2019; Novak *et al.* 2017; Rothermel *et al.* 2020; Wippelhauser *et al.* 2017). Data from fishery-independent and dependent surveys, and data collected from genetic, tracking, and/or tagging studies also indicate that Atlantic sturgeon make seasonal coastal movements from marine waters to river estuaries in the spring and from river estuaries to marine waters in the fall; 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 (Altenritter *et al.* 2017; Breece *et al.* 2018b; Dunton *et al.* 2010; Erickson *et al.* 2011; Ingram *et al.* 2019; Novak *et al.* 2017; Rothermel *et al.* 2020; Wippelhauser 2012; Wippelhauser *et al.* 2017). When in the marine environment, Atlantic sturgeon presence and distribution in nearshore or offshore environments also appears to be seasonally variable; with preference for shallow, coastal waters in the spring, more offshore waters in the late fall-winter, and mouths of estuaries in the summer. Residency times in these areas of the marine environment are variable, with suitable environmental conditions (e.g., depth and temperature) dictating residency in an area (Altenritter *et al.* 2017; Breece *et al.* 2018b; Erickson *et al.* 2011; Ingram *et al.* 2019; Novak *et al.* 2017; Rothermel *et al.* 2020; Wippelhauser *et al.* 2017).

More information on the biology and range wide distribution of each DPS of Atlantic sturgeon is in 77 FR 5880 and 77 FR 5914, the Atlantic Sturgeon Status Review Team's (ASSRT) 2007 status

review of Atlantic sturgeon (ASSRT 2007); the ASMFC 2017 Atlantic Sturgeon Benchmark Stock Assessment and Peer Review Report (ASMFC 2017), and NMFS (2021a).

More information on the biology and range wide distribution of each DPS of Atlantic sturgeon refer to: 77 FR 5880 and 77 FR 5914, the Atlantic Sturgeon Status Review Team's (ASSRT) 2007 status review of Atlantic sturgeon (ASSRT 2007); the ASMFC 2017 Atlantic Sturgeon Benchmark Stock Assessment and Peer Review Report (ASMFC 2017), and NMFS (2021a).

4.1.1.5 Atlantic salmon

Status and Trends

As provided in Table 15, Atlantic salmon (GOM DPS) have the potential to be impacted by the proposed action. There is no population growth rate available for GOM DPS Atlantic salmon; however, the consensus is that the DPS exhibits a continuing declining trend (NOAA 2016; USFWS and NMFS 2018; NMFS 2021a).

Occurrence and Distribution

The wild populations of Atlantic salmon are listed as endangered under the ESA. Their freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River, while the marine range of the GOM DPS extends from the GOM (primarily northern portion of the GOM), to the coast of Greenland (NMFS and USFWS 2005, 2016; Fay et al. 2006). In general, smolts, post-smolts, and adult Atlantic salmon may be present in the GOM and coastal waters of Maine in the spring (beginning in April), and adults may be present throughout the summer and fall months (Baum 1997; Fay et al. 2006; 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 and range wide distribution of the GOM DPS of Atlantic salmon, refer to NMFS and USFWS (2005, 2016); Fay et al. (2006); and NMFS (2021a).

4.1.1.6 Giant Manta Ray

Status and Trends

As provided in Table 15, giant manta rays have the potential to be impacted by the proposed action. While there is considerable uncertainty regarding the giant manta ray's current abundance throughout its range, the best available information indicates that in areas where the species is not subject to fishing, populations may be stable (NMFS 2021a). However, in regions where giant manta rays are (or were) actively targeted or caught as bycatch populations appear to be decreasing (Miller and Klimovich 2017).

Occurrence and Distribution

Based on the giant manta ray's distribution, the species may occur in coastal, nearshore, and pelagic waters off the U.S. east coast (Miller and Klimovich 2017). Along the U.S. East Coast, giant manta rays are usually found in water temperatures between 19 and 22°C (Miller and Klimovich 2017) and have been observed as far north as New Jersey. Given that the species is rarely identified in the fisheries data in the Atlantic, it may be assumed that populations within the Atlantic are small and sparsely distributed (Miller and Klimovich 2017).

6.3.3 Gear Interactions and Protected Species

Protected species are at risk of interacting with various types of fishing gear, with interaction risks associated with gear type, quantity, soak or tow duration, and degree of overlap between gear and protected species. Information on observed or documented interactions between gear and protected species is available from as early as 1989 (NMFS Marine Mammal SARs for the Atlantic Region; NMFS NEFSC observer/sea sampling database, unpublished data). As the distribution and occurrence of protected species and the operation of fisheries (and, thus, risk to protected species) have changed over the last 30 years, we use the most recent 10 years of available information to best capture the current risk to protected species from fishing gear. For marine mammals protected under the MMPA, the most recent 10 years of information on estimated bycatch of small cetacean and pinnipeds in commercial fisheries covers the timeframe between 2011-2020; for large baleen whales, confirmed human caused serious injury, mortality, and entanglement reports are from 2012-2021 (GAR Marine Animal Incident Database, unpublished data; Hayes *et al.* 2017; 2018; 2019; 2020; Hayes *et al.* 2021; Hayes *et al.* 2022; Hayes et al. 2023; Henry *et al.* 2017; Henry *et al.* 2016; Henry *et al.* 2020; Henry *et al.* 2021; Henry 2022; Henry et al. 2022; Henry et al. 2023; Henry *et al.* 2019; Waring *et al.* 2016). For ESA listed species, the most recent 10 years of data on observed or documented interactions is available from 2013-2022 (ASMFC 2017; Kocik *et al.* 2014; NMFS 2021a; unpublished data: GAR Marine Animal Incident Database, NMFS NEFSC observer/sea sampling database, GAR Sea Turtle and Disentanglement Network, NMFS Sea Turtle Stranding and Salvage Network) (NMFS Marine Mammal SARs for the Atlantic Region; NMFS NEFSC protected species serious injury and mortality Reference Documents, Publications, or Technical Memoranda).

Available information on gear interactions with a given species (or species group) is provided in the sections below. However, the following sections are not a comprehensive review of all fishing gear types known to interact with a given species; emphasis is only being placed on the primary gear types used to prosecute the summer flounder and/or scup fisheries (i.e., recreational: hook and line; summer flounder commercial: bottom trawl gear; scup commercial: bottom trawl, pot/trap).

4.1.1.7 Recreational Fisheries Interactions

Recreational summer flounder and scup fisheries are primarily prosecuted with rod and reel and handline (i.e., hook and line gear). Available information on interactions between protected species and hook and line gear is summarized below. This information is based on overall gear type and is not strictly limited to the recreational summer flounder or scup fisheries.

In the absence of an observer program for recreational fisheries, records of recreational hook and line interactions with protected species are limited. However, as a dedicated observer program exists for all commercial fisheries, there is a wealth of information on observed protected species interactions with all fishing gear types and years of data assessing resultant population level effects of these interactions. Other sources of information, such as state fishing records, stranding databases, and marine mammal stock assessment reports, provide additional information that can assist in better understanding hook and line interaction risks to protected species.

Large Whales

Large whales have been documented entangled with hook and line gear or monofilament line (GAR Marine Animal Incident Database, unpublished data; NMFS Marine Mammal SARs for the

Atlantic Region; Henry et al. 2016; Henry et al. 2017; Henry et al. 2019; Henry et al. 2020; Henry et al. 2021; Henry 2022; Henry et al. 2022; Henry et al. 2023). Review of mortality and serious injury determinations for baleen whales between 2012-2021 shows that there have been 68 confirmed cases of hook and line and/or monofilament gear wrapped around or trailing from portions of the whale's body (Henry et al. 2016; Henry et al. 2017; Henry et al. 2019; Henry et al. 2020; Henry et al. 2021; Henry 2022; Henry et al. 2022; Henry et al. 2023). Of the 68 cases documented, the majority of them did not result in serious injury to the animal, and none of them resulted in mortality to the whale (87.0% observed/reported whales had a serious injury value of 0; 13.0% had a serious injury value of 0.75;[13] Henry et al. 2017; Henry et al. 2020; Henry et al. 2021; Henry 2022; Henry et al. 2022; Henry et al. 2023). In fact, 82.3% of the whales observed or reported with hook/line or monofilament were resighted gear free and healthy; confirmation of the health of the other remaining whales remain unknown as no resightings had been made over the timeframe of the assessment (Henry et al. 2015; Henry et al. 2016; Henry et al. 2017; Henry et al. 2019; Henry et al. 2020; Henry et al. 2021; Henry 2022; Henry et al. 2022; Henry et al. 2023). Based on this information, while large whale interactions with hook and line gear are possible, relative to other gear types, such as fixed gear, hook and line gear appears to represent a low source serious injury or mortality risk to any large whale.

Small Cetaceans and Pinnipeds

Table 15 provides a list of small cetaceans and pinnipeds that occur in the affected environment of the Summer Flounder, Scup, and Black Sea Bass FMP. Reviewing the most recent 10 years of data provided in the NMFS marine mammal SARs (i.e., 2011-2020), of the small cetacean and pinniped species identified in Table 49, the Western North Atlantic (WNA) Northern and Southern Migratory stocks of bottlenose dolphins and small finned pilot whales are the only species that have been documented with hook and line gear (see NMFS Marine Mammal SARs for the Atlantic Region). As there is no systematic observer program for rod and reel (hook and line) fisheries, most data on hook and line interactions come from stranding data and as such, mean serious injury or mortality estimates are not available; however, a minimum known count of interactions with this gear type is provided in the NMFS Marine Mammal SARs for the Atlantic Region.

Between 2011-2020, there were a total of seven strandings that could be ascribed to the WNA Northern Migratory Coastal bottlenose dolphin stock for which hook and line gear entanglement or ingestion was documented; for the WNA Southern Migratory Coastal bottlenose dolphin stock, there were a total of nine cases. In most instances, it could not be determined if the death or serious injury to the dolphin was caused by hook and line gear. Over this timeframe, an interaction between hook and line gear and a small finned pilot whale was self-reported at sea; the animal was released alive, but considered seriously injured (Maze-Foley and Garrison 2016).

Based on this, although interactions with hook and line gear are possible, relative to other gear types, such as gillnet or trawl gear, hook and line gear appears to represent a low source serious injury or mortality to bottlenose dolphin stocks along the Atlantic coast and small finned pilot whales. For other species of small cetaceans or pinnipeds, hook and line gear does not appear to

[13] Any injury leading to a significant health decline (e.g., skin discoloration, lesions near the nares, fat loss, increased cyamid loads) is classified as a serious injury (SI) and will result in a SI value set at 1 (see NMFS NEFSC reference documents (baleen whale serious injury and mortality reports):
https://apps-nefsc.fisheries.noaa.gov/rcb/publications/center-reference-documents.html

be a source of serious injury or mortality.

Sea Turtles

Interactions between ESA listed species of sea turtles and hook and line gear have been documented (GAR Sea Turtle and Disentanglement Network (STDN), unpublished data; NMFS Sea Turtle Stranding and Salvage Network (STSSN), unpublished data; NMFS 2021a). Sea turtles are known to ingest baited hooks or have their appendages snagged by hooks, both of which have been recorded in the STSSN database. Although, it is assumed that most sea turtles hooked by recreational fishermen are released alive, deceased sea turtles with hooks in their digestive tract have been reported (NMFS 2021a). Some turtles will break free on their own and escape with embedded/ingested hooks and/or trailing line, while others may be cut free by fishermen and intentionally released (NMFS 2021a). These sea turtles will escape with embedded or swallowed hooks or trailing varying amounts of monofilament fishing line, which may cause post-release injury or death (e.g., constriction and strangulation of internal digestive organs; wrapped line results in limb amputation; NMFS 2021a). Given the above, hook and line gear does pose an interaction risk to sea turtles; however, the extent to which these interactions are impacting sea turtle populations is still under investigation, and therefore, no conclusions can currently be made on the impact of hook and line gear on the continued survival of sea turtle populations (NMFS 2021a).

Atlantic Sturgeon

Interactions between ESA-listed species of Atlantic sturgeon and hook and line gear have been documented, particularly in nearshore waters (ASMFC 2017). Interactions with hook and line gear have resulted in Atlantic sturgeon injury and mortality and therefore, poses an interaction risk to these species. However, the extent to which these interactions are impacting Atlantic sturgeon DPSs is still under investigation and therefore, no conclusions can currently be made on the impact of hook and line gear on the continued survival of Atlantic sturgeon DPSs (NMFS 2011; ASMFC 2017; NMFS 2021a).

Atlantic Salmon

Review of NMFS (2021a), as well as the most recent 10 years of data on observed or documented interactions between Atlantic salmon and fishing gear, show that there have been no observed/documented interactions between Atlantic salmon and hook and line gear (NMFS NEFSC observer/sea sampling database, unpublished data). Based on this information, hook and line gear is not expected to pose an interaction risk to any Atlantic salmon.

Giant Manta Ray

Review of NMFS (2021a), as well as the most recent 10 years of data on observed or documented interactions between giant manta rays and fishing gear, show that there have been no observed/documented interactions between giant manta rays and hook and line gear (NMFS NEFSC observer/sea sampling database, unpublished data). Based on this information, hook and line gear is not expected to pose an interaction risk to giant manta rays.

4.1.1.8 Commercial Fisheries Interactions

Based on VTR data, the commercial summer flounder and scup fisheries are primarily prosecuted with bottom trawl gear (about 99% of summer flounder landings and 96% of scup landings in

2022). Pots/traps are also used to a lesser extent in the commercial scup fishery (about 3% of commercial scup landings in 2022; Table 14).

Available information on gear interactions with a given species (or species group) is provided below. As noted above, the following sections are not a comprehensive review of all fishing gear types known to interact with a given species; emphasis is only being placed on the primary gear types used in the commercial summer flounder (i.e., bottom trawl) and/or scup fisheries (i.e., bottom trawl and/or pot/trap) and their associated interaction risk to the species under consideration.

Sea Turtles

Bottom Trawl Gear: Bottom trawl gear poses an injury and mortality risk to sea turtles (Sasso and Epperly 2006; NMFS NEFSC observer/sea sampling database; NMFS 2021a). Since 1989, the date of our earliest observer records for federally managed fisheries, sea turtle interactions with trawl gear have been observed in the GOM, Georges Bank, and/or the Mid-Atlantic; however, most of the observed interactions have been observed south of the GOM (Murray 2008; Murray 2015; Murray 2020; NMFS NEFSC observer/sea sampling database, unpublished data; NMFS 2021a; Warden 2011a,b). As few sea turtle interactions have been observed in the GOM, there is insufficient data available to conduct a robust model-based analysis and bycatch estimate of sea turtle interactions with trawl gear in this region. As a result, the bycatch estimates and discussion below are for trawl gear in the Mid-Atlantic and Georges Bank.

Murray (2015) estimated that from 2009-2013, the total average annual loggerhead interactions in bottom trawl gear in the Mid-Atlantic was 231 (CV=0.13, 95% CI=182-298; this equates to approximately 33 adult equivalents (Murray 2015). Most recently, Murray (2020) provided information on sea turtle interaction rates from 2014-2018 (the most recent five-year period that has been statistically analyzed for trawls). Interaction rates were stratified by region, latitude zone, season, and depth. The highest loggerhead interaction rate (0.43 turtles/day fished) was in waters south of 37º N during November to June in waters greater than 50 meters deep. The greatest number of estimated interactions occurred in the Mid-Atlantic region north of 39º N, during July to October in waters less than 50 meters deep. Within each stratum, interaction rates for non-loggerhead species were lower than rates for loggerheads (Murray 2020).

Based on Murray (2020)[14], from 2014-2018, 571 loggerhead (CV=0.29, 95% CI=318-997), 46 Kemp's ridley (CV=0.45, 95% CI=10-88), 20 leatherback (CV=0.72, 95% CI=0-50), and 16 green (CV=0.73, 95% CI=0-44) sea turtle interactions were estimated to have occurred in bottom trawl gear in the Mid-Atlantic region over the five-year period. On Georges Bank, 12 loggerheads (CV=0.70, 95% CI=0-31) and 6 leatherback (CV=1.0, 95% CI=0-20) interactions were estimated to have occurred from 2014-2018. An estimated 272 loggerhead, 23 Kemp's ridley, 13 leatherback, and 8 green sea turtle interactions resulted in mortality over this period (Murray 2020).

[14] Murray (2020) estimated interaction rates for each sea turtle species with stratified ratio estimators. This method differs from previous approaches (Murray 2008; Murray 2015; Warden 2011a,b), where rates were estimated using generalized additive models (GAMs). Ratio estimator results may be similar to those using GAM or generalized linear models (GLM) if ratio estimators are stratified based on the same explanatory variables in a GAM or GLM model (Murray 2007, Murray and Orphanides 2013, Orphanides 2010).

Pot/Trap Gear: Leatherback, loggerhead, green, and kemp's ridley sea turtles are at risk of interacting with trap/pot gear; however, review of data provided by the NEFSC Observer Program, VTR, and the NMFS Greater Atlantic Region (GAR) Sea Turtle Disentanglement Network (STDN), indicate that interactions between trap/pot gear and Kemp's ridley and green sea turtles are rare in the Greater Atlantic Region (NMFS 2021a). Sea turtle interactions with pot/trap gear are primarily associated with entanglement in vertical lines associated with this gear type; however, sea turtles can also become entangled in groundlines or surface system lines of pot/trap gear (Sea Turtle Disentanglement Network (STDN), unpublished data). 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; STDN, unpublished data). As a result, sea turtles can incur serious injuries and in some case, mortality immediately or at a later time.

Given few trap/pot trips have been observed by the NEFSC Observer Program over the last 10 years, and VTR reporting of incidences of interactions with sea turtles are limited, most reports of sea turtle entanglements in the vertical lines of trap/pot gear are documented by the NMFS Greater Atlantic Region (GAR; Maine through Virginia) Sea Turtle Disentanglement Network (STDN). Based on this, the STDN database, a component of the Sea Turtle Stranding and Salvage Network database, provides the most complete and best available dataset on sea turtle vertical line entanglements in the GAR. Confirmed and probable entanglement cases in the GAR STDN database from 2013-2022 were reviewed. Over this timeframe, 246 sea turtle entanglements in vertical line gear (known and unknown fishery) were documented. Of the 246 cases assessed, 233 involved leatherback sea turtles, 12 involved loggerhead sea turtles, and one involved a sea turtle of unknown species.

Atlantic Sturgeon

Bottom Trawl Gear:

Atlantic sturgeon are at risk of interacting with bottom trawl gear (ASMFC 2017; Boucher and Curti 2023; Miller and Shepard (2011); NMFS (2021a); NMFS observer data). The NEFSC Observer Program have observed Atlantic sturgeon bycaught in Federal commercial bottom trawl fisheries since 1989, with recent bottom trawl bycatch estimates provided by Boucher and Curti (2023). Both environmental (e.g., depth, seasonal temperature) and operational fishing practices can affect the risk of Atlantic sturgeon being bycaught in bottom trawl gear (NMFS 2021a). For instance, the highest incidence of Atlantic sturgeon bycatch in otter trawl fisheries have been associated with depths less than 30 meters (ASMFC 2007; ASMFC 2017).

Pot/Trap Gear: To date, there have been no documented pot/trap interactions with Atlantic sturgeon (NMFS NEFSC observer/sea sampling database, unpublished data; NMFS 2021a).

Atlantic Salmon

Bottom Trawl Gear: Atlantic salmon are at risk of interacting with bottom trawl (NEFSC observer/sea sampling database, unpublished data; Kocik *et al*. 2014; NMFS 2021a). Northeast Fisheries Observer Program (NEFOP) data from 1989-2019 show records of incidental bycatch of Atlantic salmon in seven of the 31 years, with a total of 15 individuals caught, nearly half of which

(seven) occurred in 1992 (NMFS NEFSC observer/sea sampling database, unpublished data).[15] Of the observed incidentally caught Atlantic salmon, ten were listed as "discarded," which is assumed to be a live discard (Kocik, pers comm.; February 11, 2013). Out of the 15 salmon bycaught, four were observed in bottom trawl gear, with the remainder observed in gillnet gear. Given the very low number of observed Atlantic salmon interactions in bottom trawl gear, interactions with this gear type is believed to be rare in the GAR.

Pot/Trap Gear: To date, there have been no documented pot/trap interactions with Atlantic salmon (NMFS NEFSC observer/sea sampling database, unpublished data; NMFS 2021a).

Giant Manta Ray

Bottom Trawl Gear: Giant manta rays are potentially susceptible to capture by bottom trawl gear based on records of their capture in fisheries using these gear types (NMFS NEFSC observer/sea sampling database, unpublished data; NMFS 2021a). Review of the most recent 10 years of NEFOP data showed that between 2013-2022, one giant manta ray and five unidentified *Mobulidae* were observed in bottom trawl gear (NMFS NEFSC observer/sea sampling database, unpublished data). All of the giant manta ray interactions in trawl gear recorded in the NEFOP database indicate the animals were encountered alive and released alive.

Pot/Trap Gear: To date, there have been no documented pot/trap interactions with giant manta rays (NMFS NEFSC observer/sea sampling database, unpublished data; NMFS 2021a).

Marine Mammals

Depending on species, marine mammals have been observed seriously injured or killed in bottom trawl and/or pot/trap 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). In the Northwest Atlantic, the 2023 LOF (88 FR 16899; March 21, 2023) categorizes commercial bottom trawl fisheries (Northeast or Mid-Atlantic), and the Atlantic mixed species trap/pot fishery (e.g., scup) as Category II fisheries .

Large Whales

Bottom Trawl Gear:

Documented interactions between large whales and bottom trawl gear are infrequent. Review of the most recent 10 years of information on large whale entanglement in fishing gear indicates that between 2012-2021, there has been one confirmed entanglement case between a humpback whale and a full trawl net.[16] In 2020, a live, humpback whale was anchored/entangled in fishing gear, later identified by NMFS as trawl net. The animal was disentangled by trained responders from

[15] There is no information available on the genetics of these bycaught Atlantic salmon, so it is not known how many of them were part of the GOM DPS. It is likely that some of these salmon, particularly those caught south of Cape Cod, may have originated from the stocking program in the Connecticut River. Those Atlantic salmon caught north of Cape Cod and/or in the Gulf of Maine are more likely to be from the GOM DPS.

[16] GAR Marine Animal Incident Database (unpublished data); NMFS Marine Mammal Stock Assessment Reports for the Atlantic Region; NMFS Atlantic Large Whale Entanglement Reports; MMPA List of Fisheries (LOF)

the Atlantic Large Whale Disentanglement Network. Given the disentanglement efforts, gear was removed and recovered from the animal, resulting in the whale being released alive, with non-serious injuries. Additional information on this incident can be found in the 2020 Atlantic Large Whale Entanglement Report and Henry et al. 2023.

Pot/Trap Gear:
Large whale interactions (entanglements) with fishing gear have been observed and documented in the waters of the Northwest Atlantic.[17] Information available on all interactions (e.g., entanglement, vessel strike, unknown cause) with large whales comes from reports documented in the GAR Marine Animal Incident Database (unpublished data). The level of information collected for each case varies, but may include details on the animal, gear, and any other information about the interaction (e.g., location, description, etc.). Each case is evaluated using defined criteria to assign the case to an injury/information category using all available information and scientific judgement. In this way, the injury severity and cause of injury/death for the event is evaluated, with serious injury and mortality determinations issued by the NEFSC.[18]

Based on the best available information, the greatest entanglement risk to large whales is posed by fixed gear used in trap/pot or sink gillnet fisheries (Angliss and Demaster 1998; Cassoff et al. 2011; Cole and Henry 2013; Kenney and Hartley 2001; Knowlton and Kraus 2001; Hartley et al. 2003; Johnson et al. 2005;Whittingham et al. 2005a,b; Knowlton et al. 2012; NMFS 2021a,b; Hamilton and Kraus 2019; Henry et al. 2014; Henry et al. 2015; Henry et al. 2016; Henry et al. 2017; Henry et al. 2019; Henry et al. 2020; Henry et al. 2021; Henry 2022; Henry et al. 2022; Henry et al. 2023; Sharp et al. 2019; Pace et al. 2021; see NMFS Marine Mammal SARs for the Atlantic Region). Specifically, while foraging or transiting, large whales are at risk of becoming entangled in vertical endlines, buoy lines, or groundlines of gillnet and pot/trap gear, as well as the net panels of gillnet gear that rise into the water column (Baumgartner et al. 2017; Cassoff et al. 2011; Cole and Henry 2013; Hamilton and Kraus 2019; Hartley et al. 2003; Henry et al. 2014; Henry et al. 2015; Henry et al. 2016; Henry et al. 2017; Henry et al. 2019; Henry et al. 2020; Henry et al. 2021; Henry et al. 2022; Henry et al. 2023; Johnson et al. 2005; Kenney and Hartley 2001; Knowlton and Kraus 2001;Knowlton et al. 2012; NMFS 2021a,b; Whittingham et al. 2005a,b; see NMFS Marine Mammal SARs for the Atlantic Region).[19] Large whale interactions (entanglements) with these features of trap/pot and/or sink gillnet gear often result in the serious injury or mortality to the whale (Angliss and Demaster 1998; Cassoff et al. 2011; Cole and Henry 2013; Henry et al. 2014, Henry et al. 2015, Henry et al. 2016; Henry et al. 2017; Henry et al. 2019; Henry et al. 2020; Henry et al. 2021; Henry 2022; Henry et al. 2022; Henry et al. 2023; Knowlton

[17] **NMFS Atlantic Large Whale Entanglement Reports**: For years prior to 2014, contact David Morin, Large Whale Disentanglement Coordinator, David.Morin@NOAA.gov; GAR Marine Animal Incident Database (unpublished data); **NMFS Marine Mammal Stock Assessment Reports for the Atlantic Region**; NMFS NEFSC Baleen Whale Serious Injury and Morality Determinations **Reference Documents,** Publications, **or Technical Memoranda**; **MMPA List of Fisheries; NMFS 2021a,b.**

[18] NMFS NEFSC Baleen Whale Serious Injury and Morality Determinations **Reference Documents,** Publications, **or Technical Memoranda**

[19] Through the ALWTRP, regulations have been implemented to reduce the risk of entanglement in in vertical endlines, buoy lines, or groundlines of gillnet and pot/trap gear, as well as the net panels of gillnet gear. ALWTRP regulations currently in effect are summarized online.

and Kraus 2001, Knowlton et al. 2012; Moore and Van der Hoop 2012; NMFS 2014; NMFS 2021a,b; Pettis et al. 2021; Sharp et al. 2019; van der Hoop et al. 2016; van der Hoop et al. 2017). In fact, review of Atlantic coast-wide causes of large whale human interaction incidents between 2010 and 2019 shows that entanglement is the highest cause of mortality and serious injury for North Atlantic right, humpback, fin, and minke whales in those instances when cause of death could be determined (NMFS 2021b). As many entanglements, and therefore, serious injury or mortality events, go unobserved, and because the gear type, fishery, and/or country of origin for reported entanglement events are often not traceable, the rate of large whale entanglement, and thus, rate of serious injury and mortality due to entanglement, are likely underestimated (Hamilton et al. 2018; Hamilton et al. 2019; Knowlton et al. 2012; NMFS 2021a,b; Pace et al. 2017; Robbins 2009).

As noted above, pursuant to the MMPA, NMFS publishes a LOF annually, classifying U.S. commercial fisheries into one of three categories based on the relative frequency of incidental serious injurious and mortalities of marine mammals in each fishery. Large whales, in particular, humpback, fin, minke, and North Atlantic right whales, are known to interact with Category I and II fisheries in the Northwest Atlantic Ocean. As fin, and North Atlantic right whales are listed as endangered under the ESA, these species are considered strategic stocks under the MMPA. Section 118(f)(1) of the MMPA requires the preparation and implementation of a Take Reduction Plan for any strategic marine mammal stock that interacts with Category I or II fisheries. In response to its obligations under the MMPA, in 1996, NMFS established the Atlantic Large Whale Take Reduction Team (ALWTRT) to develop a plan (Atlantic Large Whale Take Reduction Plan (ALWTRP)) to reduce serious injury to, or mortality of large whales, specifically, humpback, fin, and North Atlantic right whales, due to incidental entanglement in U.S. commercial fishing gear.[20] In 1997, the ALWTRP was implemented; however, since 1997, it has been modified as NMFS and the ALWTRT learn more about why whales become entangled and how fishing practices might be modified to reduce the risk of entanglement. In 2021, adjustments to Plan were implemented and in 2022, NOAA fisheries issued a notice of its intent to begin a rulemaking process to amend the ALWTRP to further reduce the risk of mortalities and serious injuries of NARW and other large whales caused by incidental entanglement in commercial trap/pot and gillnet fisheries along the U.S. East Coast. These recent ALWTRP actions are summarized online.

The ALWTRP consists of regulatory (e.g., universal gear requirements, modifications, and requirements; area-and season- specific gear modification requirements and restrictions; time/area closures) and non-regulatory measures (e.g., gear research and development, disentanglement, education and outreach) that, in combination, seek to assist in the recovery of North Atlantic right, humpback, and fin whales by addressing and mitigating the risk of entanglement in gear employed by commercial fisheries, specifically trap/pot and gillnet fisheries. The ALWTRP recognizes trap/pot and gillnet Management Areas in Northeast, Mid-Atlantic, and Southeast regions of the U.S, and identifies gear modification requirements and restrictions for Category I and II gillnet

[20] The measures identified in the ALWTRP are also beneficial to the survival of the minke whale, which are also incidentally taken in commercial fishing gear.

and trap/pot fisheries in these regions; these Category I and II fisheries must comply with all regulations of the Plan.[21]. For further details on the Plan, refer to the ALWTRP.

Small Cetaceans and Pinnipeds

Bottom Trawl Gear:

Small cetaceans and pinnipeds are vulnerable to interactions with bottom trawl gear.[22] Reviewing marine mammal stock assessment and serious injury reports that cover the most recent ten years of data (i.e., 2011-2020), as well as the MMPA LOF's, Table 16 has a list of species that have been observed (incidentally) seriously injured and/or killed by MMPA LOF Category II (occasional interactions) bottom trawl fisheries that operate in the affected environment of the Summer Flounder, Scup, and Black Sea Bass FMP. Of the species in Table 16, short-beaked common dolphins, Risso's dolphins, Atlantic white-sided dolphins, and gray seals are the most frequently observed bycaught marine mammal species in bottom trawl gear in the GAR, followed by long-finned pilot whales, bottlenose dolphin (offshore stock), harbor porpoise, harbor seals, and harp seals (Chavez-Rosales *et al.* 2017; Lyssikatos 2015; Lyssikatos *et al.* 2020; 2021).

Table 16. Small cetacean and pinniped species observed seriously injured and/or killed by Category bottom trawl fisheries in the affected environment of the Summer Flounder, Scup, and Black Sea Bass FMP.

Fishery	Category	Species Observed or reported Injured/Killed
Northeast Bottom Trawl	II	Harp seal
		Harbor seal
		Gray seal
		Long-finned pilot whales
		Short-beaked common dolphin
		Atlantic white-sided dolphin
		Harbor porpoise
		Bottlenose dolphin (offshore)
		Risso's dolphin
Mid-Atlantic Bottom Trawl	II	White-sided dolphin
		Short-beaked common dolphin
		Risso's dolphin
		Bottlenose dolphin (offshore)
		Gray seal
		Harbor seal

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

[22] More information on small cetacean and pinniped interactions is in: NMFS NEFSC marine mammal serious injury and mortality Reference Documents, Publications, or Technical Memoranda; NMFS Marine Mammal SARs for the Atlantic Region; MMPA LOF.

Source: NMFS Marine Mammal SARs for the Atlantic Region; MMPA 2017-2023 LOFs.

In 2006, the Atlantic Trawl Gear Take Reduction Team was convened to address the incidental mortality and serious injury of long-finned pilot whales, short-finned pilot whales, common dolphins, and white-sided dolphins 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 Team are classified as a "strategic stock," nor do they currently interact with a Category I fishery, a take reduction plan was not necessary. [23]

In lieu of a take reduction plan, the Team agreed to develop an Atlantic Trawl Gear Take Reduction Strategy. The Strategy identifies informational and research tasks, as well as education and outreach needs the Team believes are necessary, to decrease mortalities and serious injuries of marine mammals to insignificant levels approaching zero. The Strategy 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 on the Strategy, please visit: http://www.greateratlantic.fisheries.noaa.gov/Protected/mmp/atgtrp/

Pot/Trap Gear: Observer coverage has been limited for fisheries prosecuted with trap/pot gear. 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. Based on stranding data provided in the NMFS Marine Mammal SARs for the Atlantic Region, a minimum known count of interactions with pot/trap gear type is provided and summarized below. However, because not all human caused serious injuries or mortalities to marine mammals are discovered, reported, or show signs of entanglement, stranding data alone underestimates the extent of human-related mortality and serious injury. 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. As a result, the conclusions below should be taken with these considerations in mind, and with an understanding that interactions may occur more frequently than what we are able to detect at this time.

Table 15 provides the list of small cetacean and pinniped species that may occur Summer Flounder, Scup, and Black Sea Bass FMP. Reviewing the most recent 10 years of data provided in the NMFS Marine Mammal SARs for the Atlantic Region (i.e., 2011-2020), of the small cetacean and pinniped species identified in Table 15, the WNA Northern and Southern Migratory stocks of bottlenose dolphins are the only species in which entanglement in trap/pot gear has been documented. Between 2011-2020, stranding data documented a total of four cases of bottlenose dolphins entangled in trap/pot gear that could be ascribed to the WNA Northern Migratory Coastal stock; for the WNA Southern Migratory Coastal, there were a total of 13 cases. All cases over this timeframe resulted in the serious injury or mortality of the animal. Although the trap/pot gear involved in most of the cases were either unknown or identified to the Atlantic blue crab trap/pot fishery, given the general similarities in trap/pot gear composition (e.g., traps and vertical buoy lines); there is the potential for interactions to occur between bottlenose dolphins and pot/trap gear

[23] 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.

used in the scup fishery. However, given the best available information provided above, interactions with trap/pot gear, resulting in the serious injury or mortality to small cetaceans or pinnipeds are likely to be infrequent to unlikely.

6.4. Human Communities

The following sections summarize the commercial and recreational fisheries for summer flounder and scup.

6.4.1 Summer Flounder Fisheries

Overall Fishery Performance

Table 17 shows summer flounder total catch and catch limits from 2014 through 2023, as well as the overfishing limit (OFL) from which the ABC is derived. The ABC is set less than or equal to the OFL to account for scientific uncertainty. The OFL for summer flounder has not been exceeded in the last ten years (based on total dead catch estimates that use the prior time series of MRIP through 2018, and corresponding OFLs based on assessments that did not account for the revised MRIP data). The summer flounder ABC has not been exceeded since 2017 (Table 17).

Table 17: Total summer flounder dead catch (i.e., commercial and recreational landings and dead discards) compared to the OFL and ABC. All values are in millions of pounds. Total dead catch calculations use "old" MRIP data through 2018, and "new" MRIP data for 2019-2022. Catch estimates for 2020-2022 reflect estimates from the Catch Accounting and Monitoring System (CAMS) for the commercial fishery.

Year	Total dead catch[a]	OFL	OFL overage/underage	ABC	ABC overage/underage
2014	22.27	26.76	-17%	21.94	+2%
2015	18.22	27.06	-33%	22.57	-19%
2016	17.16	18.06	-5%	16.26	+6%
2017	12.00	16.76	-28%	11.30	+6%
2018	12.65	18.69	-32%	13.23	-4%
2019	21.63	30.00	-28%	25.03	-14%
2020	24.60	30.94	-21%	25.03	-2%
2021	21.82	31.67	-31%	27.11	-20%
2022	25.61	36.28	-29%	33.12	-23%
2023	--	34.98	--	33.12	--

[a] See Table 18 and Table 10 for the commercial and recreational data contributing to the total catch estimates.

Figure 10 shows commercial and recreational landings and dead discards from 1993 through 2022. Total (commercial and recreational combined) summer flounder catch during this time period peaked in 2004, generally declining to a low in 2018, with a slight increase since then.

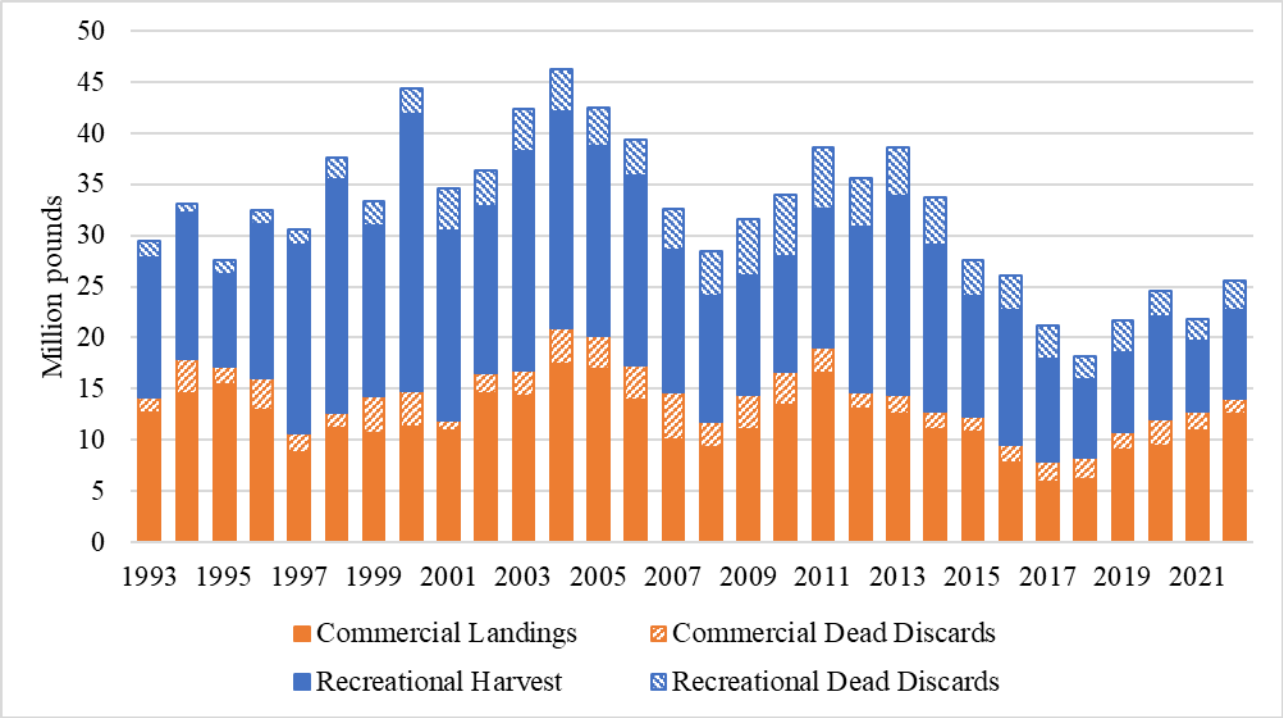


Figure 10: Commercial and recreational summer flounder landings and dead discards in millions of pounds, Maine-North Carolina, 1993-2022, based on federal dealer data, MRIP data, and NEFSC provided discard data.

