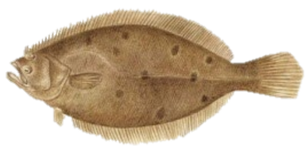
Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocation Amendment

Amendment 22 to the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan

Environmental Assessment, Regulatory Impact Review, and Initial Regulatory Flexibility Act Analysis



June 2022

Prepared by the Mid-Atlantic Fishery Management Council in cooperation with the Atlantic States Marine Fisheries Commission and the National Marine Fisheries Service (NMFS)

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1 EXECUTIVE SUMMARY

1.1 PURPOSE OF THE ACTION

As described in more detail in Section 4.1, the purposes of this action are to:

- **Consider whether to modify the current allocations between the commercial and recreational sectors for summer flounder, scup, and black sea bass.** The commercial and recreational allocations for all three species are currently based on historical proportions of landings (for summer flounder and black sea bass) or catch (for scup) from each sector. These allocations were set in the mid-1990s and have not been revised since that time. Recent changes in how catch is estimated have resulted in a discrepancy between the current levels of estimated sector-specific catch and harvest and these allocations.
- **Consider the option to transfer a portion of the allowable landings each year between the commercial and recreational sectors (in either directed as needed).** Such transfers could increase the flexibility of the management system to prevent catch and landings limit overages and encourage full catch limit utilization.
- **Considers whether future additional modifications to these measures can be considered through a future Fishery Management Plan (FMP) addendum/framework action as opposed to an amendment.** This could allow for a more efficient administrative process to facilitate consideration of future changes to allocations and transfer provisions.

1.2 SUMMARY OF ALTERNATIVES CONSIDERED

Commercial/Recreational Allocation Alternatives

This amendment considered alternatives for allocation of total allowable catch or landings between the commercial and recreational sectors for summer flounder, scup, and black sea bass (Table 1), and alternatives for phasing in any changes to those allocations over a set number of years (Table 2). These alternatives are described in more detail in Section 5.1. Additional information on the basis for each allocation alternative is provided in Appendix B.

For all three species, the preferred alternatives would revise the allocations using the same base years as the current allocations, updated with recent data on catch or landings in those years. For all three species, the revised allocations would be catch-based and there would be no phase-in period.

Annual Quota Transfer Provision Alternatives

Table 3 lists alternatives considered regarding annual transfer of quota between the commercial and recreational sectors, in either direction, as part of the specifications setting process, as well as alternatives for a cap on the total amount that could be transferred between sectors in a given year. These alternatives are described in more detail in Section 5.2. The preferred alternative would not allow for transfers through the specifications process.

Framework Provision Alternatives

Alternative set 3 (Table 4) considers whether the Council and Board should have the ability to make future changes to the commercial/recreational allocation percentages or transfer provisions through a future framework action and/or an addendum instead of through an FMP amendment. These alternatives are described in more detail in Section 5.3. The preferred alternative would allow the option to make future changes through a framework/addenda.

Table 1. Summer flounder, scup, and black sea bass commercial/recreational allocation percentage alternatives.

Summer Flounder	Scup	Black Sea Bass
Catch-based		
Fluke-5 (preferred): 55% com., **45.0%** rec.	**1b-1 (no action): 78.0%** com., **22.0%** rec.	**BSB-5 (preferred): 45%** com., **55%** rec.
Fluke-4: 50.0% com., **50.0%** rec.	**1b-2 (preferred): 65.0%** com., **35.0%** rec.	**BSB-4: 40.5%** com., **59.5%** rec.
Fluke-2: 45.0% com., **55.0%** rec.	**Scup-4: 63.5%** com., **36.5%** rec.	**BSB-2: 36.0%** com., **64.0%** rec.
1a-1: 44.0% com., **56.0%** rec.	**Scup-2: 62.0%** com., **38.0%** rec.	**1c-1: 32.0%** com., **68.0%** rec.
1a-2: 43.0% com., **57.0%** rec.	**1b-3: 61.0%** com., **39.0%** rec.	**1c-2: 28.0%** com., **72.0%** rec.
1a-3: 40.0% com., **60.0%** rec.	**1b-4: 59.0%** com., **41.0%** rec.	**1c-3: 24.0%** com., **76.0%** rec.
Landings-based		
1a-4 (no action): 60.0% com., **40.0%** rec.	**Scup-1: 59.0%** com., **41.0%** rec.	**1c-4 (no action): 49.0%** com., **51.0%** rec.
1a-5: 55.0% com., **45.0%** rec.	**Scup-3: 58.0%** com., **42.0%** rec.	**1c-5: 45.0%** com., **55.0%** rec.
Fluke-3: 51.0% com., **49.0%** rec.	**1b-5: 57.0**% com., **43.0**% rec.	**BSB-3: 41.0%** com., **59.0%** rec.
Fluke-1: 47.0% com., **53.0%** rec.	**1b-6: 56.0%** com., **44.0%** rec.	**BSB-1: 37%** com., **63%** rec.
1a-6: 45.0% com., **55.0%** rec.	**1b-7: 50.0%** com., **50.0%** rec.	**1c-6: 29.0%** com., **71.0%** rec.
1a-7: 41.0% com., **59.0**% rec.		**1c-7: 22.0%** com., **78.0%** rec.

Table 2. Commercial/recreational allocation change phase-in alternatives.

Phase-In Alternatives
1d-1 (preferred): No phase-in
1d-2: Allocation change evenly spread over 2 years
1d-3: Allocation change evenly spread over 3 years
1d-4: Allocation change evenly spread over 5 years

Table 3. Alternatives for annual transfer of quota between the commercial and recreational sectors, and alternatives for caps on the amount of transfer.

Annual Quota Transfer Alternatives
2a (preferred): No action/status quo (do not modify the FMP to allow transfers of annual quota between the commercial and recreational sectors.)
2b: Allow optional bi-directional transfers through annual specifications process with pre-defined guidelines and process.
Annual Quota Transfer Cap Alternatives
2c-1: No transfer cap specified
2c-2: Maximum transfer amount set at 5% of the ABC.
2c-3: Maximum transfer amount at 10% of the ABC.
2c-4: Maximum transfer amount set at 15% of the ABC.

Table 4. Framework/addendum provision alternatives.

Framework/Addendum Provision Alternatives
3a: No action/status quo (no changes to framework/addendum provisions; changes to commercial/recreational allocations must be made through an amendment)
3b (preferred): Allow changes to commercial/recreational allocations, annual quota transfers, and other measures included in this amendment to be made through framework actions/addenda

1.3 SUMMARY OF IMPACTS OF ALTERNATIVES

1.3.1 Impacts of Commercial/Recreational Allocation Alternatives

As described above, alternative sets 1a-1c define the commercial/recreational allocation percentages for summer flounder, scup, and black sea bass. All but the no action/status quo alternatives (alternatives 1a-4, 1b-2, and 1c-4) would increase the recreational allocation and decrease the commercial allocation. Alternatives 1d-1 through 1d-4 consider if any changes to the allocation percentages under alternative sets 1a, 1b, and 1c should occur in a single year (alternative 1d-1, no phase in) or if the change should be spread over two, three, or five years (alternatives 1d-2 through 1d-4).

Socioeconomic Impacts of Allocation Percentage Changes (Alternative Sets 1a-1c)

As described in more detail in Sections 7.1.1 - 7.1.1.3, for sectors with recent consistent trends of under- or over-harvesting their landings limits or a strong disconnect between the revised fishery data and recent landings limits, the percent change in allocation was not the sole predictor of socioeconomic impacts under each alternative in alternative sets 1a - 1c. Recent landings by sector were also compared to example landings limits (i.e., commercial quotas and recreational harvest limits (RHLs)) under each alternative. Alternatives expected to allow increased landings compared to recent years were generally considered to have positive socioeconomic impacts and alternatives likely to require reduced landings compared to recent years, even under increased allocations, were considered to have negative socioeconomic impacts. Each species and sector had unique considerations and Sections 7.1.1 - 7.1.1.3 should be referenced for more details. Based on the considerations outlined in those sections, the no action/status quo alternative for summer flounder (alternative 1a-4) is expected to have moderate positive impacts on the commercial sector and slight negative to slight positive impacts on the recreational sector. The impacts of the other summer flounder allocation percentage alternatives range from negligible to moderate negative for the commercial sector and from slight negative to moderate positive for the recreational sector (Table 5). The no action/status quo alternative for scup (alternative 1b-1) is expected to have moderate positive impacts on the commercial sector and moderate negative impacts on the recreational sector. The impacts of the other scup allocation percentage alternatives range from negligible to high negative for the commercial sector and from moderate negative to slight positive for the recreational sector (Table 6). The no action/status quo alternative for black sea bass (alternative 1c-4) is expected to have moderate positive impacts on the commercial sector and high negative impacts on the recreational sector. The impacts of the other black sea bass allocation percentage alternatives range from high negative to moderate positive for the commercial sector and from high negative to slight positive for the recreational sector (Table 7). In all cases, these conclusions assume future ABCs and other factors which impact landings will remain similar to recent years. The impacts may differ under different conditions.

Socioeconomic Impacts of Phase-in Alternatives (Alternative Set 1d)

As previously stated, alternative set 1d considers whether any allocation changes should be made in a single year (1d-2; preferred) or phased-in over two (alternative 1d-2), three (alternative 1d-3), or five years (alternative 1d-4). For allocation percentage change alternatives (alternative sets 1a-1c) that are not expected to impact recent landings in one or both sectors, all phase-in alternatives would have negligible socioeconomic impacts for the commercial and/or recreational sectors as they would not impact landings.

For allocation alternatives where the decreased commercial allocation is expected to require reduced commercial landings (and therefore revenues) compared to recent levels, phasing in this change over a longer time (alternative 1d-4, followed by 1d-3 and 1d-2) could result in less negative impacts than if the change were implemented in a single year (alternative 1d-1). In these cases, alternatives 1d-2, 1d-3, and 1d-4 could have slight positive impacts for the commercial sector, compared to alternative 1d-1, which, by comparison, could have slight negative impacts for the commercial sector.

In instances where the increased recreational allocation is expected to allow increased recreational harvest (and therefore increased for-hire revenues and angler satisfaction) compared to recent levels, phasing in this change over a longer time (alternative 1d-4, followed by 1d-3 and 1d-2) could result in less positive impacts than if the change were implemented in a single year (alternative 1d-1). Therefore, alternative 1d-1 would be expected to have slight positive impacts on the recreational sector by allowing for a faster transition to increased allocations. Alternatives 1d-2 through 1d-4 could have slight negative impacts to the recreational sector by comparison as the transition to an increased allocation and associated benefits would be slower.

For alternatives that could require reduced recreational harvest compared to recent levels, even under increased recreational allocations, implementing the full allocation increase in a single year (alternative 1d-1) would have more positive impacts than if the increase were phased-in over a longer time (alternative 1d-4, followed by 1d-3 and 1d-2). In this sense, when comparing the phase-in allocation alternatives to each other, alternative 1d-1 is expected to have slight positive impacts and alternatives 1d-2 through 1d-4 are expected to have slight negative impacts for the recreational sector.

For these reasons, socioeconomic impacts are expected to range from negligible to slight negative for the commercial sector and from negligible to slight positive for the recreational sector under alternative 1d-1 (no phase-in). Impacts are expected to range from negligible to slight positive for the commercial sector and from negligible to slight negative for the recreational sector under alternatives 1d-2 through 1d-4 (Table 8).

Impacts of Alternative Sets 1a-1d on Summer Flounder, Scup, and Black Sea Bass

Under all commercial/recreational allocation percentage alternatives (alternative sets 1a, 1b, and 1c), total dead catch in both sectors will continue to be constrained by management measures which are designed to prevent overfishing and are based on the best scientific information available. All alternatives are expected to continue to prevent overfishing for all three species. Scup and black sea bass biomass is currently above the target levels (Sections 6.2.2 and 6.2.3). All allocation alternatives are expected to maintain scup and black sea bass biomass levels that are at or above the target levels. Summer flounder biomass is below the target level, but above the threshold level that defines an overfished state (Section 6.2.1). The management program under all allocation alternatives for summer flounder is intended to bring summer flounder biomass to the target level over time. Therefore, all allocation percentage alternatives are expected to have moderate positive impacts for all three species by maintaining their currently positive stock status (i.e., not overfished).

These impacts are not expected to be influenced by the number of years over which allocation changes are phased in (alternative set 1d). As such, all alternatives 1d-1 through 1d-4 are expected to have no impacts on summer flounder, scup, and black sea bass as these alternatives merely propose a process for transitioning to revised allocations.

Impacts of Alternative Sets 1a-1d on Non-Target Species

Depending on the scale of allocation change, some allocation alternatives could result in minor changes in interaction risks with non-target species based on shifts in fishing effort between the commercial and recreational fisheries. However, none of these shifts are expected to change patterns in landings, discards, or fishing effort in such a way that they impact stock status of any non-target species. As such, all alternatives are expected to have slight positive impacts on the non-target species with a currently positive stock status and slight negative impacts on non-target species with a currently negative stock status (Table 5 - Table 7). Non-target species and their stock status are identified in Section 6.3.

These impacts are not expected to be influenced by the number of years over which allocation changes are phased in under alternative set 1d. As such, all alternatives 1d-1 through 1d-4 are expected to have no direct impacts on non-target species as these alternatives merely propose a process for transitioning to revised allocations.

Impacts of Alternative Sets 1a-1d on Habitat

As described in Section 6.4, the gear types used in the summer flounder, scup, and black sea bass fisheries (i.e., predominantly bottom otter trawl and pots/traps in the commercial fisheries 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 habitat than the dominant commercial gear types. As previously stated, under all allocation alternatives (alternative sets 1a, 1b, and 1c), total commercial and recreational fishing effort will still be constrained by a variety of management measures designed to prevent overfishing. Some allocation alternatives could result in minor changes in habitat interactions by shifting effort from the commercial fishery (predominantly bottom otter trawls and pots/traps) to the recreational fishery (predominantly hook and line). However, any such shifts are not expected to contribute to either further degradation or restoration of any habitats currently impacted by the fisheries. Under all allocation alternatives for all three species, 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 these and many other fisheries which operate in the same areas. For these reasons, all allocation alternatives are expected to have slight negative impacts to physical habitat (Table 5 - Table 7).

These impacts are not expected to be influenced by the number of years over which allocation changes are phased in under alternative set 1d. As such, all alternatives 1d-1 through 1d-4 are expected to have no direct impacts on habitat as these alternatives merely propose a process for transitioning to revised allocations.

Impacts of Alternative Sets 1a-1d on Protected Species

Depending on the scale of allocation change, some allocation alternatives could result in minor changes in interaction risk with protected species based on shifts in fishing effort between the commercial and recreational fisheries. However, any shift in effort, areas fished, and amount of gear in the water is expected to be negligible given the recreational and commercial sectors are still bound by measures to prevent overfishing. For the reasons described in more detail in Section 7.5.1, the impacts of the allocation alternatives (alternative sets 1a, 1b, and 1c) on non-ESA listed species of marine mammals are likely to range from slight negative (for stocks/species which may not currently be at optimum sustainable levels) to slight positive (for stocks with potential biological removal levels that have not been exceeded). The impacts of these alternatives on ESA-listed species are expected to be slight moderate negative (i.e., more negative than slight negative, but less negative than moderate negative) to negligible, depending on the species (Table 5 - Table 7).

These impacts are not expected to be influenced by the number of years over which they are phased in under alternative set 1d. As such, alternatives 1d-1 through 1d-4 are all expected to have no direct impacts on protected species as these alternatives merely propose a process for transitioning to revised allocations.

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Table 5. Expected impacts of the summer flounder commercial/recreational allocation percentage alternatives on each VEC, relative to current conditions, based on the rationale described in Sections 7.1 - 7.5. A minus sign (–) signifies a negative impact and a plus sign (+) signifies a positive impact. "Mod" indicates a moderate impact and "Sl" indicates a slight impact. No impacts are expected to be significant.

Alternative	Description	Expected Impacts						
		Socioeconomic		***Summer Flounder***	***Non-Target Species***	***Habitat***	***Protected Species***	
		Commercial Fishery	***Recreational Fishery***				***ESA-Listed*** *(Endangered or Threatened)*	***Marine Mammals*** *(Not ESA Listed)*
Fluke-5 (preferred)	55% com., 45% rec. (catch-based)	Negl. to Sl-	Sl– to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
Fluke-4	50% com., 50% rec. (catch-based)	Negl. to Sl-	Sl– to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
Fluke-2	45% com., 55% rec. (catch-based)	Sl– to Mod–	Sl+ to Mod+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1a-1	44% com., 56% rec. (catch-based)	Sl– to Mod–	Sl+ to Mod+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1a-2	43% com., 57% rec. (catch-based)	Sl– to Mod–	Sl+ to Mod+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1a-3	40% com., 60% rec. (catch-based)	Sl– to Mod–	Sl+ to Mod+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1a-4 (status quo)	60% com., 40% rec. (landings-based)	Mod+	Sl– to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1a-5	55% com., 45% rec. (landings-based)	Negl. to Sl-	Sl+ to Mod+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
Fluke-3	51% com., 49% rec. (landings-based)	Sl– to Mod–	Sl+ to Mod+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
Fluke-1	47% com., 53% rec. (landings-based)	Sl– to Mod–	Sl+ to Mod+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1a-6	45% com., 55% rec. (landings-based)	Sl– to Mod–	Sl+ to Mod+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1a-7	41% com., 59% rec. (landings-based)	Sl– to Mod–	Sl+ to Mod+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+

Table 6. Expected impacts of the scup commercial/recreational allocation percentage alternatives on each VEC, relative to current conditions, based on the rationale described in Sections 7.1 - 7.5. A minus sign (–) signifies a negative impact and a plus sign (+) signifies a positive impact. "Mod" indicates a moderate impact and "Sl" indicates a slight impact. No impacts are expected to be significant.

Alternative	**Description**	**Expected Impacts**						
		Socioeconomic		***Scup***	***Non-Target Species***	***Habitat***	***Protected Species***	
		Commercial Fishery	***Recreational Fishery***				***ESA-Listed*** *(Endangered or Threatened)*	***Marine Mammals*** *(Not ESA Listed)*
1b-1 (no action)	78% com., 22% rec. (catch-based)	Mod+	Mod–	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1b-2 (preferred)	65% com., 35% rec. (catch-based)	Mod– to Negl.	Mod– to Negl.	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
Scup-4	63.5% com., 36.5% rec. (catch-based)	Mod– to Negl.	Mod– to Negl.	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
Scup-2	62% com., 38% rec. (catch-based)	Mod– to Negl.	Mod– to Negl.	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1b-3	61% com., 39% rec. (catch-based)	Mod– to Negl.	Mod– to Negl.	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1b-4	59% com., 41% rec. (catch-based)	Mod– to Negl.	Sl– to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
Scup-1	59% com., 41% rec. (landings-based)	Mod– to Negl.	Mod– to Negl.	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
Scup-3	58% com., 42% rec. (landings-based)	Mod– to Negl.	Mod– to Negl.	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1b-5	57% com., 43% rec. (landings-based)	Mod– to Negl.	Mod– to Negl.	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1b-6	56% com., 44% rec. (landings-based)	Mod– to Negl.	Sl– to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1b-7	50% com., 50% rec. (landings-based)	High – to Negl.	Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+

Table 7. Expected impacts of the black sea bass commercial/recreational allocation percentage alternatives on each VEC, relative to current conditions, based on the rationale described in Sections 7.1 - 7.5. A minus sign (–) signifies a negative impact and a plus sign (+) signifies a positive impact. "Mod" indicates a moderate impact and "Sl" indicates a slight impact. No impacts are expected to be significant.

Alt.	Description	Expected Impacts						
		Socioeconomic		***Black Sea Bass***	***Non-Target Species***	***Habitat***	***Protected Species***	
		Commercial Fishery	***Recreational Fishery***				***ESA-Listed*** *(Endangered or Threatened)*	***Marine Mammals*** *(Not ESA Listed)*
BSB-5 (preferred)	45% com., 55% rec. (catch-based)	Mod - to Sl -	High - to Sl -	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
BSB-4	40.5% com., 59.5% rec. (catch-based)	Mod -	High - to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
BSB-2	36.0% com., 64.0% rec. (catch-based)	Mod -	Mod - to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1c-1	32.0% com., 68.0% rec. (catch-based)	Mod -	Mod - to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1c-2	28.0% com., 72.0% rec. (catch-based)	High -	Mod - to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1c-3	24.0% com., 76.0% rec. (catch-based)	High -	Mod - to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1c-4 (status quo)	49.0% com., 51.0% rec. (landings-based)	Mod +	High -	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1c-5	45.0% com., 55.0% rec. (landings-based)	Sl - to Sl +	High -	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
BSB-3	41.0% com., 59.0% rec. (landings-based)	Negl. to Mod+	High - to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
BSB-1	37% com., 63% rec. (landings-based)	Mod - to Sl -	High - to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1c-6	29% com., 71% rec. (landings-based)	Mod -	Mod - to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+
1c-7	22% com., 78% rec. (landings-based)	High -	Mod - to Sl+	Mod+	Sl– to Sl+	Sl-	Negl. to Sl Mod-	Sl– to Sl+

Table 8: Expected impacts of phase-in alternatives on each VEC, relative to current conditions, based on the rationale described in Section 7.1.1.4.

Alternative	Expected Impacts						
	Socioeconomic					*Protected Species*	
	Commercial Fishery	***Recreational Fishery***	***Target Species***	***Non-Target Species***	***Habitat***	***ESA-Listed (Endangered or Threatened)***	***Marine Mammals (Not ESA Listed)***
1d-1 (no phase-in, preferred)	Negligible to slight negative	Negligible to slight positive	No impact				
1d-2 (2 year phase-in)	Negligible to slight positive	Negligible to slight negative	No impact				
1d-3 (3 year phase-in)	Negligible to slight positive	Negligible to slight negative	No impact				
1d-4 (5 year phase-in)	Negligible to slight positive	Negligible to slight negative	No impact				

1.3.2 Impacts of Transfer Provision Alternatives

Under alternative 2a (no action), transfers between sectors would not be allowed. This could have both slight negative and slight positive socioeconomic impacts. Impacts could be slight positive due to increased stability and predictability in landings limits, compared to if transfers were allowed (alternative 2b). However, the inability to transfer could also lead to slight negative impacts due to lack of flexibility in cases where one sector is expected to exceed their limit and the other is not expected to achieve their limit. This could reduce the likelihood of achieving OY, and could lead to more restrictive management measures, reduced revenues and/or reduced angler satisfaction in the sector requiring restrictions.

In contrast, in cases where each sector tends to harvest their limits, alternative 2a could result in continued slight positive impacts due to each sector retaining the opportunity to harvest their full allocation. Alternative 2a also allows for increased stability and predictability in annual landings limits, compared to alternative 2b.

Alternative 2b establishes a mechanism for transfers but does not define the frequency, direction, or calculation of a transfer amount. As such, the socioeconomic impacts of alternative 2b are primarily those that result from establishing a process allowing for transfers, rather than the impacts of future transfers themselves. The socioeconomic impacts of alternative 2b are expected to range from slight negative to slight positive. Alternative 2b would allow for greater flexibility in modifying annual sector-specific limits with the potential to better achieve OY, potentially resulting in slight positive impacts. Alternative 2b could result in slight negative socioeconomic impacts if it results in less predictability and stability in sector-specific catch and landings limits.

Alternative set 2c considers if the magnitude of a transfer would be unlimited (alternative 2c-1) or limited to 5% (alternative 2c-2), 10% (alternative 2c-3), or 15% (alternative 2c-4) of the ABC. For similar reasons as described above for alternative set 2b, all alternatives in alternative set 2c are expected to have the slight negative to slight positive socioeconomic impacts. Specifically, smaller transfers (e.g., alternatives 2c-2 and 2c-3) could provide greater stability and predictability (slight positive impacts) but less flexibility for modifying the annual catch and landings limits to meet the predicted needs of each sector (slight negative impacts). Larger (alternative 2c-4) or unlimited (alternative 2c-1) transfers could provide greater flexibility (slight positive impacts) but less stability and predictability in each sector's catch and landings limits each year (slight negative impacts).

None of the alternatives in alternative set 2 are expected to have direct impacts on the VECs for target species, non-target species, habitat, or protected species. These alternatives define the process and parameters around the transfer process. They are not expected to directly change patterns in landings, discards, or fishing effort. Because of this, alternative set 2 is expected to have no impacts on target species, non-target species, habitat, or protected species (Table 9).

Table 9. Expected impacts of the transfer provision and transfer cap alternatives.

Alternative	Expected Impacts					
	Socioeconomic *(Commercial and Recreational)*	***Target Species***	***Non-Target Species***	***Habitat***	***Protected Species***	
					ESA-Listed *(Endangered or Threatened)*	***Marine Mammals*** *(Not ESA Listed)*
2a (preferred; no action) Do not modify FMP to allow transfers between sectors	Slight negative to slight positive	No impact				
2b: Optional bi-directional transfers through specifications	Slight negative to slight positive	No impact				
2c-1: No transfer cap	Slight negative to slight positive	No impact				
2c-2: Max. transfer 5% of ABC	Slight negative to slight positive	No impact				
2c-3: Max. transfer 10% of ABC	Slight negative to slight positive	No impact				
2c-4: Max. transfer 15% of ABC	Slight negative to slight positive	No impact				

1.3.3 Impacts of Framework Provision Alternatives

As previously stated, alternatives 3a and 3b consider whether any future modifications to the commercial/recreational allocations or allocation transfer systems would require a full FMP amendment (alternative 3a) or could be considered through a framework action (for the Council) and addendum (for the Commission; alternative 3b, the preferred alternative). Frameworks/addenda are generally shorter and more efficient actions than amendments; however, the timeline and complexity of either type of management action would depend on the nature of the specific options considered.

Neither alternative 3a or 3b are expected to have any direct impacts on any of the VECs as this alternative set is primarily administrative. Alternative 3b is intended to simplify and improve the efficiency of future landings flexibility actions to the extent possible. This alternative would have no effect on summer flounder, scup, and black sea bass management until a future framework action is developed and implemented through a separate process with associated public comment opportunities and a full description of expected impacts.

1.3.4 Cumulative Impacts of the Alternatives

The impacts of all alternatives on human communities, target and non-target species, habitat, and protected species have been analyzed (Section 7). 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 on the human environment are associated with the proposed action (Section 7.6).