Commercial Summer Flounder Fishery

Commercial landings of summer flounder peaked in 1984 at 37.77 million pounds and reached a low of 5.87 million pounds in 2017 (Figure 10). In 2022, dealer data indicate that commercial fishermen from Maine through North Carolina landed 12.47 million pounds of summer flounder, about 82% of the commercial quota (15.53 million pounds). Commercial dead catch has not exceeded the commercial ACL since 2018. Where commercial ACL overages have occurred, they are generally caused by higher-than-expected dead discards, as commercial fishery landings for summer flounder are typically well controlled to the commercial quota (Table 18).

Table 18: Summer flounder commercial landings, dead discards, and dead catch compared to the commercial quota and commercial ACL, 2014-2023. All values are in millions of pounds.

Year	Com. landings[a]	Com. quota	Quota overage/ underage	Com. dead discards[a]	Com. dead catch[a]	ACL	ACL overage/ underage
2014	11.00	10.51[b]	5%	1.83	12.83	12.87	0%
2015	10.71	11.07	-3%	1.55	12.26	13.34	-8%
2016	7.80	8.12	-4%	1.7	9.5	9.43	1%
2017	5.87	5.66	4%	2.0	7.87	6.57	20%
2018	6.17	6.63	-7%	2.16	8.33	7.70	8%
2019	9.06	10.98	-17%	1.73	10.79	13.53	-20%
2020	9.11	11.53	-21%	2.56	11.67	13.53	-14%
2021	10.56	12.49	-15%	1.92	12.48	14.63	-15%
2022	12.47	15.53	-20%	1.5	13.97	18.48	-24%
2023	--	15.27	--	--	--	18.21	--

[a] Commercial landings based on NMFS dealer data; commercial dead discards from NEFSC 2021 and M. Terceiro, personal communication, June 2023.

[b] The 2014 commercial quota was adjusted for Research Set Aside (RSA). Quotas for 2015-2023 do not reflect an adjustment for RSA due to the suspension of the program in 2014. Commercial quotas also reflect deductions from prior year landings overages and discard-based Accountability Measures.

The commercial quota is divided among the states based on the allocation percentages specified in the FMP. Each state sets measures to achieve their state-specific commercial quotas. Two or more states may transfer or combine their summer flounder commercial quota under mutual agreement and with the approval of the NMFS Regional Administrator. The commercial allocations to the states were modified via Amendment 21, which became effective on January 1, 2021. This allocation system specifies that coastwide commercial quota up to 9.55 million pounds will be distributed according to the baseline allocations specified in Table 19 below (based on the pre-2021 state allocation percentages). When the coastwide quota exceeds 9.55 million pounds, the first 9.55 million pounds will be allocated according to the baseline percentages, but the *additional* quota amount beyond this trigger will be distributed by equal shares to all states except Maine, Delaware, and New Hampshire, which would split 1% of the additional quota (Table 19). The total percentage allocated annually to each state is dependent on how much additional quota beyond 9.55 million pounds, if any, is available in any given year. This allocation system is designed to provide for more equitable distribution of quota when stock biomass is higher, while also considering the historic importance of the fishery to each state.

Table 19: Allocation of summer flounder commercial quota to the states.

State	Total state commercial quota allocation = baseline quota allocation + additional quota allocation	
	Allocation of baseline quota ≤9.55 mil lb	Allocation of additional quota beyond 9.55 mil lb
ME	0.04756%	0.333%
NH	0.00046%	0.333%
MA	6.82046%	12.375%
RI	15.68298%	12.375%
CT	2.25708%	12.375%
NY	7.64699%	12.375%
NJ	16.72499%	12.375%
DE	0.01779%	0.333%
MD	2.03910%	12.375%
VA	21.31676%	12.375%
NC	27.44584%	12.375%
Total	100%	100%

For 1994 through 2022, NMFS dealer data indicate that summer flounder total ex-vessel revenue from Maine to North Carolina ranged from a low of $24.84 million in 1996 to a high of $40.90 million in 2005 (values adjusted to 2022 dollars to account for inflation). The mean price per pound ranged from a low of $2.11 in 2002 to a high of $4.98 in 2017 (both values in 2022 dollars). In 2022, 12.46 million pounds of summer flounder were landed generating $30.45 million in total ex-vessel revenue (an average of $2.44 per pound; Figure 11).

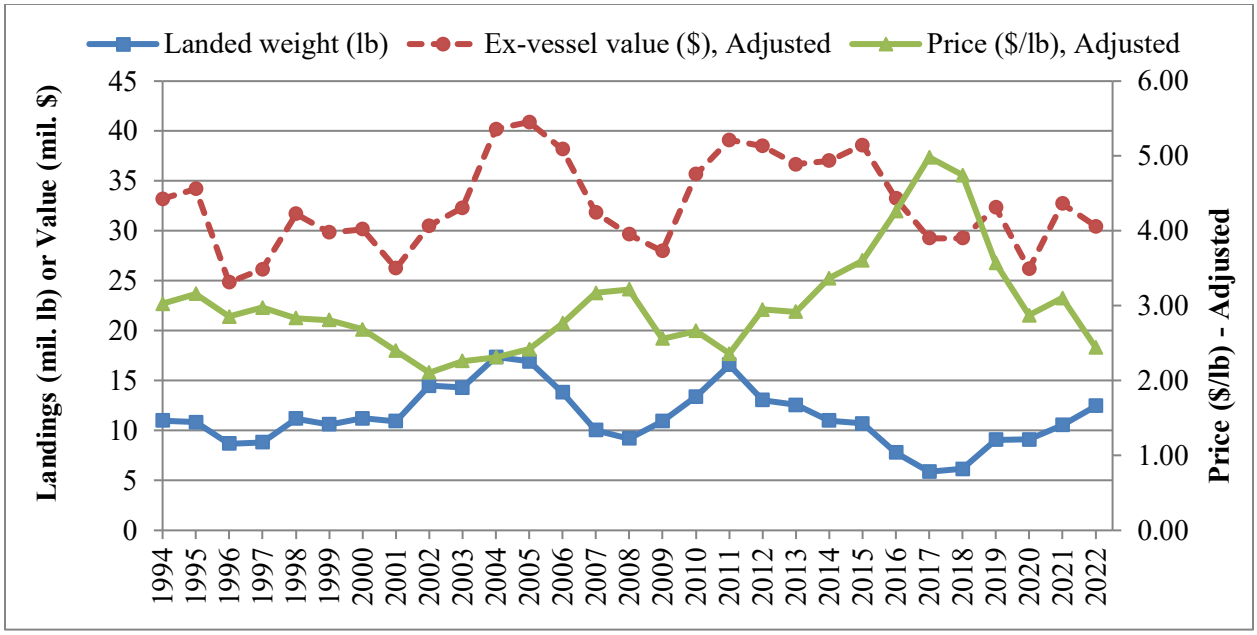


Figure 11: Landings, ex-vessel value, and price per pound for summer flounder, Maine through North Carolina, 1994-2022. Ex-vessel value and price are adjusted to real 2022 dollars using the Gross Domestic Product Price Deflator (GDPDEF).

VTR data indicate that 99% of summer flounder landings in 2021 were taken by bottom otter trawls. Current regulations 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).

According to federal VTR data, statistical areas 537 and 616 were responsible for the highest percentage of commercial summer flounder catch in 2022 (29% and 22% respectively; Table 20; Figure 12). Statistical areas 613 and 539 had the highest number of trips that caught summer flounder (1,653 and 1,626 trips, respectively; Table 20).

Over 167 federally permitted dealers from Maine through North Carolina bought summer flounder in 2022. More dealers from New York bought summer flounder than any other state (Table 21). All dealers combined bought approximately $30.45 million worth of summer flounder in 2022.

Since 1993, a moratorium permit has been required to fish commercially for summer flounder in federal waters. In 2022, 718 vessels held such permits.

Federal dealer data indicate that at least 100,000 pounds of summer flounder were landed by commercial fishermen in 20 ports in 8 states in 2022. These ports accounted for 93% of all 2022 commercial summer flounder landings. Point Judith, RI and Pt. Pleasant, NJ were the leading ports in 2022 in pounds of summer flounder landed, while Point Judith, RI was the leading port in number of vessels landing summer flounder (Table 22). Detailed community profiles developed by the Northeast Fisheries Science Center's Social Science Branch can be found at www.mafmc.org/communities/.

Table 20: Statistical areas that accounted for at least 5% of the total summer flounder catch in 2022, with associated number of trips, from federal VTR data. Federal VTR data do not capture landings by vessels only permitted to fish in state waters.

Statistical Area	Percent of 2022 Commercial Summer Flounder Catch	Number of Trips
537	29%	1,461
616	22%	508
613	14%	1,653
612	7%	758
539	6%	1,626
615	5%	393
622	5%	134

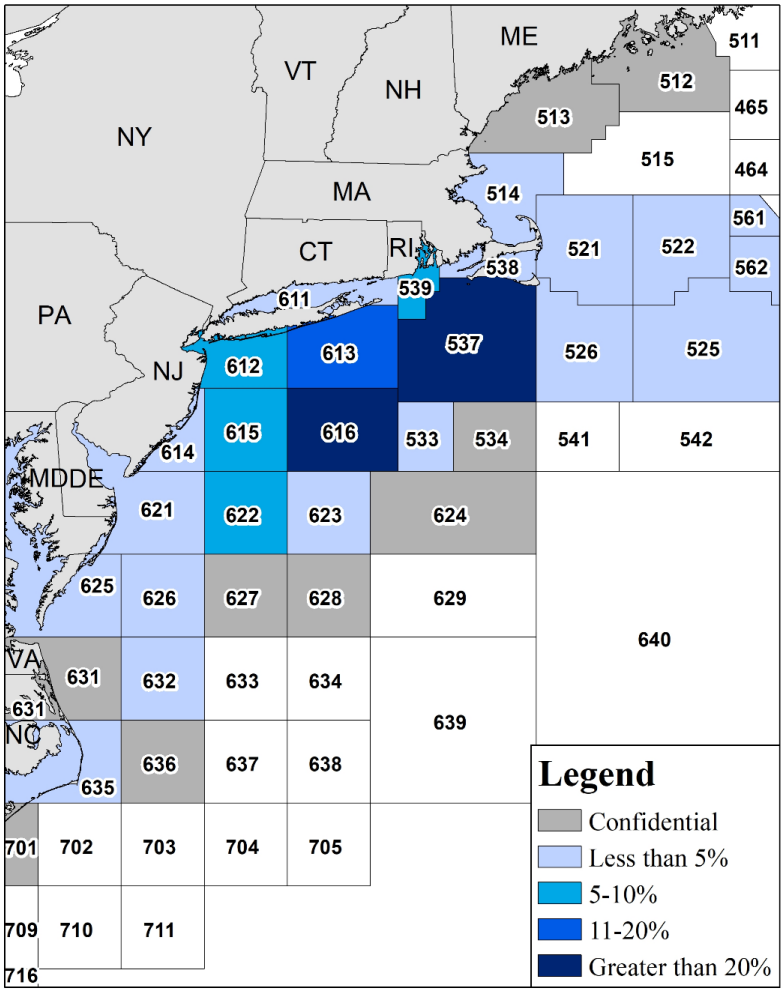


Figure 12: Proportion of commercial summer flounder catch (all vessel reported landings and discards) by NMFS statistical area in 2022 based on federal VTR data. Statistical areas marked "confidential" are associated with fewer than three vessels and/or dealers. The amount of catch not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown.

Table 21: Number of dealers per state which reported purchases of summer flounder in 2022. C = Confidential.

State	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC
# of Dealers	0	30	24	14	46	26	C	3	11	13

Table 22: Ports reporting at least 100,000 pounds of commercial summer flounder landings in 2022, based on federal dealer data.

Port	Commercial summer flounder landings (lb)	% of total	Number of vessels
POINT JUDITH, RI	1,921,868	15	107
PT. PLEASANT, NJ	1,475,985	12	39
BEAUFORT, NC	1,285,732	10	28
NEWPORT NEWS, VA	1,133,724	9	32
HAMPTON, VA	854,395	7	34
MONTAUK, NY	600,918	5	52
CAPE MAY, NJ	553,444	4	34
ENGELHARD, NC	535,408	4	6
NEW BEDFORD, MA	529,055	4	54
STONINGTON, CT	446,181	4	17
HAMPTON BAYS, NY	388,412	3	25
OCEAN CITY, MD	336,852	3	15
EAST HAVEN, CT	300,663	2	7
SHINNECOCK, NY	222,777	2	13
BELFORD, NJ	218,201	2	13
WANCHESE, NC	206,655	2	5
ORIENTAL, NC	202,688	2	4
CHINCOTEAGUE, VA	141,968	1	8
BARNEGAT LIGHT, NJ	127,249	1	13
WOODS HOLE, MA	102,589	1	8

Recreational Summer Flounder Fishery

There is a significant recreational fishery for summer flounder, primarily in state waters when the fish migrate inshore during the warm summer months. The Council and Commission determine annually whether to manage the recreational fishery under coastwide measures or conservation equivalency. Under conservation equivalency, state- or region- specific measures are developed through the Commission's management process and submitted to NMFS. The combined state or regional measures must achieve the same level of harvest as a set of coastwide measures developed to adhere to the overall RHL. If NMFS considers the combination of the state- or region- specific measures to be "equivalent" to the coastwide measures, they may then waive regulations in federal waters. Anglers fishing in federal waters are then subject to the measures of the state in which they land summer flounder.

MRIP estimates indicate that recreational summer flounder harvest peaked in 1983, with 25.78 million fish landed, totaling 36.74 million pounds. Recreational harvest in numbers of fish reached a low in 2021 with 2.32 million fish landed (6.82 million pounds), while recreational harvest in pounds was lowest in 1989 at 5.66 million pounds (3.10 million fish). Recreational catch (harvest plus live and dead discards) peaked in 2010 with 58.89 million fish caught, and was lowest in 1989 with 5.06 million fish caught (Figure 13).

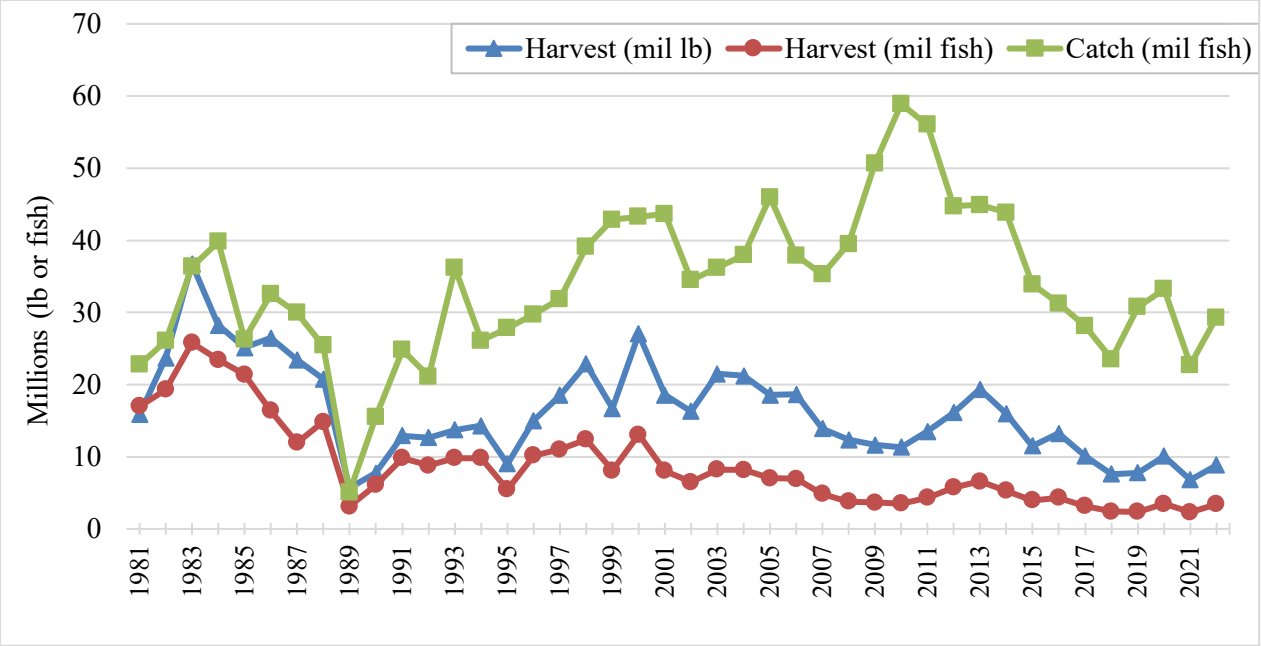


Figure 13: MRIP estimates of recreational summer flounder harvest in numbers of fish and pounds and catch in numbers of fish, ME - NC, 1981-2022. All values are in new MRIP currency.

Table 23: Summer flounder recreational landings, dead discards, and dead catch compared to the RHL, projected recreational dead discards, and recreational ACL, 2014-2023. Information is provided in the "old" MRIP units for 2014-2018, and in the "new" MRIP units for 2019-2022. For summer flounder, ACLs and RHLs did not account for the revised MRIP data until 2019. Therefore, overage/underage evaluations must be based in the old MRIP units through 2018 and the new MRIP units starting in 2019. All values are in millions of pounds.

Year	Version of MRIP data used	Rec. harvest[a]	RHL	RHL over/ under	Rec. dead disc.[a]	Rec. dead catch	ACL	ACL over/ under
2014	Old MRIP (pre-revision)	*7.39*	7.01[b]	*5%*	*2.05*	9.44	9.07	*4%*
2015		*4.72*	7.38	*-36%*	*1.24*	5.96	9.44	*-37%*
2016		*6.18*	5.42	*14%*	*1.48*	7.66	6.84	*12%*
2017		*3.19*	3.77	*-15%*	*0.94*	4.13	4.72	*-13%*
2018		*3.35*	4.42	*-24%*	*0.97*	4.32	5.53	*-22%*
2019	New MRIP (post-revision)	7.80	7.69	1%	3.04	10.84	11.51	-6%
2020[c]		10.07	7.69	31%	2.52	12.60	11.51	9%
2021		6.82	8.32	-18%	2.20	9.02	12.48	-28%
2022		8.83	10.36	-17%	2.95	11.58	14.64	-21%
2023		--	10.62	--	--	--	14.9	--

[a] Recreational harvest data from MRIP; recreational dead discards from NEFSC 2021 and M. Terceiro, personal communication, June 2023.

[b] For 2014, the RHL was adjusted for Research Set Aside (RSA). RHLs for 2015-2023 do not reflect an adjustment for RSA due to the suspension of the program in 2014.

[c] Recreational harvest estimates for 2020 were impacted by temporary suspension of shoreside intercept surveys due to COVID-19. NMFS used imputation methods to fill gaps in 2020 catch data with data collected in 2018 and 2019. For summer flounder, the 2020 harvest estimate relied on approximately 19% imputed data. For more information on imputation methods see: https://www.mafmc.org/s/1-2020-Marine-Recreational-Catch-Estimates-QA-52121.pdf.]

For-hire vessels carrying passengers in federal waters must obtain a federal party/charter permit. In 2022, 961 vessels held summer flounder federal party/charter permits. Many of these vessels also hold recreational permits for scup and black sea bass.

On average, an estimated 77% of the recreational landings (in numbers of fish) occurred in state waters over the past ten years (Table 24). Most summer flounder are typically landed in New York and New Jersey (Table 25).

About 81% of recreational summer flounder harvest from 2020-2022 was from anglers who fished on private or rental boats. About 4% was from party or charter boats, and about 15% was from anglers fishing from shore (Table 26).

The top non-target species in the recreational fishery were identified by a species guild approach that identifies species with the strongest associations on recreational trips from 2017-2021 (2021 MRIP data used here were preliminary and excluded wave 6). Sea robins, black sea bass, scup, smooth dogfish, and bluefish were highly correlated with summer flounder in the recreational fishery (J. Brust, personal communication March 2022).

Table 24: Estimated percentage of summer flounder recreational landings (in numbers of fish) from state vs. federal waters, Maine through North Carolina, 2013-2022.

Year	State ≤ 3 mi	EEZ > 3 mi
2013	77%	23%
2014	78%	22%
2015	82%	18%
2016	79%	21%
2017	80%	20%
2018	83%	17%
2019	79%	21%
2020	61%	39%
2021	66%	34%
2022	80%	20%
Avg. 2013- 2022	**77%**	**23%**
Avg. 2020 - 2022	**69%**	**31%**

Table 25: State contribution (as a percentage) to total recreational landings of summer flounder (in numbers of fish), from Maine through North Carolina, 2020-2022.

State	2020	2021	2022	2020-2022 average
Maine	0%	0%	0%	0%
New Hampshire	0%	0%	0%	0%
Massachusetts	2%	2%	3%	2%
Rhode Island	3%	2%	3%	3%
Connecticut	4%	5%	5%	5%
New York	21%	15%	26%	21%
New Jersey	57%	58%	47%	54%
Delaware	6%	4%	3%	4%
Maryland	2%	3%	3%	3%
Virginia	4%	10%	11%	8%
North Carolina	1%	1%	0%	1%
Total	100%	100%	100%	100%

Table 26: The percent of summer flounder landings (in number of fish) by recreational fishing mode, Maine through North Carolina, 2013-2022.

Year	Shore	Party/Charter	Private/Rental	Total number of fish landed (millions)
2013	11%	4%	85%	6.60
2014	7%	8%	84%	5.36
2015	7%	7%	86%	4.03
2016	8%	4%	89%	4.30
2017	13%	4%	83%	3.17
2018	11%	6%	84%	2.41
2019	10%	3%	87%	2.38
2020	18%	2%	80%	3.49
2021	11%	7%	82%	2.32
2022	15%	4%	81%	3.38
% of Total, 2013-2022	**11%**	**5%**	**84%**	**--**
% of Total, 2020-2022	**15%**	**4%**	**81%**	**--**

6.4.2 Scup Fisheries

Overall Fishery Performance

Table 27 shows scup total catch and catch limits from 2014 through 2023, as well as the overfishing limit (OFL) from which the ABC is derived. The ABC is set less than or equal to the OFL to account for scientific uncertainty. The OFL for scup was likely exceeded in 2022 (based on preliminary 2022 total catch estimates). The scup ABC was exceeded in 2017 and 2021, and likely again in 2022 (based on preliminary 2022 data; Table 27).

Table 27: Total scup catch (i.e., commercial and recreational landings and dead discards) compared to the OFL and ABC. All values are in millions of pounds. Total catch calculations use "old" MRIP data through 2019, and "new" MRIP data for 2020-2022.

Year	Total catch[a]	OFL	OFL overage/underage	ABC	ABC overage/underage
2014	23.10	47.8	-52%	35.99	-36%
2015	25.85	47.8	-46%	33.77	-23%
2016	26.91	35.8	-25%	31.11	-14%
2017	32.20	32.09	0%	28.4	13%
2018	26.84	45.05	-40%	39.14	-31%
2019	26.55	41.03	-35%	36.43	-27%
2020	33.50	41.17	-19%	35.77	-6%
2021	35.35	35.3	0%	34.81	2%
2022	35.92	32.56	10%	32.11	12%

2023	--	30.09	--	29.67	--

[a] See Table 28 and Table 34 for the commercial and recreational data contributing to the total catch estimates.

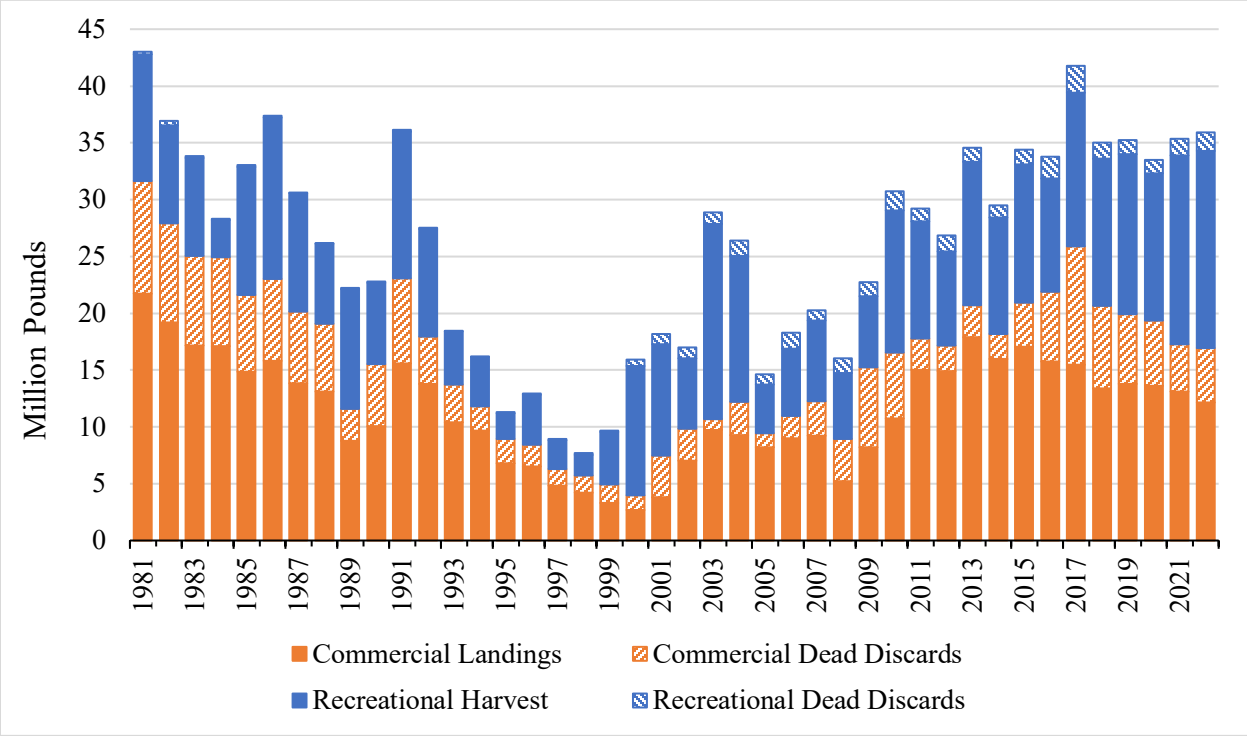


Figure 14: Shows commercial and recreational landings and dead discards from 1993 through 2022. Total (commercial and recreational combined) scup catch during this time period peaked in 1981 and 2017, and in recent years has remained relatively constant. Source: unpublished CAMS data.

Commercial Fishery

Commercial scup landings peaked in 1981 at 21.73 million pounds and reached a low of 2.66 million pounds in 2000 (Figure 14). In 2022, commercial fishermen landed 12.12 million pounds of scup, about 59% of the commercial quota. Commercial catch has not exceeded the commercial ACL since 2017. Where commercial ACL overages have occurred, they are generally caused by higher-than-expected dead discards, as commercial fishery landings for scup are typically well controlled to the commercial quota (Table 28).

Table 28: Scup commercial landings, dead discards, and catch compared to the commercial quota and commercial ACL, 2014-2023. All values are in millions of pounds.

Year	Com. landings[a]	Com. quota	Quota overage/ underage	Com. dead discards[a]	Com. catch[a]	ACL	ACL overage/ underage
2014	15.96	21.95[b]	-27%	2.16	18.12	28.07	-35%
2015	17.03	21.23	-20%	3.79	20.82	26.35	-21%
2016	15.76	20.47	-23%	6.12	21.88	24.26	-10%
2017	15.45	18.38	-16%	10.43	25.88	22.15	+17%
2018	13.37	23.98	-44%	7.26	20.63	30.53	-32%
2019	13.78	23.98	-43%	6.13	19.91	28.42	-30%
2020	13.58	22.23	-39%	5.76	19.34	27.9	-31%
2021	12.93	20.5	-37%	4.18	17.11	27.15	-37%
2022	12.12	20.38	-41%	4.79	16.91	25.05	-33%
2023	--	14.01	--	--	--	19.29	--

[a] Commercial landings based on NMFS dealer data; commercial dead discards from NEFSC 2021 and M. Terceiro, personal communication, June 2023.

[b] The 2014 commercial quota was adjusted for Research Set Aside (RSA). Quotas for 2015-2023 do not reflect an adjustment for RSA due to the suspension of the program in 2014. Commercial quotas also reflect deductions from prior year landings overages and discard-based Accountability Measures.

In 2022, about 4.79 million pounds of scup were discarded in commercial fisheries, representing a 12% increase from 2021. Commercial discards increased from 2014-2017, peaking at about 10.42 million pounds in 2017. This was the highest number of discards since 1981 and was likely attributed to the large 2015-year class, which was the largest year class since 1984. In 2017, these scup were very abundant, but mostly too small to be landed in the commercial fishery due to the commercial minimum fish size of 9 inches total length. Since 2017, commercial discards have decreased but have remained higher than years prior to 2015 (Figure 14; Table 28).

The commercial scup fishery operates year-round, taking place mostly in federal waters during the winter 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. 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. The dates of the summer and winter II periods were modified in 2018 (Table 29). Both winter periods are managed under a coastwide quota while the summer period quota is divided among states according to the allocation percentages outlined in the Commission's FMP (Table 30).

Table 29: Dates, allocations, and possession limits for the commercial scup quota periods. Winter period possession limits apply in both state and federal waters.

Quota Period	Dates	Commercial 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[a]	38.95%	State-specific
Winter II	October 1 – December 31[a]	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.

[a] Prior to 2018, the summer period was May 1 - October 31 and the winter II period was November 1 - December 31, with the same allocations as shown above.

Table 30: State-by-state quotas for the commercial scup fishery during the summer quota period (May-September).

State	Share of summer quota
Maine	0.1210%
Massachusetts	21.5853%
Rhode Island	56.1894%
Connecticut	3.1537%
New York	15.8232%
New Jersey	2.9164%
Maryland	0.0119%
Virginia	0.1650%
North Carolina	0.0249%
Total	99.9908%

Once the quota for a given period is reached, the commercial fishery is closed for the remainder of that period. If the full winter I quota is not harvested, unused quota is added to the winter II period. Any quota overages during the winter I and II periods are subtracted from the quota allocated to those periods in the following year. Quota overages during the summer period are subtracted from the following year's quota only in the states where the overages occurred.

A possession limit of 50,000 pounds is in effect during the winter I quota period. A possession limit of 12,000 pounds is in effect during the winter II period. If the winter I quota is not reached, the winter II possession limit increases by 1,500 pounds for every 500,000 pounds of quota not caught during winter I. During the summer period, various state-specific possession limits are in effect.

The commercial scup fishery in federal waters is predominantly a bottom otter trawl fishery. In 2022, 96% of the commercial scup landings (by weight) reported by federal VTR data were caught

with bottom otter trawls. Pots/traps accounted for about 3% of landings, while all other gear types accounted for less than 1% of the 2022 commercial scup landings.

Prior to 2019, trawl vessels could not possess 1,000 pounds or more of scup during October - April, or 200 pounds or more during May - September, unless they use a minimum mesh size of 5-inch diamond mesh, applied throughout the codend for at least 75 continuous meshes forward of the terminus of the net. In 2019, another threshold period was added from April 15-June 15 with a 2,000-pound possession limit to allow for higher retention in the small-mesh squid fishery. Pots and traps for scup are required to have degradable hinges and escape vents that are either circular with a 3.1-inch minimum diameter or square with a minimum length of 2.25 inches on the side.

VTR data suggests that NMFS statistical areas 613, 537, 616, 539 and 611 were responsible for the largest percentage of commercial scup catch in 2022. Statistical area 539, off Rhode Island, had the highest number of trips which caught scup; however, statistical area 613 off of Long Island, NY accounted for the greatest amount of scup caught (Table 31, Figure 15).

Table 31: Statistical areas which accounted for greater than 5% of the total commercial scup catch (by weight based on VTR data) in 2022, with associated number of trips. Federal VTR data do not capture landings by vessels only permitted to fish in state waters.

Statistical area	Percentage of 2022 commercial scup catch	Number of trips
613	24%	1,377
537	20%	1,066
616	16%	346
539	10%	2,108
611	6%	1,139

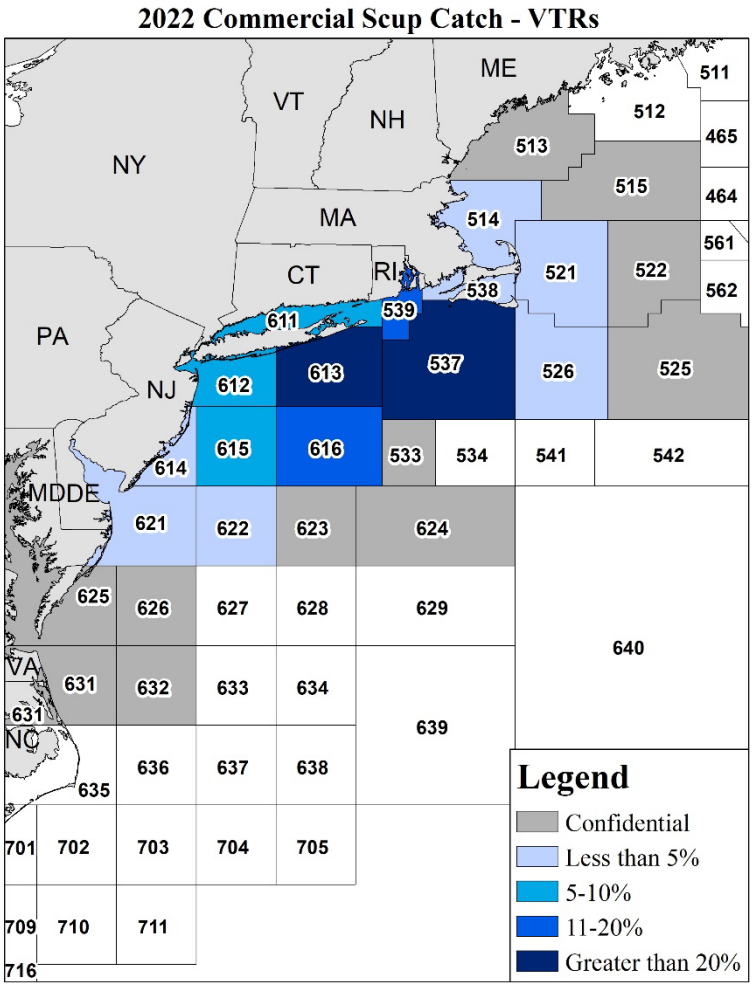


Figure 15: Proportion of scup catch by statistical area in 2022 based on federal VTR data. Statistical areas marked "confidential" are associated with fewer than three vessels and/or dealers. The amount of catch (landings and discards) that was not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown.

Over the past two decades, total scup ex-vessel revenue ranged from a low of $5.39 million in 2001 to a high of $13.77 million in 2015. In 2022, 12.12 million pounds of scup were landed by commercial fishermen from Maine through North Carolina. Total ex-vessel value in 2022 was $9.68 million, resulting in an average price per pound of $0.80 Figure 16). All revenue and price values were adjusted to 2022 dollars to account for inflation.

In general, the price of scup tends to be lower when landings are higher, and vice versa (Figure 16). This relationship is not linear and many other factors besides landings likely influence price. The highest average price per pound over the past two plus decades was $2.47 and occurred in 1998. The lowest average price per pound was $0.69 and occurred in 2013.

Over 122 federally permitted dealers from Maine through North Carolina purchased scup in 2022. More dealers in New York purchased scup than in any other state (Table 32).

At least 100,000 pounds of scup were landed by commercial fishermen in 15 ports in 6 states in 2022. These ports accounted for approximately 92% of all 2022 commercial scup landings. Point

Judith, Rhode Island was the leading port, both in terms of landings and number of vessels landing scup (Table 33). Detailed community profiles developed by the Northeast Fisheries Science Center's Social Science Branch can be found at www.mafmc.org/communities/.

Since 1996, a moratorium permit has been required to fish commercially for scup. In 2022, 603 vessels held commercial moratorium permits for scup.

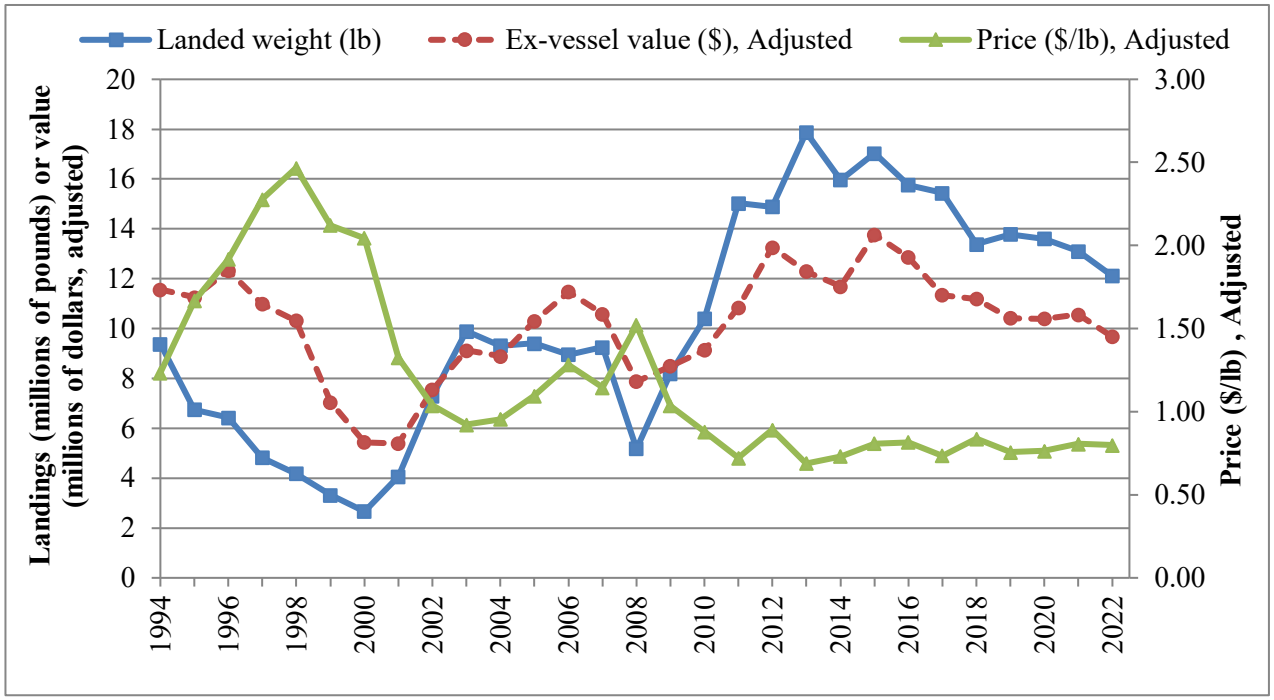


Figure 16: Landings, ex-vessel value, and price for scup from Maine through North Carolina, 1994-2022. Ex-vessel value and price are inflation-adjusted by the Gross Domestic Product Price Deflator indexed for 2022 (https://fred.stlouisfed.org). Source: NMFS unpublished dealer data.

Table 32: Number of dealers per state which reported purchases of scup in 2022.

State	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of Dealers	31	30	13	45	15	3	5	5	8

Table 33: Ports reporting at least 100,000 pounds of scup landings in 2020, based on NMFS dealer data. C = Confidential. Source: NMFS Unpublished dealer data.

Port	Scup landings (lbs.)	% of total landings	Number of vessels
POINT JUDITH, RI	3,203,618	26%	125
MONTAUK, NY	2,802,648	23%	79
PT. PLEASANT, NJ	1,397,265	12%	30
CAPE MAY, NJ	964,646	8%	24
NEW BEDFORD, MA	712,476	6%	48
MATTITUCK, NY	C	C	C
NEW LONDON, CT	263,461	2%	4
STONINGTON, CT	229,225	2%	18
HAMPTON BAY, NY	224,861	2%	22
LITTLE COMPTON, RI	198,676	2%	9
EAST HAVEN, CT	134,752	1%	4
SHINNECOCK, NY	129,546	1%	16
GREENPORT, NY	124,745	1%	3
AMAGANSETT, NY	C	C	C
NEWPORT NEWS, VA	102,276	1%	14

Two scup gear restricted areas (GRAs) were first implemented in 2000 with the goal of reducing scup discards in small-mesh fisheries. The GRA boundaries have been modified multiple times since their initial implementation. The current boundaries are shown in Figure 17. Trawl vessels may not fish for or possess longfin squid, black sea bass, or silver hake in the Northern GRA from November 1 – December 31 and in the Southern GRA from January 1 – March 15 unless they use mesh which is at least 5 inches in diameter. The GRAs are thought to have contributed to the recovery of the scup population in the mid- to late-2000s (Terceiro and Miller, 2014). As previously stated, commercial scup discards increased by 71% between 2016 and 2017, likely due to the large 2015-year class (NEFSC 2021). Although discards decreased by about 43% in 2022 compared with the record high discards in 2017, they remain above the total average annual discards from 2003-2022.

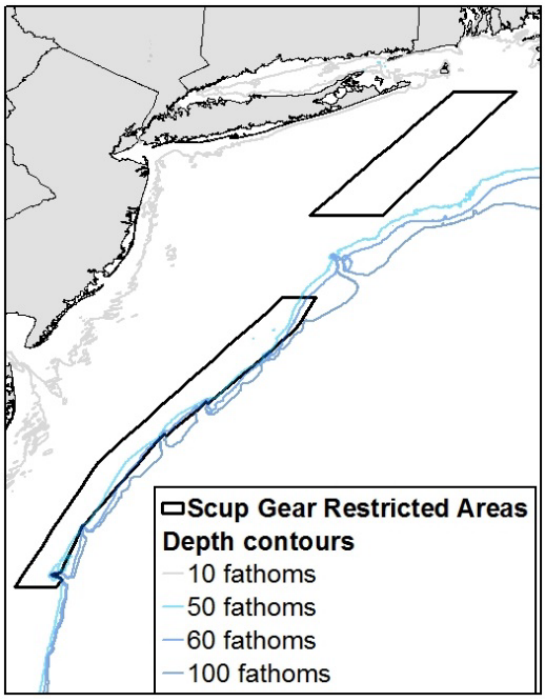


Figure 17: The Scup Gear Restricted Areas.

Recreational Scup Fishery

From 1981-2022, MRIP estimates indicate that recreational catch of scup (in number of fish) peaked in 2017 at 41.20 million scup and landings peaked in 1986 with an estimated 30.43 million scup landed by recreational fishermen from Maine through North Carolina. Recreational catch was lowest in 1998 when an estimated 6.86 million scup were caught and 2.74 million scup were landed. In 2022, recreational anglers from Maine through North Carolina caught an estimated 36.47 million scup and landed 18.04 million scup (about 17.36 million pounds; Figure 18; Table 34).

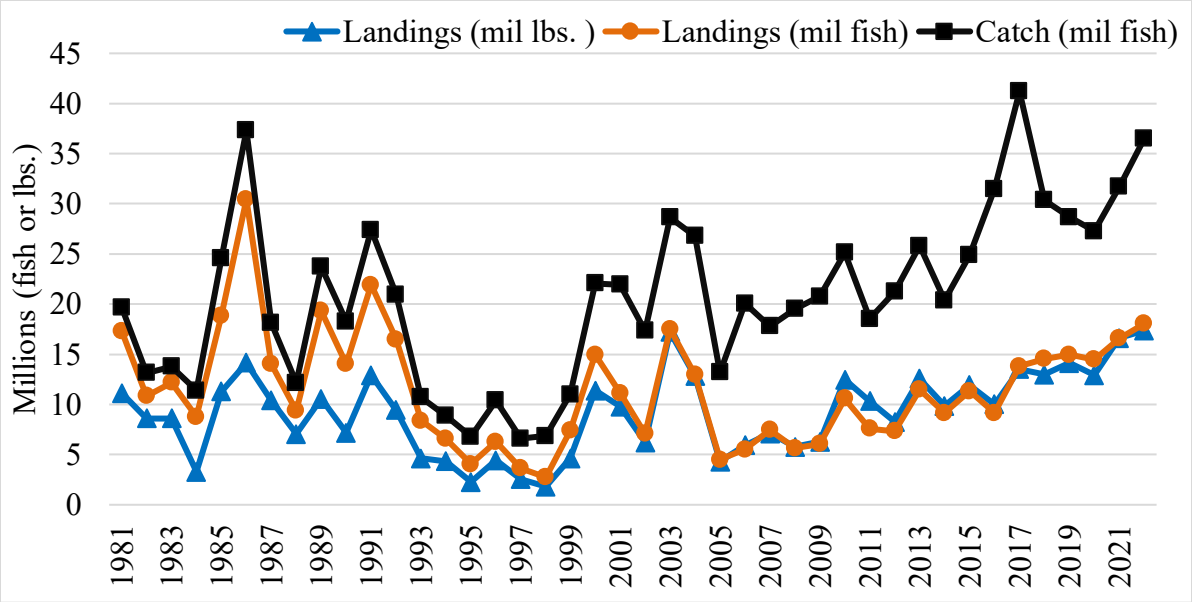


Figure 18: MRIP estimates of recreational scup landings in numbers of fish and pounds and catch in numbers of fish, ME - NC, 1981-2022.

Table 34: Scup recreational landings, dead discards, and catch compared to the RHL, projected recreational dead discards, and recreational ACL, 2014-2023. Information is provided in the "old" MRIP units for 2014-2019, and in the "new" MRIP units for 2020-2022. For scup, ACLs and RHLs did not account for the revised MRIP data until 2020. Therefore, overage/underage evaluations must be based in the old MRIP units through 2019 and the new MRIP units starting in 2020. All values are in millions of pounds.

Year	Version of MRIP data used	Rec. landings[a]	RHL	RHL over/ under	Rec. dead disc.[a]	Rec. catch	ACL	ACL over/ under
2014	Old MRIP (pre-revision)	4.43	7.03	*-37%*	*1.06*	5.49	7.92	*-31%*
2015		4.41	6.8	*-35%*	*1.28*	5.69	7.43	*-23%*
2016		4.26	6.09	*-30%*	*1.90*	6.16	6.84	*-10%*
2017		5.42	5.5	*-1%*	*2.38*	7.80	6.25	*+25%*
2018		5.61	7.37	*-24%*	*1.42*	7.03	8.61	*-18%*
2019	Old MRIP (provided by NEFSC)	5.41	7.37	*-27%*	*1.23*	6.64	8.01	*-17%*
2020[c]	New MRIP (post-revision)	12.91	6.51	*+98%*	*1.19*	14.10	7.87	*+79%*
2021		16.62	6.07	*+174%*	*1.44*	18.06	7.66	*+136%*
2022		17.36	6.08	*+186%*	*1.63*	18.99	7.06	*+169%*
2023		--	9.27	--	--	--	10.39	--

[a] Recreational harvest data from MRIP; recreational dead discards from NEFSC 2021 and M. Terceiro, personal communication, June 2023.

[b] For 2014, the RHL was adjusted for Research Set Aside (RSA). RHLs for 2015-2023 do not reflect an adjustment for RSA due to the suspension of the program in 2014.

[c] Recreational harvest estimates for 2020 were impacted by temporary suspension of shoreside intercept surveys due to COVID-19. NMFS used imputation methods to fill gaps in 2020 catch data with data collected in 2018 and 2019. For scup, the 2020 harvest estimate relied on approximately 25% imputed data. For more information on imputation methods see: https://www.mafmc.org/s/1-2020-Marine-Recreational-Catch-Estimates-QA-52121.pdf.]

Vessels carrying passengers for hire in federal waters must obtain a federal party/charter permit. In 2022, 828 vessels held scup federal party/charter permits. Many of these vessels also held party/charter permits for summer flounder and black sea bass.

Most recreational scup catch occurs in state waters during the warmer months when the fish migrate inshore. Between 2020 and 2022, on average 94% of recreational scup catch (in numbers of fish) occurred in state waters and about 6% occurred in federal waters (Table 35). New York, Connecticut, Rhode Island, Massachusetts, and New Jersey accounted for over 99% of recreational scup harvest in 2022 (Table 36).

About 66% of recreational scup landings (in numbers of fish) in 2022 were from anglers who fished on private or rental boats and about 24% were from anglers fishing from shore. Additionally, about 9% were from anglers fishing on party or charter boats (Table 37).

Table 35: Estimated percent of scup landed by recreational fishermen in state and federal waters, Maine – North Carolina, 2013 – 2022. Percentages calculated based on numbers of fish. Source: NMFS unpublished MRIP data.

Year	State waters	Federal waters
2013	95%	5%
2014	97%	3%
2015	99%	1%
2016	95%	5%
2017	97%	3%
2018	96%	4%
2019	97%	3%
2020	90%	10%
2021	96%	4%
2022	97%	3%
2013-2022 average	**96%**	**4%**
2020-2022 average	**94%**	**6%**

Table 36: Estimated percent of scup harvested by state, 2019 – 2022. Percentages calculated based on numbers of fish. Source: NMFS unpublished MRIP data.

State	2020	2021	2022	2020-2022 average
Maine	0%	0%	0%	0%
New Hampshire	0%	0%	0%	0%
Massachusetts	9%	22%	12%	15%
Rhode Island	11%	17%	16%	15%
Connecticut	25%	17%	10%	18%
New York	49%	42%	59%	50%
New Jersey	6%	1%	1%	3%
Delaware	0%	0.01%	0.01%	0.01%
Maryland	0%	0%	0.01%	0.01%
Virginia	0%	0.8%	0%	0.3%
North Carolina	0.01%	0.02%	0.02%	0.01%

Table 37: Proportion of scup harvest (calculated based on numbers of fish) by recreational fishing mode, Maine - North Carolina, 2013 – 2022. Note: percentages may not sum to 100% due to rounding. Source: NMFS unpublished MRIP data.

Year	Private/rental	Shore	Party/charter	Total number (number of fish)
2013	52%	34%	15%	11,487,157
2014	67%	20%	12%	9,164,521
2015	77%	17%	6%	11,330,115
2016	56%	34%	10%	9,143,577
2017	65%	24%	11%	13,820,251
2018	48%	43%	9%	14,545,138
2019	56%	29%	15%	14,952,142
2020	62%	28%	10%	14,491,967
2021	73%	18%	9%	16,592,493
2022	66%	24%	9%	18,038,052
2013-2022 average	**62%**	**27%**	**11%**	**13,356,541**
2020-2022 average	**67%**	**23%**	**10%**	**16,374,171**

7. ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

This EA analyzes the expected impacts of the alternatives on each VEC. The alternatives are compared to the current conditions of the VECs and to each other. They are compared to each other within each alternative set (i.e., the summer flounder alternatives are compared to the other summer flounder alternatives and the scup alternatives are compared to the other scup alternatives). 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 prepared for previously implemented management actions.

The current conditions of the VECs are summarized in Table 38 and described in more detail in Section 6. Impacts are described both in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high) based on the guidelines shown in Table 39.

The recent conditions of the VECs include the biological conditions of the summer flounder, scup, non-target species, and protected species over the most recent five years (Sections 6.1 and 6.3). They also include the fishing practices and levels of fishing effort and landings in commercial and recreational fisheries for summer flounder and scup 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). They also include recent levels of habitat availability and quality (Section 6.2).

As described in Section 5.3, summer flounder and scup catch and landings limits cannot roll over from one year to the next without a Council action. This document considers catch and landings limits for 2024-2025 only. Sections 7.1 – 7.4 consider the impacts of the alternatives on all VECs

in 2024-2025. If any of these alternatives are considered for other future years, their impacts on the VECs in those future years will be analyzed in a separate document.

In general, alternatives which may result in overfishing or an overfished status for **target or non-target species** are considered to have negative impacts for those species. Conversely, alternatives which may maintain or are projected to result in a stock status above an overfished condition are considered to have positive impacts (Table 39).

As previously stated, bottom trawls is the predominant gear type in the commercial summer flounder and scup fisheries; pot trap gear is also used, albeit to a lesser extent in the scup commercial fishery. The recreational fisheries use hook and line gear almost exclusively. When considering the impacts of the alternatives on the **habitat** VEC, emphasis is placed on the commercial fisheries due to the higher potential for impacts to physical habitat from bottom trawl gear than from hook and line gear (Section 6.2.3). Alternatives that improve the quality or quantity of habitat are expected to have positive impacts on habitat. Alternatives that degrade the quality or quantity, or increase disturbance of habitat are expected to have negative impacts (Table 39). A reduction in fishing effort is likely to decrease the time that fishing gear is in the water, thus reducing the potential for interactions between fishing gear and habitat. However, most areas where summer flounder and scup are fished have been fished by multiple fishing fleets over many decades and are unlikely to see a measurable improvement in their condition in response to a decrease in effort for an individual fishery.

The impacts of the alternatives on **protected species** take into account impacts to ESA-listed species, as well as impacts to non-ESA listed MMPA protected species in good condition (i.e., marine mammal stocks whose PBR level have not been exceeded) or poor condition (i.e., marine mammal stocks that have exceeded or are near exceeding their PBR level). For ESA-listed species, any action that results in interactions or take 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 (i.e., no take). None of the alternatives considered in this document would ensure no interactions with ESA-listed species. By definition, all ESA-listed species are in poor condition and any take can negatively impact their recovery. The stock conditions for marine mammals not listed under the ESA varies by species; however, all are in need of protection. For non-ESA listed marine mammal stocks that have their PBR level reached or exceeded, negative impacts would be expected from alternatives that result in the potential for interactions between fisheries and those stocks. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), alternatives not expected to change fishing behavior or effort may have positive impacts by maintaining takes below the PBR level and approaching the zero mortality rate goal (Table 40).

Impacts to **human communities** (socioeconomic impacts) are considered in relation to potential changes in landings, prices, revenues, fishing opportunities, and angler satisfaction. 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. Increased landings are generally considered to have positive socioeconomic impacts because they could result in increased revenues (for commercial and/or for-hire vessels) and angler satisfaction (for recreational fishery participants); however, if an increase in landings leads to a decrease in price or a decrease in future availability for any of the landed species, then negative socioeconomic impacts could also occur.

Table 38: Recent conditions of VECs (described in more detail in Section 6).

VEC		Condition	
		Overfishing?	**Overfished?**
Target species (Section 6.1)	Summer flounder	Yes	No
	Scup	No	No
Non-target species (Section 6.1)	Black sea bass	No	No
	Spiny dogfish	No	No
	Black sea bass	No	No
	NE Skates: *Little skate* *Winter Skate* *Clearnose Skate* *Barndoor Skate*	 No No No No	 No No No No
	Northern sea robin	Unknown	Unknown
	Striped sea robin	Unknown	Unknown
	Bluefish	No	Yes
	Tautog	No	Yes, in some regions
	Smooth Dogfish	No	No
Habitat (Section 6.2)		Commercial fishing impacts are complex, variable, and typically adverse. Recreational fishing has minimal impacts on habitat. Non-fishing activities had historically negative but site-specific effects on habitat quality.	
Protected species (Section 6.3)	Sea turtles	Leatherback and Kemp's ridley sea turtles are endangered; loggerhead (NW Atlantic Ocean DPS) and green (North Atlantic DPS) sea turtles are threatened.	
	Fish	Atlantic salmon, shortnose sturgeon, Giant manta ray, and the New York Bight, Chesapeake, Carolina, and South Atlantic DPSs of Atlantic sturgeon are endangered. Atlantic sturgeon Gulf of Maine DPS threatened. Cusk are a candidate species.	
	Large whales	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.	
	Small cetaceans	Pilot whales, dolphins, and harbor porpoise are protected under the MMPA.	
	Pinnipeds	Gray, harbor, hooded, and harp seals are protected under the MMPA.	
Human communities (Section 6.4)	Summer Flounder	Commercial landings averaged 9.47 million pounds during 2018-2022, with $30.19 million average ex-vessel value for an average ex-vessel price of $3.35 per pounds (2022 dollars). Recreational landings during 2018-2022 averaged 8.19 million pounds.	
	Scup	Commercial landings averaged 13.20 million pounds during 2018-2022, with $10.45 million average ex-vessel value for an average ex-vessel price of $0.79 per pound (2022 dollars). Recreational landings during 2018-2022 averaged 14.80 million pounds.	

Table 39: Guidelines for defining the direction and magnitude of the impacts of alternatives on the VECs.

General Definitions				
VEC	**Resource Condition**	**Direction of Impact**		
		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 resources, 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 will 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 marine mammals
Physical Environment / Habitat / EFH	Many habitats degraded from historical effort	Alternatives that improve the quality or quantity of habitat	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	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

	Magnitude of Impact	
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, as in slight positive or slight negative)	To a lesser degree / minor
	Moderately positive or negative	To an average degree (i.e., more than "slight", but not "high")
	High, as in high positive or high negative	To a substantial degree (not significant unless stated)
	Significant	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 attribute aside from the MSA status, but this must be justified within the impact analysis.

Expected Changes in Fishing Effort Under Each Alternative

The expected impacts of the alternatives on the VECs are derived from consideration of both the current conditions of the VECs and expected changes in fishing effort under each alternative. Fishing effort is influenced by a variety of interacting factors, including regulations (catch and landings limits, possession limits, gear restrictions, seasonal closures, etc.), availability of the species in question and other potential target species, market factors such as price of various potential target species, and other factors. It is not possible to quantify with confidence how fishing effort will change under each alternative; therefore, expected changes are described qualitatively.

In this document, expected changes in fishing effort under each alternative are largely based on changes in the commercial quota and RHL, assuming all other factors (availability, prices, etc.) remain similar to current conditions. It is important to note that actual fishing effort may differ from these expectations based on changes in availability, market factors, and other conditions which are difficult to predict.

Summer Flounder

The commercial summer flounder fishery has underharvested their quota since 2018, by 7% to 19% (see Section 6.4.1; Table 18). Larger underages since 2019 (17-19%) may be due in part to a substantial increase in quota starting in mid-2019, with possible additional influence from market factors related to COVID-19. Commercial quotas under summer flounder alternatives 1A (status quo) and 1C (least restrictive) are 22-52% above 2022 landings, and would not be expected to be constraining to the fishery given recent trends (Figure 19a). Thus, commercial effort under these alternatives would be expected to be similar to levels observed in 2022, or to somewhat increase given a trend of incremental increases in landings from 2019-2022. Landings increased by about 4% between 2019-2020, and by about 15% each year between 2020-2021 and 2021-2022. Assuming that any increase in landings would follow a similar trend, increases are unlikely to be to the level of the quotas under alternatives 1A and 1C. Under alternatives 1B (preferred) and 1D (most restrictive), moderate to substantial reductions in commercial fishing effort would be required, as these limits are well below recent landings levels, particularly under alternative 1D. It is expected that landings would be constrained to these limits given commercial in-season monitoring and closure authority for summer flounder.

Determining expected changes in recreational effort are more difficult, given the lack of in-season monitoring and closure authority, as well as the recently revised process for setting recreational measures. Specific recreational measures for 2024-2025 will not be determined until later this year. As noted in Section 4.2, the Percent Change Approach to setting recreational measures has been implemented starting in 2023. Under this approach, measures aim to achieve a specified percent change in harvest compared to the expectation of harvest in the upcoming year(s) under current measures. Unlike the previous process, the recreational measures no longer aim to achieve but not exceed the RHL. Instead, measures will aim to achieve a different level of harvest, which will vary based on the following two factors: 1) A confidence interval (CI) around an estimate of expected harvest in the upcoming two years under current measures compared to the average RHL for the

upcoming two years and 2) biomass compared to the target level, as defined by the most recent stock assessment. [24]

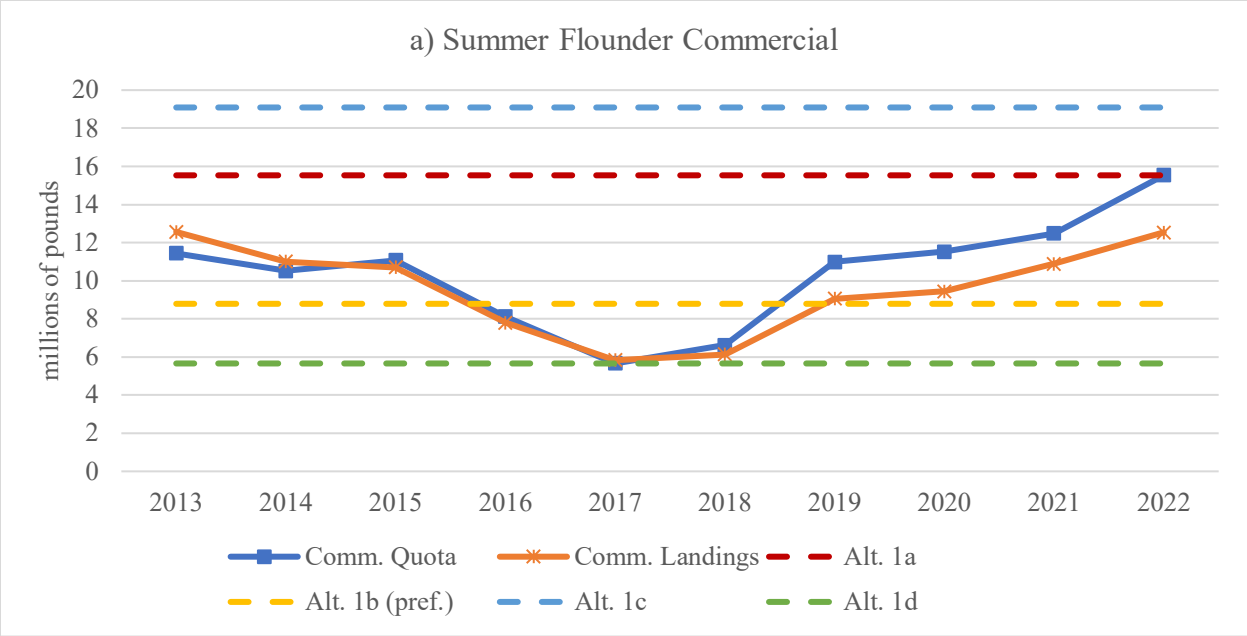
The current summer flounder biomass (83% of the target; in the "low" biomass category of the Percent Change Approach) is the only element of the Percent Change Approach application currently known for summer flounder. The RHLs analyzed in this document feed into the process of determining these outcomes, but are only one piece of it. A projected level of harvest for 2024-2025 under current (2023) measures will be developed in the Fall of 2023 using the Recreational Demand Model (RDM).[25] A comparison of a confidence interval around this estimate to the 2024-2025 RHL, in combination with biomass status, will determine how recreational measures will need to change for 2024-2025. Based on the current summer flounder biomass level, the change in harvest needed could be a 10% liberalization, a 10% reduction, or a reduction based on the difference between the harvest estimates and the 2-year average RHL, not to exceed 40%.

For the summer flounder recreational fishery, performance relative to the RHL has been variable since 2019, but harvest was under the RHL in 2021 and 2022 by 17-18% (Table 23, Section 6.4.1). Recreational harvest (under revised MRIP estimates) has generally declined over the past 10 years (Figure 19b). Recreational measures for summer flounder remained unchanged between 2022 and 2023. The RDM projections of harvest depends on many factors and is uncertain at this time. However, assuming that projected harvest for 2024-2025 is approximately within the range of recent harvest, alternative 1A may result in a 10% liberalization of recreational measures given the RHL for this alternative is 23% above 2022 harvest. However, it is also possible that the confidence interval around the projected harvest for 2024-2025 could encompass the RHL under this alternative, leading to 10% decrease in harvest needed. Under alternative 1B, the RHL is similar to 2022 landings. If projected 2024-2025 harvest remains in a similar range, summer flounder may end up in the 10% reduction in harvest category. Under alternative 1C, the large increase in the RHL under this alternative may lead to the fishery ending up in the 10% liberalization category. Under alternative 1D, the substantial decrease in the RHL would likely lead to summer flounder incurring a larger reduction in the harvest target (up to 40% as specified by the Percent Change Approach table).

Based on the assumptions described above, the assumed change in commercial and recreational fishing effort used in the impacts determinations are summarized in Table 40. Under all summer flounder alternatives, it is not expected that fishing effort would substantially shift or expand in geographic area or seasonality.

[24] https://www.mafmc.org/s/HCR-Percent-Change-Table.pdf.

[25] https://www.mafmc.org/s/fluke-RDM-overview-final-report.pdf



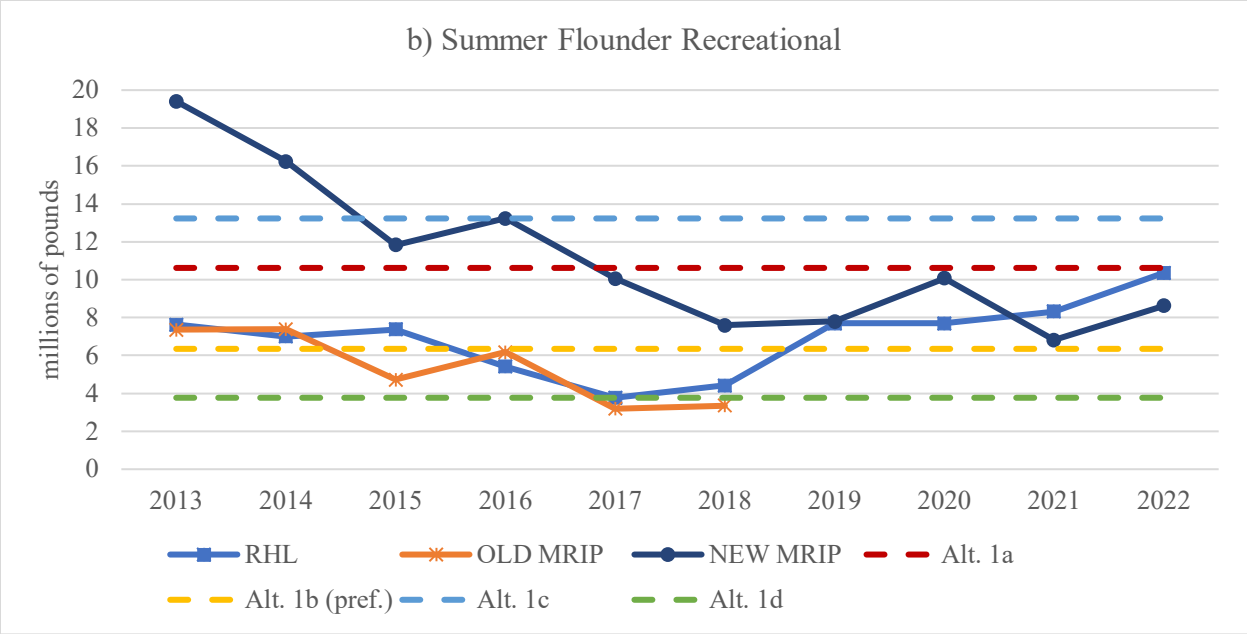


Figure 19: Comparison of recent (2013-2022) summer flounder a) commercial and b) recreational landings and landings limits to the summer flounder alternatives considered in this document. Note that for the recreational fishery, old MRIP data is provided through 2018 as the appropriate comparison to the RHLs set for 2013-2018. New MRIP data is provided for all years to allow for comparison to the alternatives under consideration.

Table 40: Assumed changes in recreational and commercial fishing effort for summer flounder under each alternative 1A-1D.

Alternative	Recreational Effort	Commercial Effort
1A	Uncertain, possible slight increase in effort from potential 10% liberalization or slight decrease from 10% reduction in target	Similar to 2022 levels or slightly increased; unlikely to be constrained by quota
1B	Uncertain, possible slight reduction in effort from potential 10% reduction in harvest	Moderately reduced from 2022 levels (landings reduced ~30% from 2022)
1C	Uncertain, possible slight increase in effort from potential 10% liberalization	Similar to 2022 levels or slightly increased; unlikely to be constrained by quota
1D	Uncertain, slight to moderate reduction in the harvest target expected (not to exceed 40%)	Substantially reduced from 2022 (landings reduced by ~55% from 2022)

Scup

The commercial scup fishery has underharvested their quota since 2013, by 16% to 44%, and landings have generally decreased since 2017 (see 6.4.2; Table 28). Based on recent quota underages, commercial scup harvest currently appears to be limited more by market demand than by the quota. Based on this assumption, under most of the alternatives for scup (i.e., alternatives 2A, 2B, and 2C) would not be expected to be constraining to the fishery (Figure 20a). Under these alternatives, commercial fishing effort would be expected to be similar to that observed for the last few years for scup. Under alternative 2D (most restrictive); however, slight reductions in commercial fishing effort would be required, as these limits are slightly below recent landings levels. It is expected that landings would be constrained to the limit under 2D given commercial in-season monitoring and closure authority for scup.

As described above for summer flounder, determining expected changes in recreational effort are more difficult, given the lack of in-season monitoring and closure authority, as well as the recently revised process for setting recreational measures. Specific recreational measures for 2024-2025 will not be determined until later this year. Under the Percent Change Approach, measures aim to achieve a specified percent change in harvest compared to the expectation of harvest in the upcoming year(s) under current measures. Unlike the previous process, the recreational measures no longer aim to achieve but not exceed the RHL. Instead, measures will aim to achieve a different level of harvest, which will vary based on the following two factors: 1) A confidence interval (CI) around an estimate of expected harvest in the upcoming two years under current measures compared to the average RHL for the upcoming two years and 2) biomass compared to the target level, as defined by the most recent stock assessment. [26]

The current scup biomass (246% of the target: in the "very high" biomass category of the Percent Change Approach) is the only element of the Percent Change Approach application currently known for scup. The RHLs analyzed in this document feed into the process of determining these

[26] https://www.mafmc.org/s/HCR-Percent-Change-Table.pdf.

outcomes, but are only one piece of it. A projected level of harvest for 2024-2025 under current (2023) measures will be developed in the Fall of 2023 using the Recreational Demand Model (RDM).[27] A comparison of a confidence interval around this estimate to the 2024-2025 RHL, in combination with biomass status, will determine how recreational measures will need to change for 2024-2025. Based on the current scup biomass level, the change in harvest needed could be a 10% liberalization, a 10% reduction, or a liberalization based on the difference between the harvest estimates and the 2-year average RHL, not to exceed 40%. As discussed below, the 10% liberalization or 10% reduction outcomes are assumed to be the most likely under the current range of RHL alternatives.

Recreational scup harvest (under revised MRIP estimates) has generally increased over the past 10 years and has consistently exceeded the RHL (Figure 20b). Last year, based on the Percent Change Approach, recreational scup measures were modified from 2022 to 2023 to account for a required 10% reduction in harvest. The RDM projections of 2024-2025 harvest depend on many factors and are uncertain at this time. However, assuming that projected harvest for 2024-2025 is within the range of recent harvest, alternatives 2A, 2B, and 2D may end up in the 10% reduction in harvest category given the RHL for these alternatives is about 24-60% below (depending on the alternative) 2022 harvest. Under alternative 2C, the RHL is again below 2022 landings, but given it is only just slightly below 2022 landings (about 5%) and recreational scup measures were changed from 2022 to 2023 to account for a 10% reduction in harvest, under alternative 2C it is possible for the RHL to be within the confidence interval of harvest estimate and end up in the 10% liberalization category.

Based on the assumptions described above, the assumed change in commercial and recreational fishing effort used in the impacts determinations are summarized in Table 41. Under all scup alternatives, it is not expected that fishing effort would substantially shift or expand in geographic area or seasonality.

[27] https://www.mafmc.org/s/fluke-RDM-overview-final-report.pdf

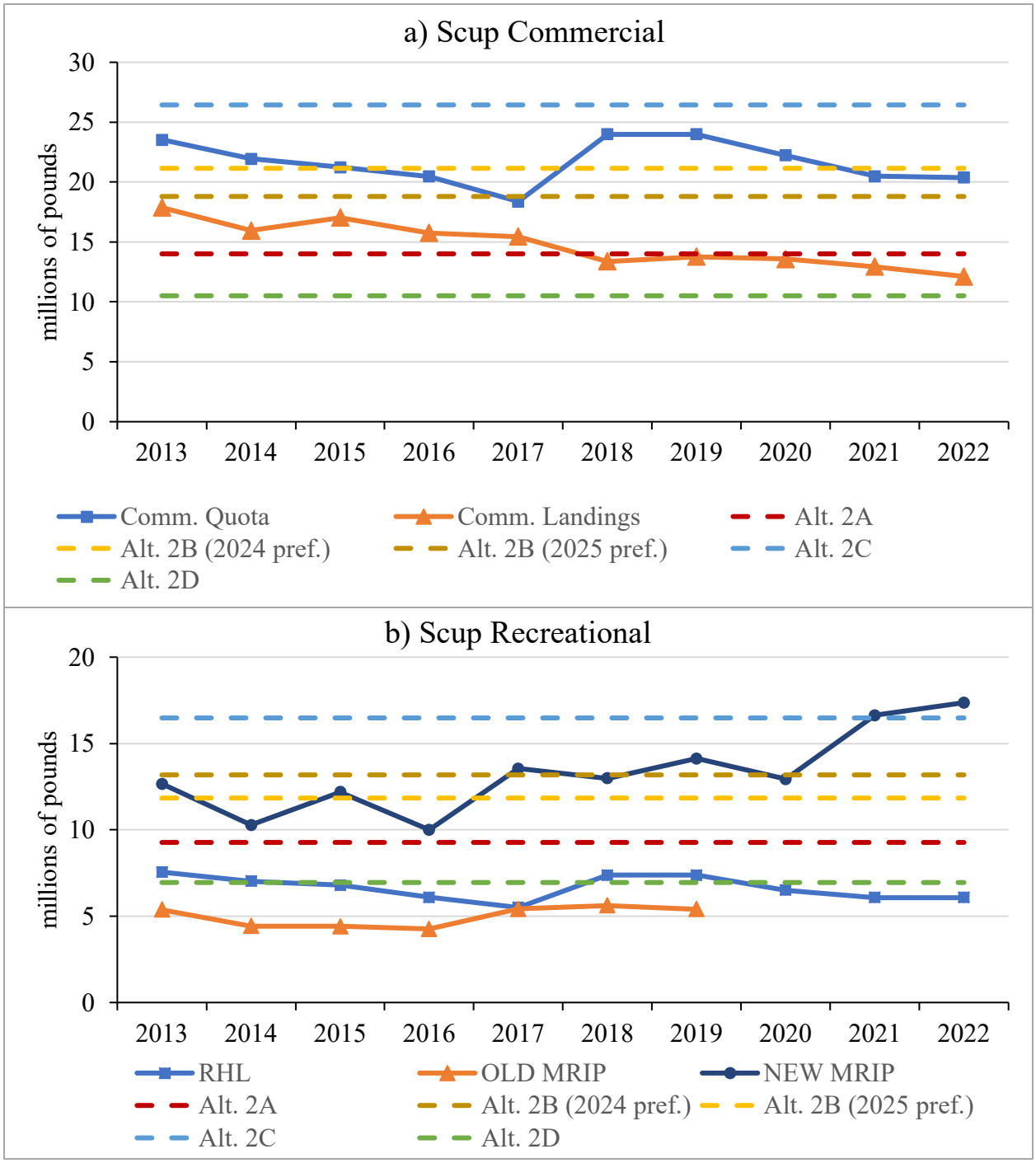


Figure 20: Comparison of recent (2013-2022) scup a) commercial and b) recreational landings and landings limits to the scup alternatives considered in this document. Note that for the recreational fishery, old MRIP data is provided through 2019 as the appropriate comparison to the RHLs set for 2013-2019. New MRIP data is provided for all years to allow for comparison to the alternatives under consideration.

Table 41: Assumed changes in recreational and commercial fishing effort for scup under each alternative 2A-2D.

Alternative	Recreational Effort	Commercial Effort
2A	Uncertain, possible slight reduction in effort from potential 10% reduction in harvest	Similar to 2022 levels; unlikely to be constrained by quota
2B	Uncertain, possible slight reduction in effort from potential 10% reduction in harvest	Similar to 2022 levels; unlikely to be constrained by quota
2C	Uncertain, possible slight increase in effort from potential 10% liberalization or slight decrease from 10% reduction in target	Similar to 2022 levels; unlikely to be constrained by quota
2D	Uncertain, possible slight reduction in effort from potential 10% reduction in harvest	Slight to moderately reduced from 2022 levels (landings reduced ~15% from 2022)

7.1. Impacts of the Alternatives on Summer Flounder, Scup, and Non-Target Species

The following sections describe the expected impacts of each alternative on summer flounder, scup, and non-target species. Impacts are based on expected changes in fishing effort and fishing mortality under each alternative.

7.1.1 Impacts of Alternative Set 1 (Summer Flounder Catch and Landings Limits) on Summer Flounder and Non-Target Species

7.1.1.1 Impacts of Alternative 1A (Status Quo Summer flounder Catch and Landings Limits; Non-Preferred) on Summer flounder and Non-Target Species

Alternative 1A consists of the status quo (2023) commercial quota and RHL as applied to 2024-2025 (i.e., 15.27 and 10.62 million pounds, respectively). As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, or a slight increase as has occurred the last couple of years, as the commercial quota has not been limiting in recent years. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience an increase in fishing effort resulting from a potential 10% liberalization in harvest, or a decrease in fishing effort resulting from a potential 10% reduction in harvest.

The expected levels of landings under this alternative are uncertain given the factors described in the introduction to Section 7. While it is not expected that the fishery would achieve the full total allowable landings specified under this alternative given recent trends, it is also true that the likely levels of landings under this alternative (i.e., similar to 2022 levels) exceeds the total allowable landings associated with the ABC recommended by the SSC to prevent overfishing. Summer flounder was found to be experiencing overfishing in 2022 despite not exceeding the previously set limits, and reductions in limits were recommended for 2024-2025 as a result (alternative 1B). Therefore, this alternative poses a risk of continued overfishing for summer flounder. Overfishing, if continued over time, increases the likelihood of the stock becoming overfished. Therefore, this alternative is expected to have slight to moderate negative impacts on summer flounder, depending on the degree to which the actual fishery landings would exceed the recommendations of the SSC.