2 CONTENTS, TABLES, AND FIGURES

Contents

1 EXECUTIVE SUMMARY 2
1.1 PURPOSE OF THE ACTION 2
1.2 SUMMARY OF ALTERNATIVES CONSIDERED 2
SUMMARY OF IMPACTS OF ALTERNATIVES 4
1.2.1 Impacts of Commercial/Recreational Allocation Alternatives 4
1.2.2 Impacts of Transfer Provision Alternatives 11
1.2.3 Impacts of Framework Provision Alternatives 14
1.2.4 Cumulative Impacts of the Alternatives 14
2 CONTENTS, TABLES, AND FIGURES 15
3 LIST OF ACRONYMS AND ABBREVIATIONS 23
4 BACKGROUND AND PURPOSE 25
4.1 PURPOSE AND NEED FOR ACTION 25
4.2 FMP OBJECTIVES 26
4.2.1 Summer Flounder 26
4.2.2 Scup and Black Sea Bass 27
4.3 MANAGEMENT UNIT 27
4.4 FMP HISTORY 27
4.5 THE SPECIFICATIONS PROCESS 30
5 MANAGEMENT ALTERNATIVES 30
5.1 ALTERNATIVE SET 1: COMMERCIAL/ RECREATIONAL ALLOCATION ALTERNATIVES 30
5.1.1 Summer Flounder Commercial/Recreational Allocation Alternatives 31
5.1.2 Scup Commercial/Recreational Allocation Alternatives 33
5.1.3 Black Sea Bass Commercial/Recreational Allocation Alternatives 35
5.1.4 Allocation Change Phase-In Provision Alternatives 37
5.2 ALTERNATIVE SET 2: ANNUAL QUOTA TRANSFER PROVISION ALTERNATIVES 38
5.2.1 Quota Transfer Process Alternatives 38
5.2.2 Quota Transfer Cap Alternatives 40
5.3 ALTERNATIVE SET 3: FRAMEWORK PROVISIONS 40
5.4 CONSIDERED BUT REJECTED ALTERNATIVES 41
6 DESCRIPTION OF THE AFFECTED ENVIRONMENT 41
6.1 SOCIAL AND ECONOMIC ENVIRONMENT 42
6.1.1 Summer Flounder Fisheries 42
6.1.2 Scup Fisheries 50
6.1.3 Black Sea Bass Fisheries 61
6.2 SUMMER FLOUNDER, SCUP, AND BLACK SEA BASS 68
6.2.1 Summer Flounder 68
6.2.2 Scup 71
6.2.3 Black Sea Bass 72
6.3 NON-TARGET SPECIES 75
6.3.1 Identification of Major Non-Target Species 75
6.3.2 Description and Status of Major Non-Target Species 76
6.4 HABITAT 79
6.4.1 Physical Environment 79
6.4.2 Essential Fish Habitat (EFH) 82
6.4.3 Fisheries Habitat Impact Considerations 88

6.5 PROTECTED SPECIES 89
6.5.1 Species and Critical Habitat Not Likely to be Impacted by the Proposed Action 91
6.5.2 Species Potentially Impacted by the Proposed Action 92
6.5.3 Gear Interactions and Protected Species 97
7 ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES 107
7.1 Impacts to Human Communities 112
7.1.1 Socioeconomic Impacts of the Commercial/Recreational Allocation Alternatives 112
7.1.2 Socioeconomic Impacts of the Quota Transfer Provision Alternatives 132
7.1.3 Socioeconomic Impacts of the Framework Provision Alternatives 134
7.2 Impacts to Summer Flounder, Scup, Black Sea Bass 134
7.2.1 Impacts of the Commercial/Recreational Allocation Alternatives on Summer Flounder, Scup, and Black Sea Bass 134
7.2.2 Impacts of the Quota Transfer Provision Alternatives on Summer Flounder, Scup, and Black Sea Bass 135
7.2.3 Impacts of the Framework Provision Alternatives on Summer Flounder, Scup, and Black Sea Bass 135
7.3 Impacts to Non-Target Species 136
7.3.1 Impacts of the Commercial/Recreational Allocation Alternatives on Non-Target Species 136
7.3.2 Impacts of the Quota Transfer Provision Alternatives on Non-Target Species 137
7.3.3 Impacts of the Framework Provision Alternatives on Non-Target Species 137
7.4 Impacts to Habitat 137
7.4.1 Impacts of the Commercial/Recreational Allocation Alternatives on Habitat 137
7.4.2 Impacts of the Quota Transfer Provision Alternatives on Habitat 138
7.4.3 Impacts of the Framework Provision Alternatives on Habitat 138
7.5 Impacts to Protected Species 138
7.5.1 Impacts of the Commercial/Recreational Allocation Alternatives on Protected Species . 139
7.5.2 Impacts of the Quota Transfer Provision Alternatives on Protected Species 141
7.5.3 Impacts of the Framework Provision Alternatives on Protected Species 141
7.6 Cumulative Effects Analysis 141
7.6.1 Introduction 141
7.6.2 Relevant Actions Other Than Those Proposed in this Document 143
7.6.3 Summary of Effects of the Proposed Actions 156
7.6.4 Magnitude and Significance of Cumulative Effects 157
7.6.5 Proposed Action on all VECs 159
8 OTHER APPLICABLE LAWS 160
8.1 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT (MSA) 160
8.1.1 National Standards 160
8.1.2 Essential Fish Habitat Assessment 161
8.2 ENDANGERED SPECIES ACT 162
8.3 MARINE MAMMAL PROTECTION ACT 162
8.4 COASTAL ZONE MANAGEMENT ACT 163
8.5 ADMINISTRATIVE PROCEDURES ACT 163
8.6 DATA QUALITY ACT 164
8.7 EXECUTIVE ORDER 13123 (FEDERALISM) 165
8.8 PAPERWORK REDUCTION ACT 165
8.9 EXECUTIVE ORDER 12898 (ENVIRONMENTAL JUSTICE) 166
8.10 REGULATORY FLEXIBILITY ACT 167
8.10.1 Basis and Purpose of the Rule and Summary of Preferred Alternatives 167
8.10.2 Description and Number of Regulated Entities to which the Rule Applies 168

8.10.3 Economic Impacts on Regulated Entities ... 169
8.10.4 Analysis of Non-Preferred Alternatives ... 172
8.11 REGULATORY IMPACT REVIEW ... 173
8.11.1 Determination of Significance Under E.O. 12866 ... 173
8.11.2 Objectives for and Description of the Proposed Action ... 173
8.11.3 Baseline Conditions for Determination of Significance ... 174
8.11.4 Summary of Economic Effects of the Proposed Measures ... 174
8.11.5 Determination of Significant Regulatory Action ... 174
9 LITERATURE CITED ... 174
10 APPENDICES ... 187
10.1 APPENDIX A: Catch vs. Landings-Based Allocations ... 187
10.2 APPENDIX B: Basis for Allocation Alternatives ... 193
10.3 APPENDIX C: Example Quotas and RHLs Under Each Allocation Alternative ... 198
10.4 APPENDIX D: BASELINE FOR ALLOCATION SHIFT AND PHASE-IN CALCULATIONS 202

Tables

Table 1. Summer flounder, scup, and black sea bass commercial/recreational allocation percentage alternatives. ... 3
Table 2. Commercial/recreational allocation change phase-in alternatives. ... 3
Table 3. Alternatives for annual transfer of quota between the commercial and recreational sectors, and alternatives for caps on the amount of transfer. ... 3
Table 4. Framework/addendum provision alternatives. ... 4
Table 5. Expected impacts of the summer flounder commercial/recreational allocation percentage alternatives on each VEC, relative to current conditions, based on the rationale described in Sections 7.1 - 7.5. A minus sign (–) signifies a negative impact and a plus sign (+) signifies a positive impact. “Mod” indicates a moderate impact and “Sl” indicates a slight impact. No impacts are expected to be significant. ... 8
Table 6. Expected impacts of the scup commercial/recreational allocation percentage alternatives on each VEC, relative to current conditions, based on the rationale described in Sections 7.1 - 7.5. A minus sign (–) signifies a negative impact and a plus sign (+) signifies a positive impact. “Mod” indicates a moderate impact and “Sl” indicates a slight impact. No impacts are expected to be significant. ... 9
Table 7. Expected impacts of the black sea bass commercial/recreational allocation percentage alternatives on each VEC, relative to current conditions, based on the rationale described in Sections 7.1 - 7.5. A minus sign (–) signifies a negative impact and a plus sign (+) signifies a positive impact. “Mod” indicates a moderate impact and “Sl” indicates a slight impact. No impacts are expected to be significant. ... 10
Table 8: Expected impacts of phase-in alternatives on each VEC, relative to current conditions, based on the rationale described in Section 7.1.1.4. ... 11
Table 9. Expected impacts of the transfer provision and transfer cap alternatives. ... 13
Table 10. Summer flounder commercial/recreational allocation alternatives. The current allocations are highlighted in green. Alternatives beginning with 1a represent those considered by the Council and Board during their April 2021 meeting. Alternatives fluke-1 through fluke-4 were added during their August 2021 meeting. Alternative fluke-5, highlighted in blue, is the preferred alternative and was added during the December 2021 Council and Board meeting. ... 33
Table 11. Scup commercial/recreational allocation alternatives. The current allocations are highlighted in green. The preferred alternative is highlighted in blue. Alternatives beginning with 1b represent those

considered by the Council and Board during their April 2021 meeting. Alternatives beginning with "scup" represent those added during the August 2021 Council and Board meeting. 35
Table 12. Black sea bass commercial/recreational allocation alternatives. The current allocations are highlighted in green. Alternatives beginning with 1c represent those considered by the Council and Board during their April 2021 meeting. Alternatives BSB-1 through BSB-4 were added during their August 2021 meeting. Alternative BSB-5, highlighted in blue, is the preferred alternative and was added during the December 2021 Council and Board meeting. 37
Table 13. Allocation change phase-in alternatives. 38
Table 14. Alternatives for annual transfer of quota between the commercial and recreational sectors. 39
Table 15. Proposed quota transfer process during a typical specifications cycle under alternative 2b. Alternative 2b was not selected as a preferred alternative. 39
Table 16. Alternatives for annual transfer of quota between the commercial/recreational sectors. These alternatives are only relevant under alternative 2b, which was not selected as a preferred alternative; therefore, none of the following alternatives were selected as preferred. 40
Table 17. Framework/addendum provision alternatives. 41
Table 18. Summary of catch limits, landings limits, and landings for commercial and recreational summer flounder fisheries from 2010 through 2021 (preliminary). Values are in millions of pounds. 43
Table 19. Previous (through 2020) and revised (effective January 2021) allocation of summer flounder commercial quota to the states. 45
Table 20. Statistical areas that accounted for at least 5 percent of the total summer flounder catch in 2020, with associated number of trips. Federal VTR data do not capture landings by vessels only permitted to fish in state waters. 46
Table 21. Ports reporting at least 100,000 pounds of commercial summer flounder landings in 2020, based on dealer data. 47
Table 22. Number of dealers per state which reported purchases of summer flounder in 2020. C = Confidential. 47
Table 23. Summer flounder recreational fishing measures 2019-2021, by state, under regional conservation equivalency. Conservation equivalency regions in these years include: 1) Massachusetts, 2) Rhode Island, 3) Connecticut and New York, 4) New Jersey, 5) Delaware, Maryland, The Potomac River Fisheries Commission, and Virginia, and 6) North Carolina. 49
Table 24. Average state contribution (as a percentage) to total recreational landings of summer flounder (in numbers of fish), from Maine through North Carolina, 2018-2020 (revised MRIP data). 50
Table 25. The percent of summer flounder landings (in number of fish) by recreational fishing mode, Maine through North Carolina, 2011-2020 (revised MRIP data). 50
Table 26. Summary of scup catch limits, landings limits, and landings, 2011 through 2021. Values are in millions of pounds unless otherwise noted. 52
Table 27. Dates, allocations, and possession limits for the commercial scup quota periods. Winter period possession limits apply in both state and federal waters. 54
Table 28. State-by-state quotas for the commercial scup fishery during the summer quota period (May-September). 55
Table 29. Statistical areas which accounted for at least 5% of the total commercial scup catch (by weight based on VTR data) in 2020, with associated number of trips. Federal VTR data do not capture landings by vessels only permitted to fish in state waters. 55
Table 30. Number of dealers per state which reported purchases of scup in 2020. C = Confidential. 57
Table 31. Ports reporting at least 100,000 pounds of scup landings in 2020, based on NMFS dealer data. C = Confidential. 57
Table 32. Federal recreational measures for scup, 2005-2021 58

Table 33. State recreational fishing measures for scup in 2019-2021. 59
Table 34. Recreational scup harvest by state, 2018- 2020. Percentages were calculated based on numbers of fish using the revised MRIP estimates. 60
Table 35. Scup harvest (in numbers of fish) by recreational fishing mode, Maine - North Carolina, 2011 – 2020, based on the revised MRIP estimates. Some percentages do not sum to 100% due to rounding.60
Table 36. Summary of catch and landings limits, and landings for commercial and recreational black sea bass fisheries from Maine through Cape Hatteras, NC 2010 through 2021. All values are in millions of pounds unless otherwise noted. 62
Table 37. Number of dealers, by state, reporting purchases of black sea bass in 2020. C = confidential. . 64
Table 38. Statistical areas that accounted for at least 5% of the total commercial black sea bass dead catch (landings and dead discards) in 2020 based on federal VTRs, with associated number of trips. Federal VTR data do not capture landings by vessels only permitted to fish in state waters. 64
Table 39. Ports reporting at least 100,000 pounds of black sea bass landings in 2020, associated number of vessels, and percentage of total commercial landings. C = confidential. 65
Table 40. State-by-state contribution to total recreational harvest of black sea bass (in number of fish), Maine through Cape Hatteras, North Carolina, based on the 2018 - 2020 average. 67
Table 41. Percent of total recreational black sea bass harvest (in numbers of fish) by recreational fishing mode, Maine through Cape Hatteras, North Carolina, 2011-2020. 67
Table 42. Federal black sea bass recreational measures, Maine - Cape Hatteras, NC, 2007 - 2020.......... 67
Table 43. State waters black sea bass recreational measures in 2018-2021. The only changes made during these years were to maintain a Saturday opening (Massachusetts) or to account for harvest in the February opening (Virginia and North Carolina). 68
Table 44. Percent of non-target species caught in observed trawls where summer flounder, scup or black sea bass made up at least 75% of the observed landings, 2015-2019. Only those non-target species comprising at least 2% of the non-target catch for at least one species are listed. 76
Table 45. Most recent stock status information for commercial non-target species identified in this action. 77
Table 46. Most recent stock status information for non-target species in the recreational summer flounder, scup, and black sea bass fisheries. Current tautog stock status information is listed for each assessed region. 78
Table 47. Geographic distributions and habitat characteristics of EFH designations for benthic fish and shellfish species within the affected environment of the action. 82
Table 48. Percent of reported commercial scup and black sea bass landings taken by gear category from 2015-2019 based on VTR and dealer data. 88
Table 49. Species Protected Under the ESA and/or MMPA that may occur in the Affected Environment of the summer flounder, scup, and black sea bass fisheries. Marine mammal species italicized and in bold are considered MMPA strategic stocks.[1] 90
Table 50. 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 fisheries. 106
Table 51. Recent conditions of VECs (described in more detail in Section 6). 110
Table 52. Guidelines for defining the direction and magnitude of the impacts of alternatives on the VECs. 111
Table 53. Evaluation of the socioeconomic impacts of summer flounder alternatives, including percent shift in allocation (based on the methodology described in Appendix D), comparison of average example limits and recent landings from 2019-2021, and example limits for 2023. Example quotas and RHLs are in millions of pounds and developed based on the methodology described in Appendix C. Alternative Fluke-5 is the preferred alternative. Alternative 1a-4 is the no action alternative. 118

Table 54. Expected socioeconomic impacts of the summer flounder commercial/recreational allocation alternatives by sector. 119
Table 55. Percent allocation shift from the commercial to the recreational sector and example quotas and RHLs in millions of pounds for each scup alternative under the 2019-2021 average ABC and 2023 ABC. The methodology for example quotas and RHLs is described in Appendix C. Alternative 1-b2 is the preferred alternative for scup. 122
Table 56. Expected socioeconomic impacts of the scup commercial/recreational allocation alternatives by sector. 123
Table 57. Evaluation of the socioeconomic impacts of the black sea bass alternatives, including percent shift in allocation (based on methodology described in Appendix D), comparison of average example limits and recent landings from 2019-2021, and example limits for 2023. Example quotas and RHLs are in millions of pounds and developed based on the methodology described in Appendix C. Alternative BSB-5 is the preferred alternative. Alternative 1c-4 is the no action alternative. 127
Table 58. Expected socioeconomic impacts of the black sea bass commercial/recreational allocation alternatives on the commercial and recreational sectors.. 128
Table 59. Expected socioeconomic impacts of the allocation change phase-in alternatives. In all cases the impacts vary based on the allocation percentage change alternative from alternative sets 1a - 1c with which the phase-in alternative would be paired.. 130
Table 60. Percent shift in allocation per year for all summer flounder allocation change alternatives. ... 130
Table 61. Percent shift in allocation per year for all scup allocation change alternatives. 131
Table 62. Percent shift in allocation per year for all black sea bass allocation change alternatives. 131
Table 63. Summary of cumulative effects of preferred alternatives. 160
Table 64. Demographic data (minority rate and poverty rate) for summer flounder, scup, and black sea bass fishing communities (counties)... 167
Table 65. Average annual total revenues during 2018-2020 for the commercial small and large business affiliates likely to be affected by the proposed action, as well as average annual revenues from commercial landings of summer flounder, scup, and/or black sea bass. Only those businesses which reported commercial fishing revenue in 2020 are shown. 171
Table 66. Alternatives considered through this amendment for commercial/recreational allocation percentages (i.e., alternative sets 1a – summer flounder, 1b - scup, and 1c – black sea bass) grouped according to the approach used to derive the alternatives. *Indicates an alternative supported by multiple approaches. 193
Table 67. Summer flounder example quotas and RHLs in millions of pounds, under an ABC of 33.12 million pounds. The values shown for alternative 1a-4 (the no action/status quo alternative) represent the catch and landings limits implemented for 2023, not example measures using the methodology described in this appendix. Alternative Fluke-5 is the preferred alternative. 200
Table 68. Scup example quotas and RHLs in millions of pounds, under an ABC of 29.67 million pounds. The values shown for alternative 1b-1 (the no action/status quo alternative) represent the catch and landings limits implemented for 2023, not example measures using the methodology described in this appendix. Alternative 1-b2 is the preferred alternative for scup... 201
Table 69. Black sea bass example quotas and RHLs in millions of pounds, under an ABC of 16.66 million pounds. The values shown for alternative 1c-4 (the no action/status quo alternative) represent the catch and landings limits implemented for 2023, not example measures using the methodology described in this appendix. Alternative BSB-5 is the preferred alternative. 201
Table 70. The currently implemented recreational/commercial split for total landings, dead discards, and total dead catch for 2022 specifications. The current FMP-specified allocations for each species are highlighted in yellow. 202

Figures

Figure 1. Components of the summer flounder fishery catch from 1993 (implementation of Amendment 2) through 2020. Dead discard estimates for 2020 are approximated using different estimation methods due to COVID-19 related data gaps. Source: NEFSC 2021a; MAFMC 2021a. 42

Figure 2. Landings, ex-vessel value, and price per pound for summer flounder, Maine through North Carolina, 1994-2020. Ex-vessel value and price are adjusted to real 2020 dollars using the Gross Domestic Product Price Deflator (GDPDEF). 45

Figure 3. Proportion of summer flounder catch by NMFS statistical area in 2020 based on federal VTR data. Statistical areas marked "confidential" are associated with fewer than three vessels and/or dealers. Statistical areas with confidential data collectively accounted for less than 1% of commercial catch reported on VTRs in 2020. The amount of catch (landings and dead discards) that was not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown. For 2019, Northeast Fisheries Science Center Data ("AA tables") suggested that 8% of total commercial landings (state and federal) were not associated with a statistical area reported in federal VTRs; AA data for 2020 and beyond are not available. 46

Figure 4. Scup fishery catch components (commercial landings, commercial dead discards, recreational landings, and recreational dead discards) from 1981-2020. Source: NEFSC 2021b. 51

Figure 5. Proportion of scup catch by statistical area in 2020 based on federal VTR data. Statistical areas marked confidential are associated with fewer than three vessels and/or dealers. Statistical areas with confidential data collectively accounted for about 1% of the total. The amount of catch (landings and discards) not reported on federal VTRs (e.g., from vessels permitted to fish only in state waters) is unknown. In 2019, Northeast Fisheries Science Center Data ("AA tables") suggest that 18% of total commercial landings (state and federal) were not associated with a statistical area reported in federal VTRs; AA data for 2020 are not available. 56

Figure 6. Landings, ex-vessel value, and price for scup from Maine through North Carolina, 1994-2020. Ex-vessel value and price are inflation-adjusted to 2020 dollars using the Gross Domestic Product Price Deflator. 56

Figure 7. Components of black sea bass fishery dead catch from 1989 through 2019. For 2020, only landings data are shown as dead discard information for 2020 is not currently available due to COVID-19 related data gaps. Source: NEFSC 2021c through 2019. MRIP and NMFS commercial fish dealer data for 2020. 61

Figure 8. Landings, ex-vessel value, and average price for black sea bass, ME-NC, 1996-2020. Ex-vessel value and price are inflation-adjusted to 2020 dollars using the Gross Domestic Product Price Deflator. 64

Figure 9. Proportion of commercial black sea bass dead catch (landings and dead discards) by statistical area in 2020 based on federal VTR data. Confidential areas are associated with fewer than three vessels and/or dealers. Confidential areas collectively accounted for less than 1% of commercial catch reported on VTRs in 2020. The amount of catch not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown. In 2019, Northeast Fisheries Science Center Data ("AA tables") suggest that 20% of total commercial landings (state and federal) were not associated with a statistical area reported in federal VTRs; AA data for 2020 are not available. 65

Figure 10. Summer flounder spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars),1982-2019. The horizontal dashed line is the updated target biomass reference point. The horizontal solid line is the updated threshold biomass reference point. 70

Figure 11. Total fishery catch (metric tons; mt; solid line) and fully-recruited fishing mortality (F, peak at age 4; squares) of summer flounder, 1982-2019. The horizontal solid line is the updated fishing mortality reference point. 70

Figure 12. Scup SSB and recruitment at age 0, 1984-2019 from the 2021 management track stock assessment (NEFSC 2021b). 72

Figure 13. Scup total catch and fishing mortality, 1984-2019 from the 2021 management track stock assessment (NEFSC 2021b). 72

Figure 14. Black sea bass spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars) by calendar year. The horizontal dashed line is the updated SSBMSY proxy = SSB40% =14,441 mt. Source: NEFSC 2021c. Note that SSB and recruitment estimates were adjusted for a retrospective pattern in the stock assessment. The un-adjusted values are shown in this figure. Adjusted SSB in 2019 for comparison against the SSBMSY proxy reference point is 29,769 mt. The adjusted recruitment value for 2019 is 79.4 million. 74

Figure 15. 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 FMSY proxy = F40% = 0.46. The red square Is the retrospectively adjusted fishing mortality value for 2019. Source: NEFSC 2021c. 74

Figure 16. Northeast U.S. Shelf Ecosystem. 79

Figure 17. Commercial summer flounder landings and average ex-vessel prices, 2005-2019, in 2019 dollars. Source: NEFSC Social Sciences Branch, personal communication. 119

Figure 18. Commercial scup landings and average ex-vessel prices, 2005-2019, in 2019 dollars. Source: NEFSC Social Sciences Branch, personal communication. 123

Figure 19. Commercial black sea bass landings and average ex-vessel prices, 2005-2019, in 2019 dollars. Source: NEFSC Social Sciences Branch, personal communication. 128

Figure 20. 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. 153

Figure 21. Overall climate vulnerability scores for Greater Atlantic Region species, with summer flounder, scup, and black sea bass 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. 156

Figure 22. Comparison of first two steps of calculating commercial and recreational catch and landings limits under catch and landings-based allocations. 191

Figure 23. Black sea bass recreational dead discards and landings, 2005-2019. 199

3 LIST OF ACRONYMS AND ABBREVIATIONS

ABC	Acceptable Biological Catch
ACL	Annual Catch Limit
ALWTRP	Atlantic Large Whale Take Reduction Plan
ALWTRT	Atlantic Large Whale Take Reduction Team
ASMFC	Atlantic States Marine Fisheries Commission (Commission)
B_{MSY}	Biomass at maximum sustainable yield
C.F.R.	Code of Federal Regulations
CEA	Cumulative Effects Assessment
CPUE	Catch per unit effort
CV	Coefficient of Variation
DPS	Distinct Population Segment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
E.O.	Executive Order
ESA	Endangered Species Act
F	Fishing mortality rate
FMAT	Fishery Management Action Team
FMP	Fishery Management Plan
FR	Federal Register
GAR	Greater Atlantic Region
GARFO	Greater Atlantic Regional Fisheries Office (formerly Northeast Regional Office/NERO)
GOM	Gulf of Maine
GRA	Gear Restricted Area
HAPC	Habitat Area of Particular Concern
ITS	Incidental Take Statement
LOF	List of Fisheries
MAFMC	Mid-Atlantic Fishery Management Council (Council)
MC	Monitoring Committee
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act (as currently amended)
MSY	Maximum Sustainable Yield
MT	Metric tons
NEFMC	New England Fishery Management Council
NEFOP	Northeast Fisheries Observer Program
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NS	National Standard
OY	Optimum Yield
PBR	Potential Biological Removal
RFA	Regulatory Flexibility Act
RHL	Recreational harvest limit
RIR	Regulatory Impact Review
SARs	Stock Assessment Reports
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SBRM	Standardized Bycatch Reporting Methodology

SSB	Spawning Stock Biomass
SSC	Scientific and Statistical Committee
STDN	Sea Turtle and Disentanglement Network
STSSN	Sea Turtle Stranding and Salvage Network
TAL	Total Allowable Landings
TED	Turtle Excluder Device
TRP	Take Reduction Plan
USFWS	U.S. Fish and Wildlife Service
VEC	Valued Ecosystem Component
VTR	Vessel Trip Report

4 BACKGROUND AND PURPOSE

This amendment is a joint action of the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission).

The Council and Commission work cooperatively to develop commercial and recreational fishery regulations for summer flounder, scup, and black sea bass from Maine through North Carolina (north of Cape Hatteras for scup and black sea bass). The National Marine Fisheries Service (NMFS) serves as the federal implementation and enforcement entity. This cooperative management endeavor was developed because a significant portion of the catch for all three species is taken from both state (0-3 miles offshore) and federal waters (3-200 miles offshore).

4.1 PURPOSE AND NEED FOR ACTION

There are three purposes of this action, described with their associated needs for action below.

Purpose 1: Consider modifications to the current allocations between the commercial and recreational sectors for summer flounder, scup, and black sea bass (Alternative Set 1). **Need for action 1:** The commercial and recreational allocations for all three species are currently based on historical proportions of landings (for summer flounder and black sea bass) or catch (for scup) from each sector. The current allocations were set in the mid-1990s and have not been revised since that time.

Recent changes in how recreational catch is estimated have resulted in a discrepancy between the allocations and the current levels of estimated recreational catch and harvest. Recreational catch and harvest data from the Marine Recreational Information Program (MRIP) were revised in 2018 based on multiple adjustments to the methods for estimating recreational catch rates and fishing effort. The methodology change with the largest impact was a transition from a telephone-based effort survey to a mail-based effort survey for the private/rental boat and shore-based recreational fishing modes.[1] These revisions collectively resulted in much higher recreational catch and harvest estimates compared to previous estimates, affecting the entire time series of data going back to 1981 (e.g., see Table 18, Table 26, and Table 3 in Section 6.1). In general, the differences between the revised MRIP estimates and the prior MRIP estimates are greater in recent years compared to earlier years. This is due to a number of factors, including greater use of cell phones in recent years.