Because commercial fishing effort is expected to remain similar to recent levels under this alternative, with possible slight increases, interactions with commercial non-target species would likely remain similar to recent levels. This level of effort is not expected to result in a change in the stock status of any commercial non-target species. As described in Section 6.1.3.2, only little skate, winter skate, and northern sea robin made up at least 5% of observed catch in the summer flounder commercial fishery from 2017-2022. According to the most recent stock assessment information, winter and little skates are not overfished and overfishing is not occurring. The stock status of striped sea robins is unknown as it has not been assessed.

As noted above, the recreational fishery may experience either a 10% liberalization or a 10% reduction in effort under alternative 1A, resulting in either slight increases or slight decreases in fishing mortality for recreational non-target species. None of these potential changes would be expected to change recreational non-target species interactions to the extent of substantially contributing to any changes the stock status of recreational non-target species. With the exception of the New Jersey/New York Bight region of tautog, all non-target species in the recreational summer flounder fishery have either a positive (scup, black sea bass, bluefish, smooth dogfish,

other regions of tautog) or unknown stock status (sea robins, due to a lack of a stock assessment; Table 12).

In summary, this alternative is expected to have a reasonable likelihood continued overfishing for summer flounder, resulting in slight to moderate negative impacts to summer flounder. This alternative is expected to maintain existing stock conditions for all non-target species, with impacts on non-target species that range from slight negative (for those tautog regions that are overfished and/or experiencing overfishing) to moderate positive (for all other recreational non-target species).

Fishing mortality for summer flounder and non-target species is expected to be higher under this alternative than under alternatives 1B (preferred) and alternative 1D (most restrictive). Therefore, this alternative is expected to result in more negative impacts compared alternatives 1B and 1D, and potentially less negative impacts compared to 1C (least restrictive) depending on actual changes in fishing effort. For non-target species, this alternative is expected to result in less positive impacts to non-target stocks in good condition compared to alternatives 1B and 1D, which would be expected to have lower non-target interaction rates. Alternative 1A is also expected to have more positive impacts to non-target species in good condition compared to alternative 1C, which may be associated with higher non-target interaction rates depending on actual changes in fishing effort.

7.1.1.2 Impacts of Alternative 1B (Preferred Summer flounder Catch and Landings Limits) on Summer flounder and Non-Target Species

Alternative 1B includes the preferred 2024-2025 summer flounder commercial quota of 8.79 million pounds and RHL of 6.35 million pounds. As described above, this would be expected to result in moderate reductions in commercial fishing effort compared to recent years, and uncertain changes in the recreational fishery but a possible 10% reduction in harvest and effort.

This alternative is based on the SSC's recommended 2024-2025 ABC, which takes into account the most recent stock assessment and is intended to prevent overfishing and prevent the stock from becoming overfished. Therefore, this alternative is expected to have moderate positive impacts on summer flounder.

The expected decrease in commercial fishing effort under alternative 1B could lead to slightly decreased interactions and fishing mortality for non-target species, but this effect is not expected to be substantial and is not expected to notably contribute to changes in stock status for any non-target species. As described in Section 6.1.3.2, only little skate, winter skate, and northern sea robin made up at least 5% of observed catch in the summer flounder commercial fishery from 2017-2022. According to the most recent stock assessment information, winter and little skates are not overfished and overfishing is not occurring. The stock status of striped sea robins is unknown as it has not been assessed.

The potential slight (10%) decrease in recreational fishing effort under this alternative could lead to decreased fishing mortality for recreational non-target species. However, this decrease is not expected to be great enough to change the stock status of any recreational non-target species. As described above in 7.1.1.1, most recreational non-target species have a positive stock status that is expected to be maintained under this alternative (except for the NJ/NY Bight region of tautog).

In summary, this alternative is expected to have moderate positive impacts for summer flounder by preventing overfishing and an overfished status, and impacts on non-target species that range from slight negative (for those tautog regions that are overfished and/or experiencing overfishing) to moderate positive (for all other non-target species).

Fishing mortality for summer flounder and non-target species is expected to be lower under this alternative than under alternatives 1A (status quo) and 1C (least restrictive). Therefore, the positive impacts of this alternative for summer flounder and most non-target species are expected to be slightly greater in magnitude under alternative 1B compared to alternatives 1A and 1C. These slight positive impacts are expected to be lesser in magnitude than the impacts of alternative 1D (most restrictive), which would require notable restrictions in both fisheries. Conversely, the expected slight negative impacts of this alternative on the tautog regions which do not have a positive stock status are expected to be slightly lesser in magnitude under this alternative than under alternatives 1A and 1C, but greater in magnitude than under alternative 1D due to expected differences in fishing effort and fishing mortality under each alternative.

7.1.1.3 Impacts of Alternative 1C (Least Restrictive Summer flounder Catch and Landings Limits; Non-Preferred) on Summer flounder and Non-Target Species

Alternative 1C includes the least restrictive 2024-2025 summer flounder commercial quota and RHL considered in this document (i.e., 19.09 and 13.23 million pounds, respectively). These landings limits represent a 25% increase compared to those implemented for 2023. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, or a slight increase, as the commercial quota has not been limiting in recent years. The recreational fishery may experience an increase in fishing effort resulting from a potential 10% liberalization in harvest.

Similar to alternative 1A, it is not expected that the fishery would achieve the full total allowable landings specified under this alternative given recent trends. However, the likely levels of landings under this alternative (i.e., similar to 2022 levels) exceeds the total allowable landings associated with the ABC recommended by the SSC to prevent overfishing. Summer flounder was found to be experiencing overfishing in 2022 despite not exceeding the previously set limits, and reductions in limits were recommended for 2024-2025 as a result (alternative 1B). Therefore, this alternative poses a risk of continued overfishing for summer flounder. Overfishing, if continued over time, increases the likelihood of the stock becoming overfished. Therefore, this alternative is expected to have slight to moderate negative impacts on summer flounder, depending on the degree to which the actual fishery landings would exceed the recommendations of the SSC for 2024-2025.

Because commercial fishing effort is expected to remain similar to recent levels under this alternative, with possible slight increases, interactions with commercial non-target species would likely remain similar to recent levels. This level of effort is not expected to result in a change in the stock status of any commercial non-target species. Similar to alternative 1A, levels of fishing effort for summer flounder alternative 1C are likely to maintain the current positive stock status for commercial non-target species, with the exception of sea robins, that status of which is unknown (Table 11).

The potential slight increase in recreational fishing effort under this alternative could lead to a slight decrease in interactions with recreational non-target species. However, this decrease is not expected to be great enough to change the stock status of any recreational non-target species,

particularly given that under the Percent Change Approach, a recreational liberalization would likely be capped at 10%. With the exception of one region of tautog, all non-target species in the recreational summer flounder fishery have either a positive or unknown stock status (Table 12).

In summary, alternative 1C is expected to have slight to moderate negative impacts on summer flounder and impacts on non-target species that range from slight negative (for those tautog regions that are overfished and/or experiencing overfishing) to moderate positive (for other non-target species).

Because fishing mortality would likely be higher under this alternative than under all other summer flounder alternatives considered in this document (depending on actual changes in effort), this alternative has a higher potential for negative impacts to the summer flounder stock compared to alternatives 1A, 1B, and 1D. The expected moderate positive impacts to non-target species with a positive stock condition are expected to be slightly lesser in magnitude under this alternative compared to alternatives 1A, 1B, and 1D due to a slightly increased potential for increased interactions. The expected slight negative impacts of this alternative on the tautog region which does not have a positive stock status are expected to be slightly greater in magnitude under than under alternatives 1A, 1B, and 1D, due to expected differences in fishing effort and fishing mortality.

7.1.1.4 Impacts of Alternative 1D (Most Restrictive Summer flounder Catch and Landings Limits; Non-Preferred) on Summer flounder and Non-Target Species

Alternative 1D includes the most restrictive 2024-2025 summer flounder commercial quota and RHL considered in this document (i.e., 5.66 and 3.77 million pounds, respectively). These landings limits represent a 63% decrease in the commercial quota from 2023 (from 15.27 million pounds) and a 65% decrease in the RHL from 2023 (from 10.62 million pounds). As previously stated, commercial summer flounder landings have closely followed the quota for many years (e.g., Figure 19a), therefore, it is assumed that this magnitude of reduction in the commercial quota would lead to a substantial reduction in commercial fishing effort. For the recreational fishery, under the Percent Change Approach, reductions in harvest of up to 40% would likely be needed although the exact magnitude is not known.

The expected levels of landings under this alternative are lower than those allowed for under the SSC's recommended 2024-2025 summer flounder ABC (represented by alternative 1B). Therefore, this alternative is more conservative than necessary to prevent overfishing and achieve optimum yield for summer flounder. This alternative would be expected to prevent overfishing for summer flounder and the positive biomass status (i.e., not overfished) would be expected to be maintained. Therefore, this alternative is expected to have moderate positive impacts on summer flounder.

Due to the expected substantial reduction in commercial fishing effort, interactions with commercial non-target species would likely decrease compared to status quo levels. However, this is not expected to occur to a magnitude that would result in a change in the stock status of any commercial non-target species. Similar to the alternatives above, levels of fishing effort for summer flounder alternative 1D are likely to maintain the current positive stock status for commercial non-target species, with the exception of sea robins, that status of which is unknown (Table 11).

The expected reduction in recreational fishing effort under this alternative could result in decreased fishing mortality for recreational non-target species. However, it is not expected to decrease to the extent that it results in any changes the stock status of recreational non-target species. With the exception of one region of tautog, all non-target species in the recreational summer flounder fishery have either a positive or unknown stock status (Table 12).

Therefore, alternative 1D is expected to have impacts on non-target species that range from slight negative (for those tautog regions that are overfished and/or experiencing overfishing) to moderate positive (for other non-target species).

Fishing mortality for summer flounder and non-target species is expected to be lower under this alternative than under all other summer flounder alternatives (i.e., alternatives 1A-1C). Therefore, the positive impacts of this alternative for summer flounder and most non-target species are expected to be greater in magnitude than under alternatives 1A-1C. The expected slight negative impacts of this alternative on the tautog regions which do not have a positive stock status are expected to be slightly lesser in magnitude under than under alternatives 1A-1C due to expected differences in fishing effort and fishing mortality.

7.1.2 Impacts of Alternative Set 2 (Scup Catch and Landings Limits) on Scup and Non-Target Species

7.1.2.1 Impacts of Alternative 2A (Status Quo Scup Catch and Landings Limits; Non-Preferred) on Scup and Non-Target Species

Under alternative 2A, the 2024-2025 scup commercial quota would be 14.01 million pounds and the RHL would be 9.27 million pounds, identical to the landing limits implemented for 2023, resulting in constant landings limits across the three years. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, as the commercial quota has not been a limiting factor in recent years. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest required.

The specified total allowable landings under this alternative are less than those associated with the ABC recommended by the SSC to prevent overfishing (alternative 2B). Therefore, this alternative has a low risk of contributing to overfishing for scup. As described in more detail in Section 6.1.2, the scup stock is not currently overfished or experiencing overfishing. This positive stock status is expected to be maintained under alternative 2A; therefore, alternative 2A is expected to have moderate positive impacts on the scup stock.

Due to expected status quo levels of commercial fishing effort, interactions with commercial non-target species would likely remain similar to 2022-2023 levels. As described in Section 6.1.3.1, only spiny dogfish made up at least 5% of catch in the scup commercial fishery. According to the most recent stock assessment information, spiny dogfish are not overfished and overfishing is not occurring. This positive stock status is expected to be maintained under alternative 2A. Other commercial-non-target species are expected to be minimally impacted by this alternative.

As noted above, the recreational fishery may experience a 10% reduction in effort, resulting in a slight decrease in fishing mortality for recreational non-target species. None of these potential changes would be expected to change recreational non-target species interactions to the extent of substantially contributing to any changes in the stock status of recreational non-target species.

With the exception of the New Jersey/New York Bight region of tautog, and summer flounder all non-target species in the recreational scup fishery have either a positive (black sea bass, bluefish, smooth dogfish, other regions of tautog) or unknown stock status (sea robins, due to a lack of a stock assessment; Table 12).

In summary, this alternative is not expected to result in overfishing or an overfished stock status for scup, resulting in moderate positive impacts on scup. This alternative is expected to maintain existing stock conditions for all non-target species, with impacts on non-target species that range from slight negative (for those tautog regions that are overfished and/or experiencing overfishing and summer flounder) to moderate positive (for all other recreational non-target species).

Compared to the other alternatives for scup, this alternative has the potential for lower total fishing effort than alternatives 2C (least restrictive) and 2B (preferred). Therefore, the positive impacts of this alternative for scup and the non-target species with positive stock status are expected to be greater in magnitude than 2C and 2B. However, compared to alternative 2D (most restrictive) because fishing effort under this alternative could be lower than under all other alternatives depending on actual changes in fishing effort. For similar reasons, the negative impacts of this alternative on non-target species with negative stock status are expected to be lesser in magnitude than alternatives 2C and 2B and greater in magnitude than alternative 2D.

7.1.2.2 Impacts of Alternative 2B (Preferred Scup Catch and Landings Limits) on Scup and Non-Target Species

Alternative 2B includes the preferred scup commercial quotas of 21.15 million pounds for 2024 and 18.80 million pounds for 2025 and RHLs of 13.18 million pounds for 2024 and 11.84 million pounds for 2025. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, as the commercial quota has not been a limiting factor in recent years. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest required.

This alternative is based on the SSC's recommended 2024-2025 ABC, which takes into account the most recent stock assessment and is intended to prevent overfishing and prevent the stock from becoming overfished. Therefore, scup stock status under this alternative would be expected to remain positive (i.e., not overfished, overfishing not occurring) if the full ABC were to be harvested. As previously stated, the commercial fishery is not expected to land their full quota and if under the Percent Change Approach, a 10% reduction in recreational harvest is required, collectively total catch is not expected to exceed the full ABC. Thus, under both the expected levels of total catch and the full allowable ABC, the positive stock status of scup is expected to be maintained and this alternative is expected to have moderate positive impacts on the scup stock.

Due to expected status quo levels of commercial fishing effort, interactions with commercial non-target species would likely remain similar to 2022-2023 levels. As described in Section 6.1.3.1 and above, only spiny dogfish made up at least 5% of catch in the scup commercial fishery. According to the most recent stock assessment information, spiny dogfish are not overfished and overfishing is not occurring. This positive stock status is expected to be maintained under alternative 2B. Other commercial non-target species are expected to be minimally impacted by this alternative.

The potential slight (10%) decrease in recreational fishing effort under this alternative could lead to decreased fishing mortality for recreational non-target species. However, this decrease is not expected to be great enough to change the stock status of any recreational non-target species. As described above in 7.1.2.1, most recreational non-target species have a positive stock status that is expected to be maintained under this alternative (except for the NJ/NY Bight region of tautog and summer flounder).

In summary, this alternative is expected to have moderate positive impacts for scup by preventing overfishing and an overfished status, and impacts on non-target species that range from slight negative (for those tautog regions that are overfished and/or experiencing overfishing and summer flounder) to moderate positive (for all other non-target species).

Compared to the other alternatives for scup, this alternative has the potential for lower total fishing effort than alternative 2C (least restrictive). Therefore, the positive impacts of this alternative for scup and the non-target species with positive stock status are expected to be greater in magnitude than 2C. These positive impacts are expected to be lesser in magnitude than alternative 2A (status quo) and 2D (most restrictive) because fishing effort under this alternative would be higher than under those alternatives. For similar reasons, the negative impacts of this alternative on non-target species with negative stock status are expected to be lesser in magnitude than alternative 2A and 2D and greater in magnitude than alternative 2C.

7.1.2.3 Impacts of Alternative 2C (Least Restrictive Scup Catch and Landings Limits; Non-Preferred) on Scup and Non-Target Species

Alternative 2C is the least restrictive alternative for scup 2024-2025 specifications and reflects a commercial quota and RHL that are 25% above the 2024 preferred alternative 2B. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, given commercial scup harvest currently appears to be limited more by market demand than by the quota. The recreational fishery may experience an increase in fishing effort resulting from a potential 10% liberalization in harvest.

While the full total allowable landings under alternative 2C is greater than all other alternatives, given the assumptions above about expected changes in effort, total landings are not expected to be higher than those associated with the ABC recommended by the SSC for 2024-2025. This would therefore be unlikely to lead to overfishing. Thus, this alternative is expected to result in slight to moderate positive impacts on the scup stock.

Due to expected status quo levels of commercial fishing effort, interactions with commercial non-target species would likely remain similar to 2022-2023 levels. As described in Section 6.1.3.1 and above, only spiny dogfish made up at least 5% of catch in the scup commercial fishery. According to the most recent stock assessment information, spiny dogfish are not overfished and overfishing is not occurring. This positive stock status is expected to be maintained under alternative 2C. Other commercial-non-target species are expected to be minimally impacted by this alternative.

The potential slight (10%) increase in recreational fishing effort under this alternative could lead to a slight increase in fishing mortality for recreational non-target species. However, this increase is not expected to be great enough to change the stock status of any recreational non-target species. As described above in 7.1.2.1, most recreational non-target species have a positive stock status

that is expected to be maintained under this alternative (except for the NJ/NY Bight region of tautog and summer flounder).

In summary, alternative 2C is expected to have slight to moderate positive impacts on scup and impacts on non-target species that range from slight negative (for those tautog regions that are overfished and/or experiencing overfishing and summer flounder) to moderate positive (for other non-target species).

Of all the scup alternatives (i.e., alternatives 2A-2D), this alternative has the potential for the highest total fishing effort. Therefore, the positive impacts of this alternative for scup and the non-target species with positive stock status are expected to be lesser in magnitude than the other scup alternatives (2A, 2B and 2D). For similar reasons, the negative impacts of this alternative on non-target species with negative stock status are expected to be greater in magnitude than alternatives 2A, 2B, and 2D.

7.1.2.4 Impacts of Alternative 2D (Most Restrictive Scup Catch and Landings Limits; Non-Preferred) on Scup and Non-Target Species

Alternative 2D is the most restrictive alternative for scup 2024-2025 specifications and reflects a commercial quota and RHL that are 25% below the levels under the status quo alternative (i.e., alternative 2A). The 2024-2025 commercial quota under this alternative would be 10.51 million pounds and the RHL would be 6.95 million pounds. As previously stated, commercial scup harvest currently appears to be limited more by market demand than by the quota; however, under alternative 2D, slight to moderate reductions in commercial harvest would be required. Landings in 2022 were about 13% above the commercial quota under this alternative. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest required.

The expected levels of landings under this alternative are lower than those allowed for under the SSC's recommended 2024-2025 scup ABC (represented by alternative 2B). Therefore, this alternative is more conservative than necessary to prevent overfishing and achieve optimum yield for scup. This alternative would be expected to prevent overfishing for scup and the positive biomass status would be expected to be maintained. Therefore, this alternative is expected to have moderate positive impacts on scup.

Due to expected reduced levels of commercial fishing effort, interactions with commercial non-target species would likely decrease slightly compared to 2022-2023 levels. As described in Section 6.1.3.1, only spiny dogfish made up at least 5% of catch in the scup commercial fishery. According to the most recent stock assessment information, spiny dogfish are not overfished and overfishing is not occurring. This positive stock status is expected to be maintained under alternative 2D. Other commercial-non-target species are expected to be minimally impacted by this alternative.

The potential slight (10%) decrease in recreational fishing effort under this alternative could lead to decreased fishing mortality for recreational non-target species. However, this decrease is not expected to be great enough to change the stock status of any recreational non-target species. As described above in 7.1.2.1, most recreational non-target species have a positive stock status that is expected to be maintained under this alternative (except for the NJ/NY Bight region of tautog and summer flounder).

In summary, this alternative is expected to have moderate positive impacts for scup by preventing overfishing and an overfished status, and impacts on non-target species that range from slight negative (for those tautog regions that are overfished and/or experiencing overfishing and summer flounder) to moderate positive (for all other non-target species).

Of all the scup alternatives (i.e., alternatives 2A-2D), this alternative has the potential for the lowest total fishing effort. Therefore, the positive impacts of this alternative for scup and the non-target species with positive stock status are expected to be greater in magnitude than the other scup alternatives (2A, 2B, and 2C). For similar reasons, the negative impacts of this alternative on non-target species with negative stock status are expected to be lesser in magnitude than alternatives 2A, 2B, and 2C.

7.2. Impacts of the Alternatives on Habitat

The following sections describe the expected impacts of each alternative on physical habitat. The impacts are based on expected changes in fishing effort and associated changes in interactions between fishing gear and physical habitat under each alternative.

7.2.1 Impacts of Alternative Set 1 (Summer Flounder Catch and Landings Limits) on Habitat

7.2.1.1 Impacts of Alternative 1A (Status Quo Summer Flounder Catch and Landings Limits; Non-Preferred) on Habitat

Alternative 1A consists of the status quo (2023) commercial quota and RHL as applied to 2024-2025 (i.e., 15.27 and 10.62 million pounds, respectively). As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, or a slight increase, as the commercial quota has not been limiting in recent years. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience an increase in fishing effort resulting from a potential 10% liberalization in harvest, or a decrease in fishing effort resulting from a potential 10% reduction in harvest.

As described in Section 6.2.3, the gear types used in the summer flounder (i.e., predominantly bottom otter trawl in the commercial fishery and hook and line in the recreational fishery) can negatively impact physical habitat. The hook and line gear used in the recreational fishery generally has a lesser impact on physical habitat than the dominant commercial gear types. The status quo, or slightly increased, levels of commercial fishing effort and reduced recreational fishing effort expected under this alternative are not likely to result in any changes to the current conditions of physical habitat in the affected environment. Under this alternative, fishing gear will continue to have negative impacts on habitat; however, this is not expected to result in additional impacts beyond those caused in recent years by the summer flounder fisheries and many other fisheries which operate in the same areas. For these reasons, this alternative is expected to have slight negative impacts to physical habitat.

All four summer flounder alternatives are expected to have slight negative impacts on habitat; however, the magnitude of these slight negative impacts varies across the four alternatives. Alternative 1A could result in lower fishing effort compared to alternative 1C, and higher fishing effort compared to alternatives 1B and 1D (depending on actual changes in effort as described above). Therefore, the slight negative impacts of alternative 1A on habitat are expected to be lesser in magnitude that of alternative 1C and greater in magnitude than those of 1B and 1D.

7.2.1.2 Impacts of Alternative 1B (Preferred Summer Flounder Catch and Landings Limits) on Habitat

Alternative 1B includes the preferred 2024-2025 summer flounder commercial quota of 8.79 million pounds and RHL of 6.35 million pounds. As described above, this would be expected to result in moderate reductions in commercial fishing effort compared to recent years, and uncertain changes in the recreational fishery but a possible 10% reduction in harvest and effort.

Similar to the conclusions drawn in Section 7.2.1.1, the moderate reductions in commercial fishing effort and slight reduction in recreational fishing effort expected under this alternative are not likely to result in any changes to the current conditions of physical habitat in the affected environment. Additional impacts beyond those caused in recent years by the summer flounder fisheries and many other fisheries which operate in the same areas are not expected, nor are any alternatives expected to mitigate habitat damage. This alternative is not expected to result in impacts to habitats which were previously not impacted by fishing activities. For these reasons, this alternative is expected to have slight negative impacts to physical habitat.

Alternative 1B could result in lower fishing effort compared to alternative 1A and 1C, and higher fishing effort compared to alternative 1D (depending on actual changes in effort as described above). Therefore, the slight negative impacts of alternative 1B on habitat are expected to be lesser in magnitude that of alternatives 1A and 1C and greater in magnitude than those of 1D.

7.2.1.3 Impacts of Alternative 1C (Least Restrictive Summer Flounder Catch and Landings Limits; Non-Preferred) on Habitat

Alternative 1C includes the least restrictive 2024-2025 summer flounder commercial quota and RHL considered in this document (i.e., 19.09 and 13.23 million pounds, respectively). These landings limits represent a 25% increase compared to those implemented for 2023. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, or a slight increase, as the commercial quota has not been limiting in recent years. The recreational fishery may experience an increase in fishing effort resulting from a potential 10% liberalization in harvest.

The status quo, or slightly increased, levels of commercial fishing effort, and 10% liberalization in recreational effort expected under this alternative, are not likely to result in any changes to the current conditions of physical habitat in the affected environment. Under this alternative, fishing gear will continue to have negative impacts on habitat; however, this is not expected to result in additional impacts beyond those caused in recent years by the summer flounder fisheries and many other fisheries which operate in the same areas. For these reasons, this alternative is expected to have slight negative impacts to physical habitat.

Alternative 1C is expected to result in higher fishing effort compared to alternatives 1A, 1B, and 1D; therefore, the slight negative impacts of alternative 1C on habitat are expected to be greater in magnitude that of all other alternatives.

7.2.1.4 Impacts of Alternative 1D (Most Restrictive Summer Flounder and Landings Limits; Non-Preferred) on Habitat

Alternative 1D includes the most restrictive 2024-2025 summer flounder commercial quota and RHL considered in this document (i.e., 5.66 and 3.77 million pounds, respectively). These landings limits represent a 63% decrease in the commercial quota from 2023 (from 15.27 million pounds)

and a 65% decrease in the RHL from 2023 (from 10.62 million pounds). As previously stated, commercial summer flounder landings have closely followed the quota for many years (e.g., Figure 19a), therefore, it is assumed that this magnitude of reduction in the commercial quota would lead to a substantial reduction in commercial fishing effort. For the recreational fishery, under the Percent Change Approach, reductions in harvest of up to 40% would likely be needed although the exact magnitude is not known.

Similar to the conclusions drawn in Section 7.2.1.1, the substantial reductions in commercial fishing effort and slight to moderate reductions in recreational fishing effort expected under this alternative are not likely to result in any changes to the current conditions of physical habitat in the affected environment. Additional impacts beyond those caused in recent years by the summer flounder fisheries and many other fisheries which operate in the same areas are not expected, nor are any alternatives expected to mitigate habitat damage. This alternative is not expected to result in impacts to habitats which were previously not impacted by fishing activities. For these reasons, this alternative is expected to have slight negative impacts to physical habitat.

Alternative 1D is expected to result in lower fishing effort compared to alternatives 1A, 1B, and 1C; therefore, the slight negative impacts of alternative 1D on habitat are expected to be lesser in magnitude that of all other alternatives.

7.2.2 Impacts of Alternative Set 2 (Scup Catch and Landings Limits) on Habitat

7.3.2.3 7.2.2.1 Impacts of Alternative 2A (Status Quo Scup Catch and Landings Limits; Non-Preferred) on Habitat

Alternative 2A consists of the status quo (2023) commercial quota and RHL as applied to 2024-2025 (i.e., 14.01 and 9.27 million pounds, respectively). As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, as the commercial quota has not been a limiting factor in recent years. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest required.

As described in Section 6.2.3, the gear types used in the scup fisheries (i.e., predominantly bottom otter trawl in the commercial fishery and hook and line in the recreational fishery) can negatively impact physical habitat. The hook and line gear used in the recreational fishery generally has a lesser impact on physical habitat than the dominant commercial gear types. The status quo levels of commercial fishing effort and reduced recreational fishing effort expected under this alternative are not likely to result in any changes to the current conditions of physical habitat in the affected environment. Under this alternative, fishing gear will continue to have negative impacts on habitat; however, this is not expected to result in additional impacts beyond those caused in recent years by the scup fisheries and many other fisheries which operate in the same areas. For these reasons, this alternative is expected to have slight negative impacts to physical habitat.

All four scup alternatives are expected to have slight negative impacts on habitat; however, the magnitude of these slight negative impacts varies across the four alternatives. Compared to alternative 2C (least restrictive), this alternative has the potential for slightly lower negative impacts to habitat due to lower total fishing effort. Alternative 2A would be expected to have similar slightly negative impacts to habitat compared to alternative 2B (preferred) and slightly higher negative impacts compared to 2D (most restrictive) given the expected reductions in fishing effort under alternative 2D.

7.2.2.2 Impacts of Alternative 2B (Preferred Scup Catch and Landings Limits) on Habitat

Alternative 2B includes the preferred 2024 and 2025 scup commercial quotas of 21.15 million pounds and 18.80 million pounds and RHLs of 13.18 million pounds and 11.84 million pounds. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, as the commercial quota has not been a limiting factor in recent years. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest required.

Similar to the conclusions drawn in Section 7.1.2.1, the expected status quo effort in commercial fishing effort and possible slight reduction in recreational fishing effort expected under this alternative are not likely to result in any changes to the current conditions of physical habitat in the affected environment. Additional impacts beyond those caused in recent years by the scup fisheries and many other fisheries which operate in the same areas are not expected, nor are any alternatives expected to mitigate habitat damage. This alternative is not expected to result in impacts to habitats which were previously not impacted by fishing activities. For these reasons, this alternative is expected to have slight negative impacts to physical habitat.

Compared to the other alternatives for scup, this alternative has the potential for lower negative impacts to habitat due to lower total fishing effort than alternative 2C (least restrictive). Alternative 2B would be expected to have similar negative impact to alternative 2A (status quo) and slightly higher negative impacts to habitat compared to alternative 2D (most restrictive) given that alternative 2D is expected to result in lower fishing effort.

7.2.2.3 Impacts of Alternative 2C (Least Restrictive Scup Catch and Landings Limits; Non-Preferred) on Habitat

Alternative 2C is the least restrictive alternative for scup 2024-2025 specifications and reflects a commercial quota and RHL that are 25% above the levels under the 2024 preferred alternative 2B. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, given commercial scup harvest currently appears to be limited more by market demand than by the quota. The recreational fishery may experience an increase in fishing effort resulting from a potential 10% liberalization in harvest.

Similar to the conclusions drawn in Section 7.1.2.1, the expected status quo effort in commercial fishing effort and possible slight increase in recreational fishing effort expected under this alternative are not likely to result in any changes to the current conditions of physical habitat in the affected environment. The expected levels of fishing effort under this alternative are not likely to result in any changes to the current conditions of physical habitat in the affected environment. The potential slight increase in recreational fishing effort is not expected to result in impacts to habitats which were not previously impacted by fishing. Under this alternative, fishing gear will continue to have negative impacts on habitat; however, this is not expected to result in notable additional impacts beyond those caused in recent years by the scup fisheries and many other fisheries which operate in the same areas. For these reasons, this alternative is expected to have slight negative impacts to physical habitat.

Compared to the other alternatives for scup, this alternative has the highest expected fishing effort and thus the highest potential for negative impacts to habitat.

7.2.2.4 Impacts of Alternative 2D (Most Restrictive Scup Catch and Landings Limits; Non-Preferred) on Habitat

Alternative 2D is the most restrictive alternative for scup 2024-2025 specifications and reflects a commercial quota and RHL that are 25% below the levels under the status quo alternative 2B (i.e., 10.51 and 6.95 million pounds, respectively). As previously stated, commercial scup harvest currently appears to be limited more by market demand than by the quota; however, under alternative 2D, slight to moderate reductions in commercial harvest would be required. Landings in 2022 were about 13% above the commercial quota under this alternative. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest required.

In theory, reduced fishing effort could result in lower levels of gear interactions with habitat; however, as described above, the areas fished for scup have been heavily fished for many years for a variety of species. As some level of impacts will continue to occur, this alternative is expected to have slight negative impacts on physical habitat.

Compared to the other alternatives for scup, this alternative has the lowest expected fishing effort and thus the lowest potential for negative impacts to habitat.

7.3. Impacts of the Alternatives on Protected Species

The following sections describe the expected impacts of each alternative on protected species. The impacts are based on expected changes in fishing effort and associated changes in the potential for interactions between fishing gear and protected species under each alternative.

As described in Section 6.3.3, the commercial fisheries for summer flounder and scup are primarily prosecuted with bottom trawl gear. The commercial scup fishery also uses, to a limited extent, pot trap gear (e.g., in 2022, 96% of the commercial scup landings were caught with bottom otter trawls; pots/traps accounted for about 3% of landings; see Section 6.4.2). Given the limited pot/trap effort in the commercial scup fishery, the potential impacts of Alternative set 2 (Scup Catch and Landings Limits) on protected species will be weighed more heavily on the fisheries predominant use of bottom trawl gear to land scup commercially. Many protected species are vulnerable to interactions with bottom trawls and/or pot/trap gears (6.3.3). The risk of an interaction is strongly associated with the amount of gear in the water, the time the gear is in the water (e.g., soak or tow duration), and the presence of protected species in the same area and time as the gear, with risk of an interaction increasing with increases in of any of these factors.

Hook and line gear is used in the recreational summer flounder and scup fisheries. ESA listed species of large whales, sea turtles, and Atlantic sturgeon, as well as MMPA protected (non-ESA listed) species of large whales and bottlenose dolphin stocks are vulnerable to interactions with hook and line gear (6.3.3). Hook and line interactions with other protected species identified in Section 6.3 (e.g., species of small cetaceans (except bottlenose dolphins), pinnipeds, Atlantic salmon, giant manta ray) have never been observed or documented and therefore, this gear type is not expected to be source of injury or mortality to these species.

7.3.1 Impacts of Alternative Set 1 (Summer Flounder Catch and Landings Limits) on Protected Species

7.3.1.1 Impacts of Alternative 1A (Status Quo Summer Flounder Catch and Landings Limits; Non-Preferred) on Protected Species

Alternative 1A consists of the status quo (2023) commercial quota and RHL as applied to 2024-2025 (i.e., 15.27 and 10.62 million pounds, respectively). As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, or a slight increase, as the commercial quota has not been limiting in recent years. As described above, commercial landings have increased by about 15% each year from 2020-2021 and 2021-2022, but have remained well below commercial quotas. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience an increase in fishing effort resulting from a potential 10% liberalization in harvest, or a decrease in fishing effort resulting from a potential 10% reduction in harvest.

Protected species interactions with fishing gear, regardless of listing status, is greatly influenced by the amount of gear and the duration of time gear is in the water, and level of overlap between gear and a protected species. Given this, any decrease in any of these factors will reduce the potential for protected species interactions with gear. Based on this, impacts to MMPA protected species (not also ESA-listed) and ESA listed species are considered below.

Impacts to MMPA-Protected Species (Not ESA Listed)

Aside from several stocks of bottlenose dolphin (i.e., WNA Northern and Southern Migratory Coastal Stocks), there has been no indication that takes of non-ESA listed marine mammals in commercial or recreational fisheries have gone beyond levels which would result in the inability of the populations to sustain themselves. More specifically, with the exception of the WNA Northern and Southern Migratory Coastal Stocks of bottlenose dolphins, PBR levels have not been exceeded for any of the non-ESA listed marine mammal species in the affected environment (Section 6.3). Although the WNA Northern and Southern Migratory Coastal Stocks of bottlenose dolphins have experienced levels of take that resulted in the exceedance of their PBR level, take reduction strategies and/or plans have been implemented to reduce bycatch in the fisheries affecting these species.

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, the impacts of alternative 1A on non-ESA listed species of marine mammals are likely to range from low moderate negative to low moderate positive, depending on the species/stock. Some bottlenose dolphin stocks (WNA Northern and Southern Migratory Coastal Stocks) 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 previously noted, the risk of an interaction is strongly associated with the amount of gear in the water, the duration of time the gear is in the water (e.g., soak or tow duration), and the presence of protected species in the same area and time as the gear, with risk of an interaction increasing with increases in of any of these factors. As provided in Section 6.3.3, marine mammal stock assessment and serious injury reports that cover the most recent ten years of data (i.e., 2011-2020), as well as the MMPA LOF's indicate that that there have been no

observed or documented interactions between bottom trawl gear and WNA Northern or Southern Migratory Coastal Stocks of bottlenose dolphins; however, records of interactions (i.e., entanglement and ingestion) with hook and line gear have been documented with these stocks. As the commercial summer flounder fishery predominately uses bottom trawl gear, interactions between this component of the fishery and these bottlenose dolphin stocks in poor condition are not expected, especially as significant changes to fishing behavior or effort, relative to current operating conditions, are not expected. Given this, Alternative 1A is not expected to change the summer flounder commercial bottom trawl fishery in a manner that would introduce new risks to these stocks. As it relates to the recreational summer flounder fishery, under alternative 1A, there may be a slight increase or slight decrease in effort relative to current conditions. As these bottlenose dolphin stocks have been documented with interactions associated with hook and line gear, Alternative 1A has the potential to result in a slight increased or decreased risk of a hook and line interactions with these stocks. Given this information, and the information provided in Section 6.3.3, alternative 1A is likely to result in negligible to low moderate negative impacts to non-listed marine mammal stocks/species in poor condition (i.e., Bottlenose dolphin, WNA Northern and Southern Migratory Coastal Stocks).

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 result in 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. As provided above, alternative 1A is expected to result in similar levels of commercial fishing effort compared to recent years, with the potential for a commercial effort to slightly increase. For the recreational summer flounder fishery, Alternative 1A, may result in a slight decrease or increase in recreational fishing effort relative to recent levels. Given this, and the fact that the potential risk of interacting with gear types used in the commercial and recreational fishery varies between non-ESA listed marine mammal species in good condition (e.g., pinnipeds have never been documented/observed in hook and line gear; humpback whale interactions with bottom trawl gear are expected to be rare; see Section 6.3.3), the impacts of alternative 1A on these non-ESA listed species of marine mammals are expected to be slight negative to low moderate positive, depending on the species and the response of the commercial or recreational fishery to the measures identified under 1A.

Based on this information, alternative 1A is expected to have low moderate negative to low moderate positive impacts on non-ESA listed species of marine mammals, depending on the species.

Impacts to ESA-Listed Species

As previously stated, any interactions with ESA-listed species, even under status quo or reduced levels of fishing effort, are considered to have some level of negative impacts to these species. As noted above, interaction risks to protected species are strongly associated with the amount of gear in the water, gear soak or tow duration, as well as the area of overlap, either in space or time, of the gear and a protected species. Commercial fishing effort under alternative 1A is expected to

remain at levels similar to recent years, with the potential for a slight increase. For the recreational summer flounder fishery, Alternative 1A, may result in a slight decrease or increase in recreational fishing effort relative to recent levels. Based on this information, and information provided in Section 6.3, specifically the fact that the potential risk of interacting with gear types used in the commercial and recreational fishery varies between ESA listed species (e.g., listed species of large whales have never been documented/observed in bottom trawl gear; interactions between hook and line gear and Atlantic sturgeon have not been observed or documented ; Section 6.3.3), the impacts of Alternative 1A on ESA listed species is expected to be negligible to low moderate negative, depending on the species.

Overall Impacts

In summary, alternative 1A is expected to have low moderate negative to low moderate positive impacts on non-ESA listed marine mammals and negligible to low moderate negative impacts on ESA-listed species, depending on the species.

The expected levels of commercial and recreational fishing effort under alternative 1A, and thus the potential for interactions with protected species, are lower than under alternative 1C (least restrictive) but higher than under alternatives 1B (preferred) and 1D (most restrictive). As such, alternative 1A has a lesser potential for negative impacts to protected species than alternative 1C and a higher potential for negative impacts to protected species than alternatives 1B and 1D.

7.3.1.2 Impacts of Alternative 1B (Preferred Summer Flounder Catch and Landings Limits) on Protected Species

Alternative 1B includes the preferred 2024-2025 summer flounder commercial quota of 8.79 million pounds and RHL of 6.35 million pounds. As described above, this would be expected to result in moderate reductions in commercial fishing effort compared to recent years, and uncertain changes in the recreational fishery but a possible 10% reduction in harvest and effort.

Impacts to MMPA-Protected Species (Not ESA Listed)

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, the impacts of alternative 1B on non-ESA listed species of marine mammals are likely to range from slight negative to low moderate positive, depending on the species/stock.

Some bottlenose dolphin stocks (i.e., WNA Northern and Southern Migratory Coastal Stocks) 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 previously noted, the risk of an interaction is strongly associated with the amount of gear in the water, the duration of time the gear is in the water (e.g., soak or tow duration), and the presence of protected species in the same area and time as the gear, with risk of an interaction increasing with increases in of any of these factors. As previously stated, commercial effort under alternative 1B is expected to moderately decrease and recreational effort is likely to be slightly reduced. Based on information provided in Section 6.3.3, the most recent ten years of data (i.e., 2011-2020) indicate that that there have been no observed or documented interactions between bottom trawl gear and WNA Northern or Southern Migratory Coastal Stocks of bottlenose dolphins; however, records of interactions (i.e., entanglement and

ingestion) with hook and line gear have been documented with these stocks. As the commercial summer flounder fishery predominately uses bottom trawl gear, interactions between this component of the fishery and these bottlenose dolphin stocks in poor condition are not expected, especially as significant changes to fishing behavior or effort, relative to current operating conditions, are not expected. Given this, Alternative 1B is not expected to change the summer flounder commercial bottom trawl fishery in a manner that would introduce new risks to these stocks. As it relates to the recreational summer flounder fishery, under alternative 1B, there is expected to be a slight decrease in effort relative to current conditions. Given this information, and the information provided in Section 6.3.3, alternative 1B is likely to result in negligible to slight negative impacts to non-listed marine mammal stocks/species in poor condition (i.e., WNA Northern and Southern Migratory Coastal Stocks of bottlenose dolphins).

For 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), recent fishery interaction levels have not appeared 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 marine mammal species/stocks. Alternative 1B would be expected to result in moderately reduced commercial fishing effort and slightly reduced recreational effort relative to current conditions. Given this, and the fact that the potential risk of interacting with gear types used in the commercial and recreational fishery varies between non-ESA listed marine mammal species in good condition (e.g., pinnipeds have never been documented/observed in hook and line gear; humpback whale interactions with bottom trawl gear are expected to be rare; see Section 6.3.3), the impacts of alternative 1B on these non-ESA listed species of marine mammals are expected to be negligible to low moderate positive, depending on the species (i.e., continuation of current operating conditions is not expected to result in exceedance of any of these stocks/species PBR level).

Impacts to ESA-Listed Species

As previously stated, any interactions with ESA-listed species are considered to have negative impacts to these species. As noted above, interaction risks to protected species are strongly associated with the amount of gear in the water, gear soak or tow duration, as well as the area of overlap, either in space or time, of the gear and a protected species. As previously stated, fishing effort under alternative 1B is expected to moderately decrease for the commercial fishery and slightly decrease for the recreational fishery compared to current conditions. Given this, alternative 1B is not expected to introduce new or elevated interaction risks to any ESA listed species. Based on this information, and information provided in Section 6.3.3, specifically the fact that the potential risk of interacting with gear types used in the commercial and recreational fishery varies between ESA listed species (e.g., listed species of large whales have never been documented/observed in bottom trawl gear; interactions between hook and line gear and Atlantic sturgeon have not been observed or documented Section 6.3.3), the impacts of Alternative 1B on ESA listed species is expected to be negligible to slight negative, depending on the species.

Overall Impacts

In summary, alternative 1B is expected to have slight negative to low moderate positive impacts on non-ESA listed marine mammals, depending on the species/stock and whether its PBR level is exceeded as a result of the expected increase in fishing effort, which is uncertain. Alternative 1B

is expected to have negligible to slight negative impacts on ESA-listed species, depending on the species.

The expected levels of commercial and recreational fishing effort under alternative 1B, and thus the potential for interactions with protected species, are lower than under alternatives 1A (status quo) and 1C (least restrictive) but higher than under alternatives 1D (most restrictive). As such, alternative 1B has a lower potential for negative impacts to protected species than alternatives 1A and 1C, but a higher potential for negative impacts than alternative 1D.

7.3.1.3 Impacts of Alternative 1C (Least Restrictive Summer Flounder Catch and Landings Limits; Non-Preferred) on Protected Species

Alternative 1C includes the least restrictive 2024-2025 summer flounder commercial quota and RHL considered in this document (i.e., 19.09 and 13.23 million pounds, respectively). These landings limits represent a 25% increase compared to those implemented for 2023. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, or a slight increase, as the commercial quota has not been limiting in recent years. The recreational fishery may experience an increase in fishing effort resulting from a potential 10% liberalization in harvest.

This alternative is expected to result in impacts that are similar to those under alternative 1A (Section 7.3.1.1), given that in both cases, the commercial quota is not expected to be limiting to the fishery given recent trends. Commercial landings would be expected to remain similar to status quo levels, or slightly increase. For the recreational fishery, alternative 1C is more likely to result in a 10% liberalization in harvest compared to alternative 1A (alternative 1A may result in a 10% liberalization or a 10% decrease under the Percent Change Approach). Based on this, impacts to protected species (ESA-listed and MMPA protected) are expected to range from low moderate negative to low moderate positive; refer to Section 7.3.1.1 for additional information/rationale supporting these determination of impacts to protected species.

Alternative 1C would be expected to result in greater potential negative impacts to protected species compared to the other summer flounder alternatives considered in this document (i.e., alternatives 1A, 1B, and 1D), as this alternative is associated with the greatest potential increase in fishing effort; however, as described above, the full magnitude of increases under alternative 1C are not expected to be realized.

7.3.1.4 Impacts of Alternative 1D (Most Restrictive Summer Flounder Catch and Landings Limits; Non-Preferred) on Protected Species

Alternative 1D includes the most restrictive 2024-2025 summer flounder commercial quota and RHL considered in this document (i.e., 5.66 and 3.77 million pounds, respectively). These landings limits represent a 63% decrease in the commercial quota from 2023 (from 15.27 million pounds) and a 65% decrease in the RHL from 2023 (from 10.62 million pounds). As previously stated, commercial summer flounder landings have closely followed the quota for many years (e.g., Table 42), therefore, it is assumed that this magnitude of reduction in the commercial quota would lead to a substantial reduction in commercial fishing effort. For the recreational fishery, under the Percent Change Approach, reductions in harvest of up to 40% would likely be needed although the exact magnitude is not known.

This alternative is expected to result in impacts that are similar to those under alternative 1B (Section 7.3.1.2), given that in both cases, commercial and recreational harvest would both need to be notably reduced. Commercial landings would be expected to be constrained to the limit under this alternative, resulting in a large reduction in harvest. For the recreational fishery, alternative 1D is likely to result in a reduction in harvest greater than 10% but up to 40% under the Percent Change Approach. While the magnitude of these reductions is expected to be larger than under 1B, both alternatives require large harvest reductions that are expected to have a similar magnitude of impacts to protected species. Based on this, impacts to protected species (ESA-listed and MMPA protected) are expected to range from slight negative to low moderate positive; refer to Section 7.3.1.2 for additional information/rationale supporting these determination of impacts to protected species.

Of all the summer flounder alternatives considered in this document (i.e., alternatives 1A-1D), alternative 1D has the lowest potential for negative impacts to protected species as it is associated with the lowest expected commercial and recreational fishing effort.

7.3.2 Impacts of Alternative Set 2 (Scup Catch and Landings Limits) on Protected Species

7.3.2.4 7.3.2.1 Impacts of Alternative 2A (Status Quo Scup Catch and Landings Limits; Non-Preferred) on Protected Species

Under alternative 2A, the 2024-2025 scup commercial quota would be 14.01 million pounds and the RHL would be 9.27 million pounds, identical to the landing limits implemented for 2023. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, as the commercial quota has not been a limiting factor in recent years. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest required.

Protected species interactions with fishing gear, regardless of listing status, is greatly influenced by the amount of gear and the duration of time gear is in the water, and level of overlap between gear and a protected species. Given this, any decrease in either of these factors will reduce the potential for protected species interactions with gear. Based on this, impacts to MMPA protected species (not also ESA-listed) and ESA listed species are considered below.

MMPA (Non-ESA Listed) Species Impacts

Aside from several stocks of bottlenose dolphin (i.e., WNA Northern and Southern Migratory Coastal Stocks), there has been no indication that takes of non-ESA listed marine mammals in commercial or recreational fisheries have gone beyond levels which would result in the inability of the populations to sustain themselves. More specifically, with the exception of the WNA Northern and Southern Migratory Coastal Stocks of bottlenose dolphins, PBR levels have not been exceeded for any of the non-ESA listed marine mammal species in the affected environment (Section 6.3). Although the WNA Northern and Southern Migratory Coastal Stocks of bottlenose dolphins have experienced levels of take that resulted in the exceedance of their PBR levels, take reduction strategies and/or plans have been implemented to reduce bycatch in the fisheries affecting these species.

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, the impacts of alternative 2A on non-ESA listed species of marine mammals are likely to range from

slight negative to low moderate positive, depending on the species/stock. Some bottlenose dolphin stocks (i.e., WNA Northern and Southern Migratory Coastal Stocks) 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 previously noted, the risk of an interaction is strongly associated with the amount of gear in the water, the duration of time the gear is in the water (e.g., soak or tow duration), and the presence of protected species in the same area and time as the gear, with risk of an interaction increasing with increases in of any of these factors. As provided in Section 6.3.3, marine mammal stock assessment and serious injury reports that cover the most recent ten years of data (i.e., 2011-2020), as well as the MMPA LOF's indicate that that there have been no observed or documented interactions between bottom trawl or pot/trap gear and WNA Northern or Southern Migratory Coastal Stocks of bottlenose dolphins; however, records of interactions (i.e., entanglement and ingestion) with hook and line gear have been documented with these stocks. As the commercial scup fishery predominately uses bottom trawl gear, and to a lesser extent, pot/trap gear, interactions between these stocks and this component of the fishery are not expected, especially as significant changes to commercial scup fishing behavior or effort, relative to current operating conditions, is not expected. Given this, Alternative 2A is not expected to change the scup commercial bottom trawl fishery in a manner that would introduce new risks to these stocks. As it relates to the recreational scup fishery, under alternative 2A, effort is expected to decrease from current operating conditions. Given this information, and the information provided in Section 6.3.3, alternative 2A is likely to result in negligible to slight negative impacts to non-listed marine mammal stocks/species in poor condition (i.e., Bottlenose dolphin, WNA Northern and Southern Migratory Coastal Stocks).

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 result in 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. As provided above, alternative 2A is expected to result in status quo commercial fishing effort and a decrease in recreational fishing effort relative to recent levels. Given this, and the information provided in Sections 6.3.3 and 7.3, the impacts of alternative 2A on these non-ESA listed species of marine mammals are expected to be negligible to low moderate positive, depending on the species (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, alternative 2A is expected to have slight negative to low moderate positive impacts on non-ESA listed species of marine mammals, depending on the species.

Impacts to ESA-Listed Species

As previously stated, any interactions with ESA-listed species, even under status quo or reduced levels of fishing effort, are considered to have some level of negative impacts to these species. As

noted above, interaction risks to protected species are strongly associated with the amount of gear in the water, gear soak or tow duration, as well as the area of overlap, either in space or time, of the gear and a protected species. Fishing effort under alternative 2A is expected to remain at levels similar to recent years for commercial fishery and a slight decrease for the recreational fishery. Given this, alternative 2A is not expected to introduce new or elevated interaction risks to any ESA listed species. Based on this information, and information provided in Sections 6.3.3 and 7.3, specifically the fact that the potential risk of interacting with gear types used in the commercial and recreational fishery varies between ESA listed species (e.g., listed species of large whales have never been documented/observed in bottom trawl gear; however, listed species of sea turtles and fish have been observed/documented bycaught in this gear type; Section 6.3.3), the impacts of Alternative 2A on ESA-listed species is expected to be negligible to slight negative,, depending on the species.

Overall Impacts

In summary, alternative 2A is expected to have slight negative to low moderate positive impacts on non-ESA listed marine mammals, and negligible to slight negative impacts on ESA-listed species, depending on the species.

The expected levels of commercial fishing effort are expected to be the same between alternative 2A (status quo), 2B (preferred), and 2C (least restrictive) given none of these alternatives are expected to be constraining on the fishery. However, variations in recreational effort are probable under these alternatives given the application of the Percent Change Approach. Thus, the potential for interactions with protected species under alternative 2A is lower than under alternative 2C, similar to alternative 2B, but higher than alternative 2D (most restrictive). As such alternative 2A has a lesser potential for negative impacts to protected species than alternative 2C, similar potential impacts to alternative 2B, and a higher potential for negative impacts to protected species than alternative 2D.

7.3.2.5 Impacts of Alternative 2B (Preferred Scup Catch and Landings Limits) on Protected Species

Alternative 2B includes the preferred 2024 and 2025 scup commercial quotas of 21.15 million pounds and 18.80 million pounds and RHLs of 13.18 million pounds and 11.84 million pounds. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, as the commercial quota has not been a limiting factor in recent years. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest required. Based on this, Alternative 2B is expected to result in impacts to protected species (ESA-listed and MMPA protected) that are similar to those described under alternative 2A (Section 7.3.2.1); that is impacts to protected species are expected to range from slight negative to low moderate positive impacts on non-ESA listed marine mammals, and negligible to slight negative impacts on ESA-listed species, depending on the species; refer to Section 7.3.2.1 for addition information/rationale supporting these determination of impacts to protected species.

As described in Section 7.3.2.1, the expected levels of commercial fishing effort are expected to be the same between alternative 2A (status quo), 2B (preferred), and 2C (least restrictive) given none of these alternatives are expected to be constraining on the fishery. However, variations in recreational effort are probable under these alternatives given the application of the Percent

Change Approach. Thus, the potential for interactions with protected species under 2Bare lower than under alternative 2C, similar to alternative 2A, but higher than alternative 2D (most restrictive). As such alternative 2B has a lesser potential for negative impacts to protected species than alternative 2C, similar potential impacts to alternative 2A, and a higher potential for negative impacts to protected species than alternative 2D.

7.3.2.6 Impacts of Alternative 2C (Least Restrictive Scup Catch and Landings Limits; Non-Preferred) on Protected Species

Alternative 2C is the least restrictive alternative for scup 2024-2025 specifications and reflects a commercial quota and RHL that are 25% above the 2024 preferred alternative 2B. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, given commercial scup harvest currently appears to be limited more by market demand than by the quota. The recreational fishery may experience an increase in fishing effort resulting from a potential 10% liberalization in harvest. Based on this, Alternative 2C is expected to result in impacts to protected species (ESA-listed and MMPA protected) that are similar to those described under alternative 2A (Section 7.3.2.1); that is impacts to protected species are expected to range from slight negative to low moderate positive impacts on non-ESA listed marine mammals, and negligible to slight negative impacts on ESA-listed species, depending on the species ; refer to Section 7.3.2.1 for addition information/rationale supporting these determination of impacts to protected species.

As described in section 7.3.2.1, the expected levels of commercial fishing effort are expected to be the same between alternative 2A (status quo), 2B (preferred), and 2C (least restrictive) given none of these alternatives are expected to be constraining on the fishery. However, variations in recreational effort are probable under these alternatives given the application of the Percent Change Approach. Thus, the potential for interactions with protected species under 2C would be expected to result in greater potential negative impacts compared to the other scup alternatives. As this alternative is associated with the greatest potential increase in fishing effort; however, as described above, the full magnitude of increases under alternative 2C are not expected to be realized.

7.3.2.7 Impacts of Alternative 2D (Most Restrictive Scup Catch and Landings Limits; Non-Preferred) on Protected Species

Alternative 2D is the most restrictive alternative for scup 2024-2025 specifications and reflects a commercial quota and RHL that are 25% below the levels under the status quo alternative 2B (i.e., 10.51 and 6.95 million pounds, respectively). As previously stated, based on recent quota underages, commercial scup harvest currently appears to be limited more by market demand than by the quota. Because of this, it is assumed that scup commercial landings would be similar to recent years. There is about a 13% difference between expected commercial landings and total allowable commercial landings under this alternative. Therefore, it is assumed that this magnitude of reduction in the commercial quota would lead to a minimal reduction in commercial fishing effort. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest required.

Impacts to MMPA-Protected Species (Not ESA Listed)

Aside from several stocks of bottlenose dolphin (i.e., WNA Northern and Southern Migratory

Coastal Stocks), there has been no indication that takes of non-ESA listed marine mammals in commercial or recreational fisheries have gone beyond levels which would result in the inability of the populations to sustain themselves. More specifically, with the exception of the WNA Northern and Southern Migratory Coastal Stocks of bottlenose dolphins, PBR levels have not been exceeded for any of the non-ESA listed marine mammal species in the affected environment (Section 6.3). Although the WNA Northern and Southern Migratory Coastal Stocks of bottlenose dolphins have experienced levels of take that resulted in the exceedance of their PBR levels, take reduction strategies and/or plans have been implemented to reduce bycatch in the fisheries affecting these species.

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, the impacts of alternative 2D on non-ESA listed species of marine mammals are likely to range from slight negative to low moderate positive. As noted above, there are some bottlenose dolphin stocks (i.e., WNA Northern and Southern Migratory Coastal Stocks) 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 previously stated, the risk of an interaction is strongly associated with the amount of gear in the water, the duration of time the gear is in the water (e.g., soak or tow duration), and the presence of listed species in the same area and time as the gear, with risk of an interaction increasing with increases in of any of these factors. As provided in Section 6.3.3, marine mammal stock assessment and serious injury reports that cover the most recent ten years of data (i.e., 2011-2020), as well as the MMPA LOF's indicate that that there have been no observed or documented interactions between bottom trawl or pot/trap gear and WNA Northern or Southern Migratory Coastal Stocks of bottlenose dolphins; however, records of interactions (i.e., entanglement and ingestion) with hook and line gear have been documented with these stocks. As the commercial scup fishery predominately uses bottom trawl gear, and to a lesser extent, pot/trap gear, interactions between these stocks and this component of the fishery are not expected, especially as significant changes to commercial scup fishing behavior or effort, relative to current operating conditions, is not expected. Given this, Alternative 2D is not expected to change the scup commercial fishery in a manner that would introduce new risks to these stocks. As it relates to the recreational scup fishery, under alternative 2D, recreational fishing effort is expected to slightly decrease from current operating conditions. Based on this, alternative 2D is not expected to introduce new or elevated interaction risks to these non-ESA listed marine mammal stocks in poor condition. Specifically, the amount of gear in the water, gear soak or tow durations, and overlap between these species and fishing gear is expected to slightly decrease for both the commercial and recreational fisheries relative to current conditions. Given this information, and the information provided in Section 6.3.3 and 7.3, alternative 2D is likely to result in negligible to slight negative impacts to non-listed marine mammal stocks/species in poor condition (i.e., WNA Northern or Southern Migratory Coastal Stocks of bottlenose dolphins).

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 result in 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. As provided above, alternative 2D is expected to result in a slight decrease in both commercial fishing and recreational fishing effort relative to recent levels. Given this, and the information provided in Sections 6.3.3 and 7.3, the impacts of alternative 2D on these non-ESA listed species of marine mammals are expected to be negligible to low moderate 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, alternative 2D is expected to have slight negative to low moderate positive impacts on non-ESA listed species of marine mammals.

Impacts to ESA-Listed Species

As previously stated, any interactions with ESA-listed species, even under reduced levels of fishing effort, as expected under this alternative, are considered to have some level of negative impacts to these species. As noted above, interaction risks to 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. Fishing effort under alternative 2D is expected to decrease for the commercial and recreational fisheries. Given this, alternative 2D is not expected to introduce new or elevated interaction risks to any ESA listed species. Based on this information, and information provided in Section 6.3.3 and 7.3, specifically the fact that the potential risk of interacting with gear types used in the commercial and recreational fishery varies between ESA listed species (e.g., listed species of large whales have never been documented/observed in bottom trawl gear; however, listed species of sea turtles and fish have been observed/documented bycaught in this gear type; Section 6.3.3), the impacts of Alternative 2D on ESA listed species is expected to be negligible to slight negative depending on the species.

Overall Impacts

In summary, alternative 2D is expected to have slight negative to low moderate positive impacts on non-ESA listed marine mammals, and negligible to slight negative impacts on ESA-listed species, depending on the species.

Of all the scup alternatives considered in this document (i.e., alternatives 2A-2D), alternative 2D has the lowest potential for negative impacts to protected species as it is associated with the lowest expected commercial and recreational fishing effort. As a result, relative to Alternatives 2A, 2B, and2C, Alternative 2D is expected to have the least negative impacts to protected species.

7.4. Socioeconomic Impacts of the Alternatives

The following sections describe the expected socioeconomic impacts of each alternative. The impacts are based on expected changes in commercial revenues, for-hire revenues, fishing opportunities, efficiency of fishing operations, and angler satisfaction.

7.4.1 Socioeconomic Impacts of Alternative Set 1 (Summer Flounder Catch and Landings Limits)

7.4.1.1 Socioeconomic Impacts of Alternative 1A (Status Quo Summer Flounder Catch and Landings Limits; Non-Preferred)

Alternative 1A consists of the status quo (2023) commercial quota and RHL as applied to 2024-2025 (i.e., 15.27 and 10.62 million pounds, respectively). As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, or a slight increase, as the commercial quota has not been limiting in recent years. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience an increase in fishing effort resulting from a potential 10% liberalization in harvest, or a decrease in fishing effort resulting from a potential 10% reduction in harvest.

As previously stated, it is assumed that this alternative would not be constraining to the commercial fishery if recent trends continue, as the commercial fishery has underharvested their limits in recent years for uncertain reasons; possibly due to a combination of lower availability, market factors, and non-quota management factors. As described in Section 6.4.1, the commercial summer flounder fishery is a valuable fishery with many participating dealers and fishermen across the region. By allowing for continued levels of commercial harvest compared to recent years this alternative is expected to have continued moderate positive socioeconomic impacts for the commercial fishery.

Impacts to the recreational fishery would vary depending on the outcome of the Percent Change Approach for 2024-2025 and whether a 10% reduction in harvest would be needed, or whether a 10% liberalization in harvest would be allowed. How the management measures would be adjusted in each case is also uncertain. A reduction in the recreational harvest target/measures could result in reduced recreational harvest of summer flounder, reduced party/charter trips targeting summer flounder, reduced party/charter revenues, and reduced angler satisfaction compared to recent levels. This would be expected to result in slight negative impacts for the recreational fishery. Under a 10% liberalization scenario, recreational harvest would be expected to increase, along with a possible slight increase in party/charter trips targeting summer flounder, increased party/charter revenues, and increased angler satisfaction compared to recent levels.

In summary, this alternative is expected to result in moderate positive socioeconomic impacts for the commercial fishery and slight negative to slight positive socioeconomic impacts for the recreational fishery. Because commercial landings under this alternative are expected to be similar in magnitude to those under alternative 1C due to the lack of a constraining quota, alternative 1A is expected to have a similar magnitude of moderate positive impacts compared to alternative 1C. Alternative 1A is expected to have higher moderate positive impacts compared to alternatives 1B and 1D. Because the outcomes of the Percent Change Approach are more likely to result in a liberalization for this alternative compared to alternatives 1B and 1D, alternative 1A is expected to have a lesser magnitude of negative impacts (or more positive impacts) to the recreational fishery. Alternative 1A has a higher likelihood of resulting in a reduction compared to alternative 1C, so alternative 1A is expected to result in less positive (or more negative) impacts compared to alternative 1C.

7.4.1.2 Socioeconomic Impacts of Alternative 1B (Preferred Summer Flounder Catch and Landings Limits)

Alternative 1B includes the preferred 2024-2025 summer flounder commercial quota of 8.79 million pounds and RHL of 6.35 million pounds. As described above, this would be expected to result in moderate reductions in commercial fishing effort compared to recent years, and uncertain changes in the recreational fishery but a possible 10% reduction in harvest and effort.

Alternative 1B would require a reduction in the commercial fishery of about 30% relative to 2022 landings levels (12.46 million pounds). As described in Section 6.4.1, the commercial summer flounder fishery is a valuable fishery with many participating dealers and fishermen across the region. A decrease of this magnitude could therefore have notable negative socioeconomic impacts; however, negative socioeconomic impacts may be partially mitigated if a decrease in commercial revenues results in increases in price. As shown in Figure 11 (Section 6.4.2), there is a consistent relationship in recent years between higher summer flounder landings and lower prices, and vice versa.

An expected price can be estimated by first calculating an elasticity of demand, which shows how quantity demanded changes in response to a price change. This is given by the formula: $E_d = \%\Delta Q / \%\Delta P$, where Q is the Quantity Demanded and P is the Price. Elasticity of Demand changes for each point on the demand curve, but we can us an alternative measure which is the "Arc Elasticity of Demand." The formula uses the midpoint between prices and quantities and is given by:

$$Arc\ E_d = \left[(Q_{d1} - Q_{d2}) / \frac{(Q_{d1}+Q_{d2})}{2}\right] \div \left[(P_{d1} - P_{d2}) / \frac{(P_{d1}+P_{d2})}{2}\right].$$

In 2017, the price for Summer Flounder peaked at $4.98. Using the years 2022 and 2017, we can substitute the landings values and Prices into the above formula:

$$Arc\ E_d = \left[(12{,}464{,}990 - 5{,}871{,}326) / \frac{(12{,}464{,}990+5{,}871{,}326)}{2}\right] \div \left[(2.44 - 4.98) / \frac{(2.44+4.98)}{2}\right].$$

The value obtained is -1.05.

Given that we know the landings in 2022, and assuming the proposed 2024-2025 commercial quota is 100% utilized, we can plug those numbers into our elasticity formula for Q_{d1}, Q_{d2}, and P_{d1} ,and using our arc-elasticity value of -1.05 find the value for P_{d2}. After doing this, we obtain a value for P_{d2} of $3.40. As a check on this number, we examined the time series of landings and prices found in Figure 11, and observe that in 2008, there were landings of 9,214,233, which is 424,233 pounds more than the proposed quota. The corresponding price in 2008 was $3.22, which is lower than but close to our value of $3.40 (we expect a lower value with higher landings).

When the expected price of $3.40 is multiplied by the proposed quota, the total value of the harvest is expected to be $29,866,000. In 2022 the summer flounder landings value was $30,414,576, meaning that the expected total reduction in revenue is 1.74% spread among all vessels in the fleet.

A reduction in quota of this magnitude, while somewhat mitigated by higher prices for vessels who are able to land summer flounder, will also cause state regulations such as possession limits and seasons to be adjusted to prevent quota overages. Lower access to quota by individual vessels, combined with higher trip costs reported by advisors in recent years, is expected to limit the number and length of commercial trips under this alternative. Some vessels may choose to not

target summer flounder due to lack of available quota and associated regulations. As described in Section 6.4.1, the commercial quota allocation to the states was modified in 2021 such that quota above a 9.55 million pound coastwide quota will be distributed to the states differently than the baseline quota up to the 9.55 million pound amount. Because the current coastwide quota is above this trigger and the proposed quota under alternative 1B is well below it, the percent change in quota would be different by state.

For the reasons described above, negative economic impacts of this alternative are expected to vary by state and also at the vessel and dealer level. Overall, this alternative would be expected to result in moderate negative impacts to the commercial fishery.

The expected 10% reduction in the recreational harvest target/measures could result in reduced recreational harvest of summer flounder, reduced party/charter trips targeting summer flounder, reduced party/charter revenues, and reduced angler satisfaction compared to recent levels. This would be expected to result in slight negative impacts for the recreational fishery.

In summary, this alternative is expected to result in moderate negative socioeconomic impacts for the commercial fishery and slight negative socioeconomic impacts for the recreational fishery. Because commercial landings under this alternative are expected to be lower than those under alternatives 1A and 1C, alternative 1B is expected to have more negative impacts on the commercial fishery compared to these alternatives. Alternative 1B is expected to have less negative impacts on the commercial fishery compared to alternative 1D due to a lower reduction in landings needed. Because the outcomes of the Percent Change Approach are more likely to result in a reduction for this alternative compared to alternative 1A and 1C, alternative 1B is expected to have a higher magnitude of negative impacts to the recreational fishery. Alternative 1B is likely to result in a lower recreational reduction compared to alternative 1D, so alternative 1B is expected to result in a lesser magnitude of negative impacts compared to alternative 1D.

7.4.1.3 Socioeconomic Impacts of Alternative 1C (Least Restrictive Summer Flounder Catch and Landings Limits; Non-Preferred)

Alternative 1C includes the least restrictive 2024-2025 summer flounder commercial quota and RHL considered in this document (i.e., 19.09 and 13.23 million pounds, respectively). These landings limits represent a 25% increase compared to those implemented for 2023. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, or a slight increase, as the commercial quota has not been limiting in recent years. The recreational fishery may experience an increase in fishing effort resulting from a potential 10% liberalization in harvest.

As previously stated, it is assumed that this alternative would not be constraining to the commercial fishery if recent trends continue, as the commercial fishery has underharvested their limits in recent years for uncertain reasons; possibly due to a combination of lower availability, market factors, and non-quota management factors. As described in Section 6.4.1, the commercial summer flounder fishery is a valuable fishery with many participating dealers and fishermen across the region. By allowing for continued levels of commercial harvest compared to recent years this alternative is expected to have continued moderate positive socioeconomic impacts for the commercial fishery.

For the recreational fishery, alternative 1C is likely to result in a 10% liberalization in harvest. Under this scenario, recreational harvest would be expected to increase, along with a possible

slight increase in party/charter trips targeting summer flounder, increased party/charter revenues, and increased angler satisfaction compared to recent levels. As such, alternative 1C is expected to result in slight positive impacts to recreational communities.

In summary, this alternative is expected to result in moderate positive socioeconomic impacts for the commercial fishery and slight positive socioeconomic impacts for the recreational fishery. Because commercial landings under this alternative are expected to be similar in magnitude to those under alternative 1A due to the lack of a constraining quota, alternative 1C is expected to have a similar magnitude of moderate positive impacts compared to alternative 1A. Alternative 1C is expected to have higher moderate positive impacts compared to alternatives 1B and 1D. Because the outcomes of the Percent Change Approach are more likely to result in a liberalization for this alternative compared to all other alternatives, alternative 1C is expected to result in more positive impacts for the recreational fishery compared to alternatives 1A, 1B, and 1D.

7.4.1.4 Socioeconomic Impacts of Alternative 1D (Most Restrictive Summer Flounder Catch and Landings Limits; Non-Preferred)

Alternative 1D includes the most restrictive 2024-2025 summer flounder commercial quota and RHL considered in this document (i.e., 5.66 and 3.77 million pounds, respectively). These landings limits represent a 63% decrease in the commercial quota from 2023 (from 15.27 million pounds) and a 65% decrease in the RHL from 2023 (from 10.62 million pounds). As previously stated, commercial summer flounder landings have closely followed the quota for many years (e.g., Table 42), therefore, it is assumed that this magnitude of reduction in the commercial quota would lead to a substantial reduction in commercial fishing effort. For the recreational fishery, under the Percent Change Approach, reductions in harvest of up to 40% would likely be needed although the exact magnitude is not known.

Alternative 1D would require a reduction in the commercial fishery of about 64% relative to 2022 landings levels. As described in Section 6.4.1, the commercial summer flounder fishery is a valuable fishery with many participating dealers and fishermen across the region. A decrease of this magnitude could therefore have substantial negative socioeconomic impacts; however, negative socioeconomic impacts may be partially mitigated if a decrease in commercial revenues results in increases in price. As shown in Figure 11 (Section 6.4.2), there is a consistent relationship in recent years between higher summer flounder landings and lower prices, and vice versa. The commercial quota under alternative 1D is the same as that implemented for fishing year 2017, which experienced the highest average price per pound since 1994 ($4.98 per pound; Figure 11). However, overall ex-vessel revenue (in 2022 dollars) was average to below average compared to the surrounding years.

A reduction in quota of this magnitude, while somewhat mitigated by higher prices for vessels who are able to land summer flounder, will also cause state regulations such as possession limits and seasons to be adjusted to prevent quota overages. Lower access to quota by individual vessels, combined with higher trip costs reported by advisors in recent years, is expected to limit the number and length of commercial trips under this alternative. Some vessels may choose to not target summer flounder due to lack of available quota and associated regulations. As described in Section 6.4.1, the commercial quota allocation to the states was modified in 2021 such that quota above a 9.55 million pound coastwide quota will be distributed to the states differently than the baseline quota up to the 9.55 million pound amount. Because the current coastwide quota is above

this trigger and the proposed quota under alternative 1D is well below it, the percent change in quota would be different by state.

For the reasons described above, negative economic impacts of this alternative are expected to vary by state and also at the vessel and dealer level. Overall, this alternative would be expected to result in high negative (but not significant) impacts to the commercial fishery.

For the recreational fishery, this alternative would require up to a 40% reduction in recreational harvest. Under the Percent Change Approach, the exact reduction would be based on the difference between the harvest estimate (under current measures) and the 2-year average RHL, not to exceed 40%. Based on the RHL under this alternative, it is likely that a reduction would be required that would be larger than the 10% reduction likely required for other alternatives. This would be expected to result in reduced recreational harvest of summer flounder, reduced party/charter trips targeting summer flounder, reduced party/charter revenues, and reduced angler satisfaction compared to recent levels. Due to the uncertain magnitude of the needed decrease, this alternative would be expected to result in slight to high negative impacts for the recreational fishery.

In summary, this alternative is expected to result in high negative socioeconomic impacts for the commercial fishery and slight to high negative socioeconomic impacts for the recreational fishery. Commercial and recreational landings (and thus revenues, fishing opportunities, and angler satisfaction) are expected to be lower under this alternative than under all other summer flounder alternatives considered in this document (i.e., alternatives 1A-1C); therefore, this alternative has the highest potential for negative impacts for the commercial and recreational fisheries.

7.4.2 Socioeconomic Impacts of Alternative Set 2 (Scup Catch and Landings Limits)

7.3.2.8 7.4.2.1 Socioeconomic Impacts of Alternative 2A (Status Quo Scup Catch and Landings Limits; Non-Preferred)

Under alternative 2A, the 2024-2025 scup commercial quota would be 14.01 million pounds and the RHL would be 9.27 million pounds, identical to the landing limits implemented for 2023. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022, as the commercial quota has not been a limiting factor in recent years. The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest required.

As stated above, it is assumed that this alternative would result in status quo levels of commercial landings and thus status quo levels of commercial revenues, assuming prices, market demand, and other factors affecting revenues remain unchanged. As described in Section 6.4.2, the commercial scup fishery has many participating dealers and fishermen across the region. By allowing for continued status quo levels of commercial revenues, this alternative is expected to have continued moderate positive socioeconomic impacts for the commercial fishery.

Impacts to the recreational fishery would vary depending on the outcome of the Percent Change Approach for 2024-2025, with the most likely outcome being a 10% reduction in harvest. Given the expected 10% reduction, alternative 2A would be expected to result in reduced recreational harvest of scup, reduced party/charter trips targeting scup, reduced party/charter revenues, and reduced angler satisfaction compared to recent levels. This would be expected to result in a slight negative impact for the recreational fishery.

In summary, this alternative is expected to result in moderate positive socioeconomic impacts for the commercial fishery and slight negative socioeconomic impacts for the recreational fishery. As described in the introduction to Section 7, commercial landings and the expected reduction for the recreational fishery are expected to be the same under scup alternatives 2A and 2B (preferred) and therefore, the expected outcomes for alternative 2A are expected to be similar in magnitude to 2B. Compared to alternative 2C (least restrictive), the expected outcome is expected to be similar in magnitude for the commercial fishery, but depending on if the Percent Change Approach requires a 10% liberalization or 10% reduction in harvest, alternative 2A is expected to have a similar or lesser magnitude of positive impacts (more negative). However, compared to 2D (most restrictive), alternative 2A is expected to have greater positive socioeconomic impacts for the commercial fishery and similar impacts for the recreational fishery.

7.4.2.1 Socioeconomic Impacts of Alternative 2B (Preferred Scup Catch and Landings Limits)

Alternative 2B includes the preferred 2024 and 2025 scup commercial quotas of 21.15 million pounds and 18.80 million pounds and RHLs of 13.18 million pounds and 11.84 million pounds. This alternative would be likely to result in similar levels of commercial fishing effort as seen in 2022 and thus status quo levels of commercial revenues, as described under 7.4.2.1. The commercial scup fishery has many participating dealers and fishermen across the region. By allowing for continued status quo levels of commercial revenues, this alternative is expected to have continued moderate positive socioeconomic impacts for the commercial fishery.

The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest required. Due to the expected reduction in recreational scup harvest, alternative 2B would be expected to result in reduced party/charter trips targeting scup, reduced party/charter revenues, and reduced angler satisfaction compared to recent levels. This would be expected to result in slight negative impacts for the recreational fishery.

In summary, this alternative is expected to result in moderate positive socioeconomic impacts for the commercial fishery and slight negative socioeconomic impacts for the recreational fishery. As described above, commercial landings and the expected reduction for the recreational fishery are expected to be the same under scup alternatives 2B and 2A (status quo) and therefore, the expected outcomes for alternative 2B are expected to be similar in magnitude to 2A. Compared to alternative 2C (least restrictive), the expected outcome is expected to be similar in magnitude for the commercial fishery, but depending on if the Percent Change Approach requires a 10% liberalization or 10% reduction in harvest, alternative 2B is expected to have a similar or lesser magnitude of positive impacts (more negative). However, compared to 2D (most restrictive), alternative 2B is expected to have greater positive socioeconomic impacts for the commercial fishery and similar impacts for the recreational fishery.

7.4.2.2 Socioeconomic Impacts of Alternative 2C (Least Restrictive Scup Catch and Landings Limits; Non-Preferred)

Alternative 2C is the least restrictive alternative for scup 2024-2025 specifications and reflects a commercial quota and RHL that are 25% above the 2024 preferred alternative 2B. As described above, this alternative would be likely to result in similar levels of commercial fishing effort as

seen in 2022, given commercial scup harvest currently appears to be limited more by market demand than by the quota. Similar to alternatives 2A and 2B, the status quo commercial effort is expected to result in status quo commercial revenue. Given the commercial scup fishery has many participating dealers and fishermen across the region, by allowing for continued status quo levels of commercial revenues, this alternative is expected to have continued moderate positive socioeconomic impacts for the commercial fishery.