Some changes have also been made to commercial catch data since the allocations were established. For example, notable revisions to the time series of commercial scup discard estimates took place through the 2015 scup stock assessment. Commercial discard estimates for all three species have improved in recent decades due to the implementation of a standardized bycatch reporting methodology.

The commercial and recreational data revisions not only impact the catch estimates, but also affected our understanding of the population levels for all three fish stocks. For summer flounder, increased recreational catch resulted in increased estimates of stock size compared to past

[1] For-hire effort continues to be assessed through a telephone survey of known for-hire operators. More information on how MRIP collects data from the recreational fishery is available at: https://www.fisheries.noaa.gov/recreational-fishing-data/types-recreational-fishing-surveys.

assessments. The higher biomass projections resulted in a 49% increase in the commercial quota and RHL for 2019. For scup, the MRIP data have a lesser impact in the stock assessment model, with the 2019 operational stock assessment showing minor increases in biomass estimates compared to the 2015 assessment. Due to below-average recruitment in recent years, the scup catch and landings limits for both the commercial and recreational sectors decreased slightly. For black sea bass, the increased catch estimates combined with an above average 2015 year class contributed to a notable scaling up of the spawning stock biomass estimates from the previous assessment. As a result, the 2020 black sea bass commercial quota and RHL both increased by 59% compared to 2019.

This has management implications due to the fixed commercial/recreational allocation percentages defined in the FMP for all three species. The current allocation percentages do not reflect the current understanding of the recent and historic proportions of catch and landings from the commercial and recreational sectors. These allocation percentages are defined in the Council and Commission FMPs; therefore, they can only be modified through an FMP amendment. This amendment considers whether the allocations are still appropriate and meeting the objectives of the FMP and if not, how they should be revised.

Purpose 2: Consider the option to transfer a portion of the allowable landings each year between the commercial and recreational sectors, in either direction, based on the needs of each sector (Alternative Set 2).
Need for action 2: Allowing for transfers of annual quota between the commercial and recreational fisheries (in either direction as needed) could allow for improved quota management by increasing the flexibility in distributing the overall Acceptable Biological Catch (ABC). Transfers are considered through this action as a potential means to prevent commercial or recreational catch and landings limit overages, encourage full utilization of the ABC, and achieve optimum yield (OY).

Purpose 3: Consider whether future modifications to the commercial/recreational allocations and/or transfer provisions can be considered through a future FMP framework action, as opposed to an amendment (Alternative Set 3).
Need for action 3: Revising these measures through a framework action in the future if necessary may allow for more efficient consideration and implementation of changes compared to an FMP amendment. This is a primarily administrative change that would still allow for consideration through an amendment if warranted, but would provide the option for consideration through a framework action if desired.

This EA is being prepared using the 2020 CEQ NEPA Regulations. The effective date of the 2020 CEQ NEPA Regulations was September 14, 2020. Reviews begun after this date are required to apply the 2020 regulations unless there is a clear and fundamental conflict with an applicable statute (85 Fed. Reg. at 43372-73 (§§ 1506.13, 1507.3(a))). This EA began in May 2021 and accordingly proceeds under the 2020 regulations.

4.2 FMP OBJECTIVES

4.2.1 Summer Flounder

The summer flounder FMP objectives were revised via Amendment 21 to the FMP (2020). The revised goals and objectives for summer flounder are as follows:

Goal 1: Ensure the biological sustainability of the summer flounder resource in order to maintain a sustainable summer flounder fishery.

> **Objective 1.1:** Prevent overfishing, and achieve and maintain sustainable spawning stock biomass levels that promote optimum yield in the fishery.

Goal 2: Support and enhance the development and implementation of effective management measures.

> **Objective 2.1:** Maintain and enhance effective partnership and coordination among the Council, Commission, Federal partners, and member states.
>
> **Objective 2.2:** Promote understanding, compliance, and the effective enforcement of regulations.
>
> **Objective 2.3:** Promote monitoring, data collection, and the development of ecosystem-based science that support and enhance effective management of the summer flounder resource.

Goal 3: Optimize economic and social benefits from the utilization of the summer flounder resource, balancing the needs and priorities of different user groups to achieve the greatest overall benefit to the nation.

> **Objective 3.1:** Provide reasonable access to the fishery throughout the management unit. Fishery allocations and other management measures should balance responsiveness to changing social, economic, and ecological conditions with historic and current importance to various user groups and communities.

4.2.2 Scup and Black Sea Bass

The FMP objectives for scup and black sea bass were adopted via the amendments that added these species to this joint FMP (Amendment 8 for scup and Amendment 9 for black sea bass). The current FMP objectives for scup and black sea bass are:

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

4.3 MANAGEMENT UNIT

The management unit for summer flounder in US waters is the western Atlantic Ocean from the southern border of North Carolina northward to the US-Canadian border. The management unit for black sea bass and scup in US waters is the western Atlantic Ocean from Cape Hatteras, North Carolina northward to the US-Canadian border.

4.4 FMP HISTORY

The original Council Summer Flounder FMP (MAFMC 1988) was adopted in 1988 and included a 13-inch minimum size requirement (for both recreational and commercial possession), permit requirements, and a plan to annual review fishing mortality estimates and the performance of management measures after the third year of FMP implementation.

Amendment 1 (1990) added an overfishing definition to the FMP and proposed a minimum net mesh size. NMFS approved the overfishing definition, but disapproved the minimum net mesh provision.

Amendment 2 (1993) contained a number of management measures to regulate the commercial and recreational summer flounder fisheries, including a rebuilding schedule, commercial quotas, RHLs, size limits, gear restrictions including minimum mesh sizes, and permit and reporting requirements. Amendment 2 established a mesh size exemption for the flynet fishery, as well as the small mesh exemption area, an offshore area where fishermen participating in the winter trawl fishery may obtain an authorized exemption from the minimum mesh size regulations. Amendment 2 also established the Summer Flounder Monitoring Committee, which meets annually make recommendations regarding the commercial quota and other management measures.

Amendment 3 (1993) modified the demarcation line for the small mesh exempted fishery area and the seasonal large mesh net possession thresholds.

Amendment 4 (1993) revised the state-specific shares of the coastwide commercial summer flounder quota based on revised Connecticut landings data, as requested by the Commission.

Amendment 5 (1993) allowed states to transfer or combine portions of their commercial quota.

Amendment 6 (1994) allowed multiple nets on board if they were properly stowed and changed the deadlines for publishing annual fishery management measures.

Amendment 7 (1995) revised the fishing mortality rate reduction schedule for summer flounder.

In 1996, NMFS requested that the black sea bass and scup regulations be incorporated into an existing FMP to reduce the number of separate fisheries regulations issued by the federal government. As a result, the Scup FMP and the Black Sea Bass FMP were incorporated into the summer flounder regulations as **Amendments 8 and 9** (1996) to the Council's Summer Flounder FMP, respectively. These amendments 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.

Amendment 10 (1997) modified the summer flounder commercial minimum mesh regulations, modified language related to commercial moratorium permits, and prohibited the transfer of summer flounder at sea.

Amendment 11 (1999) modified provisions related to vessel replacement and upgrades as well as permit history transfer, splitting, and renewal regulations.

Amendment 12 (1999) revised the FMP to comply with the new and revised National Standards and other required provisions of Sustainable Fisheries Act, including revising overfishing definitions and identifying essential habitat for summer flounder, scup and black sea bass. In addition, Amendment 12 added a framework adjustment procedure that allows the Council to add or modify management measures through a streamlined public review process.

Framework 1 (2001) established quota set-aside for research for summer flounder, scup, and black sea bass.

Framework 2 (2001) established a state-specific conservation equivalency process for the recreational summer flounder fishery.

Framework 3 (2003) allowed for rollover of winter period scup quota, and revised the start date for the summer quota period for the scup fishery.

Framework 4 (2003) established a system to allow for transfer of scup at sea.

Amendment 13 (2003) revised the black sea bass commercial quota system, and addressed other black sea bass management measures. The preferred alternatives for Amendment 13 had no impact on summer flounder or scup.

Framework 5 (2004) established the ability to implement catch and landings limits for up to three years at a time for all three species.

Framework 6 (2006) established the option of region-specific conservation equivalency measures for the summer flounder recreational fishery.

Framework 7 (2007) built flexibility into the process to define and update stock status determination criteria for each plan species.

Amendment 14 (2007) established a rebuilding schedule for scup and made the Scup Gear Restricted Areas (GRAs) modifiable through the framework adjustment process.

Amendment 16 (2007) implemented Standardized Bycatch Reporting Methodology (SBRM).

Amendment 15 (2011) Established Annual Catch Limits (ACLs) and Accountability Measures (AMs), as required by the 2007 reauthorization of the MSA.

Amendment 19 (2013) modified the AMs for the Council's recreational fisheries.

Amendment 17 (2015) implemented a revised version of the SBRM.

Framework 8 (2015) modified the opening date of the black sea bass recreational fishery to May 15, starting in 2015.

Amendment 18 (2015) eliminated the requirement for vessel owners to submit "did not fish" reports for months or weeks when their vessel was not fishing. Amendment 18 also removed some of the restrictions for upgrading vessels listed on Federal fishing permits.

Framework 9 (2016) modified the southern and eastern boundaries of the Southern Scup GRA.

Framework 10 (2017), the Omnibus For-Hire Electronic Trip Report Framework, implemented a requirement for vessels that hold party/charter permits for Council-managed species to submit vessel trip reports electronically (eVTRs) while on a trip carrying passengers for hire.

Framework 11 (2018) established a process for setting constant multi-year ABCs for Council-managed fisheries, and clarifies several elements of the Council’s risk policy.

Framework 12 (2017) modified the dates of the scup commercial quota periods, such that the month of October was moved to the Winter II quota period.

Amendment 20 (2017), the Unmanaged Forage Omnibus Amendment, implemented a possession limit in Mid-Atlantic federal waters for over 50 previously unmanaged forage species.

Framework 13 (2018) modified the summer flounder, scup, and black sea bass commercial AMs for overages caused by discards.

Framework 14 (2019) gave the Council the option to waive the federal recreational black sea bass measures in favor of state measures through conservation equivalency. It also implemented a transit zone for commercial and recreational summer flounder, scup, and black sea bass fisheries in Block Island Sound; and allowed for the use of a maximum size limit in the recreational summer flounder and black sea bass fisheries.

Amendment 21 (2020) revised the FMP goals and objectives for summer flounder and implemented new summer flounder state-specific commercial allocations.

Framework 16 (2020) modified the Council's ABC control rule and risk policy.

The Commission's Summer Flounder, Scup, and Black Sea Bass Board has also modified their FMP through several Board-only actions, mostly through their addendum process. These actions are available on the Commission's website at www.ASMFC.org.

4.5 THE SPECIFICATIONS PROCESS

The Council and Commission jointly agree to annual commercial and recreational catch and landings limits, as well as other management measures such as minimum fish sizes, gear restrictions, and possession limits through a process referred to as "specifications." The FMP specifies which measures may be modified through the specifications process as opposed to a larger FMP action such as a framework or amendment. The specifications process allows for annual review, and modification if necessary, of the catch and landings limits and other measures.

As a first step in establishing the annual catch and landings limits, the Council's Scientific and Statistical Committee (SSC) recommends ABCs based on the Council's ABC control rule and risk policy. Using this ABC recommendation, the Monitoring Committee recommends commercial and recreational Annual Catch Limits (ACLs) and Annual Catch Targets (ACTs), as well as sector-specific landings limits (the commercial quota and RHL). The ABC, ACLs, and ACTs are catch limits (i.e., include both projected landings and dead discards), while the commercial quota and the RHL include landings only. The process for deriving the sector-specific catch and landings limits from the ABC is outlined in more detail in Appendix A. The Council and Board review the SSC recommendations, Monitoring Committee recommendations, Advisory Panel comments, and other relevant information before recommending any necessary new specifications or changes to implemented specifications to NMFS.

Commercial and recreational possession limits, minimum size restrictions, open/closed seasons, and other measures implemented at the state and federal level are aimed at preventing overages of the commercial and recreational ACLs, commercial quotas, and RHLs.

5 MANAGEMENT ALTERNATIVES

5.1 ALTERNATIVE SET 1: COMMERCIAL/ RECREATIONAL ALLOCATION ALTERNATIVES

This section describes the alternatives under consideration for the commercial/recreational allocation percentages for summer flounder (Section 5.1.1), scup (Section 5.1.2), and black sea bass (Section 5.1.3). Section 5.1.4 includes alternatives to phase in any allocation changes over multiple years.

Alternatives for both catch-based and landings-based allocations were considered for all three species. As described in more detail in Appendix A, the same types of catch and landings limits are required under both catch and landings-based allocations (i.e., commercial and recreational annual catch limits, or ACLs, and annual catch targets, commercial quota, and RHL). Dead discards (i.e., discarded fish that are assumed to die)[2] must be accounted for in the catch limits under both allocation approaches. Under both approaches, dead discards are subtracted from the catch limits to derive the sector-specific landings limit. The main difference between these approaches is the step in the calculations where the commercial/recreational allocation percentage is applied. This has implications for how those dead discards are factored into the calculations.

Catch-based allocations (currently in place for scup) apply the commercial/recreational allocation at the ABC level, meaning the entire amount of allowable catch (i.e., the ABC, which includes landings and dead discards) would be split based on the commercial/recreational allocation percentage defined through the alternatives listed below. Under a landings-based allocation (currently in place for summer flounder and black sea bass), the ABC is first split into the amount expected to come from landings and the amount expected to come from dead discards. The expected landings amount is then split according to the commercial/recreational allocation percentage defined through the alternatives listed below. As described in more detail in Appendix A, under a catch-based allocation, changes in landings and dead discards in one sector do not influence the other sector's ACL, as the entire ABC is always split among the sectors based on the allocation defined in the FMP, regardless of recent trends in landings and discards by sector. In theory, this can allow each sector to see the benefits of a reduction in their own dead discards to a greater extent than under a landings-based allocation.

It is important to note that because expected dead discards are handled differently under catch and landings-based approaches, the allocation percentages under these two approaches are not directly comparable. To allow for comparison across all alternatives, example resulting commercial quotas and RHLs for each species are discussed in Section 7.1.1 (see Appendix C for details on how these example quotas and RHLs were calculated). Actual resulting commercial quotas and RHLs will vary based on annual considerations.

Under all alternatives, the commercial and recreational sectors will continue to be held separately accountable for overages of their catch and landings limits, regardless of whether the allocations are catch- or landings-based. There will be no changes to the accountability measures for either sector.[3]

5.1.1 Summer Flounder Commercial/Recreational Allocation Alternatives

Table 10 lists the alternatives considered for the commercial/recreational summer flounder allocation percentages. The current summer flounder allocations are landings-based and are represented by the no action/status quo alternative (alternative 1a-4). As described above, both

[2] The current discard mortality rates assumed in the stock assessments and catch and landings limits calculations are: 10% for recreational summer flounder discards and 80% for commercial summer flounder discards; 15% for scup recreational discards and 100% for commercial scup discards; 15% for recreational black sea bass discards, 15% for commercial non-trawl black sea bass discards, and 100% for commercial trawl black sea bass discards. These discard mortality rates are used in all aspects of the management program which utilize estimates of dead discards.

[3] A summary of the current accountability measures for summer flounder, scup, and black sea bass can be found at: https://www.mafmc.org/s/AMs-description_SF_scup-BSB_Dec2020.pdf.

catch- and landings-based alternatives were considered. The percentages under these alternatives are not directly comparable due to differences in how dead discards are addressed under catch-based allocations and landings-based allocations. Appendix C provides examples of potential commercial quotas and RHLs under each alternative to allow for direct comparisons between the catch and landings-based alternatives. Appendix A provides more details on the differences between catch- and landings-based allocations and the potential implications of each approach. The rationale behind each allocation alternative is described in more detail in Appendix B.

The range of alternatives includes an option to update the existing base years with new data, as well as options for different base years. The alternatives in this section are mutually exclusive, meaning the Council and Board could only choose one of the alternatives from Table 10 below.

The Council and Board adopted a preferred alternative for summer flounder (alternative fluke-5) that would modify the current 60% commercial, 40% recreational landings-based allocation to a 55% commercial, 45% recreational catch-based allocation. These percentages are based on the original allocation base years updated with current landings data from those years. The Council and Board agreed that the original base years are the most appropriate basis for the allocations as they are years before the fisheries were notably impacted by management measures. Catch and landings percentages from more recent years are influenced by many management measures, including the allocations. Basing the allocations on more recent trends in catch or landings raised concerns about fairness due to differences in how well the commercial and recreational sectors have been held to their respective limits in past years (Section 10.2.3). The Council and Board also agreed that the allocations should be updated to reflect the most recent available data from the base years, especially as other parts of the management process, including the stock assessment and catch accounting systems, now rely on newer, improved data compared to when the allocations were first established.

Although the allocation percentages under the preferred alternative are based on landings data, they would be applied as a catch-based allocation. Reliable dead discard data for the summer flounder base years (1980-1989) are not available. The Council and Board agreed that catch-based allocations are preferable to landings-based allocations for all three species because the calculations of sector-specific catch and landings limits are more separate. Recent trends in landings and dead discards in one sector have a lesser impact on the limits in the other sector under a catch-based allocation compared to a landings-based allocation, as described in more detail in Section 5.1.1 and in Appendix A.

Table 10. Summer flounder commercial/recreational allocation alternatives. The current allocations are highlighted in green. Alternatives beginning with 1a represent those considered by the Council and Board during their April 2021 meeting. Alternatives fluke-1 through fluke-4 were added during their August 2021 meeting. Alternative fluke-5, highlighted in blue, is the preferred alternative and was added during the December 2021 Council and Board meeting.

Summer Flounder Catch-Based Allocation Percentages	
Alternative	**Basis (see Appendix B for details)**
Fluke-5 (preferred): 55% com., **45.0%** rec.	Same base years, new data, using landings data but applied as a catch-based allocation (1981-1989; 1980 data unavailable)
Fluke-4: 50.0% com., **50.0%** rec.	50/50 weighting of no action/status quo base years and 2004-2018, excluding years with RHL overages (i.e., 2006-2008, 2014, and 2016)
Fluke-2: 45.0% com., **55.0%** rec.	Average 2004-2018 catch proportions, excluding years with RHL overages (i.e., 2006-2008, 2014 and 2016)
1a-1: 44.0% com., **56.0%** rec.	Average 2004-2018 catch proportions
1a-2: 43.0% com., **57.0%** rec.	Multiple approaches: 2009-2018 average catch proportions, approximate status quo harvest per sector compared to 2017/2018, and average of other approaches approved by Council/Board in June 2020
1a-3: 40.0% com., **60.0%** rec.	Average 2014-2018 catch proportions
Summer Flounder Landings-Based Allocation Percentages	
Alternative	**Basis (see Appendix B for details)**
1a-4: 60.0% com., **40.0%** rec.	No action/status quo (1980-1989)
1a-5: 55.0% com., **45.0%** rec.	Same base years, new data (1981-1989; 1980 data unavailable)
Fluke-3: 51.0% com., **49.0%** rec.	50/50 weighting of no action/status quo base years and 2004-2018, excluding years with RHL overages (i.e., 2006-2008, 2014, and 2016)
Fluke-1: 47.0% com., **53.0%** rec.	Average 2004-2018 landings proportions, excluding years with RHL overages (i.e., 2006-2008, 2014 and 2016)
1a-6: 45.0% com., **55.0%** rec.	Multiple approaches: average 2004-2018 landings proportions and average 2009-2018 landings proportions
1a-7: 41.0% com., **59.0**% rec.	Average 2014-2018 landings proportions

5.1.2 Scup Commercial/Recreational Allocation Alternatives

Table 11 lists the alternatives considered for the commercial/recreational scup allocation percentages. The current scup allocations are catch-based and are represented by the no action/status quo alternative (alternative 1b-1). As described above, both catch- and landings-based alternatives were considered. The percentages under these alternatives are not directly comparable due to differences in how dead discards are addressed under catch- and landings-based allocations. Appendix C provides examples of potential commercial quotas and RHLs under each alternative to allow for direct comparisons between the catch and landings-based alternatives. Appendix A provides more details on the differences between catch and landings-based allocations and the potential implications of each approach. The rationale behind each allocation alternative is described in more detail in Appendix B. The alternatives in this section are mutually exclusive, meaning the Council and Board could only choose one of the alternatives from Table 11 below.

The range of alternatives includes an option to update the existing base years with new data, as well as options to set the allocations on different base years. The Council and Board selected alternative 1b-2 as the preferred alternative for scup. This alternative includes a 65% commercial and 35% recreational catch-based allocation, based on the same base years (i.e., 1988-1992) as the original allocations updated with current catch data for those years. The Council and Board agreed that the original base years are the most appropriate basis for the allocations as they are years before the fisheries were notably impacted by management measures. Catch and landings percentages from more recent years are influenced by many management measures, including the allocations. Basing the allocations on more recent trends in catch or landings raised concerns about fairness due to differences in how well the commercial and recreational sectors have been held to their respective limits in past years (Section 10.2.3).

The Council and Board agreed that the allocations should be updated to reflect the most recent available data from the base years, especially as other parts of the management process, including the stock assessment and catch accounting systems, now rely on improved data compared to when the allocations were first established. The Council and Board agreed that catch-based allocations are preferable to landings-based allocations for all three species because the calculations of sector-specific catch and landings limits are more separate. Recent trends in landings and dead discards in one sector have a lesser impact on the limits in the other sector under a catch-based allocation compared to a landings-based allocation, as described in more detail in Section 5.1.1 and in Appendix A. In addition, the current allocations for scup are catch-based and the Council and Board did not support switching from a catch-based to a landings-based allocation.

Table 11. Scup commercial/recreational allocation alternatives. The current allocations are highlighted in green. The preferred alternative is highlighted in blue. Alternatives beginning with 1b represent those considered by the Council and Board during their April 2021 meeting. Alternatives beginning with "scup" represent those added during the August 2021 Council and Board meeting.

Scup Catch-Based Allocation Percentages	
Alternative	**Basis (see Appendix B for details)**
1b-1: 78.0% com., **22.0%** rec.	No action/status quo
1b-2 (preferred): 65.0% com., **35.0%** rec.	Same base years, new data (1988-1992)
Scup-4: 63.5% com., **36.5%** rec.	50/50 weighting of no action/status quo base years and 2004-2018, excluding years with RHL overages (i.e., 2004 and 2007-2010)
Scup-2: 62.0% com., **38.0%** rec.	Average 2004-2018 catch proportions, excluding years with RHL overages (i.e., 2004 and 2007-2010)
1b-3: 61.0% com., **39.0%** rec.	Multiple approaches: avg 2009-2018 catch proportions and average of other approaches approved by Council/Board in June 2020
1b-4: 59.0% com., **41.0%** rec.	Approximate status quo harvest per sector compared to 2018/2019
Scup Landings-Based Allocation Percentages	
Alternative	**Basis (see Appendix B for details)**
Scup-1: 59.0% com., **41.0%** rec.	Average 2004-2018 landings proportions, excluding years with RHL overages (i.e., 2004 and 2007-2010)
Scup-3: 58.0% com., **42.0%** rec.	50/50 weighting of no action/status quo base years and 2004-2018, excluding years with RHL overages (i.e., 2004 and 2007-2010)
1b-5: 57.0% com., **43.0**% rec.	Multiple approaches: Same base years, new data; average 2014-2018 landings proportions; average 2009-2018 landings proportions
1b-6: 56.0% com., **44.0%** rec.	Average 2004-2018 landings proportions
1b-7: 50.0% com., **50.0%** rec.	Approximate status quo harvest per sector compared to 2018/2019

5.1.3 Black Sea Bass Commercial/Recreational Allocation Alternatives

Table 12 lists the alternatives considered for the commercial/recreational black sea bass allocation percentages. The current black sea bass allocations are landings-based and are represented by the no action/status quo alternative (alternative 1c-4). As described above, both catch- and landings-based alternatives were considered. The percentages under these alternatives are not directly comparable due to differences in how dead discards are addressed under catch-based allocations and landings-based allocations. Appendix C provides examples of potential commercial quotas and RHLs under each alternative to allow for direct comparisons between the catch and landings-based alternatives. Appendix A provides more details on the differences between catch- and landings-based allocations and the potential implications of each approach. The rationale behind each allocation alternative is described in more detail in Appendix B.

The alternatives in this section are mutually exclusive, meaning the Council and Board could only choose one of the alternatives from Table 12 below.

The range of alternatives includes an option to update the existing base years with new data, as well as options to set the allocations on different base years. The Council and Board selected a 45% commercial, 55% recreational catch-based allocation (alternative BSB-5) as the preferred alternative for the black sea bass allocations. These percentages are based on the original allocation base years updated with current landings data for those years. The Council and Board agreed that the original base years are the most appropriate basis for the commercial/recreational allocations as they are years before the fisheries were notably impacted by management measures. Catch and landings percentages from more recent years are influenced by many management measures, including the allocations. Basing the allocations on more recent trends in catch or landings raised concerns about fairness due to differences in how well the commercial and recreational sectors have been held to their respective limits in past years (Section 10.2.3). The Council and Board also agreed that the allocations should be updated to reflect the most recent available data from the base years, especially as other parts of the management process, including the stock assessment and catch accounting systems, now rely on improved data compared to when the allocations were first established.

Although the allocation percentages under the preferred alternative are based on landings data, they would be applied as a catch-based allocation. Reliable dead discard data for all black sea bass base years (1983-1992) are not available. The Council and Board agreed that catch-based allocations are preferable to landings-based allocations for all three species because the calculations of sector-specific catch and landings limits are more separate. Recent trends in landings and dead discards in one sector have a lesser impact on the limits in the other sector under a catch-based allocation compared to a landings-based allocation, as described in more detail in Section 5.1.1 and in Appendix A.

Table 12. Black sea bass commercial/recreational allocation alternatives. The current allocations are highlighted in green. Alternatives beginning with 1c represent those considered by the Council and Board during their April 2021 meeting. Alternatives BSB-1 through BSB-4 were added during their August 2021 meeting. Alternative BSB-5, highlighted in blue, is the preferred alternative and was added during the December 2021 Council and Board meeting.