Impacts to the recreational fishery would vary depending on the outcome of the Percent Change Approach for 2024-2025 and whether a 10% reduction in harvest would be needed, or whether a 10% liberalization in harvest would be allowed. How the management measures would be adjusted in each case is also uncertain. A reduction in the recreational harvest target/measures could result in reduced recreational harvest of scup, reduced party/charter trips targeting scup, reduced party/charter revenues, and reduced angler satisfaction compared to recent levels. This would be expected to result in slight negative impacts for the recreational fishery. Under a 10% liberalization scenario, recreational harvest would be expected to increase, along with a possible slight increase in party/charter trips targeting scup, increased party/charter revenues, and increased angler satisfaction compared to recent levels; therefore resulting in slight positive impacts for the recreational fishery.

In summary, this alternative is expected to result in moderate positive socioeconomic impacts for the commercial fishery and slight negative or slight positive socioeconomic impacts for the recreational fishery. Commercial landings under this alternative are expected to be similar to alternatives 2A (status quo) and 2B (preferred) resulting in a similar magnitude of moderate positive impacts across all the three alternatives. However, if the Percent Change Approach requires a 10% liberalization under alternative 2C, recreational landings (and thus revenues, fishing opportunities, and angler satisfaction) are expected to be higher under this alternative than 2A and 2B. Therefore, the magnitude of the negative impacts to the recreational fishery are expected to be lesser in magnitude than under alternatives 2A and 2B. Compared to 2D, alternative 2C is expected to have a lesser magnitude of negative (or more positive) impacts to both the commercial and recreational fisheries.

7.4.2.3 Socioeconomic Impacts of Alternative 2D (Most Restrictive Scup Catch and Landings Limits; Non-Preferred)

Alternative 2D is the most restrictive alternative for scup 2024-2025 specifications and reflects a commercial quota and RHL that are 25% below the levels under the status quo alternative 2B (i.e., 10.51 and 6.95 million pounds, respectively). As previously stated, based on recent quota underages, commercial scup harvest currently appears to be limited more by market demand than by the quota. Because of this, it is assumed that scup commercial landings would be similar to recent years. There is about a 13% difference between recent (2022) commercial landings and total allowable commercial landings under this alternative. Therefore, it is assumed that this magnitude of reduction in the commercial quota would lead to a reduction in commercial fishing effort, and thus result in a decrease in commercial revenue. Given the commercial scup fishery has many participating dealers and fishermen across the region, this magnitude of reduction in commercial revenues is expected to have a slight to moderate negative socioeconomic impacts for the commercial fishery.

The recreational fishery, depending on the outcome of the Percent Change Approach, may experience a slight decrease in fishing effort resulting from a potential 10% reduction in harvest

required. Due to the expected reduction in recreational scup harvest, alternative 2C would be expected to result in reduced party/charter trips targeting scup, reduced party/charter revenues, and reduced angler satisfaction compared to recent levels. This would be expected to result in slight negative impacts for the recreational fishery.

In summary, this alternative is expected to result in slight to moderate negative socioeconomic impacts for the commercial fishery and slight negative socioeconomic impacts for the recreational fishery. Of all the scup alternatives considered in this document (i.e., alternatives 2A-2D), alternative 2D would be expected to result in greater potential negative socioeconomic impacts for the commercial fishery and for the recreational fishery similar in magnitude negative impacts compared to 2A (status quo) and 2B (preferred). Compared to 2C (least restrictive), alternative 2D is expected to have a greater magnitude of negative (or less positive) impacts to both the commercial and recreational fisheries.

7.5. Cumulative Effects Analysis

7.5.1 Introduction

A cumulative effects analysis is required by the Council on Environmental Quality (40 CFR part 1508.7) and NOAA policy and procedures in NOAA Administrative Order 216-6A (Companion Manual, January 13, 2017). The purpose of the cumulative effects analysis 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. 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 cumulative effects assessment makes effect determinations based on a combination of 1) impacts from past, present, and reasonably foreseeable future actions; 2) the baseline conditions of the VECs (the combined effects from past, present, and reasonably foreseeable future actions plus the present condition of the VEC); and 3) impacts of the alternatives under consideration for this action. The following sections address the significance of the expected cumulative impacts as they relate to the federally managed summer flounder and scup fisheries.

7.5.1.1 Consideration of the VECs

The valued ecosystem components for the summer flounder and scup fisheries are generally the "place" where the impacts of management actions occur and are identified in Section 6.

- Summer flounder, scup, and non-target species
- Physical environment and EFH
- Protected species (ESA and MMPA protected species)
- Human communities

The cumulative effects analysis identifies and characterizes the impacts on the VECs by the alternatives under consideration when analyzed in the context of other past, present, and reasonably foreseeable future actions.

7.5.1.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the commercial and recreational harvest of summer flounder and scup. The Western Atlantic Ocean is the core geographic scope for each of

the VECs. The core geographic scope for the managed species is the management units for summer flounder and scup described in 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, 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 commercial or recreational harvest or processing of summer flounder and scup (Section 6.4).

7.5.1.3 Temporal Boundaries

Overall, while the effects of the historical summer flounder and scup fisheries are important and considered in the analysis, the temporal scope of past and present actions for summer flounder, scup, and non-target species and other fisheries, the physical environment and EFH, and human communities is primarily focused on actions that occurred after FMP implementation (1988 for summer flounder and 1996 for scup). An assessment using this timeframe demonstrates the changes to resources and the human environment that have resulted through management under the Council process and through U.S. prosecution of the fishery. 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 to 2029, five years beyond the intended initial implementation of this action. 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 this section are focused on the cumulative effects of the proposed action (i.e., the suite of preferred alternatives) in combination with the relevant past, present, and reasonably foreseeable future actions over these time scales.

7.5.2 Relevant Actions Other Than Those Proposed in this Document

This section summarizes the past, present, and reasonably foreseeable future actions and effects that are relevant for this cumulative effects assessment. Some past actions are still relevant to the present and/or future actions.

7.5.2.1 Fishery Management Actions

Summer Flounder, Scup, and Black Sea Bass FMP Actions

Past, present, and reasonably foreseeable future actions for summer flounder and scup management include the establishment of the original FMP, all subsequent amendments and frameworks, and the setting of annual specifications (ACLs and measures to constrain catch and harvest). Key actions are described below.

Human Communities

Past and Present Actions: All actions taken under the Summer Flounder, Scup, and Black Sea Bass FMP have had effects on human communities. None were developed to primarily address elements of fishing related businesses and communities, but many actions included specific measures designed to improve flexibility and efficiency. In general, actions that prevent overfishing have long-term economic benefits for businesses and communities that depend on

those resources; however, many actions may lead to short-term negative economic impacts by reducing landings.

Amendments 2, 8, 9, and 10 (1993, 1996, and 1997) had major implications for human communities by limiting participation and allocating the resources by state, and imposing other gear and permitting requirements. Amendments 8 and 9 incorporated scup and black sea bass into the summer flounder FMP and implemented a number of management measures for scup and black sea bass including commercial quotas, commercial gear requirements, minimum size limits, RHLs, and permit and reporting requirements. These major actions resulted in mixed impacts to human communities by imposing costs and eliminating some participants, but improving management's ability to control harvest and maintain positive biological conditions for the stock.

Frameworks 2 and 6 (2001 and 2004) for the recreational fishery provided overall positive benefits to human communities by allowing for increased management flexibility within the constraints of ACLs.

Amendment 15 (2011) established ACLs and AMs to bring the FMP into compliance with the new requirements of the MSA, establishing a control rule for setting annual fishery specifications. This action and associated annual specifications resulted in constraints on effort and revenues in the fishery; however, ACLs and other measures resulted in positive impacts on the stocks that will continue to positively impact human communities in the future.

Amendment 21 revised the summer flounder commercial quota allocation starting January 1, 2021 and modified the FMP objectives for summer flounder. This action included a range of expected social and economic impacts from high (but not significant) negative to high (but not significant) positive depending on the state, vessel, or other stakeholder entity affected.

The Council and the Commission worked together on a management action which modified the state allocations of the black sea bass commercial quota such that they are now partially based on the distribution of the stock and partially based on the original state allocations first implemented in 2003. The allocations will be updated each time updated information on biomass distribution is available. These revised allocations went into effect through the ASMFC FMP in 2022. This action was expected to have slight negative to moderate positive socioeconomic expected impacts that varied by state and community based on which states may gain and lose allocation, and the degree of the change. Because the allocations will be revised each time updated biomass distribution information is available, no state will permanently gain or lose allocation. This action also modified the commercial in-season closure trigger. This change aimed to reduce the negative socioeconomic impacts of in-season closures on states that have not fully harvested their allocations.

Amendment 22 (2022) revised the allocations of summer flounder, scup, and black sea bass to the commercial and recreational sectors. These changes were intended to better reflect current information about the historic proportions of catch and landings from the commercial and recreational sectors. The revised allocations are summarized in the table below. For all three species, these changes shift allocation from the commercial to the recreational sector.

The Recreational Harvest Control Rule Framework/Addenda (Framework 17 to the Council's FMP; 2022) revised the process for setting recreational measures (bag, size, and season limits) for summer flounder, scup, and black sea bass, adopting the Percent Change Approach for use starting

with the 2023 recreational measures. This action also includes modifications to the recreational accountability measures for these species. The action was intended to ensure that measures prevent overfishing, are reflective of stock status, appropriately account for uncertainty in the recreational data, take into consideration angler preferences, and provide an appropriate level of stability and predictability in changes from year to year.

Reasonably Foreseeable Future Actions:

The Council and Commission are currently developing a Recreational Measures Setting (RMS) Framework/Addenda that will serve as a follow-on action to the Recreational Harvest Control Rule Framework/Addenda, which implemented the Percent Change Approach for setting recreational management measures. In adopting the Percent Change Approach, the Council and the Commission's Interstate Fishery Management Program Policy Board (Policy Board) agreed it should sunset by the end of 2025 with the goal of considering an improved measures setting process, as developed through this management action, starting with 2026 measures.

The MAFMC and ASMFC have also initiated an amendment to consider options for managing for-hire recreational fisheries separately from other recreational fishing modes (referred to as sector separation) and options related to recreational catch accounting, such as private angler reporting and enhanced vessel trip report requirements. These management actions aim to increase stability in recreational measures while continuing sustainable management of the fishery, which should benefit the recreational community. Sector separation could allow management measures to be tailored to the unique needs of the party/charter sector and private recreational fishing sectors.

Over the temporal scope of the future effects of this action (5 years), the Council will continue to implement annual specifications to manage the resource for sustainability, which are expected to have moderate negative to moderate positive impacts on fishing communities depending on the total catch limits.

Target Species (Summer Flounder and Scup)

Past and Present Actions: The original joint MAMFC/ASMFC Summer Flounder FMP was implemented in 1988. Amendment 2 (1993) enacted the bulk of the fishery management program including fishery allocations and regulations to reduce fishing mortality. Amendment 8 (1996) added scup to the Summer Flounder FMP with commercial quotas, RHLs, minimum fish size limits, gear restrictions, permits, and reporting requirements. These actions had positive impacts on target species by controlling fishing mortality, rebuilding the stocks, and contributing to long-term sustainable management of the stocks.

Additional amendments and framework actions have allowed for or required reduced fishing mortality rates for these species, commercial quota transfers, research set-aside, gear restrictions (including implementation of the scup gear restricted areas), protection of the spawning classes, and reducing discards. These actions had positive impacts on the stocks.

Amendment 15 established ACLs and AMs consistent with the 2007 revisions to the Magnuson-Stevens Act. Related to this requirement, the Council annually implements or reviews catch and landings limits for each species consistent with the recommendations of the SSC, and reviews other management measures as necessary to prevent catch limits from being exceeded and to meet the objectives of the FMP.

Standardized Bycatch Reporting Methodology (SBRM) amendments, which cover Federal waters fisheries managed by the New England and/or Mid-Atlantic Councils, have updating the monitoring programs for federally managed species. The first SBRM amendment became effective in 2008, and an update to these measures was finalized in June 2015 (Amendment 17 to the Summer Flounder, Scup, and Black Sea Bass FMP; 80 FR 37182). The updated regulations created a new prioritization process for allocation of observers, improving monitoring of managed resources. The SBRM amendments had indirect positive impacts on target species by improving monitoring for total removals.

The Council's Unmanaged Forage Omnibus Amendment, implemented in 2017, established a commercial possession limit for over 50 forage species which were previously unmanaged in federal waters. This action has ongoing positive impacts to target, non-target, and protected species by protecting many forage species and limiting the expansion of any existing fishing effort on forage stocks.

Amendment 23 modified the allocations of the black sea bass commercial quota among the states to be partially based on the distribution of the stock and partially based on the original state allocations first implemented in 2003. These allocations will continue to ensure efficient commercial quota management to ensure that the commercial ACL and ABC are not exceeded in a given year, contributing to continued positive stock status.

Amendment 21 revised the summer flounder commercial quota allocation starting January 1, 2021 and modified the FMP objectives for summer flounder. This action included a range of expected social and economic impacts from high (but not significant) negative to high (but not significant) positive depending on the state, vessel, or other stakeholder entity affected.

Amendment 22 (2022) revised the allocations of summer flounder, scup, and black sea bass to the commercial and recreational sectors. These changes were intended to better reflect current information about the historic proportions of catch and landings from the commercial and recreational sectors. The revised allocations are summarized in the table below. For all three species, these changes shift allocation from the commercial to the recreational sector.

The Recreational Harvest Control Rule Framework/Addenda (Framework 17 to the Council's FMP; 2022) revised the process for setting recreational measures (bag, size, and season limits) for summer flounder, scup, and black sea bass, adopting the Percent Change Approach for use starting with the 2023 recreational measures. This action also includes modifications to the recreational accountability measures for these species. The action was intended to ensure that measures prevent overfishing, are reflective of stock status, appropriately account for uncertainty in the recreational data, take into consideration angler preferences, and provide an appropriate level of stability and predictability in changes from year to year.

Reasonably Foreseeable Future Actions:

The Council and Commission are currently developing a Recreational Measures Setting (RMS) Framework/Addenda that will serve as a follow-on action to the Recreational Harvest Control Rule Framework/Addenda, which implemented the Percent Change Approach for setting recreational management measures. In adopting the Percent Change Approach, the Council and the Commission's Interstate Fishery Management Program Policy Board (Policy Board) agreed it

should sunset by the end of 2025 with the goal of considering an improved measures setting process, as developed through this management action, starting with 2026 measures.

The MAFMC and ASMFC have also initiated an amendment to consider options for managing for-hire recreational fisheries separately from other recreational fishing modes (referred to as sector separation) and options related to recreational catch accounting, such as private angler reporting and enhanced vessel trip report requirements. These management actions will contribute to continued sustainable management of the stocks.

Non-Target Species

Past and Present Actions: Summer Flounder, Scup, and Black Sea Bass FMP actions in the past and present have had mostly positive impacts on non-target species. Specific gear and area restrictions have reduced bycatch of various non-target species. Effort controls and increased efficiency of the fleet have also likely reduced impacts on non-target species. As described in Section 6.3, most of the relevant non-target species have a positive stock condition.

The Council's Unmanaged Forage Omnibus Amendment, implemented in 2017, established a commercial possession limit for over 50 forage species which were previously unmanaged in federal waters. This action has ongoing positive impacts to target, non-target, and protected species by protecting many forage species and limiting the expansion of any existing fishing effort on forage stocks.

Physical Habitat and EFH

Past and Present Actions: Amendment 12 (1998) designated EFH for summer flounder, scup, and black sea bass, which resulted in indirect positive impacts on habitat and the summer flounder, scup, and black sea bass stocks via the ability to identify, monitor, and protect important habitats for these species.

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. The principal gears used in the recreational fisheries for summer flounder, scup, and black sea bass are rod and reel and handline. These gears have minimal adverse impacts on EFH in the region (Stevenson et al. 2004).

Reasonably Foreseeable Future Actions: The MAFMC has multiple ongoing habitat initiatives and actions that are likely to positively impact habitat in the management unit in the reasonably foreseeable future. The Northeast Regional Marine Fish Habitat Assessment is an ongoing project to describe and characterize estuarine, coastal, and offshore fish habitat distribution and quality in the Northeast. The project aims to align habitat science goals and priorities with human and financial resources to develop habitat science products that support an assessment. The Council is also developing an Omnibus Essential Fish Habitat Amendment. This action will concurrently conduct the 5-year EFH review required under the Magnuson Stevens Act while amending fishery management plans for the Council, as needed. This action is an opportunity to utilize the best available fish habitat science to improve EFH designations and support the Council’s fish habitat conservation efforts while supporting the EFH consultation process.

Protected Resources

Past and Present Actions: NMFS has implemented specific actions to reduce injury and mortality of protected species from gear interactions.

As provided in Section 6.5.3, NMFS developed an Atlantic trawl gear take reduction strategy (Strategy) for long-finned pilot whales (*Globicephala melas*), short-finned pilot whales (*Globicephala macrorhynchus*), white-sided dolphins (*Lagenorhynchus acutus*), and common dolphins (*Delphinus delphis*). The Strategy identifies voluntary measures for trawl fisheries to reduce the incidental capture of small cetaceans. In addition, as provided in Section 6.5.3, NMFS requires summer flounder trawlers fishing in the summer flounder fishery-sea turtle protection area to use turtle excluder devices (TEDs; 50 CFR 223.206) in their trawl gear. TEDs allow sea turtles to escape the trawl net, reducing injury and mortality resulting from capture in the net. In addition, NMFS has also implemented regulations, pursuant to the Atlantic Large Whale Take Reduction Plan (ALWTRP), to reduce serious injury and mortality of large whale species in commercial fixed gear (i.e., trap/pot and gillnet) fisheries; see Section 6.5.3 for additional information, as well as NMFS ALWTRP website[28]. These voluntary or regulatory measures have had slight to moderate positive impacts on these protected species by reducing the number of interactions with fishing gear.

On May 27, 2021, the NMFS completed formal consultation pursuant to Section 7 of the ESA of 1973, as amended, and issued a biological opinion (2021 Opinion) on the authorization of eight FMPs, two interstate fishery management plans (ISFMP), and the implementation of the New England Fishery Management Council's Omnibus Essential Fish Habitat (EFH) Amendment 2.[29] On September 13, 2023, NMFS issued a 7(a)(2)/7(d) memorandum that reinitiated consultation on the 2021 Biological Opinion due to new information regarding the exceedance of the amount of incidental take of Atlantic sturgeon identified in the 2021 Opinion's Incidental Take Statement for gillnet gear. Consultation is currently ongoing; additional information on the reinitiation is provided in Section 8.2.

Reasonably Foreseeable Future Actions: NMFS is working on amending the Atlantic Large Whale Take Reduction Plan (ALWTRP) to reduce the risk of mortalities and serious injuries of North Atlantic right, fin, and humpback whales in U.S. East Coast gillnet and Atlantic mixed species trap/pot fisheries. On August 11, 2021, NMFS issued a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA) to analyze the impacts to the environment of alternatives to amend the Plan (86 FR 43996). The NOI also informed the public of upcoming scoping meetings to solicit public input. A second NOI to prepare an EIS published on September 9, 2022 that added lobster and Jonah

[28] NMFS ALWTRP website: https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-mammal-protection/atlantic-large-whale-take-reduction-plan.

[29] The eight Federal FMPs considered in the May 27, 2021, Biological Opinion include: (1) Atlantic Bluefish; (2) Atlantic Deep-sea Red Crab; (3) Mackerel, Squid, and Butterfish; (4) Monkfish; (5) Northeast Multispecies; (6) Northeast Skate Complex; (7) Spiny Dogfish; and (8) Summer Flounder, Scup, and Black Sea Bass. The two ISFMPs are American Lobster and Jonah Crab.

crab trap/pot fisheries to the list of fisheries being analyzed in future amendments (87 FR 55405). These efforts to modify the Plan are still ongoing. ALWTRP measures from this action would likely impact black sea bass and scup pot/trap fisheries.

In 2022, NOAA Fisheries held various forums to gather information from the public, fishing industry, and other stakeholder groups to inform any future measures for reducing sea turtle bycatch in trawl fisheries, including the summer flounder trawl fishery. Potential considerations to reduce sea turtle bycatch included ideas such as geographically extending the requirement of TEDs northward, other gear modifications, or reduced tow times. For additional information on NMFS' initiative to reduce sea turtle bycatch in trawl fisheries, see: https://www.fisheries.noaa.gov/sea-turtle-bycatch-reduction-trawl-fisheries?utm_medium=email&utm_source=govdelivery.

On July 19, 2023, NMFS issued a proposed rule to designate new areas of critical habitat and modify existing critical habitat for threatened and endangered distinct population segments (DPSs) of the green sea turtle, in areas under U.S. jurisdiction, pursuant to the ESA (88 FR 46572).These future measures would likely have some degree of positive impacts on these protected species by reducing the number of interactions with fishing gear, and therefore, reducing the risk of injury and mortality to these protected species and/or adversely affecting habitat.

Other Fishery Management 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 impacted these VECs over the temporal scale described in Section 7.6.1.3. 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 have had positive long-term cumulative impacts on managed and non-target species because they constrain fishing effort and manage stocks at sustainable levels. As previously stated, constraining fishing effort can have negative short-term socioeconomic impacts and long-term positive impacts. These actions have typically had slight negative impacts on habitat, due to continued fishing operations preventing impacted habitats from recovering; however, some actions had long-term positive impacts through designating or protecting important habitats. FMP actions have also had a range of impacts on protected species, including generally slight negative impacts on ESA-listed species, and slight negative to indirect slight positive impacts on non ESA-listed marine mammals, depending on the species.

Fishery Management Action Summary

The Council has taken many actions to manage commercial and recreational fisheries. The MSA is the statutory basis for federal fisheries management. The cumulative impacts on the VECs of past, present, and reasonably foreseeable future federal fishery management actions under the MSA should generally be associated with positive long-term outcomes because they constrain fishing effort and manage stocks at sustainable levels. 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 promote positive effects on human communities in the long-term.

7.5.2.2 Non-Fishing Impacts

Other Human Activities

Non-fishing activities that occur in the marine nearshore and offshore environments and connected watersheds can cause loss or degradation of habitat and/or affect the species that utilize those areas. The impacts of most nearshore, human-induced, non-fishing activities tend to be localized in the areas where they occur, although effects on highly mobile species could be felt throughout their populations. For offshore projects, some impacts may be localized while others may have regional influence, especially for larger projects. The following discussion of impacts is based on past assessments of activities and assumes these activities will continue as projects are proposed.

Examples of non-fishing activities include point source and non-point source pollution, shipping, dredging/deepening, wind energy development, oil and gas development, construction, and other activities. Specific examples include at-sea disposal areas, oil and mineral resource exploration, aquaculture, construction of offshore wind energy projects, and bulk transportation of petrochemicals. Episodic storm events and the restoration activities that follow can also cause impacts. The impacts from these activities primarily stem from habitat loss and alteration due to human interaction or natural disturbances. These activities are widespread and can have localized impacts on habitat related to accretion of sediments, pollutants, habitat conversion, and shifting currents and thermoclines. For protected species, primary concerns associated with non-fishing activities include vessel strikes, dredge interactions (especially for sea turtles and sturgeon), and underwater noise. These activities have both direct and indirect impacts on protected species. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and as such may indirectly constrain the productivity 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. Non-fishing activities can cause target, non-target, and protected species to shift their distributions away from preferred areas and may also lead to decreased reproductive ability and success (e.g., from current changes, spawning disruptions, and behavior changes), disrupted or modified food web interactions, and increased disease. While localized impacts may be more severe, the overall impact on the affected species and their habitats on a population level is unknown, but likely to have impacts that mostly range from no impact to slight negative, depending on the species and activity.

Non-fishing activities permitted by other federal agencies (e.g., beach nourishment, offshore wind facilities) 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). NMFS and 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. Agencies need to respond to, but do not necessarily need to adopt these recommendations. Habitat conservation measures serve to potentially minimize the extent and magnitude of indirect negative impacts federally-permitted activities could have on resources under NMFS' jurisdiction. In addition to guidelines mandated by the MSA, NMFS evaluates non-fishing effects during the review processes required by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for certain activities that are regulated by federal, state, and local authorities. Non-fishing activities must also meet the

mandates under the ESA, specifically Section 7(a)(2),[30] which ensures that agency actions do not jeopardize the continued existence of endangered species and their critical habitat.

In recent years, offshore wind energy and oil and gas exploration have become more relevant activities in the Greater Atlantic region. They are expected to impact all VECs, as described below.

Impacts of Offshore Wind Energy Development on Target, Non-target, and Protected Species and the Physical Environment

Four offshore wind energy projects from southern New England through Virginia, with a cumulative total of up to 174 turbines, are either operational or are currently undergoing construction and expected to be operational in the near future. Twenty-six additional projects in federal waters are in various stages of the planning process but have not yet been approved for construction (Figure 20). The Biden administration has a goal of deploying 30 gigawatts of wind energy production capacity in Federal waters by 2030 and the east coast states collectively have goals of more than 50 gigawatts of offshore wind energy capacity. These goals are not expected to be achieved without construction of most, if not all, of these additional planned east coast projects.

Construction, operation, and eventual decommissioning of offshore wind energy projects may have both direct and indirect impacts on marine species. For example, changes in species distribution may result from habitat conversion and changes in oceanographic processes due to the addition of thousands of new hard structures in the ocean if all planned projects are built (i.e., turbine and offshore substation foundations, as well as external cable armoring where needed). Temporary behavior changes may occur for some species due to factors such as construction and operations noise and electromagnetic fields. Some species may experience injury or mortality (e.g., due to noise and physical impacts during construction). Changes in larval dispersal could result from changes in oceanographic conditions. Changes in physical and biological habitats could impact the distribution of predator and prey species. The impacts will vary by species based on their life history, migration patterns, and habitat use. Some species may benefit from the additional hard structures placed in the ocean, while others will be negatively impacted. Hogan et al. (2023) should be referenced for an in-depth synthesis of synthesized current and past scientific research examining the interactions between offshore wind, fisheries, and marine ecosystems. This report summarized the current state of scientific knowledge and data gaps for impacts including benthic habitat modification, physical habitat modification, offshore wind interactions with oceanographic processes, and ecosystem impacts on phytoplankton and zooplankton. Impacts could occur from changes to habitat in the areas of wind turbines, offshore substations, and cable corridors and increased vessel traffic to and from these areas.

Wind energy survey and construction activities, as well as operations throughout the life of the projects will substantially affect NMFS scientific research surveys, including stock assessment surveys for fisheries and protected species and ecological monitoring surveys. Disruption of these surveys could increase scientific uncertainty in survey results and may significantly affect NMFS' ability to monitor the health, status, and behavior of marine species (including protected species)

[30] "Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an "agency action") is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat."

and their habitat use within this region. Based on existing regional Fishery Management Councils' ABC control rule processes and risk policies (e.g., 50 CFR §§ 648.20 and 21), increased assessment uncertainty could result in lower commercial quotas and RHLs that may reduce the likelihood of overharvesting and mitigate associated biological impacts on fish stocks. However, this would also result in lower fishing revenues and reduced recreational fishing opportunities, which could result in indirect negative impacts on fishing communities.

Socioeconomic Impacts of Offshore Wind Energy Development

All wind lease areas shown in Figure 21 overlap with the summer flounder, scup, and/or black sea bass stocks and fisheries (Section 6.1 and 6.2). The socioeconomic impacts of offshore wind energy on commercial fisheries could be generally negative due to the overlap of wind energy areas with productive fishing grounds. Fishing effort will be temporarily displaced during construction of wind projects. Restricted fishing access is not anticipated during the operational phase of any planned projects; however, some fishermen may choose not to operate within the project areas due to safety concerns. Any reduced fishing access (either due to restrictions or safety concerns) as a result of offshore wind energy development would result in a negative overall effect to the fishery. In some cases, effort could be displaced to another area, which could partially compensate for potential economic losses if vessel operators choose not to operate in the wind energy areas.

Turbine structures could increase the presence of and fishing for structure affiliated species, including black sea bass. Many recreational fishing trips in this region target a combination of species. For example, recreational trips which catch black sea bass often also catch tautog, scup, summer flounder, and Atlantic croaker (NEFSC 2017). For this reason, increased recreational fishing effort for species such as black sea bass near wind turbine foundations could also lead to increased recreational catches of other species. This could lead to socioeconomic benefits in terms of increased for-hire fishing revenues and angler satisfaction in certain wind project areas.

There could also be social and economic benefits in the form of jobs associated with construction and maintenance, and replacement of some electricity generated using fossil fuels with renewable sources (AWEA 2020).

It remains unclear how fishing or transiting to and from fishing grounds will be affected by the presence of a wind energy project. While no offshore wind developers have expressed an intent to exclude fishing vessels from project areas once construction is complete, it could be difficult for operators to tow bottom-tending mobile gear or transit amongst the wind turbines, depending on the spacing and orientation of the array and weather conditions.[31] If vessel operators choose to avoid fishing or transiting within wind project areas, effort displacement and additional steaming time could result in negative socioeconomic impacts to affected communities, including increased user conflicts, decreased catch and associated revenue, safety concerns, and increased fuel costs. If vessels elect to fish within wind project areas, effects could be both positive and negative due to increased catch rates for some species with some gear types (e.g., recreational catches of

31 The United States Coast Guard has considered transit and safety issues related to the Massachusetts and Rhode Island lease areas in a recent port access route study, and has recommended uniform 1 mile spacing in east-west and north-south directions between turbines to facilitate access for fishing, transit, and search and rescue operations. Future studies in other regions could result in different spacing recommendations (USCG 2020).

structure orienting species such as black sea bass) and reduced catches and associated revenues for other species and gear types (e.g., mobile bottom tending gear), user conflicts, gear damage/loss, and increased risk of allision or collision.

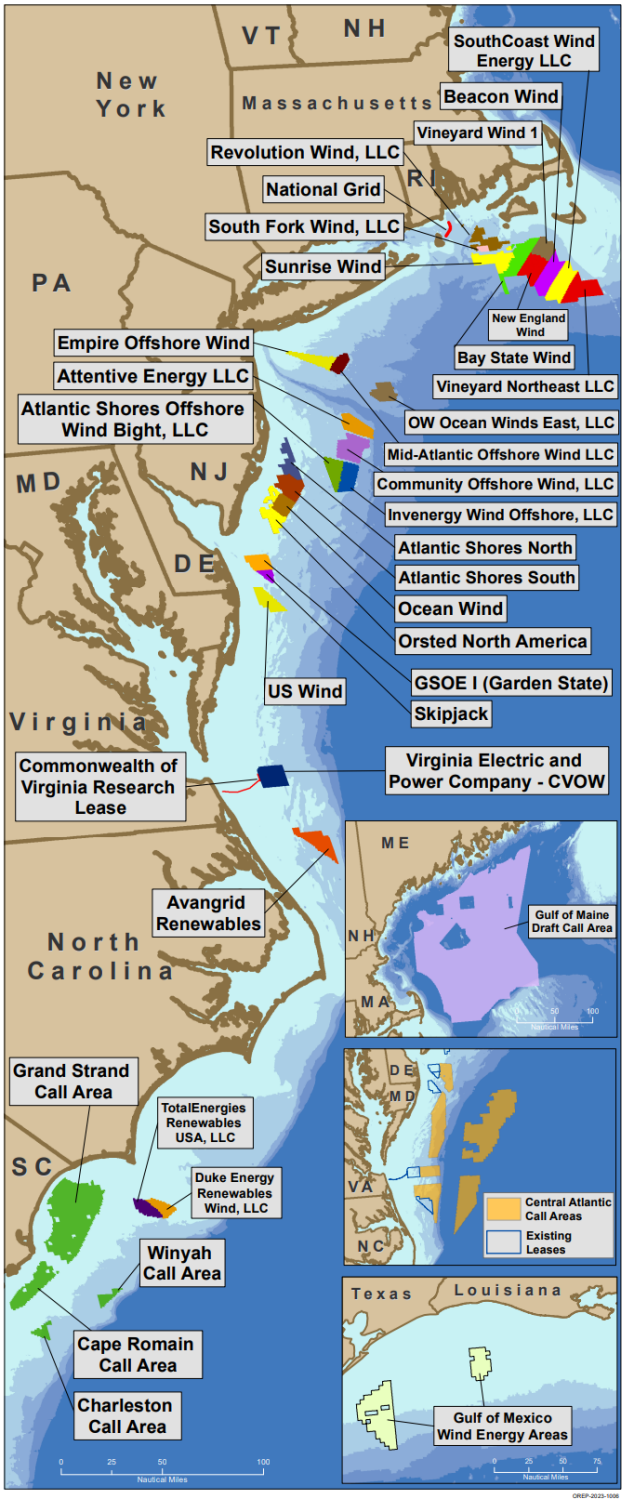


Figure 21. Offshore wind lease areas off New England and the Mid-Atlantic as of April 2022. Additional areas offshore of Delaware through North Carolina and in the Gulf of Maine are in the planning stages for lease sales which may occur over the next few years.

Impacts of Oil and Gas Development on Biological and Socioeconomic Resources

Compared to offshore wind energy, fewer offshore oil and gas development activities are anticipated in this region; therefore, fewer details on the non-fishing impacts from oil and gas development are provided here.

The timeframe for potential impacts from oil and gas development activities considered in this document includes leasing and possible surveys, depending on the direction of the Bureau of Ocean Energy Management's 5-year planning process in the North and Mid-Atlantic regions. Seismic surveys to detect and quantify mineral resources in the seabed impact marine species and the acoustic environment within which marine species live. These surveys have uncertain impacts on fish behaviors that could cumulatively lead to negative population level impacts. For protected species (sea turtle, fish, small cetacean, pinniped, large whale), the severity of these behavioral or physiological impacts is based on the species' hearing threshold, the overlap of this threshold with the frequencies emitted by the survey, as well as the duration of time the surveys would operate, as these factors influence exposure rate (Ellison et al. 2011, Ellison et al. 2018, Finneran 2015, Finneran 2016, Madsen et al. 2006, Nelms et al. 2016, Nowacek et al. 2007, Nowacek et al. 2015, NRC 2000, NRC 2003, NRC 2005, Piniak 2012, Popper et al. 2014, Richardson et al. 1995, Thomsen et al. 2006, Weilgart 2013). If marine species are affected by seismic surveys, then so in turn the fishermen targeting these species would be affected. However, such surveys could increase jobs, which may provide some positive effects on human communities (BOEM 2020). It is important to understand that seismic surveys for mineral resources are different from surveys used to characterize submarine geology for offshore wind installations, and thus these two types of activities are expected to have different impacts on marine species.

Offshore Energy Summary

The overall impact of offshore wind energy and oil and gas exploration on the affected species and their habitats at a population level is unknown, but likely to range from moderate positive to moderate negative, depending on the species and the number and locations of projects that occur. The individual project phases (site assessment, construction, operation, and decommissioning) as well as different aspects of the technology (foundation types, cables/pipelines, turbines) will have varying impacts on resources. Mitigation efforts, such as habitat conservation measures, time of year construction restrictions, layout modifications, and fishery compensation funds could lessen the magnitude of negative impacts. The overall socioeconomic impacts are likely slight positive to moderate negative (i.e., potentially positive due to a potential increase in jobs and recreational fishing opportunities, but negative due to displacement and disruption of commercial fishing effort).

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. The rates of physical and chemical changes in marine ecosystems have been most rapid in recent decades (Johnson et al. 2019). 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). The general trend of changes can be explained by warming causing

increased ocean stratification, which reduces primary production, lowering energy supply for higher trophic levels and changing metabolic rates. Different responses to warming can lead to altered food-web structures and ecosystem-level changes. Shifts in spatial distribution are generally to higher latitudes (i.e., poleward) and to deeper waters as species seek cooler waters within their normal temperature preferences. Climate change will also potentially exacerbate the stresses imposed by fishing and other non-fishing human activities and stressors. Survival of marine species under a changing climate depends on their ability to adapt to change, but also how and to what degree those other human activities influence their natural adaptive capacity.

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 occurs 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 conditions 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 (Hare et al. 2016).

This assessment determined that scup have a moderate vulnerability to climate change. 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 occurs during all life stages. Scup have seasonal inshore/offshore and north/south migrations. As warming continues, the availability of winter (offshore/southern) and summer (inshore/northern) habitat may increase and therefore may result in positive impacts on scup distribution, abundance and recruitment. Scup were determined to have low biological sensitivity to climate change, given their life history, spawning behavior, and relatively long life span (Hare et al. 2016).[32]

Overall vulnerability results for additional Greater Atlantic species, including most of the non-target species identified in this action, are shown in Figure 22 (Hare et al. 2016). While the effects of climate change may benefit some habitats and the populations of species through increased availability of food and nutrients, reduced energetic costs, or decreased competition and predation, a shift in environmental conditions outside the normal range can result in negative impacts for those habitats and species unable to adapt. This, in turn, may lead to higher mortality, reduced growth, smaller size, and reduced reproduction or populations. Thus, already stressed populations are expected to be less resilient and more vulnerable to climate impacts. Climate change is expected to have impacts that range from positive to negative depending on the species. However,

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

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. The social and economic impacts of climate change will depend on stakeholder and community dependence on fisheries, and their capacity to adapt to change. Commercial and recreational fisheries may adapt in different ways, and methods of adaptation will differ among regions. In addition to added scientific uncertainty, climate change will introduce implementation uncertainty and other challenges to effective conservation and management.

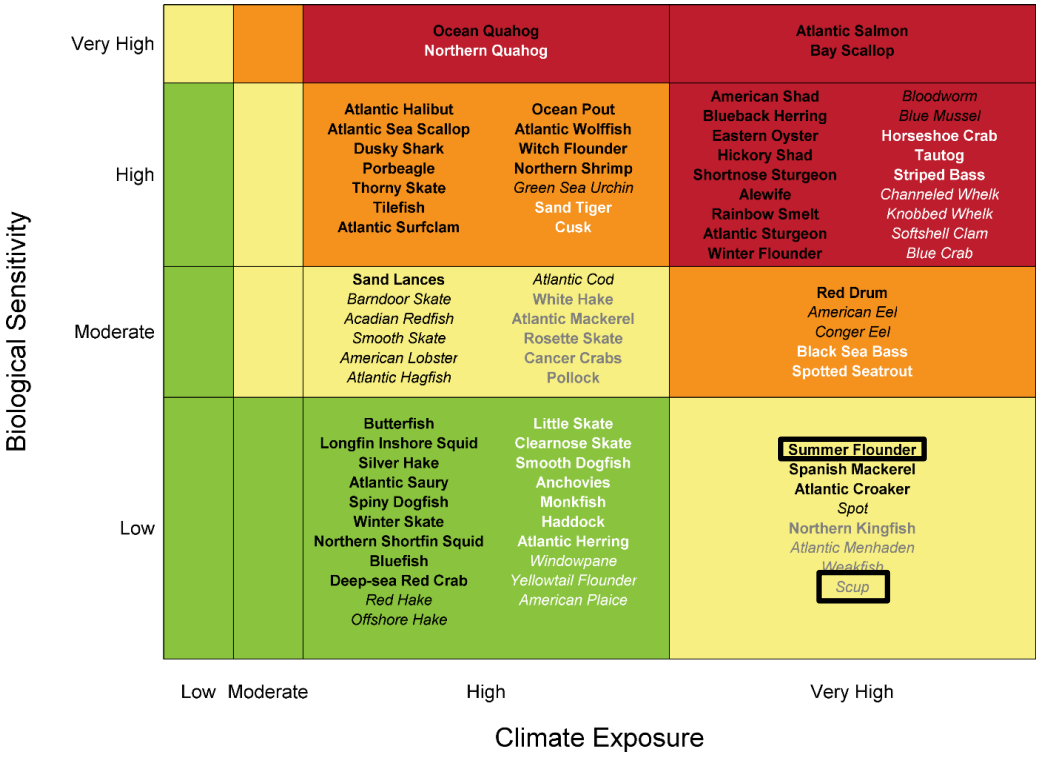


Figure 22: Overall climate vulnerability scores for Greater Atlantic Region species, with summer flounder and scup highlighted with a black box. Overall climate vulnerability is denoted by color: low (green), moderate (yellow), high (orange), and very high (red). Certainty in score is denoted by text font and text color: very high certainty (>95%, black, bold font), high certainty (90–95%, black, italic font), moderate certainty (66–90%, white or gray, bold font), low certainty (<66%, white or gray, italic font). Figure source: Hare et al. 2016.

7.5.3 Summary of Effects of the Proposed Actions

The preferred alternatives in this action are:

- Alternative 1B; a summer flounder 2024-2025 commercial quota of 8.79 million pounds and a 2024-2025 RHL of 6.35 million pounds (Section 5.1.2)
- Alternative 2B; a scup 2024 commercial quota of 21.15 million pounds and 2025 commercial quota of 18.80 million pounds, and a 2024 RHL of 13.18 million pounds and a 2025 RHL of 11.84 million pounds (Section 5.3.2)

The impacts of the proposed actions are described in Sections 7.1 through 7.4 and are summarized in Section 1 of this EA.

7.5.4 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative impacts of the preferred alternatives, the incremental impacts of the direct and indirect impacts should be considered, on a VEC-by-VEC basis, in addition to the effects of all actions (those identified and discussed relative to the past, present, and reasonably foreseeable future actions of both fishing and non-fishing actions). Sections 7.1 through 7.4 provide a summary of likely impacts of the management alternatives contained in this action. The CEA baseline represents the sum of past, present, and reasonably foreseeable future actions and conditions of each VEC. When an alternative has a positive impact on a VEC, for example, reduced fishing mortality on a managed species, it has a positive cumulative effect on the stock size of the species when combined with other actions that were also designed to increase stock size. In contrast, when an alternative has negative effects on a VEC, such as increased mortality, the cumulative effect on the VEC would be negative and tend to reduce the positive effects of the other actions. The resultant positive and negative cumulative effects are described below for each VEC. As previously described, non-fishing impacts on the VECs generally range from no impact to slight negative.

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

As described in Section 6, summer flounder, scup, and all primary non-target species except sea robins are managed by the Mid-Atlantic or New England Fishery Management Councils. Sea robins are unmanaged. Past fishery management actions taken through the respective FMPs and the annual specifications process ensure that stocks are managed sustainably and that measures are consistent with the objectives of the FMP under the guidance of the MSA. These actions have generally had a positive cumulative effect on these species. It is anticipated that future management actions will have additional indirect positive effects on the target species through actions which reduce and monitor bycatch, protect habitat, and protect the ecosystem services on which the productivity of these species depend.

As noted previously, the preferred alternatives may result in a slight to moderate decrease in commercial and recreational effort for summer flounder, and for scup would result in similar levels of commercial fishing effort relative to current conditions and a slight reduction in recreational effort. Therefore, impacts of the fisheries on summer flounder, scup, and non-target species are expected to be positive for the preferred alternatives. The preferred alternatives would positively reinforce the past and anticipated positive cumulative effects on target and non-target species by achieving the objectives specified in the FMPs.

When the direct and indirect effects of the preferred alternatives are considered in combination with all other actions (i.e., past, present, and reasonably foreseeable future actions), the cumulative effects are expected to yield non-significant positive impacts on summer flounder, scup, and non-target species.

7.5.4.2 Magnitude and Significance of Cumulative Effects on Physical Environment

Past fishery management actions and annual specifications process have had positive cumulative effects on habitat. The actions have constrained fishing effort at both local and larger scales and

have implemented gear requirements which reduce impacts on habitat. EFH and Habitat Areas of Particular Concern were designated for the managed species. It is anticipated that future management actions 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.

As previously described, many additional non-fishing activities are concentrated near-shore and likely work either additively or synergistically to decrease habitat quality. The effects of these actions, combined with impacts resulting from years of commercial fishing activity, have negatively affected habitat. These impacts could be broad in scope. All the VECs are interrelated; therefore, the linkages among habitat quality, target and non-target species productivity, and associated fishery yields should be considered. 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. Reductions in overall fishing effort and protection of sensitive habitats have mitigated some negative effects.

As previously noted, none of the preferred alternatives are expected to result in significantly increased levels of fishing effort or changes to the character of that effort relative to current conditions. Although the impacted areas have been fished for many years with many different gear types and therefore will not likely be further impacted by these measures, continued fishing effort will continue to impact habitats. Therefore, the slight negative impacts of the fishery on the physical environment are not expected to change relative to the current condition under the preferred alternatives.

When the direct and indirect effects of the preferred alternatives are considered in combination with all other actions (i.e., past, present, and reasonably foreseeable future actions), the cumulative effects are expected to yield non-significant slight negative impacts on the physical environment and EFH.

7.5.4.3 Magnitude and Significance of Cumulative Effects on Protected Species

Taking into consideration the above information and information provided in Section 6.3, past fishery management actions taken through the respective FMPs and annual specifications process have had slight indirect positive cumulative effects on protected species. The actions have constrained fishing effort both at a large scale and locally, and have implemented, pursuant to the ESA, MMPA, or MSA, gear modifications, requirements, and management areas. These measures and/or actions have served to reduce interactions between protected species and fishing gear. It is anticipated that future management actions will result in additional indirect positive effects on protected species. These impacts could be broad in scope.

The preferred alternatives would not substantially modify current levels of fishing effort in terms of the overall amount of effort, timing, and location. They would allow existing fishing effort to continue. As described in more detail in Section 7, this is expected to result in low moderate negative to low moderate positive impacts for non-ESA listed marine mammals and negligible to low moderate negative impacts for ESA-listed species, depending on the species.

When the direct and indirect effects of the preferred alternatives are considered in combination with all other actions (i.e., past, present, and reasonably foreseeable future actions), the cumulative effects are expected to yield non-significant slight negative impacts to slight positive impacts.

7.5.4.4 Magnitude and Significance of Cumulative Effects on Human Communities

Past fishery management actions taken through the respective FMPs and annual specifications process have had both positive and negative cumulative effects on human communities. They have benefitted domestic fisheries through sustainable fishery management, but have also reduced participation in fisheries and imposed management measures such as catch limits and gear restrictions which have limited potential revenues and impacted efficiency and costs.

It is anticipated that future fishery management actions will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on some human communities could occur if management actions result in reduced revenues. Overall, the past, present, and reasonably foreseeable future actions have had overall positive cumulative effects for human communities. Despite the potential for negative short-term effects due to reduced revenues, positive long-term effects are expected due to the long-term sustainability of the managed stocks.

By providing revenues and contributing to the overall functioning of and employment in coastal communities, the summer flounder and scup fisheries have both direct and indirect positive social impacts. As previously described, the preferred alternatives are unlikely to result in substantial changes to levels of fishing effort or the character of that effort relative to current conditions.

When the direct and indirect effects of the preferred alternatives are considered in combination with all other actions (i.e., past, present, and reasonably foreseeable future actions), the cumulative effects are expected to yield non-significant slight positive impacts.

7.5.5 Proposed Action on all the VECs

The Council's preferred alternatives (i.e., the proposed action) are described in Section 5. The direct and indirect impacts of the proposed action on the VECs are described in Sections 7.1 through 7.4. The magnitude and significance of the cumulative effects, including additive and synergistic effects of the proposed action, as well as past, present, and future actions, have been taken into account (Section 7.5.4).

In summary, the information in these sections indicates that when considered in conjunction with all other relevant past, present, and reasonably foreseeable future actions, the preferred alternatives are not expected to result in any significant impacts, positive or negative. 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 summer flounder and scup which 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 negative 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.

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. Cumulatively, through 2029, it is anticipated that the cumulative effects will range from positive to slight negative, depending on the VEC (Table 42).

Table 42: Summary of cumulative effects of preferred alternatives.

	Target species	Non-target species	Habitat	Protected species	Human communities
Impacts of preferred alternatives	Moderate positive (Section 7.1)	Slight negative to moderate positive (Section 7.1)	Slight negative (Section 7.2)	Slight negative to slight positive (Section 7.3)	Moderate negative to moderate positive (Section 7.4)
Combined cumulative effects assessment baseline conditions	Positive	Positive	Slight positive	Slight negative to slight positive	Positive
Cumulative effects (all non-significant)	Positive (Section 7.5.4.1)	Positive (Section 7.4.4.1)	Slight negative (Section 7.5.4.2)	Slight negative to slight positive (Section 7.5.4.3)	Slight positive (Section 7.5.4.4)

8. APPLICABLE LAWS

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

8.1.1 National Standards

Section 301 of the MSA requires that FMPs contain conservation and management measures that are consistent with the ten National Standards. The Council continues to meet the obligations of National Standard 1 by adopting and implementing conservation and management measures that will continue to prevent overfishing, while achieving, on a continuing basis, the optimum yield (OY) for scup, black sea bass, and the U.S. fishing industry. To achieve OY, both scientific and management uncertainty are addressed when establishing catch limits. The Council developed recommendations that do not exceed the ABC recommendations of the SSC, which explicitly address scientific uncertainty. The Council considered management uncertainty and other social, economic, and ecological factors, when recommending ACTs. The Council uses the best scientific information available (National Standard 2) and manages summer flounder and scup throughout their range (National Standard 3). These management measures do not discriminate among residents of different states (National Standard 4) and they do not have economic allocation as their sole purpose (National Standard 5). The measures account for variations in the fisheries (National Standard 6) and avoid unnecessary duplication (National Standard 7). They take into

account the fishing communities (National Standard 8) and they promote safety at sea (National Standard 10). The proposed actions are consistent with National Standard 9, which addresses bycatch in fisheries. The Council has implemented many regulations that have indirectly reduced fishing gear impacts on EFH (Section 6.2.3). By continuing to meet the National Standards requirements of the MSA through future FMP amendments, framework actions, and the annual specification setting process, the Council will ensure that cumulative impacts of these actions will remain positive overall for the managed species, the ports and communities that depend on these fisheries, and the Nation as a whole.

8.1.2 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 (i.e., the preferred alternatives) would implement catch and landings limits for the commercial and recreational summer flounder and scup fisheries for 2024-2025. The proposed actions are described in more detail in Section 5.

Potential Adverse Effects of the Action on EFH

As previously stated, the commercial summer flounder and scup fisheries predominantly use bottom otter trawl and pot/trap gear. The recreational fisheries use hook and line gear almost exclusively. The types of habitat impacts caused by these gears are summarized in Section 6.2.3.

As described in Section 7, under the preferred alternative for summer flounder (i.e., alternative 1B), the commercial quota would decrease by 42% and the RHL would decrease by 40% in 2024-2025 compared to 2023. However, the changes in effort in both fisheries are expected to be less than the magnitude of these limit reductions given the factors described in Section 7.0. In summary, commercial fishery landings have been well under their quotas in recent years, and the quota under this alternative represents about a 30% reduction from 2022 commercial landings. For the recreational fishery, the expected changes in effort are tied to the Percent Change Approach. Under the preferred alternative, it is expected that a 10% reduction in harvest would be the most likely outcome.

Under the preferred alternative for scup (i.e., alternative 2B), the 2024 commercial quota and RHL would increase by 30-34% compared to 2023 and then decrease slightly by 10-11% in 2025 compared to 2024. As described in Section 7.1.2.2, commercial scup fishing effort appears to be influenced more by market demand than by the quota and commercial landings may remain below the quota under this alternative. It is assumed that commercial fishing effort for scup would remain similar to past years under this alternative. For the recreational fishery, as noted above the changes in effort are tied to the Percent Change Approach. Under the preferred alternative, it is expected that a 10% reduction in harvest would be the most likely outcome.

Under the expected changes in fishing effort for both species, the locations of fishing are not expected to change and the amount of gear in the water and duration of time that gear is in the water are not expected to increase substantially in a manner that would cause meaningful increased negative impacts on habitat. The habitats that are impacted by the summer flounder and scup fisheries have been impacted by many fisheries over many years. The levels of fishing effort

expected under the preferred alternatives are not expected to cause additional habitat damage beyond that generated by these fisheries in the past and by other fisheries that operate in the same areas. Thus, 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. Hook and line are the principal gears used in the recreational fishery for all three species. 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. None of these measures substantially restrict the summer flounder or scup fisheries.

Conclusions

Overall, the preferred alternatives are expected to have slight negative impacts on EFH; therefore, an EFH consultation is required.

8.2. Endangered Species Act

Section 7 of the ESA requires federal agencies conducting, authorizing, or funding activities that affect threatened or endangered species to ensure that those effects do not jeopardize the continued existence of listed species and do not adversely affect designated critical habitat of listed species.

On May 27, 2021, the National Marine Fisheries Service's (NMFS) completed formal consultation pursuant to Section 7 of the ESA of 1973, as amended, and issued a biological opinion (2021 Opinion) on the authorization of eight FMPs, two interstate fishery management plans (ISFMP), and the implementation of the New England Fishery Management Council's Omnibus Essential Fish Habitat (EFH) Amendment 2.[33] The 2021 Opinion considered the effects of the authorization of these FMPs, ISFMPs, and the implementation of the Omnibus EFH Amendment on ESA-listed species and designated critical habitat, and determined that those actions were not likely to jeopardize the continued existence of any ESA-listed species or destroy or adversely modify designated critical habitats of such species under NMFS jurisdiction. An Incidental Take Statement (ITS) was issued in the Opinion. The ITS includes reasonable and prudent measures and their implementing terms and conditions, which NMFS determined are necessary or appropriate to minimize impacts of the incidental take in the fisheries assessed in this Opinion.

[33] The eight Federal FMPs considered in the May 27, 2021, Biological Opinion include: (1) Atlantic Bluefish; (2) Atlantic Deep-sea Red Crab; (3) Mackerel, Squid, and Butterfish; (4) Monkfish; (5) Northeast Multispecies; (6) Northeast Skate Complex; (7) Spiny Dogfish; and (8) Summer Flounder, Scup, and Black Sea Bass. The two ISFMPs are American Lobster and Jonah Crab.

On September 13, 2023, NMFS issued a 7(a)(2)/7(d) memorandum that reinitiated consultation on the 2021 Biological Opinion. The federal actions to be addressed in this reinitiation of consultation include the authorization of the federal fisheries conducted under the aforementioned eight federal FMPs (see footnote below). The reinitiated consultation will not include American lobster and Jonah crab fisheries, which are authorized under ISFMPs. On December 29, 2022, President Biden signed the Consolidated Appropriations Act (CAA), 2023, which included the following provision specific to NMFS' regulation of the lobster and Jonah crab fishery to protect right whales, "Notwithstanding any other provision of law ... for the period beginning on the date of enactment of this Act and ending on December 31, 2028, the Final Rule ... shall be deemed sufficient to ensure that the continued Federal and State authorizations of the American lobster and Jonah crab fisheries are in full compliance with the Marine Mammal Protection Act of 1972 (16 U.S.C. 1361 et seq.) and the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.)." Given this, the American lobster and Jonah crab fisheries remain in compliance with the ESA through December 31, 2028.

Based on our preliminary assessment of the proposed action, the Council has determined that the proposed action does not entail making any changes to the summer flounder and scup fisheries during the reinitiation period that would cause an increase in interactions with or effects to ESA-listed species or their critical habitat beyond those considered in NMFS' September 13, 2023, 7(a)(2) determination. Therefore, this action is consistent with NMFS' September 13, 2023, 7(a)(2) determination.

8.3. Marine Mammal Protection Act

Section 6.3 lists and describes the marine mammal species which inhabit the affected environment of this action. As described in Section 6.3, various marine mammal species have the potential to interact with the gear types used in the scup and black sea bass fisheries (i.e., bottom trawl, pots/traps, and hook and line gear). The impacts of the proposed measures on marine mammals (Section 7.3) are consistent with the provisions of the MMPA. The preferred alternatives would not alter existing measures to protect marine mammals.

A final determination of consistency with the MMPA will be made by NMFS during rulemaking for this action.

8.4. 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 will submit this document 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).

8.5. 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 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 development of the preferred alternatives during the following meetings:

- June 21, 2023 Advisory Panel meeting webinar
- July 24-26, 2023 SSC meeting in Philadelphia, PA
- July 27, 2023 Monitoring Committee meeting webinar
- August 8-11, 2023 joint meeting of the Council and Board in Annapolis, MD

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*.

8.6. Section 515 (Data Quality Act)

Utility of Information Product

The proposed action would implement catch and landings limits for the commercial and recreational summer flounder and scup fisheries for 2024 and 2025. This document includes a description of the alternatives considered, the preferred actions 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 annual specifications and this document serves as a supporting document for the proposed rule.

The preferred alternatives were developed consistent with the FMP, MSA, and other applicable laws. They were 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 a number of public meetings (Section 8.6). The public will have further opportunity to comment on this action 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 describes how this document was developed to be consistent with any applicable laws, including the 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). 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 scup and black sea bass fisheries.

The review process for this specifications 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, biology, 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 applicable laws. Final approval of this 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.

8.7. Paperwork Reduction Act

The Paperwork Reduction Act concerns the collection of information. The intent of the Paperwork Reduction Act 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 Paperwork Reduction Act.

8.8. Relative to Federalism/Executive Order 13132

Executive Order 13132 established nine fundamental federalism principles for federal agencies to follow when developing and implementing actions with federalism implications. It also lists a series of policy making criteria to which federal agencies must adhere when formulating and implementing policies that have federalism implications. This document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order 13132. The affected states have been closely involved in the development of the proposed fishery specifications through their representation on the Council and/or the Commission.

8.9. Executive Order 12898 (Environmental Justice)

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations provides guidelines to ensure that potential impacts on these populations are identified and mitigated, and that these populations can participate effectively in the NEPA process (EO 12898 1994). NOAA guidance NAO 216-6A, Companion Manual, Section 10(A) requires the consideration of EO 12898 in NEPA documents. Agencies should also encourage public participation, especially by affected communities, during scoping, as part of a broader strategy to address environmental justice issues. Minority and low-income individuals or populations must not be excluded from participation in, denied the benefits of, or subjected to discrimination because of their race, color, or national origin. Although the impacts

of this action may affect communities with environmental justice concerns, the proposed actions should not have disproportionately high effects on low income or minority populations. The proposed actions would apply to all participants in the affected area, regardless of minority status or income level. The public comment process is an opportunity to identify issues that may be related to environmental justice, but none have been raised relative to this action. The public has never requested translations of documents pertinent to the summer flounder and scup fisheries. With respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. GARFO tracks these issues, but there are no federally recognized tribal agreements for subsistence fishing of the species relevant for this action.

8.10. Regulatory Flexibility Act

A Regulatory Flexibility Act analysis was prepared for this proposed action in conjunction with the proposed black sea bass specifications for 2024. This analysis is available in Appendix A.

9. LITERATURE CITED

Altenritter M.N., G.B. Zydlewski, M.T. Kinnison & G.S. Wippelhauser (2017). Atlantic sturgeon use of the Penobscot River and marine movements within and beyond the Gulf of Maine. *Marine and Coastal Fisheries. 9*: 216-230.

Angliss, R.P. and D. P. DeMaster. 1998. Differentiating Serious and Non-Serious Injury of Marine Mammals Taken Incidental to Commercial Fishing Operations: Report of the Serious Injury Workshop 2 April 1997, Silver Spring, Maryland. NOAA Technical Memorandum NMFS-OPR-13, January 1998.

ASMFC (Atlantic States Marine Fisheries Commission). 2007. Special report to the Atlantic Sturgeon Management Board: Estimation of Atlantic sturgeon bycatch in coastal Atlantic commercial fisheries of New England and the Mid-Atlantic. August 2007. 95 p.

ASMFC (Atlantic States Marine Fisheries Commission). 2017. 2017 Atlantic sturgeon benchmark stock assessment and peer review report. October 18, 2017. 456 pp.

ASMFC (Atlantic States Marine Fisheries Commission). 2021. Tautog Regional Stock Assessment Update 2021. Available at: https://asmfc.org/uploads/file/63d6c5e02021TautogRegionalStockAssessmentUpdate_web.pdf.

ASSRT (Atlantic Sturgeon Status Review Team). 2007. Status review of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). Report to National Marine Fisheries Service, Northeast Regional Office. February 23, 2007. 174 p.

Balazs, G.H. 1985. Impact of ocean debris on marine turtles: entanglement and ingestion. NOAA Technical Memorandum NMFS-SWFSC-54:387-429.

Baum, E.T. 1997. *Maine Atlantic Salmon - A National Treasure*. Atlantic Salmon Unlimited. Hermon, Maine.

Baumgartner, M.F., F.W. Wenzel, N.S.J. Lysiak, M.R. Patrician. 2017. North Atlantic right whale foraging ecology and its role in human-caused mortality. *Marine Ecology Progress Series.* 581:165-181.

Beanlands, G.E., and P. N. Duinker. 1984. Ecological framework adjustment for environmental impact assessment. *Journal of Environmental Management*. 8:3.

Blumenthal, J.M., J.L. Solomon, C.D. Bell, T.J. Austin, G. Ebanks-Petrie, M.S. Coyne, A.C. Broderick, and B.J. Godley. 2006. Satellite tracking highlights the need for international cooperation in marine turtle management. *Endangered Species Research.* 2:51-61.

Boucher, J. and K.L.Curti. 2023. Discard Estimates for Atlantic Sturgeon through 2021. White Paper Provided to NOAA's Greater Atlantic Regional Fisheries Office, May 5, 2023.

Braun, J., and S.P. Epperly. 1996. Aerial surveys for sea turtles in southern Georgia waters, June 1991. *Gulf of Mexico Science*. 1996(1):39-44.

Braun-McNeill, J., and S.P. Epperly. 2002. Spatial and temporal distribution of sea turtles in the western North Atlantic and the U.S. Gulf of Mexico from Marine Recreational Fishery Statistics Survey (MRFSS). *Marine Fisheries Review.* 64(4):50-56.

Braun-McNeill, J., C.R. Sasso, S.P.Epperly, C. Rivero. 2008. Feasibility of using sea surface temperature imagery to mitigate cheloniid sea turtle–fishery interactions off the coast of northeastern USA. *Endangered Species Research*. 5: 257–266.

Breece M.W., D.A. Fox, K.J. Dunton, M.G. Frisk, A. Jordaan & M.J. Oliver (2016). Dynamic seascapes predict the marine occurrence of an endangered species: Atlantic Sturgeon Acipenser oxyrinchus oxyrinchus. *Methods in Ecology and Evolution. 7*(6): 725-733.

Breece M.W., D.A. Fox, D.E. Haulsee, I.I. Wirgin & M.J. Oliver (2018a). Satellite driven distribution models of endangered Atlantic sturgeon occurrence in the mid-Atlantic Bight. *ICES Journal of Marine Science. 75*(2): 562-571.

Breece M.W., D.A. Fox & M.J. Oliver (2018b). Environmental drivers of adult Atlantic sturgeon movement and residency in the Delaware Bay. *Marine and Coastal Fisheries. 10*(2): 269-280.

Chavez-Rosales S, Lyssikatos MC, Hatch J. 2017. Estimates of cetacean and pinniped bycatch in Northeast and Mid-Atlantic bottom trawl fisheries, 2011-2015. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 17-16; 18 p. Available from: http://www.nefsc.noaa.gov/publications/.

Clapham, P.J., L.S. Baraff, C.A. Carlson, M.A. Christian, D.K. Mattila, C.A. Mayo, M.A. Murphy and S. Pittman. 1993. Seasonal occurrence and annual return of humpback whales, *Megaptera novaeangliae*, in the southern Gulf of Maine. *Canadian Journal of Zoology.* 71: 440-443.

Cole, T. V. N., P. Hamilton, A. G. Henry, P. Duley, R. M. Pace III, B. N. White, T. Frasier. 2013. Evidence of a North Atlantic right whale *Eubalaena glacialis* mating ground. *Endangered Species Research*. 21: 55–64.

Collins, M. R. and T. I. J. Smith. 1997. Distribution of shortnose and Atlantic sturgeons in South Carolina. North American Journal of Fisheries Management. 17: 995-1000.

Conant, T.A., P.H. Dutton, T. Eguchi, S.P. Epperly, C.C. Fahy, M.H. Godfrey, S.L. MacPherson, E.E. Possardt, B.A. Schroeder, J.A. Seminoff, M.L. Snover, C.M. Upite, and B.E. Witherington. 2009. Loggerhead sea turtle (*Caretta caretta*) 2009 status review under the U.S. Endangered Species Act. Report of the Loggerhead Biological Review Team to the National Marine Fisheries Service, August 2009. 222 p.

Dadswell, M. 2006. A review of the status of Atlantic sturgeon in Canada, with comparisons to populations in the United States and Europe. Fisheries. 31: 218-229.

Dadswell, M. J., B. D. Taubert, T. S. Squiers, D. Marchette, and J. Buckley. 1984. Synopsis of Biological Data on Shortnose Sturgeon, Acipenser brevirostrum, LeSuer 1818. NOAA Technical Report NMFS 14.

Dodge, K.L., B. Galuardi, T. J. Miller, and M. E. Lutcavage. 2014. Leatherback turtle movements, dive behavior, and habitat characteristics in ecoregions of the northwest Atlantic Ocean. *PLOS ONE*. 9 (3) e91726: 1-17.

Dovel, W.L. and T.J. Berggren. 1983. Atlantic sturgeon of the Hudson River Estuary, New York. *New York Fish and Game Journal.* 30: 140-172.

Dunton, K.J., A. Jordaan, K.A. McKown, D.O. Conover, and M.J. Frisk. 2010. Abundance and distribution of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) within the northwest Atlantic Ocean, determined from five fishery-independent surveys. *Fishery Bulletin*. 108:450-465.

Dunton, K.J., A. Jordaan, D. O. Conover, K.A. McKown, L. A. Bonacci, and M. G. Frisk. 2015. Marine Distribution and Habitat Use of Atlantic Sturgeon in New York Lead to Fisheries Interactions and Bycatch. Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science 7:18–32.

Eckert, S.A., D. Bagley, S. Kubis, L. Ehrhart, C. Johnson, K. Stewart, and D. DeFreese. 2006. Internesting and postnesting movements of foraging habitats of leatherback sea turtles (*Dermochelys coriacea*) nesting in Florida. *Chelonian Conservation and Biology*. 5(2): 239-248.

Eno, N.C., D.S MacDonald, J.A.M. Kinnear, S.C Amos, C.J. Chapman, R.A Clark, F.P.D Bunker, Munro, C. 2001. Effects of crustacean traps on benthic fauna. *ICES Journal of Marine Science*. 58:11-20.

Epperly, S.P., J. Braun, and A.J. Chester. 1995a. Aerial surveys for sea turtles in North Carolina inshore waters. *Fishery Bulletin*. 93: 254-261.

Epperly, S.P., J. Braun, A.J. Chester, F.A. Cross, J.V. Merriner, and P.A. Tester. 1995b.Winter distribution of sea turtles in the vicinity of Cape Hatteras and their interactions with the summer flounder trawl fishery. *Bulletin of Marine Science*. 56(2): 547-568.

Erickson, D. L., A. Kahnle, M. J. Millard, E. A. Mora, M. Bryja, A. Higgs, J. Mohler, M. DuFour, G. Kenney, J. Sweka, and E. K. Pikitch. 2011. Use of pop-up satellite archival tags to identify oceanic-migratory patterns for adult Atlantic Sturgeon, *Acipenser oxyrinchus oxyrinchus* Mitchell, 1815. *Journal of Applied Ichthyology*. 27: 356–365.

Fay, C., M. Bartron, S. Craig, A. Hecht, J. Pruden, R. Saunders, T. Sheehan, and J. Trial. 2006. Status review for anadromous Atlantic salmon (*Salmo salar*) in the United States. Report to the National Marine Fisheries Service and U.S. Fish and Wildlife Service. 294 pages.

Gaichas, S., J. Hare, M. Pinsky, G. DePiper, O. Jensen, T. Lederhouse, J. Link, D. Lipton, R. Seagraves, J. Manderson, and M. Clark. 2015. Climate change and variability: a white paper to inform the Mid-Atlantic Fishery Management Council on the impact of climate change on fishery science and management. Second draft. Available at: http://www.mafmc.org/eafm/

Greene, J.K., M.G. Anderson, J. Odell, and N. Steinberg, eds. 2010. The Northwest Atlantic Marine Ecoregional Assessment: Species, Habitats and Ecosystems. Phase One. The Nature Conservancy, Eastern U.S. Division, Boston, MA. Available at: www.conservationgateway.org

Griffin, D.B., S. R. Murphy, M. G. Frick, A. C. Broderick, J. W. Coker, M. S. Coyne, M. G. Dodd, M. H. Godfrey, B. J. Godley, L. A. Hawkes, T. M. Murphy, K. L. Williams, and M. J. Witt. 2013. Foraging habitats and migration corridors utilized by a recovering subpopulation of adult female loggerhead sea turtles: implications for conservation. *Marine Biology.* 160: 3071–3086.

Hare, J.A., W.E. Morrison, M.W. Nelson, M.M. Stachura, E.J. Teeters, R.B. Griffis, et al. 2016. A Vulnerability Assessment of Fish and Invertebrates to Climate Change on the Northeast U.S. Continental Shelf. PLoS ONE 11(2). Available at: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0146756.

Hartley, D., A. Whittingham, J. Kenney, T. Cole, and E. Pomfret. 2003. Large Whale Entanglement Report 2001. Report to the National Marine Fisheries Service, updated February 2003.

Hawkes, L.A., A.C. Broderick, M.S. Coyne, M.H. Godfrey, L.-F. Lopez-Jurado, P. Lopez Suarez, S.E. Merino, N. Varo-Cruz, and B.J. Godley. 2006. Phenotypically linked dichotomy in sea turtle foraging requires multiple conservation approaches. *Current Biology*. 16: 990-995.

Hawkes, L.A., M.J. Witt, A.C. Broderick, J.W. Coker, M.S. Coyne, M. Dodd, M.G. Frick, M.H. Godfrey, D.B. Griffin, S.R. Murphy, T.M. Murphy, K.L. Williams, and B.J. Godley. 2011. Home on the range: spatial ecology of loggerhead turtles in Atlantic waters of the USA. *Diversity and Distributions*. 17: 624–640.

Hayes, S.A., E. Josephson , K. Maze-Foley , and P. E. Rosel. 2017. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments 2016. NOAA Technical Memorandum NMFS-NE-241.

Hayes, S.A, E. Josephson, K. Maze-Foley, and P. Rosel. 2018. US Atlantic and Gulf of Mexico Marine Mammal Stock Assessment-2017. NOAA Technical Memorandum NMFS-NE-245.

Hayes, S.A., E. Josephson, K. Maze-Foley, and P. E. Rosel. 2019. US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2018. NOAA Technical Memorandum NMFS-NE-258.

Hayes, S.A., E. Josephson, K. Maze-Foley, and P. E. Rosel. 2020. US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2019. NOAA Technical Memorandum NMFS-NE-264.

Hayes, S.A., E. Josephson, K. Maze-Foley, and P. E. Rosel. 2021. US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2020. NOAA Technical Memorandum NMFS-NE-271.

Hayes, S.A., E. Josephson, K. Maze-Foley, P.E. Rosel, and J. Wallace. 2022. US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2021. NOAA Technical Memorandum NMFS-NE-288.

Henry, A.G., T.V.N. Cole, L. Hall, W. Ledwell, D. Morin, and A. Reid. 2016. Serious injury and mortality and determinations for baleen whale stocks along the Gulf of Mexico, United States east coast and Atlantic Canadian provinces, 2010-2014. U.S. Dept Commer, Northeast Fish Sci Cent Ref Doc. 16-10; 51 p.

Henry, A.G., T.V.N. Cole, M. Garron, W. Ledwell, D. Morin, and A. Reid. 2017. Serious injury and mortality and determinations for baleen whale stocks along the Gulf of Mexico, United States east coast and Atlantic Canadian provinces, 2011-2015. U.S. Dept Commer, Northeast Fish Sci Cent Ref Doc. 17-19; 57 p.

Henry, A., M. Garron, A. Reid, D. Morin, W. Ledwell, and T.V.N. Cole. 2019. Serious injury and mortality and determinations for baleen whale stocks along the Gulf of Mexico, United States east coast and Atlantic Canadian provinces, 2012-2016. U.S. Dept Commer, Northeast Fish Sci Cent Ref Doc. 19-13; 54 p.

Henry, A. 2022. Serious injury and mortality determinations for baleen whale stocks along the Gulf of Mexico, United States East Coast, and Atlantic Canadian Provinces, 2015-2019. NOAA Technical Memorandum NMFS-NE-280.

Henry, A., M. Garron, D. Morin, A. Smith, A. Reid, W. Ledwell, T. Cole. 2023. Serious injury and mortality determinations for baleen whale stocks along the Gulf of Mexico, United States East Coast, and Atlantic Canadian Provinces, 2017-2021. Northeast Fisheries Science Center Reference Document 23-09.

Hilton E.J., B. Kynard, M.T. Balazik, A.Z. Horodysky & C.B. Dillman (2016). Review of the biology, fisheries, and conservation status of the Atlantic Sturgeon, (Acipenser oxyrinchus oxyrinchus Mitchill, 1815). *Journal of Applied Ichthyology. 32*(S1): 30-66.

Hirth, H.F. 1997. Synopsis of the biological data of the green turtle, *Chelonia mydas* (Linnaeus 1758). USFWS Biological Report 97(1): 1-120.

Hogan, F., B. Hooker, B. Jensen, L. Johnston, A. Lipsky, E. Methratta, A. Silva, and A. Hawkins. 2023. Fisheries and Offshore Wind Interactions: Synthesis of Science. NOAA Technical Memorandum NMFS-NE-291. 388 p. Available at https://doi.org/10.25923/tcjt-3a69.

Hyvarinen, P., P. Suuronen and T. Laaksonen. 2006. Short-term movement of wild and reared Atlantic salmon smolts in brackish water estuary – preliminary study. *Fisheries Management and Ecology*. 13(6): 399 -401.

Ingram E.C., R.M. Cerrato, K.J. Dunton & M.G. Frisk (2019). Endangered Atlantic Sturgeon in the New York Wind Energy Area: implications of future development in an offshore wind energy site. *Scientific Reports. 9*(1): 12432.

James, M.C., R.A. Myers, and C.A. Ottenmeyer. 2005. Behaviour of leatherback sea turtles, *Dermochelys coriacea*, during the migratory cycle. *Proceedings of the Royal Society B*. 272: 1547-1555.

James, M.C., S.A. Sherrill-Mix, K. Martin, and R. A. Myers. 2006. Canadian waters provide critical foraging habitat for leatherback sea turtles. *Biological Conservation*. 133: 347-357.

Johnson, A. J., G. S. Salvador, J. F. Kenney, J. Robbins, S. D. Kraus, S. C. Landry, and P. J. Clapham. 2005. Fishing gear involved in entanglements of right and humpback whales, *Marine Mammal Science* 21(4): 635-645.

Kazyak D.C., S.L. White, B.A. Lubinski, R. Johnson & M. Eackles (2021). Stock composition of Atlantic sturgeon (Acipenser oxyrinchus oxyrinchus) encountered in marine and estuarine environments on the U.S. Atlantic Coast. *Conservation Genetics. 22*(5): 767-781.

Kenney, J., and D. Hartley. 2001. Draft large whale entanglement summary 1997-2001. Report to the National Marine Fisheries Service, updated October.

Knowlton, A. R. and S. D. Kraus. 2001. Mortality and serious injury of northern right whales (Eubalaena glacialis) in the western North Atlantic Ocean. Journal of Cetacean Research and Management (special issue) 2: 193-208.

Knowlton, A.R., P.K. Hamilton, M.K. Marx, H.M. Pettis, and S.D. Kraus. 2012. Monitoring North Atlantic right whale (*Eubalaena glacialis*) entanglement rates: a 30 yr retrospective. Marine Ecology Progress Series 466:293-302.

Kocik. J.F., S.E. Wigley, and D. Kircheis. 2014. Annual bycatch update Atlantic salmon 2013. U.S. Atlantic Salmon Assessment Committee Working Paper 2014:05. Old Lyme, CT. 6 p. (cited with permission of authors).

Kynard, B., M. Horgan, M. Kieffer, and D. Seibel. 2000. Habitat used by shortnose sturgeon in two Massachusetts rivers, with notes on estuarine Atlantic sturgeon: a hierarchical approach. *Transactions of the American Fisheries Society*. 129: 487-503.

Lacroix, G.L. and P. McCurdy. 1996. Migratory behavior of post-smolt Atlantic salmon during initial stages of seaward migration. *Journal of Fish Biology*. 49: 1086-1101.

Lacroix, G. L, P. McCurdy, and D. Knox. 2004. Migration of Atlantic salmon post smolts in relation to habitat use in a coastal system. *Transactions of the American Fisheries Society*. 133(6):1455-1471.

Lacroix, G.L. and D. Knox. 2005. Distribution of Atlantic salmon (*Salmo salar*) postsmolts of different origins in the Bay of Fundy and Gulf of Maine and evaluation of factors affecting migration, growth, and survival. *Canadian Journal of Fisheries and Aquatic Science*. 62: 1363–1376.

Laney, R.W., J.E. Hightower, B.R. Versak, M.F. Mangold, W.W. Cole Jr., and S.E. Winslow 2007. Distribution, habitat use, and size of Atlantic sturgeon captured during cooperative winter tagging cruises, 1988–2006. Pages 167-182. In: J. Munro, D. Hatin, J. E. Hightower, K. McKown, K. J. Sulak, A. W. Kahnle, and F. Caron, (editors), Anadromous sturgeons: Habitats, threats, and management. American Fisheries Society Symposium 56, Bethesda, MD.

Lucey, S. M. and J. A. Nye. 2010. Shifting species assemblages in the northeast US continental shelf large marine ecosystem. *Marine Ecology Progress Series*. 415: 23-33.

Lyssikatos, M.C. 2015. Estimates of cetacean and pinniped bycatch in Northeast and mid-Atlantic bottom trawl fisheries, 2008-2013. Northeast Fisheries Science Center Reference Document 15-19; 20 p.