Black Sea Bass Catch-Based Percentages	
Alternative	**Basis (see Appendix B for details)**
BSB-5 (preferred): 45% com., **55%** rec.	Same base years, new data, using landings data but applied as a catch-based allocation (1983-1992)
BSB-4: 40.5% com., **59.5%** rec.	50/50 weighting of no action/status quo base years and 2004-2018, excluding years with RHL overages (i.e., 2009-2010, 2012-2016, 2018)
BSB-2: 36.0% com., **64.0%** rec.	Average 2004-2018 landings proportions, excluding years with RHL overages (i.e., 2009-2010, 2012-2016, and 2018)
1c-1: 32.0% com., **68.0%** rec.	Approximate status quo harvest per sector compared to 2018/2019
1c-2: 28.0% com., **72.0%** rec.	Average 2004-2018 catch proportions
1c-3: 24.0% com., **76.0%** rec.	Average 2009-2018 catch proportions
Black Sea Bass Landings-Based Percentages	
Alternative	**Basis (see Appendix B for details)**
1c-4: 49.0% com., **51.0%** rec.	No action/status quo
1c-5: 45.0% com., **55.0%** rec.	Same base years, new data (1983-1992)
BSB-3: 41.0% com., **59.0%** rec.	50/50 weighting of no action/status quo base years and 2004-2018, excluding years with RHL overages (i.e., 2009-2010, 2012-2016, 2018)
BSB-1: 37% com., **63%** rec.	Average 2004-2018 landings proportions, excluding years with RHL overages (i.e., 2009-2010, 2012-2016, and 2018)
1c-6: 29.0% com., **71.0%** rec.	Multiple approaches: Approximate status quo harvest per sector compared to 2018/2019 and average of other approaches approved by Council/Board in June 2020
1c-7: 22.0% com., **78.0%** rec.	Average 2009-2018 landings proportions and average 2014-2018 landings proportions

5.1.4 Allocation Change Phase-In Provision Alternatives

Alternatives 1d-1 through 1d-4 (Table 13) consider if any changes to the allocation percentages under alternative sets 1a, 1b, and 1c should occur in a single year (alternative 1d-1, no phase in) or if the change should be spread over two, three, or five years (alternatives 1d-2 through 1d-4). The Council and Board agreed that five years is a reasonable maximum phase-in time frame as longer transition periods may not adequately address the issue an allocation change is attempting to address. The choice of whether to use a phase-in approach, and the length of the phase-in, may depend on the magnitude of allocation change proposed. A phase-in period may not be desired if under smaller allocation changes. Larger allocation changes may be less disruptive to fishing communities if they are phased in over several years.

These phase-in alternatives could apply to any of the three species and different phase-in alternatives (including no phase-in) could be applied to each species.

The Council and Board selected alternative 1d-1 (no phase in) as their preferred alternative. They agreed that a phase in period was not necessary given the scale of the shift in allocation from the commercial to the recreational sector under the preferred allocation percentage alternatives.

Table 13. Allocation change phase-in alternatives.

Phase-In Alternatives
1d-1 (preferred): No phase-in
1d-2: Allocation change evenly spread over two years
1d-3: Allocation change evenly spread over three years
1d-4: Allocation change evenly spread over five years

5.2 ALTERNATIVE SET 2: ANNUAL QUOTA TRANSFER PROVISION ALTERNATIVES

The following sections describe alternatives for allowing annual transfer of quota between the commercial and recreational sectors as part of the specifications setting process. This process is similar to that currently used for bluefish, although the options below would allow transfers in either direction between sectors.

5.2.1 Quota Transfer Process Alternatives

Two alternatives were considered for quota transfer provisions (Table 14). Under alternative 2a, transfers between the commercial and recreational sectors would not be allowed. This would represent no change from the current FMPs for these species. Under alternative 2b, each year during the setting or review of annual catch limits, the Board and Council could recommend that a portion of the total ABC be transferred between the recreational and commercial sectors as a landings limit transfer, affecting the final commercial quota and RHL. They could recommend a transfer from the commercial fishery to the recreational fishery or from the recreational fishery to the commercial fishery. If a transfer cap is adopted via one of the sub-alternatives under alternative 2c, the transfer amount could not exceed this cap.

Table 15 describes how the process of transfers would work within the Council and Board's current specifications process under alternative 2b.

Note that while the transfer would occur at the landings limit level (commercial quota and RHL), for the purposes of maintaining accurate accounting and accountability at the ACL level, both sector's ACLs would be adjusted to reflect the transfer at the landings limit level.

The Council and Board adopted alternative 2a (no action on transfers) as their preferred alternative. They agreed that it would be challenging to assess the need for a transfer in any given year and the process for implementing a transfer would be complicated (Table 15).

Table 14. Alternatives for annual transfer of quota between the commercial and recreational sectors.

Annual Quota Transfer Alternatives
2a (preferred): No action/status quo (do not modify the FMP to allow transfers of annual quota between the commercial and recreational sectors.)
2b: Allow for optional bi-directional transfers through the annual specifications process with pre-defined guidelines and process. The transfer would consist of a portion of the total ABC in the form of a landings limit (i.e., commercial quota and RHL) transfer. Transfers would not occur if the stock is overfished or overfishing is occurring.

Table 15. Proposed quota transfer process during a typical specifications cycle under alternative 2b. Alternative 2b was not selected as a preferred alternative.

July: Assess need for a transfer	Staff and the Monitoring Committee (MC) would assess the potential need for a transfer and develop recommendations to the Council and Board. The MC would consider the expected commercial quota and RHL (pending Council and Board review/approval) in the coming year, and each sector's performance relative to landings limits in recent years. The MC would have very limited data for the current year. The MC could also consider factors including but not limited to: • Projected changes in stock size, availability, or year class strength; • Recent or expected changes in management measures; • Recent or expected changes in fishing effort. The effects of these considerations can be difficult to quantify and there is currently no methodology that would allow the MC to quantitatively determine the need for a transfer with a high degree of precision. The MC would use their best judgement to recommend whether a transfer would further the Council and Board's policy objectives.
August: Council and Board consider whether to recommend a transfer	The Council and Board would consider MC recommendations on transfers and would decide on the amount of transfer (if any) when setting or reviewing annual catch and landings limits.
October: Council staff submits specifications package to NMFS	Council staff would prepare and submit supporting documents to modify catch limits or implement or revise transfers.
Mid-December: Recreational measures adopted*	The Council and Board would adopt federal waters recreational measures and a general strategy for coastwide recreational management including any reductions or liberalizations needed in state waters. These recommendations would be based on the expected post-transfer RHL which likely would not yet be implemented via final rule.
Late December: Final specifications published	NMFS approves and publishes the final rule for the upcoming year's catch and landings limits (if new or modified limits are needed), including any new or revised transfers.

*While this step is not directly part of the quota transfer process, the timing of the recreational measures setting process influences the necessary timeline of transfer-related decisions.

5.2.2 Quota Transfer Cap Alternatives

The Council and Board considered four alternatives related to a cap on the size of transfers between the commercial and recreational sectors (Table 16). These alternatives would only be considered if transfer provisions were adopted under alternative 2b above. The Council and Board did not select alternative 2b as a preferred alternative; therefore, they did not select a preferred transfer cap alternative.

Table 16. Alternatives for annual transfer of quota between the commercial/recreational sectors. These alternatives are only relevant under alternative 2b, which was not selected as a preferred alternative; therefore, none of the following alternatives were selected as preferred.

Annual Quota Transfer Cap Alternatives
2c-1: No transfer cap specified; the Council and Board can recommend any amount of the ABC be transferred between fisheries.
2c-2: Maximum transfer amount set at 5% of the ABC.
2c-3: Maximum transfer amount at 10% of the ABC.
2c-4: Maximum transfer amount set at 15% of the ABC.

5.3 ALTERNATIVE SET 3: FRAMEWORK PROVISIONS

Alternatives 3a and 3b (Table 17) consider whether the Council and Board should have the ability to make future changes to the commercial/recreational allocation percentages (alternative set 1) or transfer provisions (alternative set 2) through a future framework action (under the Council's FMP) and/or an addendum (for the Commission's FMP). Under alternative 3a (no action), changes to these measures would require an FMP amendment. Under alternative 3b, the preferred alternative, changes could be considered through a framework/addendum.

Frameworks/addenda are modifications to the FMPs that are typically (though not always) more efficient than a full amendment. While amendments may take several years to complete and may be more complex, frameworks/addenda can usually be completed in 5-8 months. Both types of management actions include multiple opportunities for public input; however, scoping and public hearings are required for amendments, but are optional for frameworks/addenda. Frameworks/ addenda can only modify existing measures and/or those that have been previously considered in an FMP amendment.

Allowing changes through a framework/addendum does not require or guarantee that this mechanism can be used for future changes. The Council and Board can always choose to initiate an amendment rather than a framework/addendum if more thorough evaluation or additional public comment opportunities are desired. In addition, if the specific changes under consideration are especially controversial or represent a significant departure from previously considered measures, an amendment may be required, even if the type of change is identified in the FMP as a change that can be made through a framework/addendum.

The Council adopted an allocation review policy in 2019,[4] where each relevant allocation will be reviewed at least every 10 years; however, the Council may choose to conduct reviews more frequently based on substantial public interest or other factors (including changes in ecological, social, and economic conditions).

[4] https://www.mafmc.org/s/MAFMC-Fishery-Allocation-Review-Policy_2019-08.pdf

Table 17. Framework/addendum provision alternatives.

Framework/Addendum Provision Alternatives
3a: No action/status quo (no changes to framework/addendum provisions; changes to commercial/recreational allocations must be made through an amendment)
3b (preferred): Allow changes to commercial/recreational allocations, annual quota transfers, and other measures included in this amendment to be made through framework actions/addenda

5.4 CONSIDERED BUT REJECTED ALTERNATIVES

Several other issues identified during scoping for this action were considered by the Council and Board but have since been removed from further consideration in this amendment. Some of those issues were related more specifically to recreational sector management and will be further considered through other initiatives or actions after being removed from this action. For more information, see the documents associated with past meetings for this amendment, available at: https://www.mafmc.org/actions/sfsbsb-allocation-amendment.

Considered but rejected alternatives related to commercial/recreational allocation:

- Revised allocation percentages based on socioeconomic analyses: This category of alternatives was rejected due to lack of appropriate data for these species.
- Allocate in numbers instead of pounds: This concept was rejected due to inconsistency with the weight units used in the stock assessments and resulting OFL and ABC projections.
- Dynamic allocation approaches: This category of alternatives included a moving average approach and a trigger approach which were rejected due to concerns about rewarding overages and not addressing the purpose and need.
- Purchasing allocation between sectors: This alternative was rejected due to management and implementation issues.
- Allocation set asides: This alternative did not adequately address the purpose and need in an equitable way.

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 five aspects of the affected environment, which are defined as valued ecosystem components (VECs; Beanlands and Duinker 1984).

The VECs include:

- Human communities
- Summer flounder, scup, black sea bass
- Non-target species
- Physical habitat and Essential Fish Habitat
- Protected species

The following sections describe the recent condition of the VECs.

6.1 SOCIAL AND ECONOMIC ENVIRONMENT

The following sections summarize the recent conditions of the commercial and recreational fisheries for summer flounder, scup, and black sea bass. The trends summarized below mostly consider data through 2020 (for landings) or 2019 (for discards) as final data from more recent years were not available at the time of writing this document.

6.1.1 Summer Flounder Fisheries

Summer flounder support important commercial and recreational fisheries along the US Atlantic coast. Data for all fisheries catch components (commercial landings, commercial discards, recreational landings, and recreational discards) are available back to 1989.

Commercial landings accounted for 36% of the total catch from 2010-2019, with recreational landings accounting for 43%, commercial dead discards about 7%, and recreational dead discards about 14% (Figure 1). Commercial discard losses in the fish trawl and scallop dredge fisheries[5] have accounted for about 17% of the total *commercial* dead catch 2010-2019, assuming a discard mortality rate of 80%. Recreational dead discard losses have accounted for 25% of the total *recreational* dead catch over 2010-2019, assuming a discard mortality rate of 10%.

Table 18 shows recent catch and landings limits, and landings for commercial and recreational summer flounder fisheries.

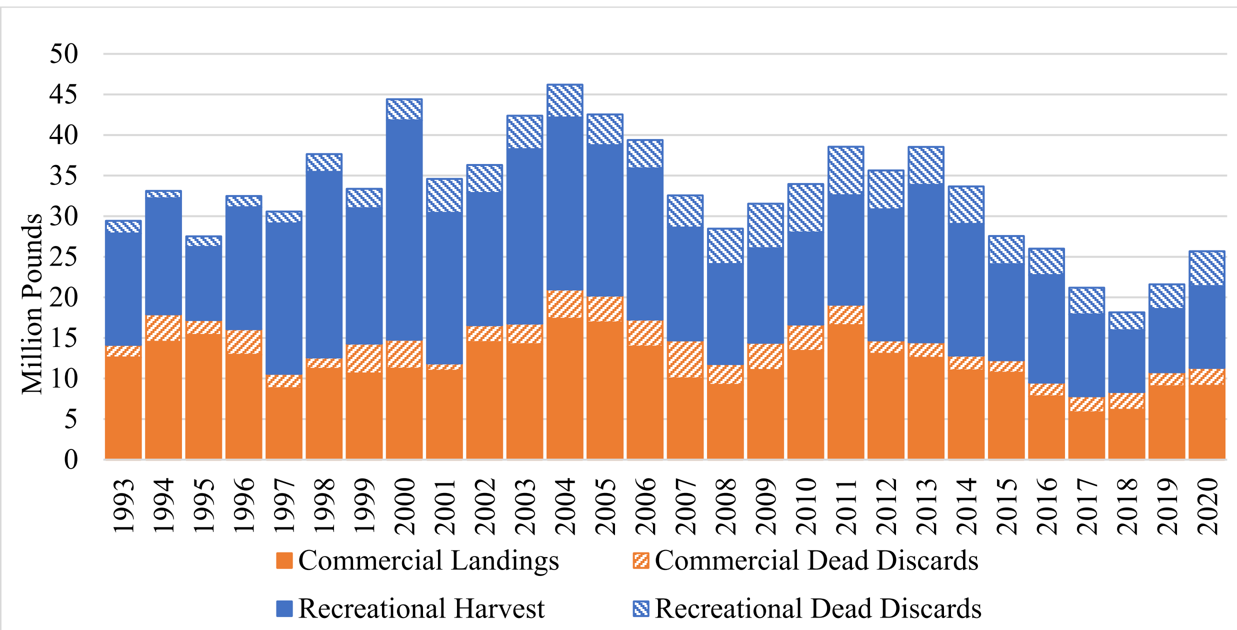

Figure 1. Components of the summer flounder fishery catch from 1993 (implementation of Amendment 2) through 2020. Dead discard estimates for 2020 are approximated using different estimation methods due to COVID-19 related data gaps. Source: NEFSC 2021a; MAFMC 2021a.

[5] Summer flounder is a non-target species in the scallop dredge fisheries that tends to be discarded due to higher value of scallops, or because of lack of access to summer flounder quota for these vessels. In the trawl fisheries, summer flounder discards are primarily driven by regulations or quota limitations.

Table 18. Summary of catch limits, landings limits, and landings for commercial and recreational summer flounder fisheries from 2010 through 2021 (preliminary). Values are in millions of pounds.

Mgmt measures	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021[e, f]
ABC	25.50	33.95	25.58	22.34	21.94	22.57	16.26	11.30	13.23	25.03	25.03	27.11
Com. ACL	--	--	14.00	12.11	12.87	13.34	9.43	6.57	7.70	13.53	13.53	14.63
Com. quota[a,b]	12.79	17.38	12.73	11.44	10.51	11.07	8.12	5.66	6.63	10.98	11.53	12.49
Com. landings	13.40	16.57	13.05	12.56	11.00	10.71	7.80	5.87	6.17	9.06	9.11	10.36
% of com. quota landed	105%	95%	102%	110%	105%	97%	96%	104%	93%	83%	79%	83%
Rec. ACL	--	--	11.58	10.23	9.07	9.44	6.84	4.72	5.53	11.51	11.51	12.48
RHL[a]	8.59	11.58	8.49	7.63	7.01	7.38	5.42	3.77	4.42	7.69	7.69	8.32
Rec. harvest - OLD MRIP	5.11	5.96	6.49	7.36	7.39	4.72	6.18	3.19	3.35	--	--	--
Rec. harvest - NEW MRIP	11.34	13.48	16.13	19.41	16.23	11.83	13.24	10.09	7.60	7.80	10.06[d]	6.82
% of RHL landed (Old MRIP 2010-2018; New MRIP 2019-2020)[c]	59%	51%	76%	96%	105%	64%	114%	85%	76%	101%	131%[d]	82%

[a] For 2010-2014, commercial quotas and RHLs are adjusted for Research Set Aside (RSA). Quotas and harvest limits for 2015-2021 do not reflect an adjustment for RSA due to the suspension of the program in 2014.

[b] Commercial quotas also reflect deductions from prior year landings overages and discard-based Accountability Measures.

[c] The revised MRIP data cannot be compared to RHLs prior to 2019, given that these limits were set based on an assessment that used previous MRIP data.

[d] 2020 recreational estimates were developed using imputation methods (incorporating 2018 and 2019 data) to account for missing 2020 APAIS data.

[e] The 2021 measures were revised in 2020 by the SSC, the Council, and the Commission in accordance with the Council's changes to their risk policy.

[f] 2021 commercial landings values are preliminary.

Summer Flounder Commercial Fishery

Commercial landings of summer flounder peaked in 1984 at 37.77 million pounds and reached a low of 5.83 million pounds in 2017. In 2020, commercial fishermen from Maine through North Carolina landed 9.11 million pounds of summer flounder, about 79% of the commercial quota (11.53 million pounds). Total ex-vessel value in 2020 was $23.46 million, resulting in an average price per pound of $2.58 (Figure 2). A moratorium permit is required to fish commercially for summer flounder in federal waters. In 2020, 727 vessels held such permits.

The commercial quota is divided among the states based on the allocation percentages specified in the FMP, and each state sets measures to achieve their state-specific commercial quotas. The commercial allocations to the states were modified via Amendment 21, which became effective on January 1, 2021. The revised allocation system modifies the state-by-state commercial quota allocations in years when the annual coastwide commercial quota exceeds the specified trigger of 9.55 million pounds. Annual coastwide commercial quota of up to 9.55 million pounds is distributed according to the previous state allocations (Table 9). In years when the coastwide quota exceeds 9.55 million pounds, 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 relatively higher, while also considering the historic importance of the fishery to each state.

For 1994 through 2020, NMFS dealer data indicate that summer flounder total ex-vessel revenue from Maine to North Carolina ranged from a low of $22.18 million in 1996 to a high of $35.93 million in 2005 (values adjusted to 2020 dollars to account for inflation). The mean price per pound ranged from a low of $1.88 in 2002 to a high of $4.45 in 2017 (both values in 2020 dollars). In 2020, 9.11 million pounds of summer flounder were landed generating $23.46 million in total ex-vessel revenue (an average of $2.58 per pound; Figure 2).

VTR data indicate that 99% of summer flounder landings in 2020 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).

Table 20 and Figure 3 show the statistical areas with the highest commercial summer flounder catch reported on to federal VTR data. Note that federal VTR data do not account for catch from vessels that are only permitted to fish for black sea bass in state waters.

At least 100,000 pounds of summer flounder were landed by commercial fishermen in 16 ports in 8 states in 2020. These ports accounted for 89% of all 2020 commercial summer flounder landings. Point Judith, RI and Beaufort, NC were the leading ports in 2020 in pounds of summer flounder landed, while Point Judith, RI was the leading port in number of vessels landing summer flounder (Table 19). Detailed community profiles developed by the Northeast Fisheries Science Center's Social Science Branch can be found at www.mafmc.org/communities/.

Over 181 federally permitted dealers from Maine through North Carolina bought summer flounder in 2020. More dealers from New York bought summer flounder than any other state (Table 22). All dealers combined bought approximately $23.46 million worth of summer flounder in 2020.

Table 19. Previous (through 2020) and revised (effective January 2021) allocation of summer flounder commercial quota to the states.

State	Previous allocation of commercial quota	Revised allocation of commercial quota (total state 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%	0.04756%	0.333%
NH	0.00046%	0.00046%	0.333%
MA	6.82046%	6.82046%	12.375%
RI	15.68298%	15.68298%	12.375%
CT	2.25708%	2.25708%	12.375%
NY	7.64699%	7.64699%	12.375%
NJ	16.72499%	16.72499%	12.375%
DE	0.01779%	0.01779%	0.333%
MD	2.03910%	2.03910%	12.375%
VA	21.31676%	21.31676%	12.375%
NC	27.44584%	27.44584%	12.375%
Total	100%	100%	100%

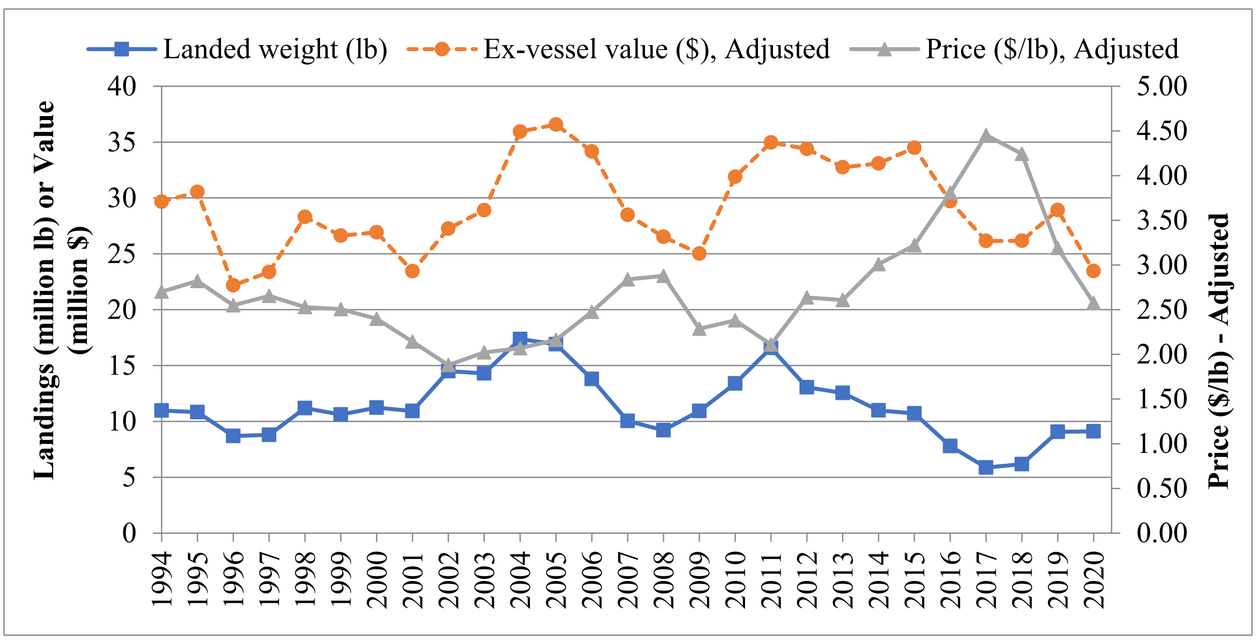

Figure 2. Landings, ex-vessel value, and price per pound for summer flounder, Maine through North Carolina, 1994-2020. Ex-vessel value and price are adjusted to real 2020 dollars using the Gross Domestic Product Price Deflator (GDPDEF).

Table 20. Statistical areas that accounted for at least 5 percent of the total summer flounder catch in 2020, with associated number of trips. Federal VTR data do not capture landings by vessels only permitted to fish in state waters.

Statistical Area	Percent of 2020 Commercial Summer Flounder Catch	Number of Trips
537	28%	1,282
616	22%	789
613	17%	1,611
612	7%	1,069
539	5%	2,212

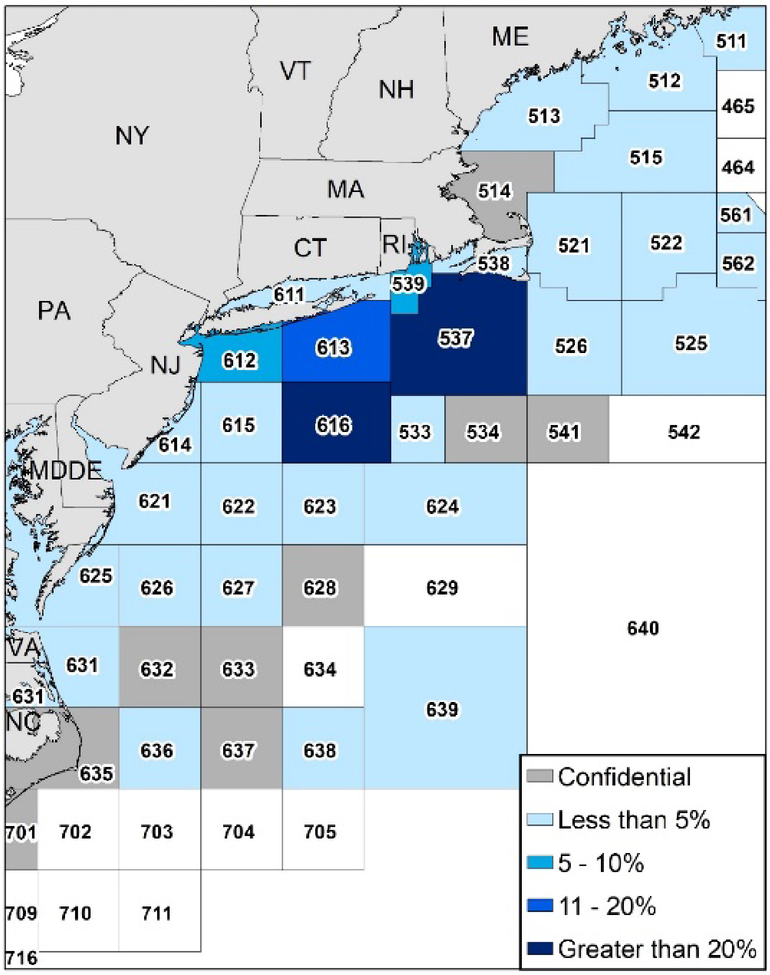

Figure 3. Proportion of summer flounder catch by NMFS statistical area in 2020 based on federal VTR data. Statistical areas marked "confidential" are associated with fewer than three vessels and/or dealers. Statistical areas with confidential data collectively accounted for less than 1% of commercial catch reported on VTRs in 2020. The amount of catch (landings and dead discards) that was not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown. For 2019, Northeast Fisheries Science Center Data ("AA tables") suggested that 8% of total commercial landings (state and federal) were not associated with a statistical area reported in federal VTRs; AA data for 2020 and beyond are not available.

Table 21. Ports reporting at least 100,000 pounds of commercial summer flounder landings in 2020, based on dealer data.

Port	Commercial summer flounder landings (lb)	% of total	Number of vessels
POINT JUDITH, RI	1,542,676	17%	129
BEAUFORT, NC	1,318,762	14%	49
PT. PLEASANT, NJ	1,172,984	13%	43
HAMPTON, VA	771,905	8%	50
NEWPORT NEWS, VA	655,960	7%	37
MONTAUK, NY	498,696	5%	63
NEW BEDFORD, MA	435,794	5%	61
BELFORD, NJ	273,612	3%	15
CAPE MAY, NJ	261,116	3%	42
OCEAN CITY, MD	190,923	2%	14
ENGELHARD, NC	181,561	2%	8
HAMPTON BAYS, NY	179,540	2%	29
STONINGTON, CT	178,621	2%	16
WANCHESE, NC	159,709	2%	6
LONG BEACH/ BARNEGAT LIGHT, NJ	159,331	2%	16
CHINCOTEAGUE, VA	130,220	1%	16

Table 22. Number of dealers per state which reported purchases of summer flounder in 2020. C = Confidential.

State	MA	RI	CT	NY	NJ	DE	MD	VA	NC
# of Dealers	27	29	12	46	30	C	5	13	19

Summer Flounder Recreational 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 ASMFC's management process and submitted to NMFS. The combined state or regional measures must achieve the same level of harvest as would a set of coastwide measures developed to adhere to the overall recreational harvest limit. If NMFS considers the combination of the state- or region- specific measures to be "equivalent" to the coastwide measures, they may then waive the coastwide regulation in federal waters. Anglers fishing in federal waters are then subject to the measures of the state in which they land summer flounder.

The recreational fishery has been managed using federal conservation equivalency each year since 2001. Since 2014, a regional approach has been used, under which the states within each region must have identical size limits, possession limits, and season length. The 2019-2021 regional conservation equivalency measures are given in Table 23. Minor seasonal adjustments were made between 2019 and 2020 in New Jersey and North Carolina. No changes to regional measures were made between 2020 and 2021.

In July 2018, MRIP released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology (i.e., a transition from a telephone-based effort survey to a mail-based effort survey). The revised estimates of catch and landings are several times higher than the previous estimates for shore and private boat modes, substantially raising the overall summer flounder catch and harvest estimates. On average, the new landings estimates for summer flounder (in pounds) are 1.8 times higher over the time series 1981-2017, and 2.3 times higher over the past 10 years (2008-2017). In 2017, new estimates of landings in pounds were 3.16 times higher than the previous estimates (Table 18). In general, the differences between the revised MRIP estimates and the prior MRIP estimates are greater in recent years compared to earlier years. This is due to a number of factors, including greater use of cell phones in recent years.

Revised MRIP estimates indicate that recreational harvest of summer flounder peaked in 1983 at 36.74 million pounds harvested, and a low in 1989 at 5.66 million pounds (Figure 1).

For-hire vessels carrying passengers in federal waters must obtain a federal party/charter permit. In 2020, 831 vessels held summer flounder federal party/charter permits. Many of these vessels also hold recreational permits for scup and black sea bass.

Over the last 10 years (2011-2020), it is estimated that approximately 83% of harvest (in numbers of fish) was taken from state waters, and 17% from federal waters. The majority of summer flounder are typically landed in New York and New Jersey (Table 24).

About 84% of recreational summer flounder harvest from 2018-2020 was from anglers who fished on private or rental boats. About 4% was from party or charter boats, and about 13% was from anglers fishing from shore. The revised MRIP methodology resulted in an increase in the amount of harvest estimated to occur from private and shore modes while making only minor changes to the estimates for party/charter modes, modifying the percentages attributable to each mode (Table 25).

Table 23. Summer flounder recreational fishing measures 2019-2021, by state, under regional conservation equivalency. Conservation equivalency regions in these years include: 1) Massachusetts, 2) Rhode Island, 3) Connecticut and New York, 4) New Jersey, 5) Delaware, Maryland, The Potomac River Fisheries Commission, and Virginia, and 6) North Carolina.

	2019-2021		
State	**Minimum Size (inches)**	**Possession Limit**	**Open Season**
Massachusetts	17	5 fish	May 23-October 9
Rhode Island (Private, For-Hire, and all other shore-based fishing sites)	19	6 fish	May 3-December 31
RI 7 designated shore sites	19	4 fish[a]	
	17	2 fish[a]	
Connecticut	19	4 fish	May 4- September 30
CT Shore Program (45 designed shore sites)	17		
New York	19		
New Jersey	18	3 fish	***2019:*** May 24- September 21 ***2020 and 2021:*** May 22-September 19
NJ Shore program site (ISBSP)	16	2 fish	
New Jersey/Delaware Bay COLREGS	17	3 fish	
Delaware	16.5	4 fish	January 1- December 31
Maryland			
PRFC			
Virginia			
North Carolina	15	4 fish	***2019:*** January 1-September 3 ***2020 and 2021:*** August 16-September 30[b]

[a] Rhode Island's shore program includes a combined possession limit of 6 fish, no more than 2 fish at 17-inch minimum size limit.

[b] North Carolina restricted the recreational season at the end of 2019 and for 2020 for all flounders in North Carolina (southern, gulf, and summer flounder) due to the need to end overfishing on southern flounder. North Carolina manages all flounder in the recreational fishery under the same regulations.

Table 24. Average state contribution (as a percentage) to total recreational landings of summer flounder (in numbers of fish), from Maine through North Carolina, 2018-2020 (revised MRIP data).

State	2018-2020 average
Maine	0%
New Hampshire	0%
Massachusetts	2%
Rhode Island	6%
Connecticut	4%
New York	23%
New Jersey	50%
Delaware	5%
Maryland	3%
Virginia	5%
North Carolina	1%
Total	100%

Table 25. The percent of summer flounder landings (in number of fish) by recreational fishing mode, Maine through North Carolina, 2011-2020 (revised MRIP data).

Year	Shore	Party/Charter	Private/Rental	Total number of fish landed (millions)
2011	4%	3%	93%	4.33
2012	9%	3%	88%	5.74
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
% of total, 2011-2020	**10%**	**4%**	**86%**	**--**
% of total, 2018-2020	**13%**	**4%**	**84%**	**--**

6.1.2 Scup Fisheries

Scup support important commercial and recreational fisheries along the US Atlantic coast. Data for all the fisheries catch components (commercial landings, commercial discards, recreational landings, and recreational discards) is available back to 1981. Commercial landings have accounted for 46% of the total catch from 2010-2019, with recreational landings accounting for 35%, commercial dead discards about 14%, and recreational dead discards about 4% (Figure 4). Commercial discard losses have accounted for about 24% of the total *commercial* catch 2010-2019, assuming a discard mortality rate of 100%. Recreational discard losses have accounted for 11% of the total *recreational* catch over 2010-2019, assuming a discard mortality rate of 15%.

Table 26 shows scup catch and landings limits from 2010 through 2021, as well as commercial and recreational landings through 2020.

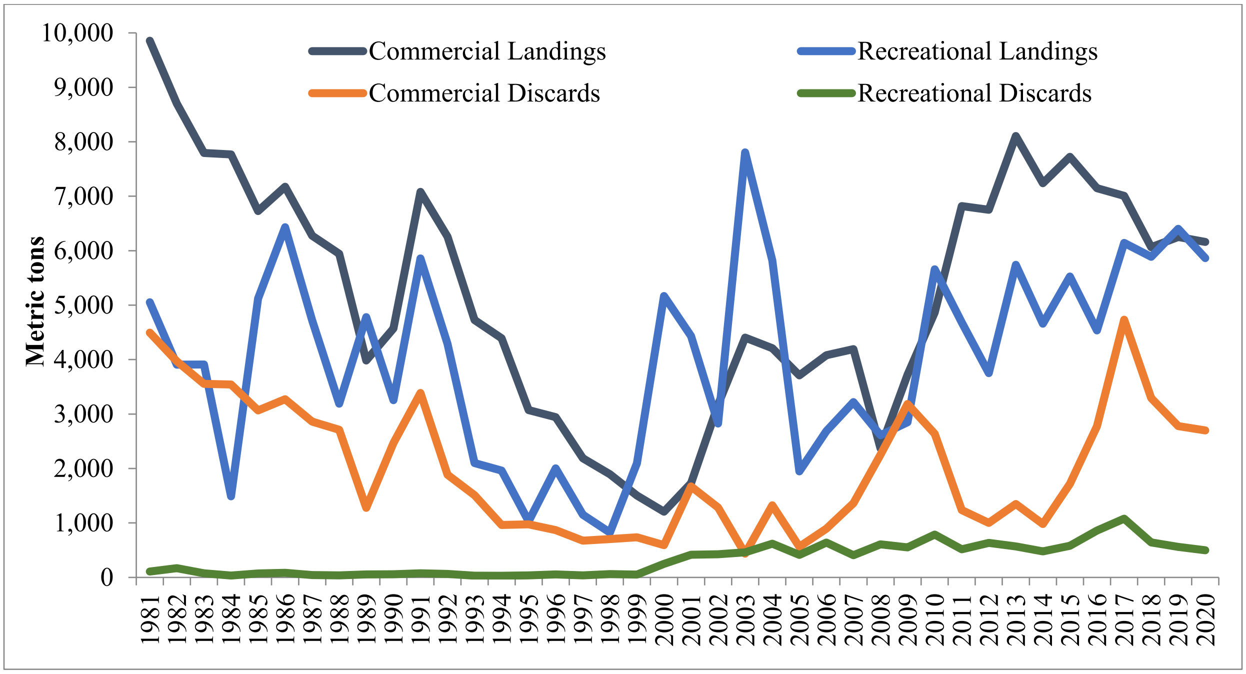

Figure 4. Scup fishery catch components (commercial landings, commercial dead discards, recreational landings, and recreational dead discards) from 1981-2020. Source: NEFSC 2021b.

Table 26. Summary of scup catch limits, landings limits, and landings, 2011 through 2021. Values are in millions of pounds unless otherwise noted.

Measure	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021[d]
ABC	51.7	40.88	38.71	35.99	33.77	31.11	28.4	39.14	36.43	35.77	34.81
TAC[a]	31.92	--	--	--	--	--	--	--	--	--	--
Commercial ACL	--	31.89	30.19	28.07	26.35	24.26	22.15	30.53	28.42	27.9	27.15
Commercial quota[b]	20.36	27.91	23.53	21.95	21.23	20.47	18.38	23.98	23.98	22.23	20.5
Commercial landings	15.03	14.88	17.87	15.96	17.03	15.76	15.45	13.38	13.78	13.58	12.93
% of com. quota landed	74%	53%	76%	72%	80%	77%	84%	55%	57%	61%	63%
Recreational ACL	--	8.99	8.52	7.92	7.43	6.84	6.25	8.61	8.01	7.87	7.66
RHL[b]	5.74	8.45	7.55	7.03	6.8	6.09	5.5	7.37	7.37	6.51	6.07
Rec. landings, old MRIP estimates	3.67	4.17	5.37	4.43	4.41	4.26	5.42	5.61	--	--	--
% of RHL harvested[c]	64%	49%	71%	63%	65%	70%	98%	76%	--	198%	274%
Rec. landings, new MRIP estimates	10.32	8.27	12.64	10.27	12.17	10	13.53	12.98	14.12	12.91	16.62

a Prior to implementation of the 2011 Omnibus ACLs and AMs Amendment, the Council specified a Total Allowable Catch (TAC). After implementation of this amendment, the Council specified ABCs instead of TACs. Both terms refer to the total catch limit in a given year. The difference between the TAC and the ABC in 2011 was due to the Council specifying a more conservative limit than that recommended by the SSC.

b Commercial quotas and RHLs reflect the removal of projected discards from the sector-specific ACLs. For 2006-2014, these limits were also adjusted for Research Set Aside.

c The percent of RHL harvested is based on a comparison of the RHL to the old MRIP estimates through 2018. The RHLs prior to 2020 did not account for the new MRIP estimates, which were released in July 2018 and were not incorporated into a stock assessment until 2019; therefore, it would be inappropriate to compare past RHLs to the revised MRIP estimates. The first year that the RHL was set using the new MRIP estimates was 2020.

d The 2021 measures were revised in 2020 by the SSC, the Council, and the Commission in accordance with the Council's changes to their risk policy. Commercial landings values for 2021 are preliminary.

Scup 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 4). In 2020, commercial fishermen landed 13.58 million pounds of scup, about 61% of the commercial quota.

As previously mentioned, 2020 commercial discard data are currently unavailable due to COVID-19 related interruptions in observer coverage. In 2019, about 6.13 million pounds of scup were discarded in commercial fisheries, representing a 9% decrease from 2018. Commercial discards increased from 2014-2017, peaking at about 10.42 million pounds in 2017. This was the highest number of discards since at least 1981 and was likely mainly due to the large 2015 year class, which is 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.

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 27). 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 28).

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 2020, about 96% of the commercial scup landings (by weight) reported by federal VTR data were caught with bottom otter trawls. Pots/traps accounted for about 2% of landings, while all other gear types each accounted for 1% or less of the 2020 commercial scup landings.

Until 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 suggest that NMFS statistical areas 537, 616, 613, 539 and 611 were responsible for the largest percentage of commercial scup catch in 2020. Statistical area 539, off Rhode Island, had the highest number of trips which caught scup (Table 19, Figure 5).

Over the past two decades, total scup ex-vessel revenue ranged from a low of $4.8 million in 2000 to a high of $12.3 million in 2015. In 2020, 13.58 million pounds of scup were landed by commercial fishermen from Maine through North Carolina. Total ex-vessel value in 2020 was $9.30 million, resulting in an average price per pound of $0.68. All revenue and price values were adjusted to 2020 dollars to account for inflation.

In general, the price of scup tends to be lower when landings are higher, and vice versa (Figure 6). This relationship is not linear and many other factors besides landings also influence price. The highest average price per pound over the past two decades was $2.20 and occurred in 1998. The lowest average price per pound was $0.61 and occurred in 2013.

Over 147 federally-permitted dealers from Maine through North Carolina purchased scup in 2020. More dealers in New York purchased scup than in any other state (Table 30).

At least 100,000 pounds of scup were landed by commercial fishermen in 14 ports in 6 states in 2020. These ports accounted for approximately 91% of all 2020 commercial scup landings. Point Judith, Rhode Island was the leading port, both in terms of landings and number of vessels landing scup (Table 31). Detailed community profiles developed by the Northeast Fisheries Science Center's Social Science Branch can be found at www.mafmc.org/communities/.

A moratorium permit is required to fish commercially for scup. In 2020, 605 vessels held commercial moratorium permits for scup.

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. 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.

Table 27. 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	% of commercial quota allocated	Possession limit
Winter I	Jan 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 – Sept 30*	38.95%	State-specific
Winter II	Oct 1 – Dec31*	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.

*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 28. 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%

Table 29. Statistical areas which accounted for at least 5% of the total commercial scup catch (by weight based on VTR data) in 2020, with associated number of trips. Federal VTR data do not capture landings by vessels only permitted to fish in state waters.

Statistical area	% of 2020 commercial scup catch	Number of trips
537	20%	894
616	20%	585
613	17%	1,252
539	11%	2,365
611	11%	2,209

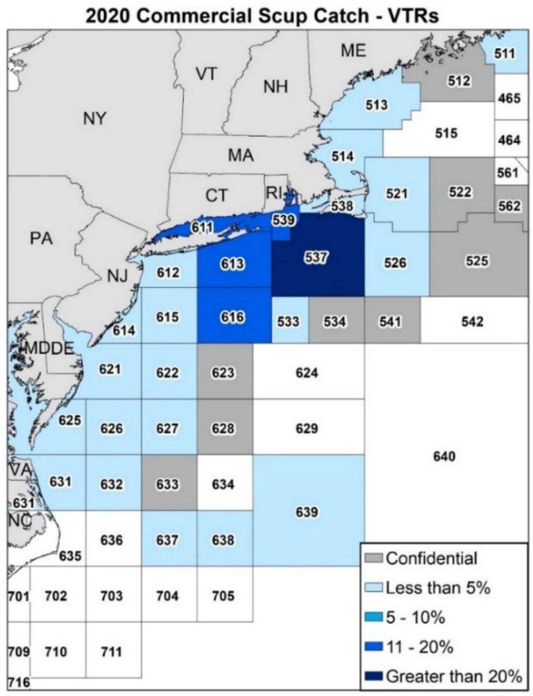

Figure 5. Proportion of scup catch by statistical area in 2020 based on federal VTR data. Statistical areas marked confidential are associated with fewer than three vessels and/or dealers. Statistical areas with confidential data collectively accounted for about 1% of the total. The amount of catch (landings and discards) not reported on federal VTRs (e.g., from vessels permitted to fish only in state waters) is unknown. In 2019, Northeast Fisheries Science Center Data ("AA tables") suggest that 18% of total commercial landings (state and federal) were not associated with a statistical area reported in federal VTRs; AA data for 2020 are not available.

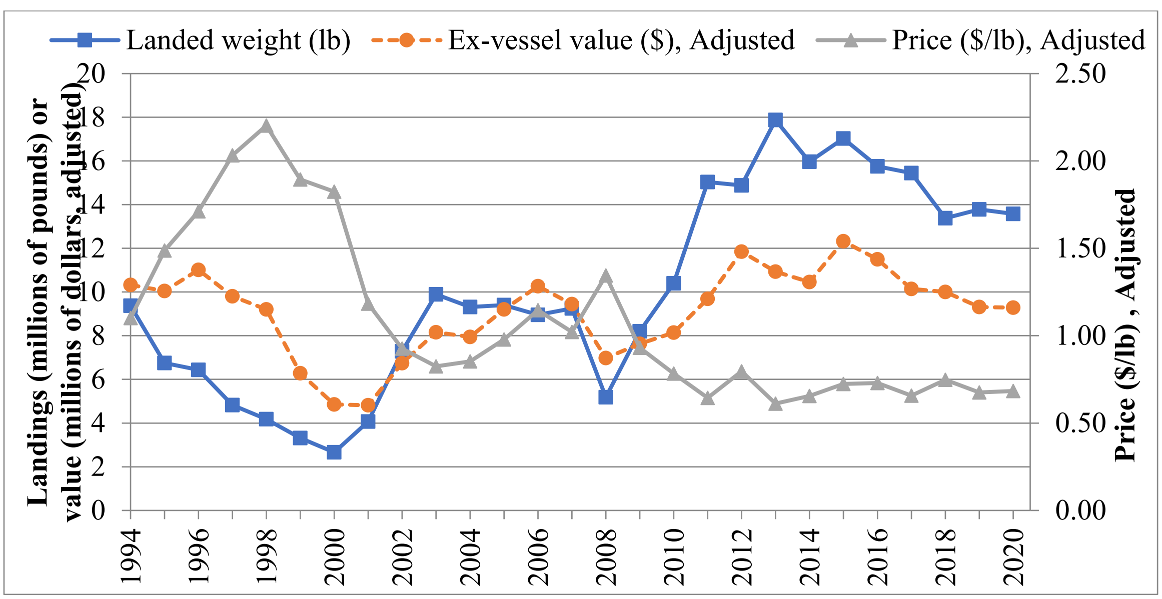

Figure 6. Landings, ex-vessel value, and price for scup from Maine through North Carolina, 1994-2020. Ex-vessel value and price are inflation-adjusted to 2020 dollars using the Gross Domestic Product Price Deflator.

Table 30. Number of dealers per state which reported purchases of scup in 2020. C = Confidential.

State	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of Dealers	C	26	26	12	38	17	C	4	10	11

Table 31. Ports reporting at least 100,000 pounds of scup landings in 2020, based on NMFS dealer data. C = Confidential.

Port	Scup landings (lb)	% of total commercial scup landings	Number of vessels
POINT JUDITH, RI	3,555,514	26%	126
MONTAUK, NY	3,236,326	24%	84
PT. PLEASANT, NJ	1,352,306	10%	32
CAPE MAY, NJ	811,353	6%	25
MATTITUCK, NY	478,300	4%	5
NEW BEDFORD, MA	474,084	3%	54
HAMPTON BAY, NY	471,657	3%	25
STONINGTON, CT	438,887	3%	21
LITTLE COMPTON, RI	403,382	3%	12
NEW LONDON, CT	301,782	2%	6
HAMPTON, VA	265,945	2%	29
SHINNECOCK, NY	174,713	1%	6
EAST HAVEN, CT	163,196	1%	7
AMMAGANSETT, NY	C	C	C

Scup Recreational Fishery

The recreational scup fishery is managed on a coast-wide basis in federal waters. Current federal regulations include a minimum size of 9 inches total length, a year-round open season, and a possession limit of 50 scup (Table 32). These measures have been unchanged since 2015.

The Commission applies a regional management approach to recreational scup fisheries in state waters, where New York, Rhode Island, Connecticut, and Massachusetts develop regulations intended to achieve 97% of the RHL. The minimum fish size, possession limit, and open season for recreational scup fisheries in state waters vary by state. State waters measures remained unchanged from 2015 through 2017. Massachusetts through New Jersey liberalized their minimum size limits and/or seasons in 2018 compared to 2017 and there were very minor changes in the state regulations from 2018 to 2019. There were no changes to state measures from 2019 to 2021 (Table 33).

Recreational data are available from MRIP. As previously stated, in July 2018, MRIP released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology, including a transition from a telephone-based effort survey to a mail-based effort survey. The RHLs and other management measures through 2019 were based on the old MRIP estimates. The new estimates of catch and landings are several times higher than the previous estimates for shore and private boat modes, substantially raising the overall scup catch and harvest estimates (Table 26). In general, the differences between the revised MRIP estimates and the prior MRIP estimates are greater in recent years compared to earlier years. This is due to a number of factors, including greater use of cell phones in recent years. Information presented in this section is based on the new estimates.

From 1981-2020, recreational catch of scup 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. Recreational anglers from Maine through North Carolina caught an estimated 27.27 million scup and landed 14.49 million scup (about 12.91 million pounds) in 2020.

The Council and Board agreed to leave the recreational bag, size, and season limits unchanged in 2020 despite an expected RHL overage. This was viewed as a temporary solution to allow more time to consider how to fully transition the management system to use of the revised MRIP data, including ongoing considerations related to the commercial/recreational allocation and the Recreational Reform Initiative. The 2020 RHL overage will be discussed in development of 2022 recreational measures but is unlikely to impact the 2022 RHL and ACL given recent biomass estimates and the Council's Accountability Measures.

Vessels carrying passengers for hire in federal waters must obtain a federal party/charter permit. In 2020, 740 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 2018 and 2020, about 93.5% of recreational scup catch (in numbers of fish) occurred in state waters and about 6.5% occurred in federal waters. New York, Connecticut, Rhode Island, Massachusetts, and New Jersey accounted for over 99.9% of recreational scup harvest in 2020 (Table 34).

About 62% of recreational scup landings (in numbers of fish) in 2020 were from anglers who fished on private or rental boats. About 12% were from anglers fishing on party or charter boats, and about 28% were from anglers fishing from shore (Table 35).

Table 32. Federal recreational measures for scup, 2005-2021.

Regulation	2005-2007	2008-2009	2010-2011	2012	2013	2014	2015-2021
Minimum size (total length)	10 in.	10.5 in.	10.5 in.	10.5 in.	10 in.	9 in.	9 in.
Possession limit	50	15	10	20	30	30	50
Open season	Jan 1–Feb 28 & Sept 18 – Nov 30	Jan 1–Feb 28 & Oct 1–Oct 31	Jun 6 – Sept 26	Jan 1 – Dec 31	Jan 1 – Dec 31	Jan 1 – Dec 31	Jan 1 – Dec 31

Table 33. State recreational fishing measures for scup in 2019-2021.

State	Minimum Size (inches)	Possession Limit	Open Season
MA (private & shore)	9	30 fish; 150 fish/vessel with 5+ anglers on board	April 13-December 31
MA (party/charter)	9	30 fish	April 13-April 30; July 1-December 31
		50 fish	May 1-June 30
RI (private & shore)	9	30 fish	January 1-December 31
RI shore program (7 designated shore sites)	8		
RI (party/charter)	9	30 fish	January 1-August 31; November 1-December 31
		50 fish	September 1-October 31
CT (private & shore)	9	30 fish	January 1-December 31
CT shore program (45 designed shore sites)	8		
CT (party/charter)	9	30 fish	January 1-August 31; November 1-December 31
		50 fish	September 1-October 31
NY (private & shore)	9	30 fish	January 1-December 31
NY (party/charter)	9	30 fish	January 1-August 31; November 1-December 31
		50 fish	September 1- October 31
NJ	9	50 fish	January 1- December 31
DE	8	50 fish	January 1-December 31
MD	8	50 fish	January 1-December 31
VA	8	30 fish	January 1-December 31
NC, North of Cape Hatteras (N of 35° 15’N)	8	50 fish	January 1-December 31

Table 34. Recreational scup harvest by state, 2018- 2020. Percentages were calculated based on numbers of fish using the revised MRIP estimates.

State	2018	2019	2020	2018-2020 average
Maine	0%	0%	0%	0%
New Hampshire	0%	0%	0%	0%
Massachusetts	22%	13%	9%	15%
Rhode Island	16%	22%	11%	16%
Connecticut	21%	17%	25%	21%
New York	37%	48%	49%	44%
New Jersey	3%	1%	6%	3%
Delaware	0%	0%	0%	0%
Maryland	0%	0%	0%	0%
Virginia	0%	0%	0%	0%
North Carolina	0%	0%	0%	0%

Table 35. Scup harvest (in numbers of fish) by recreational fishing mode, Maine - North Carolina, 2011 – 2020, based on the revised MRIP estimates. Some percentages do not sum to 100% due to rounding.

Year	Shore	Party/charter	Private/rental	Total number
2011	22%	7%	72%	7,598,242
2012	14%	16%	69%	7,334,829
2013	34%	15%	51%	11,547,027
2014	20%	15%	65%	9,488,949
2015	17%	8%	76%	11,498,783
2016	34%	10%	56%	9,143,579
2017	23%	11%	65%	13,820,611
2018	43%	9%	48%	14,545,488
2019	29%	15%	56%	14,954,157
2020	28%	10%	62%	14,493,250
2011-2020 average	26%	12%	62%	**11,442,492**
2018-2020 average	33%	12%	55%	**14,664,298**

6.1.3 Black Sea Bass Fisheries

Black sea bass support important commercial and recreational fisheries along the US Atlantic coast. Data for all fisheries catch components (commercial landings, commercial discards, recreational landings, and recreational discards) are available back to 1989.

Commercial landings accounted for 18% of the total catch from 2010-2019, with recreational landings accounting for 59%, commercial dead discards about 7%, and recreational dead discards about 16% (Figure 7). Commercial dead discards accounted for about 29% of the total *commercial* dead catch 2010-2019, assuming a discard mortality rate of 100% for trawl gear and 15% for other gears. Recreational dead discards accounted for about 21% of the total *recreational* dead catch over 2010-2019, assuming a discard mortality rate of 15%.

Table 36 shows recent catch and landings limits, and landings for commercial and recreational black sea bass fisheries.