Lyssikatos, M.C., S. Chavez-Rosales, and J. Hatch. 2020. Estimates of cetacean and pinniped bycatch in Northeast and Mid-Atlantic bottom trawl fisheries, 2013-2017. Northeast Fish Sci Cent Ref Doc. 20-04; 11 p.

Lyssikatos MC, Chavez-Rosales S, Hatch J. 2021. Estimates of Cetacean and Pinniped Bycatch in Northeast and Mid-Atlantic Bottom Trawl Fisheries, 2014-2018. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 21-02; 12 p.

MAFMC (Mid-Atlantic Fishery Management Council). 2002. Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan. 552 p. + append. Available at: http://www.mafmc.org/fisheries/fmp/sf-s-bsb

MAFMC (Mid-Atlantic Fishery Management Council). 2008. Amendment 9 to the Atlantic Mackerel, Squid, and Butterfish Fishery Management Plan. 461 p. Available at: http://www.mafmc.org/s/SMB_Amend_9_Vol_1.pdf.

MAFMC (Mid-Atlantic Fishery Management Council). 2014. Workshop Report: East Coast Climate Change and Fisheries Governance Workshop. March 19-21, 2014, Washington, DC. Available at: http://www.mafmc.org/council-events/2014/east-coast-climate-change-and-fisheries-governance-workshop.

MAFMC (Mid-Atlantic Fishery Management Council). 2023a. Staff Memo: Summer Flounder Specifications for 2024-2025. Available at: https://www.mafmc.org/s/b_flkquota-2024-2025-memo_final.pdf.

MAFMC (Mid-Atlantic Fishery Management Council). 2023b. Staff Memo: Scup Specifications for 2024-2025. Available at: https://www.mafmc.org/s/b_Scup_specs2024-2025-memo.pdf.

MAFMC (Mid-Atlantic Fishery Management Council). 2023c. Report of the July 2023 SSC meeting. Available at: https://www.mafmc.org/s/Final_July-24-26-SSC-Meeting_Report-to-Council-phzr.pdf.

MAFMC (Mid-Atlantic Fishery Management Council). 2023d. July 2023 Summer Flounder, Scup, and Black Sea Bass Monitoring Committee Recommendation Summary. Available at: https://www.mafmc.org/s/SFSBSB-MC-Mtg-Summary-27July2023.pdf.

Mansfield, K.L., V.S. Saba, J. Keinath, and J.A. Musick. 2009. Satellite telemetry reveals adichotomy in migration strategies among juvenile loggerhead sea turtles in the northwest Atlantic. *Marine Biology*. 156:2555-2570.

Maze-Foley, K. and L.P. Garrison. 2016. Serious injury determinations for small cetaceans off the southeast U.S. coast, 2013. Southeast Fisheries Science Center, Protected Resources and Biodiversity Division, 75 Virginia Beach Dr., Miami, FL 33140. PRBD Contribution # PRBD-2016-06. 12 pp.

McClellan, C.M., and A.J. Read. 2007. Complexity and variation in loggerhead sea turtle life history. *Biology Letters.* 3:592-594

Meyer-Gutbrod, E.L., C.H. Greene, K.T.A. Davies and D.G. Johns. 2021. Ocean Regime Shift is Driving Collapse of the North Atlantic Right Whale Population. Oceanography. 34. 22-31.

Meyer-Gutbrod, E.L., K. T. A. Davies, C. L. Johnson, S. Plourde, K. A. Sorochan, R. D. Kenney, C. Ramp, J.F. Gosselin, J. W. Lawson, C. H. Greene. 2022. Redefining North Atlantic right whale habitat-use patterns under climate change. Limnol. Oceanogr. 68. S71–S86.

Miller, T. and G. Shepard. 2011. Summary of discard estimates for Atlantic sturgeon. Northeast Fisheries Science Center, Population Dynamics Branch, August 2011.

Miller, M. H. and C. Klimovich. 2017. Endangered Species Act status review report: Giant manta ray (Manta birostris) and reef manta ray (Manta alfredi). National Marine Fisheries Service, Silver Spring, Maryland, September. Available from: https://repository.library.noaa.gov/view/noaa/17096.

Mitchell, G.H., R.D. Kenney, A.M. Farak, and R.J. Campbell. 2003. Evaluation of occurrence of endangered and threatened marine species in naval ship trial areas and transit lanes in the Gulf of Maine and offshore of Georges Bank. NUWC-NPT Technical Memo 02-121A. 113 p.

Morgan, L. E. and R. Chuenpagdee. 2003. Shifting gears: addressing the collateral impacts of fishing methods in U.S. Waters. Pew Science Series. Available at: http://www.pewtrusts.org/en/research-and-analysis/reports/2003/05/01/shifting-gears-addressing-the-collateral-impacts-of-fishing-methods-in-us-waters Moore, M.J. and J. M. van der Hoop. 2012. The Painful Side of Trap and Fixed Net Fisheries: Chronic Entanglement of Large Whales. Journal of Marine Biology, Volume 2012, Article ID 230653, 4 pages

Morreale, S.J. and E.A. Standora. 2005. Western North Atlantic waters: Crucial developmental habitat for Kemp's ridley and loggerhead sea turtles. *Chelonian Conservation Biology*. 4(4):872-882.

Murphy, T.M., S.R. Murphy, D.B. Griffin, and C. P. Hope. 2006. Recent occurrence, spatial distribution and temporal variability of leatherback turtles (*Dermochelys coriacea*) in nearshore waters of South Carolina, USA. *Chelonian Conservation Biology*. 5(2): 216-224.

Murray, K. T. 2007. Estimated bycatch of loggerheaed sea turtles (Caretta caretta) in U.S. mid-Atlantic scallop trawl gear, 2004-2005, and in scallop dredge gear, 2005. National Marine Fisheries Service, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, Massachusetts 02543, February 2007. Northeast Fisheries Science Center Reference Document No. 07-04. Report No. 07-04.

Murray, K.T., 2008. Estimated average annual bycatch of loggerhead sea turtles (*Caretta caretta*) in US Mid-Atlantic bottom otter trawl gear, 1996–2004, second ed. Northeast Fisheries Science Center Reference Document 08-20, p. 32. Available at: http://www.nefsc.noaa.gov/publications/crd/crd0820.

Murray, K.T. 2013. Estimated loggerhead and unidentified hard-shelled turtle interactions in mid-Atlantic gillnet gear, 2007-2011. NOAA Technical Memorandum. NMFS-NM-225. 20 p. Available at: http://www.nefsc.noaa.gov/publications/tm/

Murray, K.T. 2015. The importance of location and operational fishing factors in estimating and reducing loggerhead turtle (*Caretta caretta*) interactions in U.S. bottom trawl gear. *Fisheries Research*. 172: 440–451.

Murray, K. T. 2020. Estimated magnitude of sea turtle interactions and mortality in U.S. bottom trawl gear, 2014-2018. National Marine Fisheries Service, Woods Hole, Massachusetts, 2020. Northeast Fisheries Science Center Technical Memorandum No. NMFS-NE-260.

NEFMC (New England Fishery Management Council). 2018. Framework Adjustment 5 to the Northeast Skate Complex FMP. Newburyport, MA.

NEFSC (Northeast Fisheries Science Center). 2015. 60th Northeast Regional Stock Assessment (60th SAW) assessment report. Northeast Fisheries Science Center Reference Document 15-08; 870 p.

NEFSC (Northeast Fisheries Science Center). 2017. 62nd Northeast Regional Stock Assessment Workshop (62nd SAW) Assessment Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 17-03; 822 p. Available from: National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543-1026, or online at http://nefsc.noaa.gov/publications/.

Northeast Fisheries Science Center (NEFSC). 2021a. Summer Flounder Management Track Assessment for 2021. 14p. Available at: https://www.mafmc.org/s/c_2021_summer_flounder_MTA_report.pdf.

Northeast Fisheries Science Center (NEFSC). 2021b. Scup Management Track Assessment for 2021. 14p. Available at: https://www.mafmc.org/s/c_2021_scup_MTA_report.pdf.

Northeast Fisheries Science Center (NEFSC). 2023a. Summer Flounder Management Track Assessment for 2023. 9p. Available at: https://www.mafmc.org/s/e_Summer_flounder_MTA_2023_06_08.pdf.

Northeast Fisheries Science Center (NEFSC). 2023b. Scup Management Track Assessment for 2023. 9p. Available at: https://www.mafmc.org/s/e_Scup_2023_MTA_2023_06_05.pdf.

NMFS (National Marine Fisheries Service). 2011. Bycatch Working Group Discussion Notes. NMFS Sturgeon Workshop, Alexandria, VA. February 11, 2011.

NMFS (National Marine Fisheries Service). 2014. Final Environmental Impact Statement for Amending the Atlantic Large Whale Take Reduction Plan: Vertical Line Rule. National Marine Fisheries Service. May 2014.

NMFS and USFWS (National Marine Fisheries Service and U.S. Fish and Wildlife Service). 1991. Recovery plan for U.S. population of Atlantic green turtle (*Chelonia mydas*). National Marine Fisheries Service, Washington, D.C. 58 p.

NMFS and USFWS (National Marine Fisheries Service and U.S. Fish and Wildlife Service). 1992. Recovery plan for leatherback turtles (*Dermochelys coriacea*) in the U.S. Caribbean, Atlantic, and Gulf of Mexico. National Marine Fisheries Service, Washington, D.C. 65 p.

NMFS and USFWS (National Marine Fisheries Service and U.S. Fish and Wildlife Service). 1995. Status reviews for sea turtles listed under the Endangered Species Act of 1973. Silver Spring, Maryland: National Marine Fisheries Service. 139 p.

NMFS and USFWS (National Marine Fisheries Service and U.S. Fish and Wildlife Service). 1998a. Recovery Plan for U.S. Pacific Populations of the Leatherback Turtle (*Dermochelys coriacea*). Silver Spring, Maryland: National Marine Fisheries Service. 65 p.

NMFS and USFWS (National Marine Fisheries Service and U.S. Fish and Wildlife Service). 1998b. Recovery Plan for U.S. Pacific Populations of the Green Turtle (*Chelonia mydas*). Silver Spring, Maryland: National Marine Fisheries Service. 84 p.

NMFS and USFWS (National Marine Fisheries Service and U.S. Fish and Wildlife Service). 2005. Recovery plan for the Gulf of Maine distinct population segment of the Atlantic salmon (*Salmo salar*). National Marine Fisheries Service, Silver Spring, MD.

NMFS and USFWS (National Marine Fisheries Service and U.S. Fish and Wildlife Service). 2007a. Kemp's ridley sea turtle (*Lepidochelys kempii*) 5 year review: summary and evaluation. Silver Spring, Maryland: National Marine Fisheries Service. 50 p.

NMFS and USFWS (National Marine Fisheries Service and U.S. Fish and Wildlife Service). 2007b. Green sea turtle (*Chelonia mydas*) 5 year review: summary and evaluation. Silver Spring, Maryland: National Marine Fisheries Service. 102 p.

NMFS and USFWS (National Marine Fisheries Service and U.S. Fish and Wildlife Service). 2008. Recovery plan for the Northwest Atlantic population of the loggerhead turtle (*Caretta caretta*), Second revision. Washington, D.C.: National Marine Fisheries Service. 325 p.

NMFS and USFWS (National Marine Fisheries Service and U.S. Fish and Wildlife Service). 2013. Leatherback sea turtle (*Dermochelys coriacea*) 5 year review: summary and evaluation. Silver Spring, Maryland: National Marine Fisheries Service. 91 p.

NMFS and USFWS. 2020. Endangered Species Act status review of the leatherback turtle (Dermochelys coriacea). Report to the National Marine Fisheries Service Office of Protected Resources and U.S. Fish and Wildlife Service.

Novak A., J., A. Carlson, E., C. Wheeler, R., G.S. Wippelhauser & J.A. Sulikowski (2017). Critical Foraging Habitat of Atlantic Sturgeon Based on Feeding Habits, Prey Distribution, and Movement Patterns in the Saco River Estuary, Maine. *Transactions of the American Fisheries Society. 146*(2): 308-317-2017.

Nye, J. A., T. M. Joyce, Y.O. Kwon, and J.S. Link. 2011. Silver hake tracks changes in Northwest Atlantic circulation. *Nature Communications*. 2:412.

Pace, R.M., Corkeron, P.J., Kraus, S.D. (2017). State–space mark–recapture estimates reveal a recent decline in abundance of North Atlantic right whales. Ecol. Evo. 1-12.

Pace, R. M., III, R. Williams, S. D. Kraus, A. R. Knowlton, and H. M. Pettis. 2021. Cryptic mortality of North Atlantic right whales. Conservation Science and Practice 3(2): e346.

Packer, D. B, S. J. Griesbach, P. L. Berrien, C. A. Zetlin, D. L. Johnson, and W.W. Morse. 1999. Essential Fish Habitat Source Document: Summer Flounder, *Paralichthys dentatus*, Life History and Habitat Characteristics. NOAA Technical Memorandum NMFS-NE-151.

Payne, P.M., J.R. Nicholas, L. O'Brien and K.D. Powers. 1986. The distribution of the humpback whale, *Megaptera novaeangliae*, on Georges Bank and in the Gulf of Maine in relation to densities of the sand eel, *Ammodytes americanus*. *Fishery Bulletin.* 84: 271-277.

Payne, P.M., D.N. Wiley, S.B. Young, S. Pittman, P.J. Clapham, and J.W. Jossi. 1990. Recent fluctuations in the abundance of baleen whales in the southern Gulf of Maine in relation to changes in selected prey. *Fishery Bulletin.* 88: 687-696.

Pettis, H.M., Pace, R.M., Hamilton, P.K. (2021). North Atlantic Right Whale Consortium 2021 Annual Report Card. Report to the North Atlantic Right Whale Consortium. www.narwc.org.

Pinsky, M.L., B. Worm, M.J. Fogarty, J.L. Sarmiento, and S.A. Levin. 2013. Marine taxa track local climate velocities. *Science*. 341(6151): 1239-1242.

Quintana-Rizzo, E., S. Leiter, T.V.N. Cole, M.N. Hagbloom, A.R. Knowlton, P. Nagelkirk, O. O'Brien, C.B. Khan, A.G. Henry, P.A. Duley, L.M. Crowe, C.A. Mayo and S.D. Kraus. 2021.

Residency, demographics, and movement patterns of North Atlantic right whales Eubalaena glacialis in an offshore wind energy development area in southern New England, USA. Endang. Species Res. 45:251–268.

Reddin, D.G. 1985. Atlantic salmon (*Salmo salar*) on and east of the Grand Bank. *Journal of Northwest Atlantic Fisheries Science*. 6(2):157-164.

Reddin, D.G and P.B. Short. 1991. Postsmolt Atlantic salmon (*Salmo salar*) in the Labrador Sea. *Canadian Journal of Fisheries and Aquatic Science*. 48:2-6.

Reddin, D.G and K.D. Friedland. 1993. Marine environmental factors influencing the movement and survival of Atlantic salmon. 4th Int. Atlantic Salmon Symposium. St. Andrews, N.B. Canada.

Robbins, J. 2009. Scar-based inference into the Gulf of Maine humpback whale entanglement: 2003-2006. Report to National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, MA. NOAA Contract #EA133F04SE0998.

Rothermel E.R., M.T. Balazik, J.E. Best, M.W. Breece, D.A. Fox & B.I. Gahagan (2020). Comparative migration ecology of striped bass and Atlantic sturgeon in the US Southern mid-Atlantic bight flyway. *PLOS ONE. 15*(6): e0234442.

SEDAR. 2015. Southeast Data, Assessment, and Review (SEDAR) 39 Stock Assessment Report. Highly Migratory Species Atlantic Smooth Dogfish Shark. Available: http://sedarweb.org/docs/sar/S39_Atl_smooth_dog_SAR.pdf

Seminoff, J.A., C.D. Allen, G.H. Balazs, P.H. Dutton, T. Eguchi, H.L. Hass, S.A. Hargrove, M. Jensen, D.L. Klemm, A.M. Lauritsen, S.L. MacPherson, P. Opay, E.E. Possardt, S. Pultz, E. Seney, K.S. Van Houtan, and R.S. Waples. 2015. Status Review of the Green Turtle (*Chelonia mydas*) Under the Endangered Species Act. NOAA Technical Memorandum: NOAA-TM-NMFS-SWFSC-539. NMFS Southwest Fisheries Science Center, March 2015.

Sheehan, T.F., D.G. Reddin, G. Chaput and M.D. Renkawitz. 2012. SALSEA North America: Apelagic ecosystem survey targeting Atlantic salmon in the Northwest Atlantic. *ICES Journal of Marine Science*. 69(9):1580-1588.

Schilling, M. R., I. Seipt, M. T. Weinrich, S. E. Frohock, A. E. Kuhlberg, and P. J. Clapham. 1992. Behavior of individually-identified sei whales *Balaenoptera borealis* during an episodic influx into the southern Gulf of Maine in 1986. *Fishery Bulletin*. 90:749–755.

Shoop, C.R., and R.D. Kenney. 1992. Seasonal distributions and abundance of loggerhead and leatherback sea turtles in waters of the northeastern United States. *Herpetological Monographs*. 6:43-67.

STDN (Sea Turtle Disentanglement Network). 2016. Northeast Region Sea Turtle Disentanglement Network Summary of Entanglement/Disentanglement Data from 2002-2016. Unpublished report compiled by NMFS NERO.

STDN (Sea Turtle Disentanglement Network). 2019. Northeast Region Sea Turtle Disentanglement Network Summary of Entanglement/Disentanglement Data from 2002-2018. Unpublished report compiled by NMFS Greater Atlantic Region's Protected Resources Division.

Steimle, FW, Zetlin CA, Berrien PL, Johnson DL, Chang S. 1999. Essential fish habitat source document: Scup, Stenotomus chrysops, life history and habitat characteristics. NOAA Tech Memo NMFS NE 149; 39 p.

Steimle, FW, and CA Zetlin. 2000. Reef habitats in the middle Atlantic bight: abundance, distribution, associated biological communities, and fishery resource use. *Marine Fisheries Review.* 62: 24-42. 62: 24-42.

Stein, A. B., K. D. Friedland, and M. Sutherland. 2004b. Atlantic sturgeon marine bycatch and mortality on the continental shelf of the Northeast United States. *North American Journal of Fisheries Management*. 24: 171-183.

Stein, A. B., K. D. Friedland, and M. Sutherland. 2004. Atlantic sturgeon marine bycatch and mortality on the continental shelf of the Northeast United States. North American Journal of Fisheries Management. 24: 171-183.

Stenseth, N.C, Mysterud, A., Otterson, G., Hurrell, J.W., Chan, K., and M. Lima. 2002 Ecological Effects of Climate Fluctuations. Science 297(5585); 1292-1296.

Stevenson, D., L. Chiarella, D. Stephan, R. Reid, K. Wilhelm, J. McCarthy, M. Pentony. 2004. Characterization of the fishing practices and marine benthic ecosystems of the Northeast U.S. Shelf, and an evaluation of the potential effects of fishing on Essential Fish Habitat. NOAA Technical Memorandum NMFS-NE-181; 179 p.

Swingle, W.M., S.G. Barco, T.D. Pitchford, W.A. McLellan, and D.A. Pabst. 1993. Appearance of juvenile humpback whales feeding in the nearshore waters of Virginia. *Marine Mammal Science.*. 9: 309-315.

Terceiro, M., A. Miller. 2014. Commercial fishery scup discarding and the Gear Restricted Areas (GRAs). White paper for the Mid-Atlantic Fishery Management Council. 30 p.

TEWG (Turtle Expert Working Group). 1998. An assessment of the Kemp's ridley (*Lepidochelys kempii*) and loggerhead (*Caretta caretta*) sea turtle populations in the Western North Atlantic. NOAA Technical Memorandum NMFS-SEFSC-409:1-96.

TEWG (Turtle Expert Working Group). 2000. Assessment update for the Kemp's ridley and loggerhead sea turtle populations in the western North Atlantic. NOAA Technical Memorandum NMFS-SEFSC-444: 1-115.

TEWG (Turtle Expert Working Group). 2007. An assessment of the leatherback turtle population in the Atlantic Ocean. NOAA Technical Memorandum NMFS-SEFSC-555: 1-116.

TEWG (Turtle Expert Working Group). 2009. An assessment of the loggerhead turtle population in the Western North Atlantic Ocean. NOAA Technical Memorandum NMFS-SEFSC-575: 1-131.

USASAC (U.S. Atlantic Salmon Assessment Committee). 2013. Annual reports 2001 through 2012. Annual Report of the U.S. Atlantic Salmon Assessment Committee.

Vu, E., D. Risch, C. Clark, S. Gaylord, L. Hatch, M. Thompson, D. Wiley, and S. Van Parijs. 2012. Humpback whale song occurs extensively on feeding grounds in the western North Atlantic Ocean. *Aquatic Biology*.14(2):175–183.

Waldman, J.R., T. King, T. Savoy, L. Maceda, C. Grunwald, and I. Wirgin. 2013. Stock origins of subadult and adult Atlantic sturgeon, *Acipenser oxyrinchus*, in a non-natal estuary, Long Island Sound. *Estuaries and Coasts*. 36:257–267.

Warden, M.L. 2011a. Modeling loggerhead sea turtle (*Caretta caretta*) interactions with US Mid-Atlantic bottom trawl gear for fish and scallops, 2005–2008. *Biological Conservation*. 144: 2202–2212.

Warden, M.L. 2011b. Proration of loggerhead sea turtle (*Caretta caretta*) interactions in US Mid-Atlantic bottom otter trawls for fish and scallops, 2005-2008, by managed species landed. NEFSC Reference Document 11-04; 8 p. Available at: http://www.nefsc.noaa.gov/publications/crd/

Waring, G.T. , E. Josephson , K. Maze-Foley , and P. E. Rosel. 2016. U.S. Atlantic and Gulf of Mexico marine mammal stock assessments 2015. NOAA Technical Memorandum NMFS-NE-238. http://www.nmfs.noaa.gov/pr/sars/pdf/atlantic2015_final.pdf

Weinberg, J. R. 2005. Bathymetric shift in the distribution of Atlantic surfclams: response to warmer ocean temperature. *ICES Journal of Marine Science*. 62(7): 1444-1453.

Whittingham, A., D. Hartley, J. Kenney, T. Cole, and E. Pomfret. 2005a. Large Whale Entanglement Report 2002. Report to the National Marine Fisheries Service, updated March 2005.

Whittingham, A., M. Garron, J. Kenney, and D. Hartley. 2005b. Large Whale Entanglement Report 2003. Report to the National Marine Fisheries Service, updated June 2005.

Wippelhauser, G.S. 2012. A Regional Conservation Plan For Atlantic Sturgeon in the U. S. Gulf of Maine. Prepared on behalf of Maine Department of Marine Resources, Bureau of Science. NOAA Species of Concern Grant Program Award #NA06NMF4720249A.

Wippelhauser G.S., J.A. Sulikowski, G.B. Zydlewski, M.A. Altenritter, M. Kieffer & M.T. Kinnison (2017). Movements of Atlantic Sturgeon of the Gulf of Maine Inside and Outside of the Geographically Defined Distinct Population Segment. *Marine and Coastal Fisheries. 9*: 93-107.

Wirgin, I., M. W. Breece , D. A. Fox , L. Maceda , K. W. Wark, and T. King. 2015a. Origin of Atlantic sturgeon collected off the Delaware coast during spring months. North American Journal of Fisheries Management. 35: 20–30.

Wirgin, I., L. Maceda, C. Grunwald, and T. L. King. 2015b. Population origin of Atlantic sturgeon Acipenser oxyrinchus oxyrinchus by-catch in U.S. Atlantic coast fisheries. Journal of Fish Biology 86(4):1251–1270.

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.

Copies of this document and other supporting documents are available from Dr. Christopher M. Moore, Executive Director, Mid-Atlantic Fishery Management Council, Suite 201, 800 North State Street, Dover, DE 19901, (302) 674-2331, http://www.mafmc.org/.

11. APPENDIX A: 2024-2025 Summer Flounder and Scup Specifications and 2024 Black Sea Bass Specifications Regulatory Flexibility Act Analysis

11.1. Introduction

The Regulatory Flexibility Act, 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 Regulatory Flexibility Act 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 Regulatory Flexibility Act are to: 1) increase agency awareness and understanding of the impact of their regulations on small business; 2) require that agencies communicate and explain their findings to the public; and 3) encourage agencies to use flexibility and to provide regulatory relief to small entities.

The Regulatory Flexibility Act emphasizes predicting significant adverse impacts on small entities as a group distinct from other entities, as well as consideration of alternatives that may minimize negative impacts to small entities, while still achieving the 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 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 that describes the impact of the proposed rule on small entities.

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

11.2. Basis and Purpose of the Rule and Summary of Preferred Alternatives

This action is taken under the authority of the Magnuson-Stevens Fishery Conservation and Management Act and regulations at 50 CFR part 648.

This action proposes to implement 2024-2025 catch and landings limits for summer flounder and scup and 2024 catch and landings limits for black sea bass. The rationale for all proposed specifications is described in detail in the 2024-2025 Summer Flounder and Scup Specifications Environmental Assessment (EA; MAFMC 2023a) and the Black Sea Bass 2024 Specifications Supplemental Information Report and Fishery Specifications Document (MAFMC 2023b). For all three species, these specifications are based on the recommendations of the Scientific and Statistical Committee (SSC), the Monitoring Committee, the Mid-Atlantic Fishery Management Council (Council), and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Management Board (Board).

The recommended commercial quotas and recreational harvest limits (RHLs) for all three species are shown in Table 1, along with the 2023 values for comparison. For summer flounder, this includes a commercial quota of 8.79 million pounds and an RHL of 6.35 million pounds for both 2024 and 2025. For scup, this includes commercial quotas of 21.15 million pounds in 2024 and 18.80 million pounds in 2025 and RHLs of 13.18 million pounds in 2024 and 11.84 million pounds in 2025. For black sea bass, this includes a 2024 commercial quota of 6.00 million pounds and an

RHL of 6.27 million pounds. Black sea bass specifications for 2025 will be set in 2024 based on the results of a 2024 management track assessment.

As described in more detail in Section 5.0 of MAFMC 2023b, the proposed action also includes a 5% commercial in-season closure buffer for black sea bass in 2024, meaning the commercial fishery would close in-season if 105% of the commercial quota is projected to be landed prior to the end of the year. This type of buffer is not an option for the other two species.

The Council and Board agreed that no changes are needed to the other commercial measures which can be modified through the specifications process. Recreational bag, size, and season limits for all three species will be discussed during the December 2023 Council and Board meeting. Any revisions will be analyzed through a separate future document.

Table 43: Proposed 2024-2025 commercial quotas and RHLs for summer flounder and scup and proposed 2024 commercial quota and RHL for black sea bass. The 2023 values are shown for comparison.

	Commercial Quota *millions of pounds*			**Recreational Harvest Limit** *millions of pounds*		
	2023	**2024 (proposed)**	**2025 (proposed)**	**2023**	**2024 (proposed)**	**2025 (proposed)**
Summer Flounder	15.27	8.79	8.79	10.62	6.35	6.35
Scup	14.01	21.15	18.80	9.27	13.18	11.84
Black Sea Bass	4.80	6.00	N/A	6.57	6.27	N/A

11.3. Description and Number of Regulated Entities to which the Rule Applies

The entities (i.e., the small and large businesses) that may be affected by this action include fishing operations with federal moratorium (commercial) permits and/or federal party/charter permits for summer flounder, scup, and/or black sea bass. This section focuses on entities which held one or more of these permits and reported revenues from commercial landings from at least one of these three species and/or for-hire fishing revenues from any species in at least one year during 2020-2022. It is not possible to derive what proportion of for-hire revenues came from fishing activities for an individual species. Nevertheless, given the popularity of summer flounder, scup, and black sea bass as recreational species, revenues generated from this species are likely important to many of these businesses.

Private recreational anglers are not considered "entities" under the Regulatory Flexibility Act, thus economic impacts on private anglers are not considered here. For-hire or commercial vessels which are only permitted to operate in state waters will also be affected by this action but are not considered in this analysis.

For Regulatory Flexibility Act purposes only, NMFS established a small business size standard for businesses, including their affiliates, whose primary industry is commercial or recreational fishing (50 CFR §200.2). A business primarily engaged in fishing 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.

Vessel ownership data[34] were used to identify all individuals who own fishing vessels. Vessels were then grouped according to common owners. The resulting groupings were then treated as entities, or affiliates, for the purpose of identifying small and large businesses which may be affected by this action.

Affiliates were identified as primarily commercial fishing affiliates if the majority of their revenues in 2022 came from commercial fishing. Some of these affiliates may have also held party/charter permits. Affiliates were identified as primarily for-hire fishing affiliates if the majority of their revenues in 2022 came from for-hire fishing. Some of these affiliates may have also held commercial permits. Affiliates were identified as small or large businesses based on their average revenues during 2018-2022.

A total of 729 primarily commercial affiliates were identified as potentially impacted by this action based on the definitions above. A total of 723 (99%) of these commercial affiliates were classified as small businesses and 6 (1%) were classified as large businesses.

A total of 482 primarily for-hire affiliates were identified as potentially impacted by this action based on the definitions above. All 482 of these for-hire affiliates were categorized as small businesses.

11.4. Economic Impacts on Regulated Entities

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

Expected Impacts on Commercial Entities

The 6 potentially impacted primarily commercial large business affiliates had average total annual revenues of $20.6 million and $403,440 on average in annual revenues from summer flounder, scup, and/or black sea bass during 2020-2022. On average, summer flounder, scup, and/or black sea bass accounted for about 2% of total annual revenues for these 6 large businesses.

The 723 potentially impacted primarily commercial small business affiliates had average total annual revenues of $457,771 and $53,567 on average in annual revenues from commercial landings of summer flounder, scup, and/or black sea bass during 2020-2022. On average, summer flounder, scup, and/or black sea bass accounted for 12% of the total revenues for these 723 small businesses.

As shown in Table 2, the smaller of the small commercial businesses (based on average annual total revenues) tended to have a greater reliance on summer flounder, scup, and/or black sea bass compared to the larger small businesses. Therefore, these smaller of the small commercial

[34] Affiliate data for 2018-2022 were provided by the NMFS NEFSC Social Science Branch. This is the latest affiliate data set available for analysis.

businesses may feel the positive and/or negative impacts of this action to a greater extent than the larger small businesses.

Some individual businesses had a much higher dependence on summer flounder, scup, and/or black sea bass than the averages listed above. For example, 223 of the 723 primarily commercial small business affiliates (31%) received at least 50% of their average total annual revenues from summer flounder, scup, and/or black sea bass landings during 2020-2022. The affiliates with a higher dependence on summer flounder, scup and/or black sea bass will experience both the positive and negative effects of this action to a greater extent than those with a lower dependence on these species.

As described in more detail in the 2024-2025 Summer Flounder and Scup Specifications EA (MAFMC 2023a), the proposed 2024-2025 summer flounder commercial quotas are expected to result in moderate negative socioeconomic impacts for commercial fishery participants because they would require a decrease in commercial landings and therefore would be expected to result in a decrease in revenues. As described in more detail in MAFMC 2023a, some of these negative impacts are expected to be partially offset if a decrease in landings results in an increase in price. The analysis described in MAFMC 2023a predicted an expected price of $3.40 per pound under the proposed 2024-2025 quota based on previous landings and price information, resulting in a total expected value of the harvest of $29.87 million. Compared to the 2022 total value of $30.41 million, the expected total reduction in revenue is 1.74% spread among all vessels in the fleet. Impacts may vary by state and by fishery participant, particularly if potential price increases do not occur to the same degree in all areas.

As described in more detail in the 2024-2025 Summer Flounder and Scup Specifications EA (MAFMC 2023a), the proposed 2024-2025 scup commercial quotas are expected to result in similar levels of commercial scup landings and revenues as the past several years. Commercial scup landings appear to be influenced more by market facts than the annual commercial quota. The preferred 2024-2025 scup quotas represent an increase from 2022-2023; however, it is unlikely that commercial effort or landings would increase given recent trends. In general, the preferred 2024-2025 scup quotas are expected to have moderate positive impacts for both the small and large business identified above given they are expected to result in revenues similar to those over the past several years.

As described in more detail in the Black Sea Bass 2024 Specifications Supplemental Information Report and Fishery Specifications Document (MAFMC 2023b), the proposed 2024 commercial quota is slightly higher than recent black sea bass landings. By allowing for slightly higher levels of landings, and therefore revenues, compared to recent years, the proposed 2024 quota is expected to have moderate positive impacts for small and large commercial fishing businesses. Given recent patterns in the black sea bass fishery, it is not expected that the proposed 5% in-season closure buffer will be needed for black sea bass in 2024. In the unlikely event that it is needed, it could allow landings to exceed the quota by up to 5%. This is not expected to result in notably different impacts than the impacts of the quota.

Table 44: Average annual total revenues during 2020-2022 for the small businesses/affiliates potentially impacted by the proposed action, as well as average annual revenues from commercial landings of summer flounder, scup, and/or black sea bass.

Ave. annual total revenue (Millions of dollars)	Count of affiliates	2020-2022 avg. total revenues (All firms combined)	2020-2022 avg. annual revenues from summer flounder, scup, and/or black sea bass (All firms combined)	Summer flounder, scup, and/or black sea bass revenues as proportion of gross revenues
<0.25	519	51,511	14,279	28%
0.25 to <1	114	518,763.61	132,681.22	26%
1 to <2	49	1,481,986.16	180,869.84	12%
2 to <5	29	2,911,244.78	207,706.63	7%
5 to <10	10	6,737,412.63	57,650.70	1%
10+	2	10,338,668.83	365,146.67	4%
All	**723**	**457,771**	**53,567**	**12%**

Expected Impacts on Recreational Entities

As previously stated, 482 for-hire fishing affiliates were identified as potentially impacted by this action based on the definition above. All these affiliates were categorized as small businesses based on their average 2018-2022 revenues. These 482 small businesses had average total annual revenues of $130,921 during 2020-2022. Their average revenues from recreational for hire fishing (for a variety of species) was $107,429. Average annual revenues from for-hire fishing ranged from less than $10,000 for 195 affiliates to over $1,000,000 for 8 affiliates. On average, recreational fishing accounted for 85% of the total revenues for these 482 small businesses.

As previously stated, it is not possible to derive what proportion of the for-hire revenues came from fishing activities for an individual species. Nevertheless, given the popularity of summer flounder, scup, and black sea bass as recreational species, revenues generated from these species are likely important to many of these businesses, at least at certain times of the year.

For-hire revenues are impacted by a variety of factors, including regulations and demand for for-hire trips for summer flounder, scup, black sea bass, and other potential target species, as well as weather, the economy, and other factors. Recreational measures for 2024-2025 are not yet known. The approach for federal waters recreational measures will be determined by the Council and Board in December 2023. States will work through the Commission process to determine the state waters measures in early 2024. As required by Framework 17 to the Fishery Management Plan (FMP; MAFMC 2022), recreational measures will be set using a process referred to as the Percent Change Approach. Under this approach, the RHL is one of multiple factors which will be used to determine if measures should be modified to achieve a certain percentage liberalization or reduction in harvest, or if expected harvest should remain status quo. Uncertainty in projected harvest estimates and biomass compared to the target level will also be considered following the

process required through Framework 17. As such, it is not possible to predict how recreational harvest will change in upcoming years based on the RHL alone. The analysis to determine the necessary changes will be carried out later in 2023. However, given recent trends in the fishery, it is possible that the proposed 2024-2025 RHLs for summer flounder could require a 10% reduction in recreational harvest compared to expected harvest under status quo measures. The proposed 2024-2025 scup RHLs and the proposed 2024 black sea bass RHL could require either a 10% reduction or a 10% liberalization for these species. If restrictions are implemented, given the popularity of these species in this region, this could result in a decrease in for-hire trips, decreased for-hire revenues, and overall slight negative impacts to recreational for-hire businesses, depending on the scale of the restrictions. If measures are liberalized, this could result in an increase in for-hire trips, increase in revenues, and therefore slight positive impacts to recreational for-hire businesses. Overall, the impacts are expected to be slight given that the range of possible liberalizations or reductions is expected to be +/- 10%. These impacts would be greater in magnitude for the for-hire businesses which depend more heavily on summer flounder, scup, and/or black sea bass. However, as previously stated, it is not possible to determine the relative importance of these species compared to other species for the potentially regulated for-hire affiliates.

11.5. Analysis of Non-Preferred Alternatives

When considering the economic impacts of the alternatives under the Regulatory Flexibility Act and Executive Order 12866, consideration should also be given to those non-preferred alternatives which would result in higher net benefits or lower costs to small entities while still achieving the stated objective of the action.

The Council and Board did not consider other alternatives to the proposed actions as the proposed actions were deemed consistent with the Council's risk policy and the best scientific information available. However, to meet the requirements of the National Environmental Policy Act, a range of alternatives were considered through the EA to support implementation of the 2024-2025 summer flounder and scup specifications (MAFMC 2023a). As described in section 7.4 of this EA, alternatives 1A (summer flounder status quo), 1C (summer flounder least restrictive), and 2C (scup least restrictive) would have allowed for higher commercial and recreational landings than the preferred alternatives (i.e., alternative 1B for summer flounder and 2B for scup). Therefore, they would be expected to have higher net benefits to small entities compared to the preferred alternatives. However, these alternatives would allow for catches that exceed the acceptable biological catch limits recommended by the SSC, which are intended to prevent overfishing and are based on the best available scientific information. Therefore, these other alternatives are inconsistent with the goals of this action, the FMP, and other applicable laws.

As described in more detail in MAFMC 2023b, an EA was not prepared for the proposed 2024 black sea bass specifications as these specifications are based on the same approach used for 2023 and an updated stock assessment is not available to inform these specifications. Therefore, no additional alternatives were considered for black sea bass. The proposed action for black sea bass follows previously implemented methods and the FMP, is based on the best available scientific information, and is intended to prevent overfishing.

11.6. Conclusion

Based on the analysis provided above the 2024-2025 summer flounder and scup, and 2024 black sea bass specifications will not have a significant adverse impact on a substantial number of small entities, and small entities will not be disproportionately impacted relative to large entities. As a result, an initial regulatory flexibility analysis is not required and none has been prepared.

11.7. References

MAFMC. 2022. Recreational Harvest Control Rule Framework (Framework 17 to the Summer Flounder, Scup, and Black Sea Bass FMP and Framework 6 to the Bluefish FMP) Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Act Analysis. Available at: https://www.mafmc.org/s/SFSBSB_BF_HCR_EA_submission2.pdf.

MAFMC. 2023a. 2024-2025 Summer Flounder and Scup Specifications Environmental Assessment. Available at: https://www.mafmc.org/supporting-documents.

MAFMC. 2023b. Black Sea Bass 2024 Specifications Supplemental Information Report and Fishery Specifications Document. Available at: https://www.mafmc.org/supporting-documents.