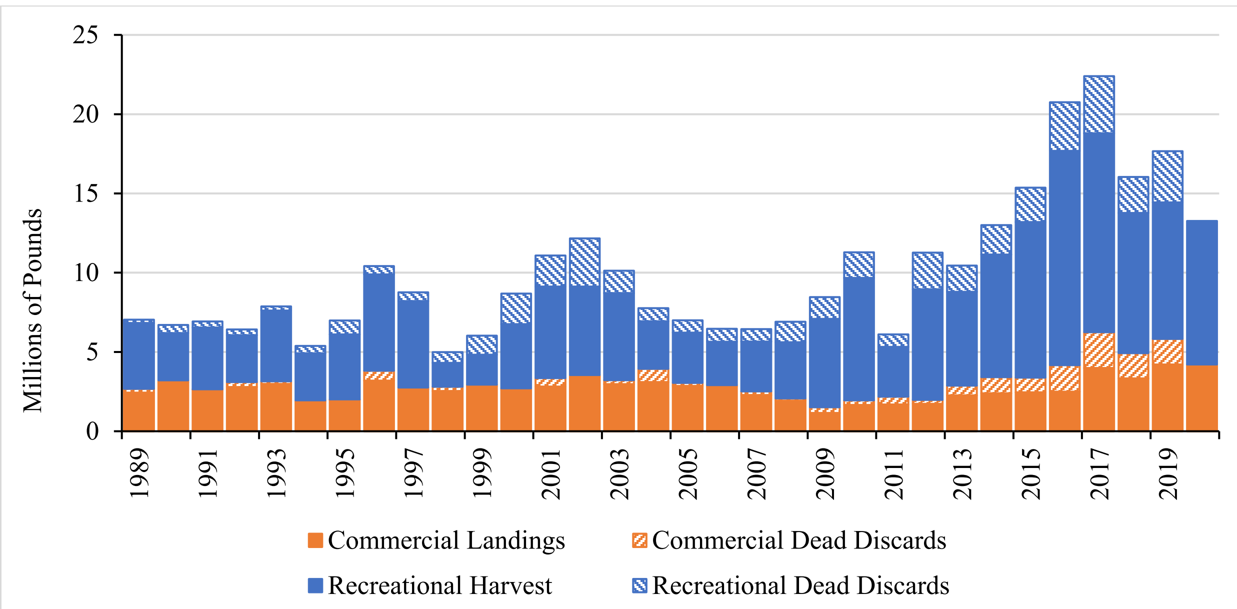

Figure 7. Components of black sea bass fishery dead catch from 1989 through 2019. **For 2020, only landings data are shown** as dead discard information for 2020 is not currently available due to COVID-19 related data gaps. Source: NEFSC 2021c through 2019. MRIP and NMFS commercial fish dealer data for 2020.

Table 36. Summary of catch and landings limits, and landings for commercial and recreational black sea bass fisheries from Maine through Cape Hatteras, NC 2010 through 2021. All values are in millions of pounds unless otherwise noted.

Management measure	2011[a]	2012[a]	2013[a]	2014[a]	2015[a]	2016[b]	2017[c]	2018[c]	2019[c]	2020[c]	2021[d]
ABC	4.50	4.50	5.50	5.50	5.50	6.67	10.47	8.94	8.94	15.07	17.45
Commercial ACL & ACT	--	1.98	2.60	2.60	2.60	3.15	5.09	4.35	4.35	6.98	9.52
Commercial quota[e]	1.71	1.71	2.17	2.17	2.21	2.71	4.12	3.52	3.52	5.58	6.09
Commercial landings	1.69	1.72	2.26	2.40	2.38	2.59	4.01	3.46	3.53	4.21	4.52[h]
% of com. quota landed	99%	101%	104%	111%	108%	96%	97%	98%	100%	75%	74%[h]
Recreational ACL & ACT	--	1.86	2.90	2.90	2.90	3.52	5.38	4.59	4.59	8.09	7.93
RHL[e]	1.78	1.32	2.26	2.26	2.33	2.82	4.29	3.66	3.66	5.81	6.34
Recreational landings, old MRIP estimates	1.17	3.18	2.46	3.67	3.79	5.19	4.16	3.82	3.46[i]	--	--
Recreational landings, revised MRIP estimates	3.27	7.04	5.68	6.93	7.82	12.05	11.50	7.92	8.61	9.05[f]	11.97
% of RHL harvested (based on old MRIP estimates through 2018; new MRIP estimates for 2020)[g]	66%	241%	109%	162%	163%	184%	97%	104%	-5%	156%	189%

[a] In 2010-2015 the ABCs were set based on a "constant catch" approach due to the lack of a peer reviewed and accepted stock assessment.

[b] The 2016 ABC was set using a data poor management strategy evaluation approach.

[c] Measures in 2017-2021 were set based on a peer reviewed and approved stock assessment. The measures for 2020 and beyond are based on a stock assessment update that incorporated the revised time series of MRIP data.

[d] The 2021 measures account for revisions to the Council's risk policy.

[e] The commercial quotas and RHLs for 2006-2014 account for deductions for the Research Set Aside program.

[f] 2020 recreational estimates were developed using imputation methods (incorporating 2018 and 2019 data) to account for missing 2020 APAIS data.

[g] The percent of RHL harvested is based on a comparison of the RHL to the previous or old MRIP estimates. The RHLs through 2019 did not account for the new MRIP estimates; therefore, it would be inappropriate to compare RHLs through 2019 to the revised MRIP estimates.

[h] 2021 commercial landings values are preliminary.

[i] Provided to the NMFS Greater Atlantic Regional Fisheries Office by the Northeast Fisheries Science Center.

Black Sea Bass Commercial Fishery

About 4.21 million pounds of black sea bass were landed in the commercial fishery in 2020. This is the highest amount of landings in the time series of available data from 1981 through 2020. Commercial black sea bass landings generally follow the coastwide quota and the 2020 quota of 5.58 million pounds was higher than any previous quota. The 2020 quota was not fully harvested in large part due to impacts of the COVID-19 pandemic on market demand. Commercial black sea bass landings were lowest in 2009, when 1.18 million pounds were landed and the quota was the lowest in the time series (1.09 million pounds; Figure 7, Table 36).

Black sea bass are a valuable commercial species. Total ex-vessel value averaged $11.57 million (adjusted to 2020 dollars) per year during 2018-2020. Landings and average price per pound were generally stable from 2010 through 2016. Landings increased in 2017 with an increase in the quota. On an annual coastwide level, the average price per pound tended to decrease with increases in landings since 2016 (Figure 8). Prices are impacted by many factors in addition to landings. The relationship between landings and price varies at the regional, state, and sometimes port level based on market demand, state-specific regulations (e.g., seasonal openings), or individual trawl trips with high landings, all of which can be inter-related.

Over 183 federally-permitted dealers from Maine through North Carolina purchased black sea bass in 2020. More dealers bought black sea bass in New York than in any other state (Table 37).

Table 38 and Figure 9 show the statistical areas with the highest commercial black sea bass catch in 2020 reported on to federal VTR data. Note that federal VTR data do not account for catch from vessels that are only permitted to fish for black sea bass in state waters.

In 2020, most commercial black sea bass landings from state and federally-permitted vessels occurred in New Jersey (26%), followed by Massachusetts (17%), Rhode Island (13%), Virginia (12%), and Maryland (10%). Landings closely follow the state quota allocations. The state allocations were revised slightly starting with the 2023 fishing year. The revised allocations are partially based on distribution of the stock. [6]

At least 100,000 pounds of black sea bass were landed in each of 11 ports in 8 states from Maine through North Carolina in 2020. These 11 ports collectively accounted for over 67% of all commercial black sea bass landings in 2020 (Table 39).

A moratorium permit is required to fish commercially for black sea bass in federal waters. In 2020, 710 federal commercial black sea bass permits were issued.

A minimum commercial black sea bass size limit of 11 inches total length has been in place in federal waters since 2002. There is no federal waters black sea bass possession limit; however, states set possession limits for state waters.

About 72% of commercial black sea bass landings reported on federal VTRs in 2020 were caught with bottom otter trawl gear, 24% with pots/traps, and 3% with hand lines. Other gear types each accounted for 1% or less of total commercial landings reported on VTRs in 2020. It is important

[6] More information on the revised commercial state allocations is available here: https://www.mafmc.org/newsfeed/2021/council-revises-black-sea-bass-commercial-state-allocation-recommendations.

to note that federal VTR data do not account for landings of black sea bass by vessels that are only permitted to fish in state waters. Some gear types (e.g., handlines) are more prevalent in state waters than in federal waters.

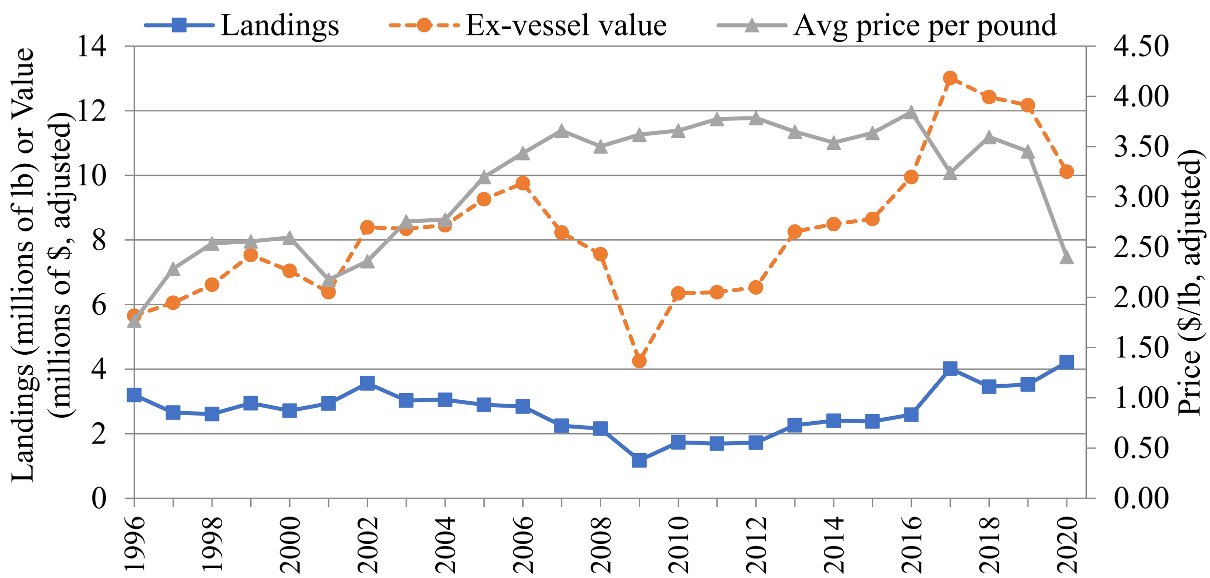

Figure 8. Landings, ex-vessel value, and average price for black sea bass, ME-NC, 1996-2020. Ex-vessel value and price are inflation-adjusted to 2020 dollars using the Gross Domestic Product Price Deflator.

Table 37. Number of dealers, by state, reporting purchases of black sea bass in 2020. C = confidential.

State	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of dealers	C	0	28	28	12	43	28	4	8	13	19

Table 38. Statistical areas that accounted for at least 5% of the total commercial black sea bass dead catch (landings and dead discards) in 2020 based on federal VTRs, with associated number of trips. Federal VTR data do not capture landings by vessels only permitted to fish in state waters.

Statistical Area	Percent of 2020 Commercial Black Sea Bass Catch	Number of Trips
616	38%	587
621	8%	222
613	8%	1,092
615	8%	168
537	6%	828
539	5%	2,102

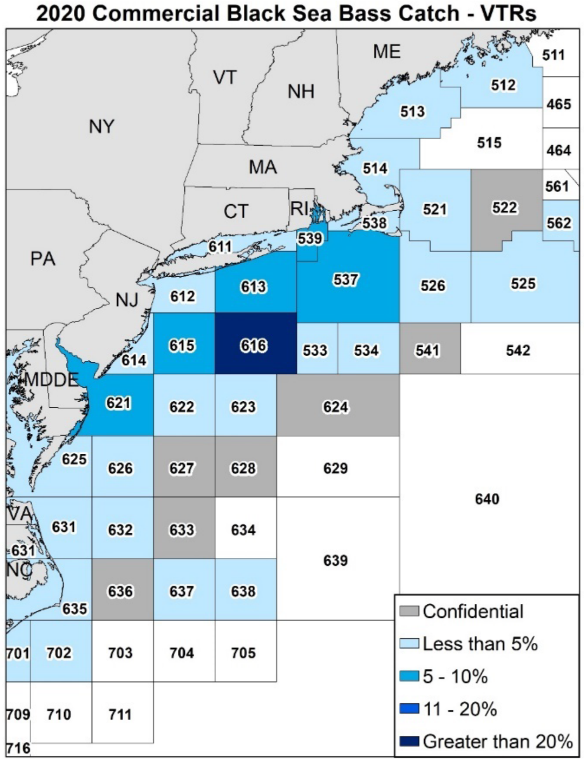

Figure 9. Proportion of commercial black sea bass dead catch (landings and dead discards) by statistical area in 2020 based on federal VTR data. Confidential areas are associated with fewer than three vessels and/or dealers. Confidential areas collectively accounted for less than 1% of commercial catch reported on VTRs in 2020. The amount of catch not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown. In 2019, Northeast Fisheries Science Center Data ("AA tables") suggest that 20% of total commercial landings (state and federal) were not associated with a statistical area reported in federal VTRs; AA data for 2020 are not available.

Table 39. Ports reporting at least 100,000 pounds of black sea bass landings in 2020, associated number of vessels, and percentage of total commercial landings. C = confidential.

Port name	Pounds of black sea bass landed	% of total commercial black sea bass landed	Number of vessels landing black sea bass
Point Pleasant, NJ	682,754	16%	37
Ocean City, MD	396,825	9%	9
Point Judith, RI	395,813	9%	148
New Bedford, MA	289,393	7%	57
Montauk, NY	229,432	5%	91
Cape May, NJ	211,373	5%	30
Hampton, VA	208,316	5%	23
Newport News, VA	157,717	4%	14
Beaufort, NC	141,486	3%	42
Sea Isle City, NJ	131,149	3%	9
Lewes, DE	C	C	C

Black Sea Bass Recreational Fishery

As previously stated, in July 2018, MRIP released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology, including a transition from a telephone-based effort survey to a mail-based effort survey. The RHLs and other management measures through 2019 were based on the old MRIP estimates. The new estimates of catch and landings are several times higher than the previous estimates for shore and private boat modes, substantially raising the overall black sea bass catch and harvest estimates. For example, the revised MRIP recreational catch estimates for black sea bass for 1981-2017 increased by an average of 73%, ranging from +9% in 1995 to +161% in 2017 (Table 36). In general, the differences between the revised MRIP estimates and the prior MRIP estimates are greater in recent years compared to earlier years. This is due to a number of factors, including greater use of cell phones in recent years. Information presented in this section is based on the new estimates. Recreational catch and landings limits did not account for the revised MRIP data until 2020.

The coastwide 2016 and 2017 MRIP estimates for black sea bass are viewed as outliers by the Monitoring and Technical Committees and the Scientific and Statistical Committee due to the influence of very high estimates in individual states and waves (i.e., New York 2016 wave 6 for all modes and New Jersey 2017 wave 3 for the private/rental mode). Steps have been taken to address uncertainty in these specific estimates in the stock assessment and in management.

Recreational harvest in 2020 was estimated at 9.05 million pounds. This represents a 56% overage of the 2020 RHL (Figure 7, Table 36). The Council and Board agreed to leave the recreational bag, size, and season limits unchanged in 2020 and 2021 despite additional expected RHL overages. This was viewed as a temporary solution to allow more time to consider how to fully transition the management system to use of the revised MRIP data, including through this amendment and the ongoing Recreational Reform Initiative.[7]

In 2020, 56% of black sea bass harvested by recreational fishermen from Maine through North Carolina (in numbers of fish) were caught in state waters and 44% in federal waters. Most of the recreational harvest in 2020 was landed in New York (30%), followed by New Jersey (19%), Rhode Island (15%), and Massachusetts (14%; Table 40).

For-hire vessels carrying passengers in federal waters must obtain a federal party/charter permit. In 2020, 850 vessels held a federal party/charter permit.

About 86% of the recreational black sea bass harvest in 2020 came from anglers fishing on private or rental boats, about 12% from anglers aboard party or charter boats, and 2% from anglers fishing from shore (Table 41). Party and charter fishing was restricted in all states for part of 2020 due to the COVID-19 pandemic.

The Council develops coast-wide regulations for the recreational black sea bass fishery in federal waters, including a minimum fish size limit, a possession limit, and open and closed seasons (Table 42). The Commission and member states develop recreational measures in state waters (Table 43). These measures were virtually unchanged during 2018-2021. Measures were revised in 2022 with

[7] More information on the Recreational Reform Initiative is available here: https://www.mafmc.org/actions/recreational-reform-initiative

the goal of achieving an approximately 21% reduction in harvest compared to 2018-2021 average harvest to prevent exceeding the 2022 RHL (Table 36). The Council and Board agreed to use the conservation equivalency process to waive the federal waters recreational black sea bass measures in favor of state measures for the first time in 2022.

Table 40. State-by-state contribution to total recreational harvest of black sea bass (in number of fish), Maine through Cape Hatteras, North Carolina, based on the 2018 - 2020 average.

State	Average Proportion of Harvest, 2018-2020
Maine	0.0%
New Hampshire	0.0%
Massachusetts	14.1%
Rhode Island	14.6%
Connecticut	10.3%
New York	29.4%
New Jersey	21.3%
Delaware	2.2%
Maryland	2.9%
Virginia	4.7%
North Carolina	0.5%

Table 41. Percent of total recreational black sea bass harvest (in numbers of fish) by recreational fishing mode, Maine through Cape Hatteras, North Carolina, 2011-2020.

Year	Shore	Party/charter	Private/rental	Total Number of Fish
2011	3%	21%	76%	1,782,519
2012	1%	19%	80%	3,690,188
2013	2%	9%	89%	3,014,535
2014	3%	16%	81%	3,806,448
2015	0%	12%	88%	4,392,452
2016	4%	9%	88%	5,841,460
2017	1%	9%	90%	5,704,072
2018	1%	12%	86%	3,992,628
2019	3%	18%	79%	4,377,491
2020	2%	12%	86%	4,227,860
2011-2020 avg	**2%**	**13%**	**85%**	**4,082,965**

Table 42. Federal black sea bass recreational measures, Maine - Cape Hatteras, NC, 2007 - 2020.

Year	Min. size	Bag limit	Open season
2007-2008	12”	25	Jan 1 - Dec 31
2009	12.5”	25	Jan 1 - Oct 5
2010-2011	12.5”	25	May 22 - Oct 11; Nov 1 - Dec 31
2012	12.5”	25	May 19 - Oct 14; Nov 1 - Dec 31
2013	12.5”	20	Jan 1 - Feb 28; May 19 - Oct 14; Nov 1 - Dec 31
2014	12.5”	15	May 19 - Sept 18; Oct 18 - Dec 31

2015-2017	12.5”	15	May 15 - Sept 21; Oct 22 - Dec 31
2018-2021	12.5”	15	Feb 1 - 28; May 15 - Dec 31

Table 43. State waters black sea bass recreational measures in 2018-2021. The only changes made during these years were to maintain a Saturday opening (Massachusetts) or to account for harvest in the February opening (Virginia and North Carolina).

State	Min. Size	Bag Limit	Open Season
Maine	13”	10	May 19 - Sept 21; Oct 18 - Dec 31
New Hampshire	13”	10	Jan 1 - Dec 31
Massachusetts	15”	5	2018: May 19 - Sept 12
			2019 & 2020: May 18 - Sept 8
			2021: May 18 – Sept 8
Rhode Island	15”	3	Jun 24 - Aug 31
		7	Sept 1 - Dec 31
Connecticut private & shore	15”	5	May 19 - Dec 31
CT authorized party/charter monitoring program vessels	15”	5	May 19 - Aug 31
		7	Sept 1- Dec 31
New York	15”	3	Jun 23 - Aug 31
		7	Sept 1- Dec 31
New Jersey	12.5”	10	May 15 - Jun 22
		2	Jul 1- Aug 31
		10	Oct 8 - Oct 31
	13”	15	Nov 1 - Dec 31
Delaware	12.5”	15	May 15 - Dec 31
Maryland	12.5”	15	May 15 - Dec 31
Virginia	12.5”	15	2018: Feb 1 - 28; May 15 - Dec 31
			2019: Feb 1-28; May 15-31; June 22-Dec 31
			2020: Feb 1 - 29; May 29 - Dec 31
			2021: Feb 1-28; May 15-May 31; Jun 16-Dec 31
North Carolina, North of Cape Hatteras (35° 15’N)	12.5	15	2018: Feb 1 - 28; May 15 - Dec 31
			2019: Feb 1 - 28; May 17 - Dec 31
			2020: Feb 1 - 29; May 17 - Nov 30
			2021: May 15 - Dec 31

6.2 SUMMER FLOUNDER, SCUP, AND BLACK SEA BASS

6.2.1 Summer Flounder

Summer flounder are a demersal flatfish found in pelagic waters, demersal waters, saltmarsh creeks, seagrass beds, mudflats, and open bay areas. Spawning occurs during the fall and winter over the open ocean over the continental shelf. Larvae and postlarvae are transported toward coastal areas by prevailing water currents, entering coastal and estuarine nursery areas. Development of post larvae and juveniles occurs primarily within bays and estuarine areas. 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. Most fish are sexually mature by age 2. Summer flounder exhibit sexual dimorphism by size; most of the largest fish are females. Females can attain lengths over 90 cm (36 in) and weights up to 11.8 kg (26 lbs.; NEFSC 2017). Recent NEFSC trawl survey data indicate that while female summer flounder grow faster (reaching a larger size at the same age), the sexes attain about the same maximum age (currently age 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 an 72 cm fish (likely a female) and 20 for a 57 cm fish (likely a male; M. Terceiro, personal communication, May 2022).

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).

In June 2021, the NEFSC provided a management track assessment update for summer flounder with data through 2019 (NEFSC 2021a). The update adds two additional years of data to the model developed for the most recent benchmark stock assessment, which was developed through the 66th SAW/SARC in 2018 using data through 2017 (NEFSC 2019b). The 2018 assessment incorporated the revised time series of recreational catch from MRIP, which is 30% higher on average compared to the previous summer flounder estimates for 1981-2017. While fishing mortality rates were not strongly affected by incorporating these revisions, increased recreational catch resulted in increased estimates of stock size compared to past assessments.

The 2021 management track assessment update made minor revisions to the biological reference points for spawning stock biomass and fishing mortality. Assessment update results indicate that the summer flounder stock was not overfished and overfishing was not occurring in 2019. SSB has generally decreased since 2003 and was estimated to be 104.49 million lb (47,397 mt) in 2019, about 86% of the updated biomass target reference point $SSB_{MSY\ proxy}$ = 121.73 million lb (55,217 mt). This estimate is 72% above the overfished threshold of ½ $SSB_{MSY\ proxy}$ = ½ $SSB_{35\%}$ = 60.87 million lb (27,609 mt; Figure 10). There is a 90% chance that SSB in 2019 was between 42,000 and 54,000 mt.

Fishing mortality on the fully selected age 4 fish ranged between 0.746 and 1.624 during 1982-1996 and then decreased to 0.245 in 2007. Since 2007 the fishing mortality rate (F) has increased, and in 2019 was estimated at 0.340, 81% of the updated fishing mortality threshold reference point ($F_{MSY\ proxy}$ = $F_{35\%}$ = 0.422; Figure 11). There is a 90% probability that the fishing mortality rate in 2019 was between 0.280 and 0.396.

The average recruitment from 1982 to 2019 is 53 million fish at age 0. Recruitment of juvenile summer flounder was below-average from 2011-2017, ranging from 31 to 45 million fish and averaging 36 million fish. The driving factors behind this period of below average recruitment have not been identified. The 2018 year class is above average at an estimated 61 million fish, which is the largest recruitment estimate since 2009, while the 2019 year class is below average at 49 million fish.

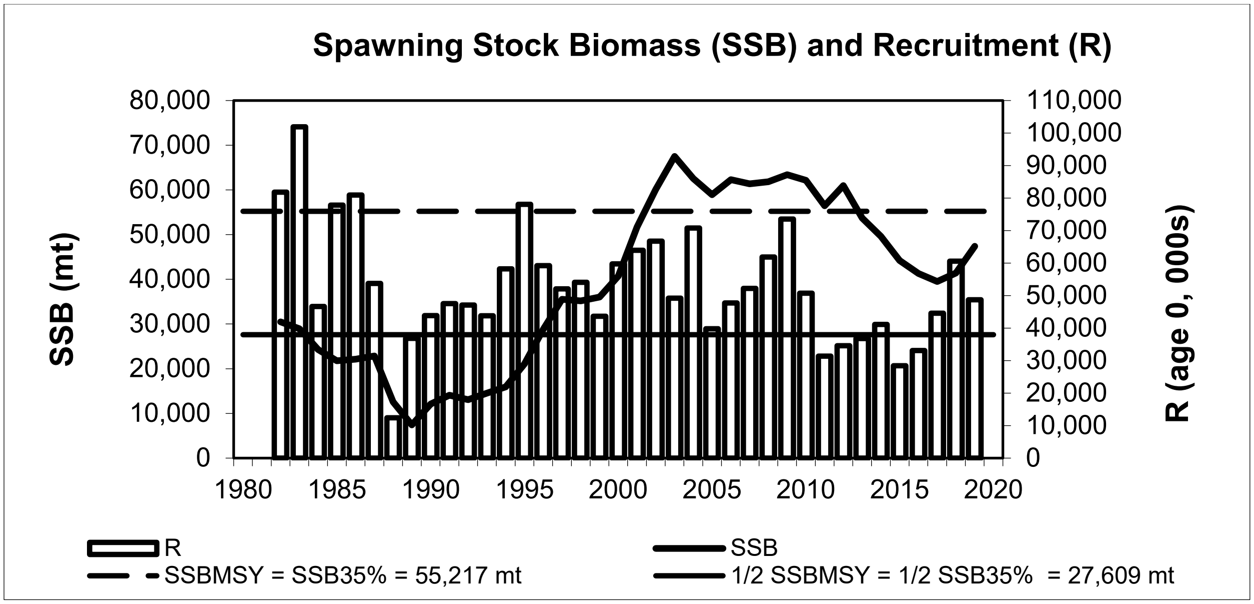

Figure 10. Summer flounder spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars),1982-2019. The horizontal dashed line is the updated target biomass reference point. The horizontal solid line is the updated threshold biomass reference point.

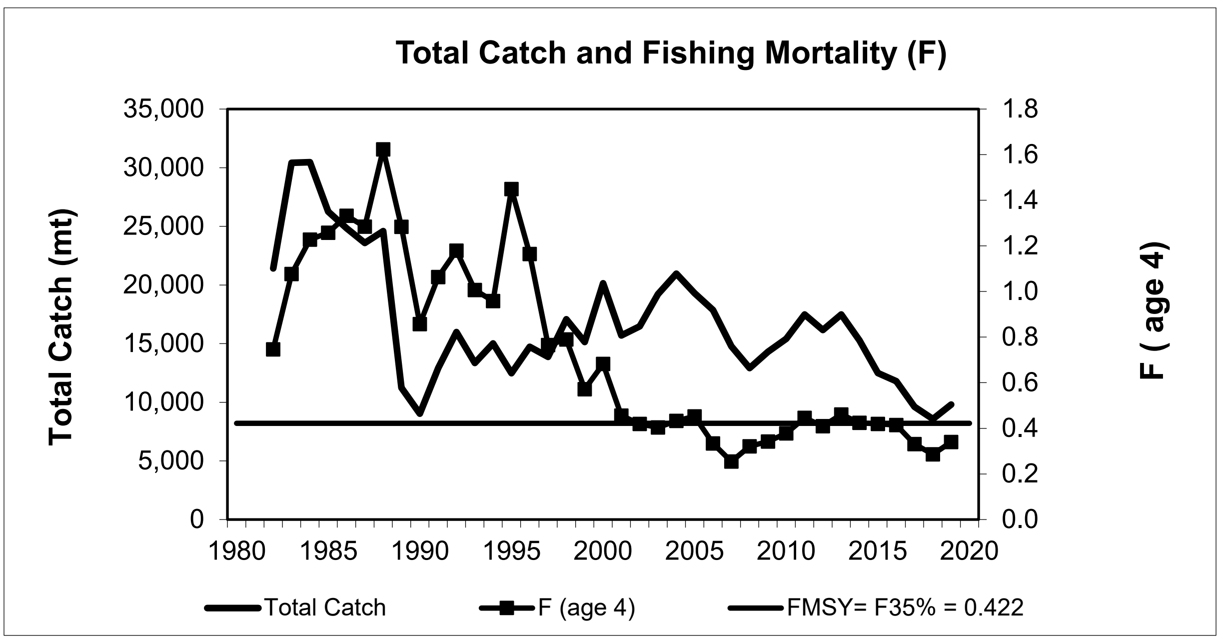

Figure 11. Total fishery catch (metric tons; mt; solid line) and fully-recruited fishing mortality (F, peak at age 4; squares) of summer flounder, 1982-2019. The horizontal solid line is the updated fishing mortality reference point.

6.2.2 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).

A scup management track stock assessment was peer reviewed and accepted in June 2021. This assessment retained the model structure of the previous benchmark stock assessment, completed in 2015, and incorporated fishery catch and fishery-independent survey data through 2019. The following information is based on the prepublication draft of the July 2021 management track assessment prepared for use by the Council and SSC (NEFSC 2021b).

The updated fishing mortality reference point is F_{MSY} proxy = $F_{40\%}$ = 0.200 and the updated biomass reference point is SSB_{MSY} proxy = $SSB_{40\%}$ = 198.458 million pounds (90,019 mt). The minimum biomass threshold of ½ SSB_{MSY} proxy = ½ $SSB_{40\%}$ = 99.230 million pounds (45,010 mt).

According to the 2021 assessment, the scup stock north of Cape Hatteras, North Carolina extending north to the US-Canada border was not overfished and overfishing was not occurring in 2019. Spawning stock biomass (SSB) was estimated to be about 389 million pounds (176,404 mt) in 2019, about 2 times the SSB_{MSY} proxy reference point of 198.458 million pounds (90,019 mt, Figure 12), meaning that the stock was not overfished in 2019. Fishing mortality on fully selected age 4 scup was 0.136 in 2019, about 68% of the F_{MSY} proxy reference point of 0.200 (Figure 13), meaning that overfishing was not occurring in 2019. The 2015 year class is estimated to be the largest in the time series at 415 million fish, while the 2017-2019 year classes are estimated to be below average, with the 2019 year class as the smallest in the time series (Figure 12).

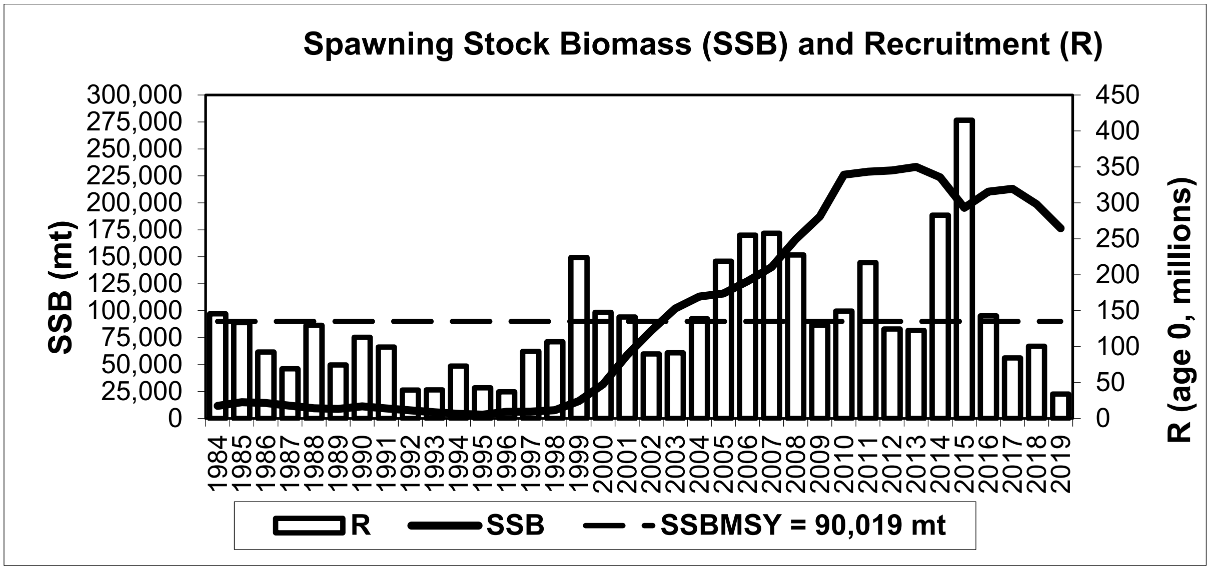

Figure 12. Scup SSB and recruitment at age 0, 1984-2019 from the 2021 management track stock assessment (NEFSC 2021b).

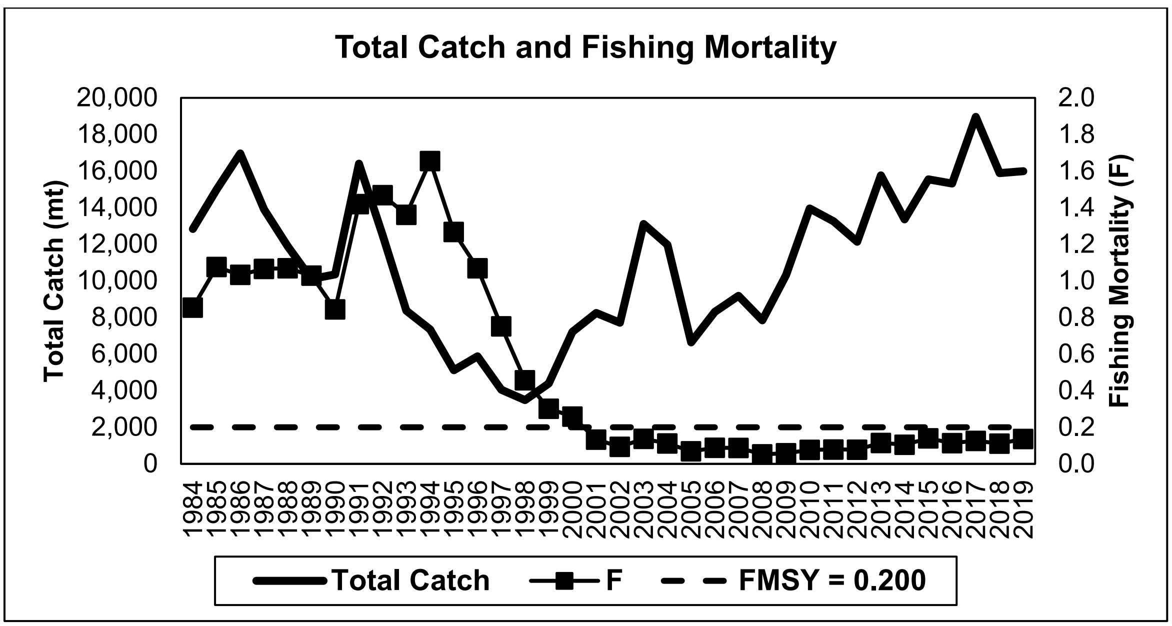

Figure 13. Scup total catch and fishing mortality, 1984-2019 from the 2021 management track stock assessment (NEFSC 2021b).

6.2.3 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 the focus of the black sea bass sections of this document. The stocks in the South Atlantic and Gulf of Mexico are not managed by the Commission and Mid-Atlantic Council.

Adult and juvenile black sea bass are mostly found on the continental shelf. Young of the year (i.e., fish less than one year old) can be found in estuaries. Adults show strong site fidelity during the summer and prefer to be near structures such as rocky reefs, coral patches, cobble and rock fields, mussel beds, and shipwrecks.

Black sea bass migrate to offshore wintering areas starting in the fall. During the winter, young of the year are distributed across the shelf and adults and juveniles are found near the shelf edge. During the fall, adults and juveniles off New York and north move offshore and travel along the shelf edge to as far south as Virginia. Most return to northern inshore areas by May. Black sea bass off New Jersey to Maryland travel southeast to the shelf edge during the late fall. Black sea bass off Virginia and Maryland travel a shorter distance due east to the shelf edge, which is closer to shore than in areas to the north (Drohan et al. 2007, NEFSC 2017).

Black sea bass are protogynous hermaphrodites, meaning they are born female and some later transition to males, usually around 2-5 years of age. Male black sea bass are either of the dominant or subordinate type. Dominant males are larger than subordinate males and develop a bright blue nuccal hump during the spawning season. About 25% of black sea bass are male at 15 cm (about 6 inches), with increasing proportions of males at larger sizes until about 50 cm, when about 70-80% of black sea bass are male. Results from a simulation model highlight the importance of subordinate males in the spawning success of this species. This increases the resiliency of the population to exploitation compared to other species with a more typical protogynous life history. About half of black sea bass are sexually mature by 2 years of age and 21 cm (about 8 inches) in length. Black sea bass reach a maximum size of about 60 cm (about 24 inches) and a maximum age of about 12 years (NEFSC 2017, Blaylock and Shepherd 2016).

Black sea bass in the mid-Atlantic spawn in nearshore continental shelf areas at depths of 20-50 meters. Spawning usually takes place between April and October. During the summer, adult black sea bass share habitats with tautog, hakes, conger eel, sea robins and other migratory fish species. Essential fish habitat for black sea bass consists of pelagic waters, structured habitat, rough bottom, shellfish, sand, and shell, from the Gulf of Maine through Cape Hatteras, North Carolina. Juvenile and adult black sea bass mostly feed on crustaceans, small fish, and squid. The NEFSC food habits database lists spiny dogfish, Atlantic angel shark, skates, spotted hake, summer flounder, windowpane flounder, and monkfish as predators of black sea bass (Drohan et al. 2007).

A black sea bass management track stock assessment was peer reviewed and accepted in June 2021 (NEFSC 2021c). This assessment found that the black sea bass stock north of Cape Hatteras, North Carolina was not overfished and overfishing was not occurring in 2019 compared to revised reference points. Spawning stock biomass in 2019 was 65.63 million pounds (29,769 mt, adjusted for retrospective bias), 2.1 times the updated biomass reference point (i.e., $SSB_{MSY\ proxy}$ = $SSB_{40\%}$=31.84 million pounds/14,441 mt; Figure 14). The median fishing mortality rate on fully selected ages 6-7 fish in 2019 was 0.39 (adjusted for retrospective bias), 85% of the updated fishing mortality threshold reference point (i.e., $F_{MSY\ proxy} = F_{40\%} = 0.46$; Figure 15).

The 2011 year class was estimated to be the largest in the time series at 170.4 million fish. The 2015 year class was the second largest at 93.8 million fish. Recruitment of the 2017 year class as age 1 in 2018 was estimated at 14.9 million, well below the 1989-2019 average of 39 million fish. However, the 2018 year class was above average at an estimated 46.2 million fish (79.4 million with the retrospective adjustment) at age 1 in 2019 (Figure 14; NEFSC 2021c).

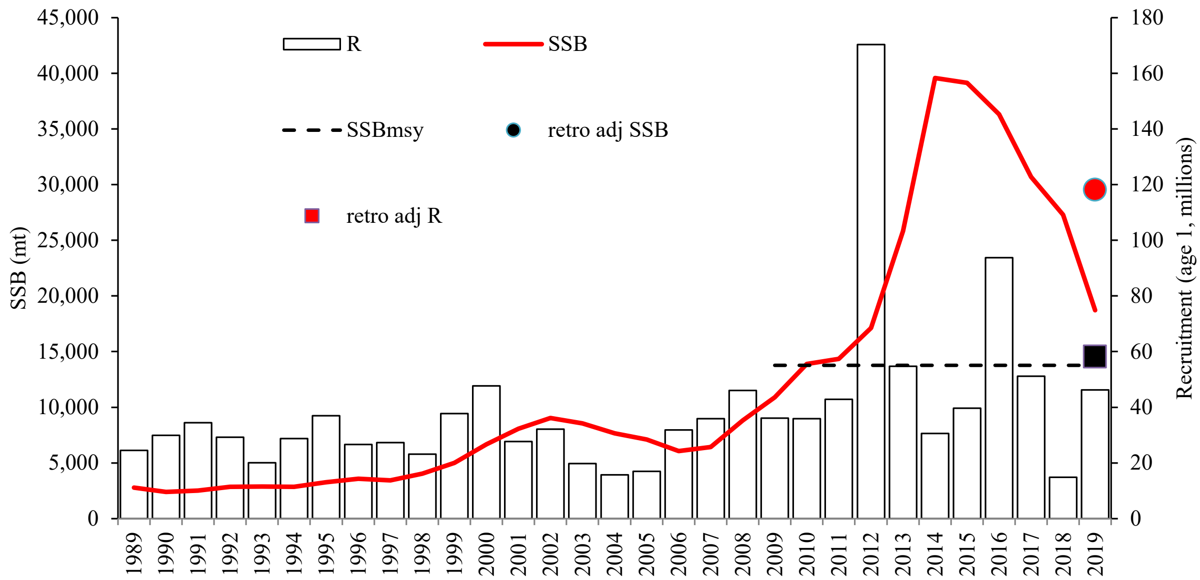

Figure 14. Black sea bass spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars) by calendar year. The horizontal dashed line is the updated SSBMSY proxy = SSB40% =14,441 mt. Source: NEFSC, personal communication. Note that SSB and recruitment estimates were adjusted for a retrospective pattern in the stock assessment. The un-adjusted values are shown in this figure. Adjusted SSB in 2019 for comparison against the SSBMSY proxy reference point is 29,769 mt. The adjusted recruitment value for 2019 is 79.4 million.

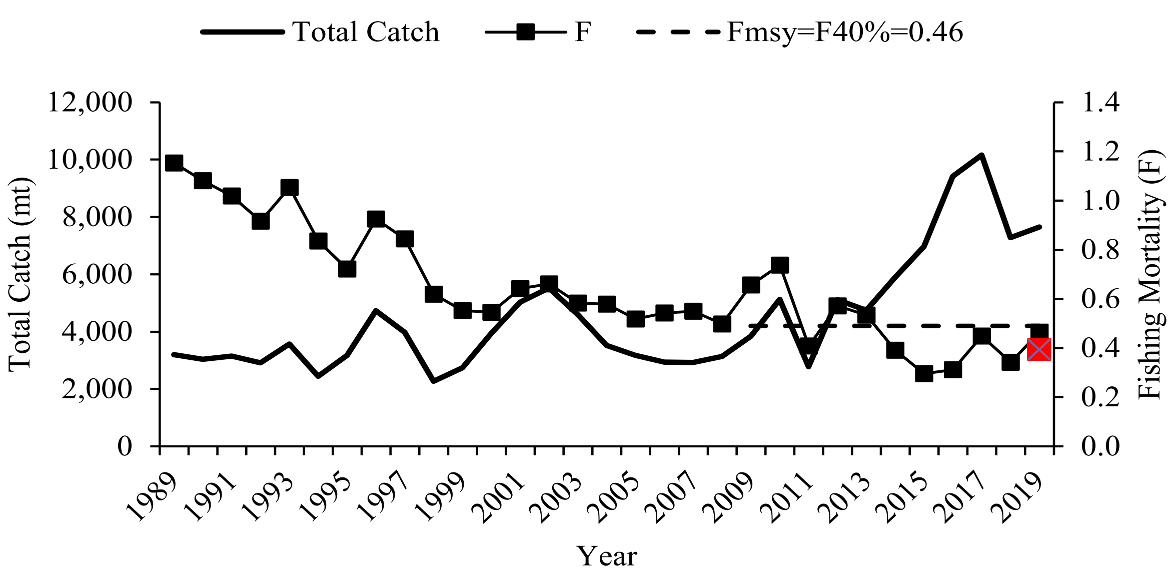

Figure 15. Total fishery catch (metric tons; mt; solid line) and fishing mortality (F, peak at age 6-7; squares) for black sea bass. The horizontal dashed line is the updated F_{MSY} proxy = $F_{40\%}$ = 0.46. The red square Is the retrospectively adjusted fishing mortality value for 2019. Source: NEFSC 2021c.

6.3 NON-TARGET SPECIES

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

6.3.1 Identification of Major 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. In some circumstances, scup can be a non-target species in the black sea bass fishery and vice versa. 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, coverage rates which vary by gear type, 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, scup, and black sea bass fisheries. For these reasons, a combination of quantitative and qualitative data were used here to identify relevant non-target species.

Northeast Fisheries Observer Program (NEFOP) data from 2015-2019[8] were analyzed to identify species caught on observed commercial trips for which summer flounder, scup, or black sea bass 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, spiny dogfish, scup, northern sea robin, and black sea bass. The most common non-target species in the scup fishery include spiny dogfish, little skate, northern sea robin, black sea bass, and summer flounder. The most common non-target species in the black sea bass fishery include sea robins (striped, northern, and unknown), spiny dogfish, scup, and little skate (Table 44). Non-target species typically comprised a small portion of the overall catch on these trips, with the exception of little skate in the summer flounder fishery, spiny dogfish in all three fisheries, and striped sea robin in the black sea bass fishery. All the species in Table 44, with the exception of 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.

[8] Due to COVID-19, observer coverage was suspended for a large portion of 2020; therefore, complete 2020 observer data are not available. Complete 2021 observer data will not be available until later in 2022.

Table 44. Percent of non-target species caught in observed trawls where summer flounder, scup or black sea bass made up at least 75% of the observed landings, 2015-2019. Only those non-target species comprising at least 2% of the non-target catch for at least one species are listed.

Species	% of total catch on summer flounder observed directed trips, 2015-2019[a]	% of total catch on scup observed directed trips, 2015-2019[a]	% of total catch on black sea bass observed directed trips, 2015-2019[a]
SKATE, LITTLE	23.4%	3.3%	2.0%
DOGFISH, SPINY	6.2%	9.3%	14.1%
SCUP	2.1%	--	5.2%
SEA ROBIN, NORTHERN	5.0%	2.2%	3.3%
SEA BASS, BLACK	1.8%	2.4%	--
SEA ROBIN, STRIPED	1.8%	0.5%	12.8%
FLOUNDER, SUMMER (FLUKE)	--	2.2%	1.3%
SEA ROBIN, (UNKNOWN)	0.1%	0%	3.4%
DOGFISH, SMOOTH	2.0%	0.9%	0.9%
MONKFISH	2.4%	0.3%	0.5%
SKATE, BARNDOOR	2.6%	0.5%	0.3%
SKATE, CLEARNOSE	6.4%	0.2%	0.2%

[a] Percentages shown are aggregate totals over 2015-2019 and do not reflect the percentages of non-target species caught on individual trips.

A species guild approach was used to examine non-target species interactions in the recreational summer flounder, scup, and black sea bass fisheries from Maine through Virginia. This analysis identified species that had the strongest associations on recreational trips from 2017-2021 (2021 MRIP data are preliminary and do not include wave 6). 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. Scup, sea robins, summer flounder, bluefish, and tautog where highly correlated with black sea bass recreational catch (J. Brust, personal communication March 2022).

Management measures for both the commercial and recreational non-target species managed by the Mid-Atlantic or New England Fishery Management Councils (i.e., all species listed in this section except sea robins, tautog, and smooth dogfish) include AMs to address ACL overages through reductions in landings limits in following years. AMs for these species take discards into account. These measures help to mitigate negative impacts from discards in the commercial and recreational fisheries for summer flounder, scup, and black sea bass.

6.3.2 Description and Status of Major Non-Target Species

The stock status of major non-target species is described below. As indicated above, summer flounder, scup, and black sea bass are often caught together and for some commercial and recreational trips, one or two of these species could be considered non-target species of the other. Stock status for summer flounder, scup, and black sea bass is described in Sections 6.1.1 through 6.1.3 and not repeated here. None of these three stocks are currently overfished or undergoing overfishing.

Commercial Non-Target Species

The status of commercial non-target species relevant to this action is described below and summarized in Table 45.

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 2018, which found that the stock is not overfished nor subject to overfishing. SSB was estimated to be 67% of the target B_{MSY} proxy in 2017 (NEFSC 2018).

Monkfish are jointly managed by the MAFMC and the NEFMC. The most recent operational assessment was in 2019, which failed peer review and invalidated previous 2010 benchmark assessment results. Therefore, the stock status for monkfish is currently unknown (NEFSC 2019a).

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 skates are the main skate species identified as non-target species in the summer flounder, scup and black sea bass 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 2021). None of the skate species identified as non-target species in the commercial summer flounder, scup, and black sea bass fisheries (i.e., little, clearnose, and barndoor skates) are overfished or experiencing overfishing (NEFMC 2021).

Northern and striped sea robins are not currently managed and have not been assessed, therefore their overfished and overfishing status is unknown (Table 45).

Table 45. Most recent stock status information for commercial non-target species identified in this action.

Species	Stock biomass status	Fishing mortality rate status
SUMMER FLOUNDER	Not overfished	Overfishing not occurring
SCUP	Not overfished	Overfishing not occurring
BLACK SEA BASS	Not overfished	Overfishing not occurring
SPINY DOGFISH	Not overfished	Overfishing not occurring
SMOOTH DOGFISH	Not overfished	Overfishing not occurring
LITTLE SKATE	Not overfished	Overfishing not occurring
BARNDOOR SKATE	Not overfished	Overfishing not occurring
CLEARNOSE SKATE	Not overfished	Overfishing not occurring
NORTHERN SEA ROBIN	Unknown (not assessed)	Unknown (not assessed)
STRIPED SEA ROBIN	Unknown (not assessed)	Unknown (not assessed)
MONKFISH	Unknown	Unknown

Recreational Non-Target Species

The status of recreational non-target species relevant to this action is described below and summarized in Table 46.

Bluefish are jointly managed by the MAFMC and the ASMFC. The most recent management track assessment results indicated that the bluefish stock was overfished and overfishing was not occurring in 2019 relative to the biological reference points. Fishing mortality on the fully selected age 2 fish was 0.172 in 2019, 95% of the updated fishing mortality threshold reference point F_{MSY} proxy = $F_{35\%}$ = 0.181. There is a 90% probability that the fishing mortality rate in 2019 was between 0.140 and 0.230 (NEFSC 2021).

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.

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

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).

Table 46. Most recent stock status information for non-target species in the recreational summer flounder, scup, and black sea bass fisheries. Current tautog stock status information is listed for each assessed region.

Species	Biomass status	Fishing mortality rate status
SCUP	Not overfished	Overfishing not occurring
BLACK SEA BASS	Not overfished	Overfishing not occurring
SUMMER FLOUNDER	Not overfished	Overfishing not occurring
BLUEFISH	Overfished	Overfishing not occurring
SMOOTH DOGFISH	Not overfished	Overfishing not occurring
TAUTOG		
MA/RI	Not overfished	Overfishing not occurring
Long Island Sound	Not overfished	Overfishing not occurring
New Jersey/New York Bight	Overfished	Overfishing not occurring
DE/MD/ VA	Not overfished	Overfishing not occurring
NORTHERN SEA ROBIN	Unknown (not assessed)	Unknown (not assessed)
STRIPED SEA ROBIN	Unknown (not assessed)	Unknown (not assessed)

6.4 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.

6.4.1 Physical Environment

Summer flounder, scup, and black sea bass 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 16).

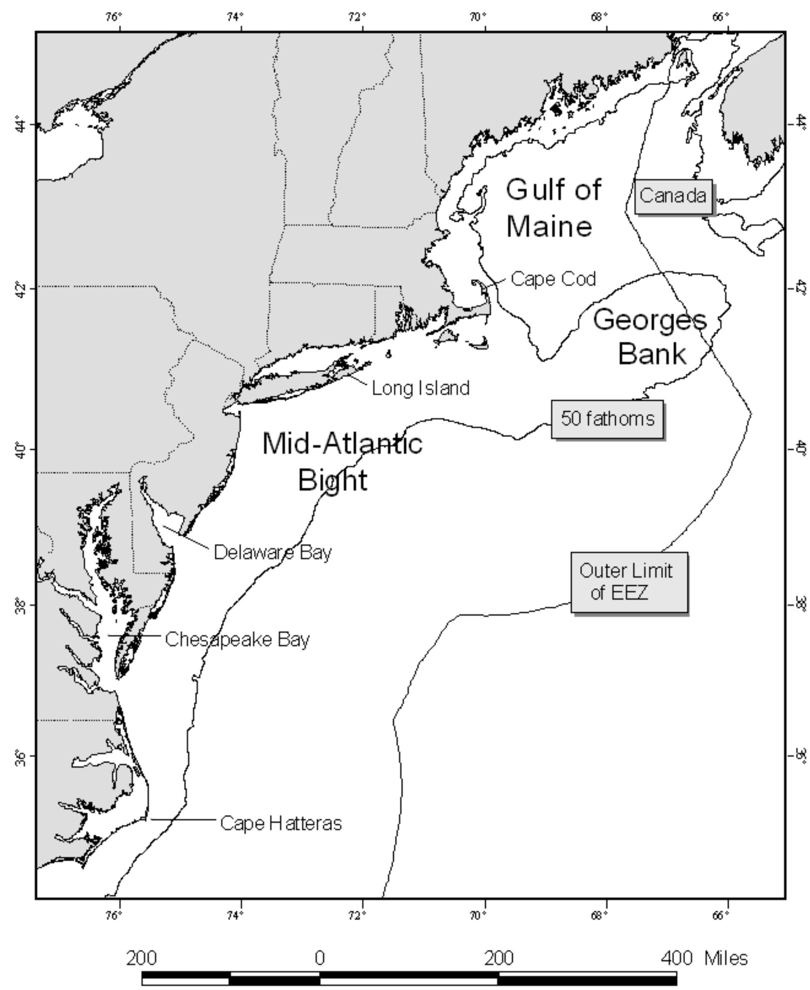

Figure 16. Northeast U.S. Shelf Ecosystem.

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 (EMUs) in New England and the Mid-Atlantic based on sediment type, seabed form (a combination of slope and relative depth)[9], and benthic organisms.[10] 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).

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

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

6.4.2 Essential Fish Habitat (EFH)

The MSA defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (MSA section 3). The MSA requires that Councils describe and identify EFH for managed species and "minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat" (MSA section 303 (a)(7)).

The broad definition of EFH has led the Mid-Atlantic and the New England Fishery Management Councils to identify EFH throughout most of the Northeast U.S. Shelf Ecosystem, ranging from areas out to the shelf break to wetlands, streams, and rivers. Table 47 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 47. 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)

Species	Life Stage	Geographic Area	Depth (meters)	Habitat Type and Description
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
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

Species	Life Stage	Geographic Area	Depth (meters)	Habitat Type and Description
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
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

Species	Life Stage	Geographic Area	Depth (meters)	Habitat Type and Description
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
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	>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

Species	Life Stage	Geographic Area	Depth (meters)	Habitat Type and Description
		shallower coastal locations in the Mid-Atlantic		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
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

Species	Life Stage	Geographic Area	Depth (meters)	Habitat Type and Description
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
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

6.4.3 Fisheries Habitat 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 flounder, scup, and black sea bass 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.

Both federal VTR and dealer data were analyzed for commercial landings by gear type. Federal VTR data does not include state-only permitted vessels submitting only state level VTRs, but dealer data has a relatively larger proportion of missing or unknown "gear type" entries. Thus, there are advantages and disadvantages of both data types and they are shown for comparison in Table 48 for years 2015-2019.

The commercial fisheries for all three species are primarily prosecuted with bottom trawl gear. Within the federal VTR data, from 2014-2019, otter trawls accounted for about 98% of all summer flounder and scup commercial landings and 73% of black sea bass commercial landings. For scup and summer flounder, all other gear types accounted for 1% of less of landings reported in federal VTR data over this time period. Black sea bass had a higher proportion of landings from pot and trap gear, estimated at 22% from 2015-2019, and 4% from handlines (Table 48).

Dealer data (including state waters data) shows a higher proportion of non-trawl gear types for all species, including other or unknown gear types representing 5% of summer flounder landings, 11% of scup landings, and 8% of black sea bass landings (Table 48).

Table 48. Percent of reported commercial scup and black sea bass landings taken by gear category from 2015-2019 based on VTR and dealer data.

VTR Data (2015-2019)	**Summer flounder**	**Scup**	**Black Sea Bass**
BOTTOM TRAWL	97.9%	97.5%	73.4%
POT AND TRAP	0.1%	1.2%	22.4%
HANDLINE	0.7%	0.4%	3.6%
GILLNET	0.8%	0.7%	0.5%
SCALLOP DREDGE	0.4%	0.0%	0.0%
OTHER OR UNKNOWN	0.1%	0.1%	0.1%
Dealer Data (2015-2019)	**Summer flounder**	**Scup**	**Black Sea Bass**
BOTTOM TRAWL	90.3%	82.4%	57.0%
OTHER OR UKNOWN	5.2%	11.1%	8.3%
POT AND TRAP	0.2%	3.3%	23.0%
HANDLINE	2.9%	2.3%	11.0%
GILLNET	1.1%	1.0%	0.8%
SCALLOP DRED	0.3%	0.0%	0.0%

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.

6.5 PROTECTED SPECIES

Numerous protected species occur in the affected environment of the Summer Flounder, Scup, and Black Sea Bass FMP 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 (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.

A summary of protected resources and critical habitat that may occur in the affected environment is provided in Table 49, followed by sections detailing which species and critical habitat are not likely to be impacted by the proposed action (Section 6.5.1) and which species may be potentially impacted by the proposed action (i.e., there have been observed/documented interactions in the fishery or with gear types similar to those used in the fishery; Section 6.5.2).

Table 49. Species Protected Under the ESA and/or MMPA that may occur in the Affected Environment of the summer flounder, scup, and black sea bass fisheries. 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
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected (MMPA)	Yes
Short Beaked Common dolphin (*Delphinus delphis*)	Protected (MMPA)	Yes
Atlantic Spotted dolphin (*Stenella frontalis*)	Protected (MMPA)	No
Striped dolphin (*Stenella coeruleoalba*)	Protected (MMPA)	No
Bottlenose dolphin (Tursiops truncatus)[3]	***Protected (MMPA)***	***Yes***
Harbor porpoise (*Phocoena phocoena*)	Protected (MMPA)	Yes
Sea Turtles		
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered	Yes
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered	Yes
Green sea turtle, North Atlantic DPS (*Chelonia mydas*)	Threatened	Yes
Loggerhead sea turtle (*Caretta caretta*), Northwest Atlantic Ocean DPS	Threatened	Yes
Hawksbill sea turtle (*Eretmochelys imbricate*)	Endangered	No
Fish		
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered	No
Giant manta ray (*Manta birostris)*	Threatened	Yes
Oceanic whitetip shark (*Carcharhinus longimanus*)	Threatened	No

Species	Status	Potentially impacted by this action?
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*.
[3] This includes the Western North Atlantic Offshore, Northern Migratory Coastal, and Southern Migratory Coastal Stocks of Bottlenose Dolphins. See https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region for further details.

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

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 49). 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 observer, stranding, and/or marine mammal serious injury and mortality reports, 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, scup, and black sea bass 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 or Technical Memoranda; MMPA List of Fisheries (LOF); NMFS 2021a).[11] 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).

[11] For marine mammals protected under the MMPA the most recent 10 years of observer, stranding, and/or marine mammal serious injury and mortality reports are from 2009-2018; however, the most recent 10 years of large whale serious injury, mortality, and entanglement reports are from 2010-2019. For ESA listed species, information on observer or documented interactions with fishing gear is from 2010-2019.

6.5.2 Species Potentially Impacted by the Proposed Action

Table 49 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 fisheries, and that may also be impacted by the operation of these fisheries; that is, have the potential to become entangled or bycaught in the fishing gear used to prosecute the fisheries. To aid in the identification of 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 or Technical Memoranda were referenced.

To help identify ESA listed species potentially impacted by the action, we queried the NMFS NEFSC observer/sea sampling (2010-2019), Sea Turtle Disentanglement Network (2010-2019), and the GAR Marine Animal Incident (2010-2019) databases for interactions, as well as reviewed the May 27, 2021, Biological Opinion (Opinion) [12] issued by NMFS. The 2021 Opinion considered the effects of the NMFS' authorization of ten FMPs, [13] including the Summer Flounder, Scup, and Black Sea Bass FMP, NMFS' North Atlantic Right Whale Conservation Framework, and the New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment 2, on ESA-listed species and designated critical habitat. The Opinion determined that the proposed action may adversely affect, but is not likely to jeopardize, the continued existence of North Atlantic right, fin, sei, or sperm whales; the Northwest Atlantic Ocean distinct population segment (DPS) of loggerhead, leatherback, Kemp's ridley, or North Atlantic DPS of green sea turtles; any of the five DPSs of Atlantic sturgeon; GOM DPS Atlantic salmon; or giant manta rays. The Opinion also concluded that the proposed action is not likely to adversely affect designated critical habitat for North Atlantic right whales, the Northwest Atlantic Ocean DPS of loggerhead sea turtles, U.S. DPS of smalltooth sawfish, Johnson's seagrass, or elkhorn and staghorn corals. 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.

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

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[12] NMFS' May 27, 2021, Biological Opinion on the 10 FMPs is found at: https://www.fisheries.noaa.gov/resource/document/biological-opinion-10-fishery-management-plans

[13] The ten FMPs considered in the May 27, 2021, Biological Opinion include the: (1) American lobster; (2) Atlantic bluefish; (3) Atlantic deep-sea red crab; (4) mackerel/squid/butterfish; (5) monkfish; (6) Northeast multispecies; (7) Northeast skate complex; (8) spiny dogfish; (9) summer flounder/scup/black sea bass; and (10) Jonah crab FMPs.

6.5.2.1 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 fisheries. Additional background information on the range-wide status of affected sea turtles species, as well as a description and life history of each of these species, can be found in a number of published documents, including 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 49). 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 2004; Epperly et al. 1995a,b,c; Griffin et al. 2013; Morreale & Standora 2005), occurring in Virginia foraging areas as early as late April and on the most northern foraging grounds in the 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).

6.5.2.2 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 49). Review of large whale stock assessment reports covering the period of 2009 through 2018, 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 (Hayes et al. 2017; Hayes et al. 2018; Hayes et al. 2019; Hayes et al. 2020; Hayes et al. 2021; Waring et al. 2016; Waring et al. 2015). 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). This is a simplification of whale movements, particularly as it relates to winter movements. It is unknown if all individuals of a population migrate to low latitudes in the winter, although increasing evidence suggests that for some species, some portion of the population remains in higher latitudes throughout the winter (Clapham et al. 1993; Davis et at. 2017; Davis 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 in the winter, the occurrence of large whales in low 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.

6.5.2.3 Small Cetaceans and Pinnipeds

Status and Trends

Table 49 lists the small cetaceans and pinnipeds that may be impacted by the proposed action. For most small cetaceans and pinniped populations, it is unknown what the population trajectory is as a trend analysis has not been conducted for these populations (NMFS Marine Mammal SARs for the Atlantic Region). However, review of stock assessment reports covering the period of 2009 through 2018, analysis of trends in abundance were provided for several common bottlenose dolphin stocks that occur in the affected environment of the summer flounder, scup, and black sea bass fisheries (i.e., Western North Atlantic: Northern and Southern Migratory Coastal stocks, S. Carolina, Georgia Coastal stock, Northern Florida Coastal stock, and Central Florida Coastal stock) and gray seals (Hayes et al. 2017; Hayes et al. 2018; Hayes et al. 2019; Hayes et al. 2020; Hayes et al. 2021; Waring et al. 2016). The analysis suggested a possible decline in stock abundance for the common bottlenose dolphin stocks and an increasing trend for the gray seal population, respectively (Hayes et al. 2017; Hayes et al. 2018; Hayes et al. 2019; Hayes et al. 2020; Hayes et al. 2020; Waring et al. 2016). For additional information on the status of each species of small cetacean and pinniped, refer to the NMFS Marine Mammal SARs for the Atlantic Region.

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 ºN). 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.

6.5.2.4 Atlantic sturgeon

Status and Trends

As provided in Table 49, 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 have the potential to be located anywhere in this marine range (ASSRT 2007; Dovel and Berggren 1983; Dadswell et al. 1984; Kynard et al. 2000; Stein et al. 2004a; Dadswell 2006; Laney et al. 2007; Dunton et al. 2010, 2015; Erickson et al. 2011; Wirgin et al. 2012; Waldman et al. 2013; O'Leary et al. 2014; Wirgin et al. 2015a,b; ASMFC 2017).

Based on fishery-independent and dependent data, as well as data collected from tracking and tagging studies, in the marine environment, Atlantic sturgeon appear to primarily occur inshore of the 50 meter depth contour (Stein et al. 2004a,b; Erickson et al. 2011; Dunton et al. 2010); however, Atlantic sturgeon are not restricted to these depths, as excursions into deeper continental shelf waters have been documented (Timoshkin 1968; Collins and Smith 1997; Stein et al. 2004a,b; Dunton et al. 2010; Erickson et al. 2011). Data from fishery-independent surveys and tagging and tracking studies also indicate that Atlantic sturgeon may undertake seasonal movements along the coast (Dunton et al. 2010; Erickson et al. 2011; Wipplehauser 2012); however, there is no evidence to date that all Atlantic sturgeon make these seasonal movements and therefore, may be present throughout the marine environment throughout the year.

For additional information on the biology 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).

6.5.2.5 Atlantic salmon

Status and Trends

As provided in Table 49, 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).

6.5.2.6 Giant Manta Ray

Status and Trends

As provided in Table 49, 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).

6.5.3 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 small cetaceans and pinnipeds protected under the MMPA, this primarily covers the period from 2009-2018[14]; however, for large whales, serious injury, mortality, and entanglements reports are from 2010-2019.[15] For ESA listed species, the most recent 10 years of data on observed or documented interactions is available from 2010-2019[16]. Available information on gear interactions with a given species (or species group) is provided in the sections below. The sections to follow 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, scup, and

[14] Waring et al. 2016; Hayes et al. 2017; Hayes et al. 2018; Hayes et al. 2019; Hayes et al. 2020; Hayes et al. 2021; MMPA List of Fisheries (LOF):NMFS NEFSC reference documents (marine mammal serious injury and mortality reports).

[15] GAR Marine Animal Incident Database, unpublished data; Waring et al. 2016; Hayes et al. 2017; Hayes et al. 2018; Hayes et al. 2019; Hayes et al. 2020; Hayes et al. 2021; Cole and Henry 2013; Henry et al. 2016; Henry et al. 2017; Henry et al. 2019; Henry et al. 2020; Henry et al. 2021; Henry et al. 2022.

[16] ASMFC 2017; GAR Marine Animal Incident Database, unpublished data; Kocik et al. 2014; NMFS Marine Mammal SARs for the Atlantic Region: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region; NMFS 2021a; NMFS NEFSC reference documents (marine mammal serious injury and mortality reports): https://nefsc.noaa.gov/publications/crd/; NMFS; NEFSC observer/sea sampling database, unpublished data; GAR Sea Turtle and Disentanglement Network, unpublished data; NMFS Sea Turtle Stranding and Salvage Network, unpublished data.

black sea bass fisheries (i.e., recreational: hook and line; commercial: pot/trap and bottom trawl gear).

6.5.3.1 Recreational Fisheries Interactions

Recreational summer flounder, scup, and black sea bass 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 gear type and is not strictly limited to the recreational summer flounder, scup, and black sea bass 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; Cole and Henry 2013; Henry et al. 2016; Henry et al. 2017; Henry et al. 2019; Henry et al. 2020; Henry et al. 2021; Henry et al. 2022). Review of mortality and serious injury determinations for baleen whales between 2010-2019 shows that there have been 61 confirmed cases of hook and line and/or monofilament gear around or trailing from portions of the whale's body (Cole and Henry 2013; Henry et al. 2016; Henry et al. 2017; Henry et al. 2019; Henry et al. 2020; Henry et al. 2021; Henry et al. 2022). Of the 61 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;[17] Cole and Henry 2013; Henry et al. 2017; Henry et al. 2020; Henry et al. 2021; Henry et al. 2022). In fact, 80.3% 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 (Cole and Henry 2013; 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). 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 49 provides a list of small cetaceans and pinnipeds that occur in the affected environment of the summer flounder, scup, and black sea bass fishery. Reviewing the most recent 10 years of data provided in the NMFS marine mammal SARs (i.e., 2009-2018), of the small cetacean and pinniped species identified in Table 49, only bottlenose dolphin stocks and small finned pilot whales have

[17] 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

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 2009-2018, there have been a total of 65 bottlenose dolphin stranding cases for which hook and line gear was documented on the animal (i.e., hook and/or line was wrapped or ingested); in most instances, it could not be determined if the death or serious injury was caused by hook and line gear.[18] Over this timeframe, there were also two cases in which interactions with hook and line gear were observed or self-reported at sea with a small finned pilot whale and a bottlenose dolphin; in both cases the animal was released alive, but with serious injuries.

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 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

[18] NMFS Marine Mammal SARs for the Atlantic Region reviewed for the period between 2009-2018 are as follows: Waring et al. 2016; and Hayes et al. 2017, 2018, 2019, 2020, 2021.

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.

6.5.3.2 Commercial Fisheries Interactions

Based on VTR data, the commercial summer flounder, scup, and black sea bass fisheries are primarily prosecuted with bottom trawl gear (about 99% of summer flounder landings, 97% of scup landings, and 65% of black sea bass landings in 2021). Pots/traps are also used in the commercial black sea bass fishery (accounting for about 32% of commercial black sea bass landings in 2021), and to a lesser extent in the commercial scup fishery (about 3% of commercial scup landings in 2021).

Available information on gear interactions with a given species (or species group) is provided below. These sections are not a comprehensive review of all fishing gear types known to interact with a given species; emphasis is only being placed on the primary gear types used in the summer flounder, scup, and black sea bass fisheries 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 Observer Program, unpublished data). 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)[19], 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).

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 trap/pot gear are documented by the NMFS GAR STDN. Based on this, the STDN database, a component of the Sea Turtle Stranding and Salvage Network, provides the most complete and best available dataset on sea entanglements in the GAR. Confirmed and probable entanglement cases in the STDN database from 2010-2019 were reviewed. Over this timeframe, 270 sea turtle entanglements in vertical line gear (known and unknown fishery) in the Greater Atlantic Region (Maine through Virginia) were reported and classified with a probable or confirmed, high confidence rating. Of the 270 cases assessed, 255 involved leatherback sea turtles and 15 involved loggerhead sea turtles (NMFS 2021a).

Atlantic Sturgeon

Bottom Trawl Gear: Since 1989, Atlantic sturgeon interactions (i.e., bycatch) with bottom trawl gear have frequently been observed in the GAR, with most sturgeon observed captured falling

[19] 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).

within the 100 to 200 cm total length range; however, both larger and small individuals have been observed (ASMFC 2007; ASMFC 2017; Miller and Shepard 2011; NMFS NEFSC observer/sea sampling database, unpublished data; NMFS 2021a; Stein et al. 2004). For otter trawl fisheries, the highest incidence of Atlantic sturgeon bycatch have been associated with depths less than 30 meters (ASMFC 2007). More recently, over all gears and observer programs that have encountered Atlantic sturgeon, the distribution of haul depths on observed hauls that caught Atlantic sturgeon was significantly different from those that did not encounter Atlantic surgeon, with Atlantic sturgeon encountered primarily at depths less than 20 meters (ASMFC 2017).

Review of NMFS (2021a), as well as the most recent 10 years of NMFS observer data (i.e., 2010-2019; NMFS NEFSC observer/sea sampling database, unpublished data) show that there have been observed interactions between Atlantic sturgeon and bottom trawl gear in the GAR. The ASMFC (2017) Atlantic sturgeon benchmark stock assessment represents the most accurate predictor of annual Atlantic sturgeon interactions in fishing gear (e.g., otter trawl). The stock assessment analyzes fishery observer and VTR data to estimate Atlantic sturgeon interactions in fishing gear in the Mid-Atlantic and New England regions from 2000-2015, the timeframe which included the most recent, complete data at the time of the report. The total bycatch of Atlantic sturgeon from bottom otter trawls ranged between 624-1,518 fish over the 2000-2015 time series. Focusing on the most recent five-year period of data provided in the stock assessment report,[20] the estimated average annual bycatch during 2011-2015 of Atlantic sturgeon in bottom otter trawl gear is 777.4 individuals.

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).[21] 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).

[20] The period of 2011-2015 was chosen as it is the period within the stock assessment that most accurately resembles the current trawl fisheries in the region.

[21] 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.

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 2010-2019, two (unidentified) giant manta rays 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 2022 LOF (87 FR 23122, April 19, 2022) categorizes commercial bottom trawl fisheries (Northeast or Mid-Atlantic), and the Atlantic mixed species trap/pot fishery (e.g., black sea bass) as Category II fisheries .

Large Whales

Bottom Trawl Gear: Review of the most recent 10 years of observer, stranding, and/or baleen whale serious injury and mortality determinations from 2010-2019, and querying the GAR Marine Animal Incident database (which contains data for 2019), showed that there have been no observed or confirmed documented interactions with large whales and bottom trawl gear.[22] Based on this information, large whale interactions with bottom trawl gear are not expected.

Pot/Trap Gear: Large whale interactions (entanglements) with fishing gear have been observed and documented in the waters of the Northwest Atlantic.[23] Information available on all interactions (e.g., entanglement, vessel strike, unknown cause) with large whales comes from reports documented in the GARFO 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

[22] GAR Marine Animal Incident Database (unpublished data); NMFS Marine Mammal Stock Assessment Reports for the Atlantic Region; NMFS NEFSC observer/sea sampling database, unpublished data ; MMPA List of Fisheries (LOF); Cole and Henry 2013;Henry et al. 2016; Henry et al. 2017; Henry et al. 2019; Henry et al. 2020; Henry et al. 2021; Henry et al. 2022.

[23] 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 or Technical Memoranda; MMPA List of Fisheries; NMFS 2021a,b.

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.[24]

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 et al. 2022; 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; 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).[25] 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 et al. 2022; Knowlton 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

[24] Serious Injury and Mortality Determinations for Baleen Whale Stocks along the Gulf of Mexico, United States East Coast, and Atlantic Canadian Provinces can be found at: https://apps-nefsc.fisheries.noaa.gov/rcb/publications/center-reference-documents.html

[25] 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.

endangered under the ESA, these species are considered strategic stocks under the MMPA.[26] 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.[27] 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 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 and trap/pot fisheries in these regions; these Category I and II fisheries must comply with all regulations of the Plan.[28]. For further details on the Plan, please refer to the ALWTRP.

Small Cetaceans and Pinnipeds

Bottom Trawl Gear: Small cetaceans and pinnipeds are vulnerable to interactions with bottom trawl gear.[29] Reviewing marine mammal stock assessment and serious injury reports that cover the most recent 10 years data (i.e., 2009-2018), as well as the MMPA LOF's covering this time frame (i.e., issued between 2017 and 2022), Table 50 provides 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 fisheries. Of the species in Table 50, short-beaked common dolphins, Risso's dolphins, and Atlantic white-sided dolphins are the most frequently observed bycaught marine mammal species in bottom trawl gear in the GAR, followed by gray seals, long-

[26] 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.

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

[28] 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.

[29] For additional information on small cetacean and pinniped interactions, see: NEFSC Reference documents (serious injury and mortality reports); NMFS Marine Mammal SARs for the Atlantic Region; MMPA List of Fisheries (LOF).

finned pilot whales, bottlenose dolphin (offshore), harbor porpoise, harbor seals, and harp seals (Chavez-Rosales *et al.* 2017; Lyssikatos 2015; Lyssikatos et al. 2020; Lyssikatos et al. 2021).

Table 50. 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 fisheries.

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
Source: MMPA 2017-2022 LOFs at: https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries		

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. [30]

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/

[30] 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; <u>or</u> which is listed as a threatened or endangered species under the ESA, or is designated as depleted under the MMPA.

Pot/Trap Gear: Over the past several years, 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. It is important to note; however, stranding data underestimates the extent of human-related mortality and serious injury because not all of the marine mammals that die or are seriously injured in human interactions are discovered, reported, or show signs of entanglement. Additionally, if gear is present, it is often difficult to definitively attribute the animal's death or serious injury to the gear interaction, or to a specific fishery. 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 49 provides the list of small cetacean and pinniped species that may occur and be affected by the summer flounder, scup, and black sea bass fisheries. Of these species, only several bottlenose dolphin stocks have been identified as species at risk of becoming seriously injured or killed by trap/pot gear. Stranded bottlenose dolphin (see Table 49) entangled in trap/pot gear have been documented (see NMFS Marine Mammal SARs for the Atlantic Region). Although the trap/pot gear involved in these cases were identified to the blue crab fishery, given the general similarities between the gear (e.g., traps and vertical buoy lines); there is the potential for these small cetaceans to interact with pot/trap gear used in this fishery. Reviewing the most recent 10 years (2009-2018) of stranding data provided in the NMFS Marine Mammal SARs for the Atlantic Region estimated mean annual mortality for each stock due to interactions with trap/pot gear was no more than approximately one animal. Based on this and the best available information, interactions with trap/pot gear, resulting in the serious injury or mortality to small cetaceans or pinnipeds are believed to be infrequent (for bottlenose dolphin stocks) to non-existent (for all other small cetacean and pinniped species).

7 ENVIRONMENTAL IMPACTS 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 (e.g., the summer flounder allocation alternatives are only compared to the other summer flounder allocation 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 51 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 in Table 52).

The recent conditions of the VECs include the most recent stock status of summer flounder, scup, black sea bass, non-target species, and protected species (Sections 6.2, 6.3, and 6.5). They also include the fishing practices and levels of fishing effort and landings in commercial and recreational fisheries for summer flounder, scup, and black sea bass over the most recent three years (2019-2021), as well as the economic characteristics of the fisheries over the most recent three years (Section 6.1). They also include recent levels of habitat availability and quality (Section 6.4).

The expected impacts of the alternatives on each VEC are summarized in Sections 7.1-7.5. 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 result in decreased fishing mortality, ending overfishing, rebuilding to the target biomass level, maintaining biomass above the target level, or maintaining fishing mortality below the threshold level are considered to have positive impacts (Table 52).

As previously stated, bottom trawls and pots/traps are the predominant gear types in the commercial fisheries. The recreational fisheries use hook and line gear almost exclusively. When considering the impacts of the alternatives on habitat, 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 (Sections 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 52). 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, scup, and black sea bass 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). No alternatives 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 stocks with PBR levels that 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 52).

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.

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, fishing behavior, and the management process under each alternative. Most of the expected impacts are driven by changes in commercial and recreational fishing effort as the result of modified allocations and/or transfers that would impact future sector-specific catch and landings limits. 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. More details on the expected changes in fishing effort for each species and sector are included in the following sections.

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Table 51. Recent conditions of VECs (described in more detail in Section 6).

VEC		Condition	
Human communities (Section 6.1)	Summer flounder	Commercial landings averaged 9.51 million pounds during 2019-2021, with $28.24 million average ex-vessel value for an average ex-vessel price of $2.97 per pound (2021 dollars). Recreational landings during 2019-2021 averaged 8.93 million pounds.	
	Scup	Commercial landings averaged 13.43 million pounds during 2019-2021, with $9.74 million average ex-vessel value for an average ex-vessel price of $0.73 per pound (2021 dollars). Recreational landings during 2016-2020 averaged 14.44 million pounds.	
	Black Sea Bass	Commercial landings averaged 4.09 million pounds during 2019-2021, with $11.89 million average ex-vessel value for an average ex-vessel price of $2.95 per pound (2021 dollars). Recreational landings during 2019-2021 averaged 9.74 million pounds.	
Target species (Section 6.2)	Summer flounder	Overfishing not occurring	Not overfished
	Scup	Overfishing not occurring	Not overfished
	Black sea bass	Overfishing not occurring	Not overfished
Non-target species (Section 6.3)	Spiny dogfish	Overfishing not occurring	Not overfished
	Little skate	Overfishing not occurring	Not overfished
	Barndoor skate	Overfishing not occurring	Not overfished
	Clearnose skate	Overfishing not occurring	Not overfished
	Northern sea robin	Unknown	Unknown
	Striped sea robin	Unknown	Unknown
	Bluefish	Overfishing not occurring	Overfished
	Monkfish	Unknown	Unknown
	Tautog	Overfishing not occurring	Overfished in some regions
	Smooth Dogfish	Overfishing not occurring	Not overfished
Habitat (Section 6.4)		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 6.5)	Sea turtles	Leatherback and Kemp's ridley sea turtles are endangered; loggerhead (NW Atlantic DPS) and green (North Atlantic DPS) sea turtles are threatened.	
	Fish	Atlantic salmon, shortnose sturgeon, and the New York Bight, Chesapeake, Carolina, and South Atlantic DPSs of Atlantic sturgeon are endangered. Atlantic sturgeon Gulf of Maine DPS, oceanic whitetip shark, and giant manta ray are threatened. Cusk are a candidate species.	
	Large whales	All are protected under the MMPA. North Atlantic right, fin, blue, sei, and sperm whales are also listed as endangered under the ESA. The ALWTRP was implemented to reduce humpback, North Atlantic right, and fin whale entanglement in vertical lines associated with fixed fishing gear (sink gillnet and trap/pot) and sinking groundlines.	
	Small cetaceans	Pilot whales, pygmy sperm whales, dolphins, and harbor porpoise are protected under the MMPA. The Atlantic Trawl Gear Take Reduction Strategy was developed to identify measures to reduce the mortality and serious injury of small cetaceans in trawl gear.	
	Pinnipeds	Gray, harbor, hooded, and harp seals are protected under the MMPA.	

Table 52. Guidelines for defining the direction and magnitude of the impacts of alternatives on the VECs.

<table>
<tr><th colspan="5">General Definitions</th></tr>
<tr><th rowspan="2">VEC</th><th rowspan="2">Resource Condition</th><th colspan="3">Direction of Impact</th></tr>
<tr><th>Positive (+)</th><th>Negative (-)</th><th>No Impact (0)</th></tr>
<tr><td>Target and Non-target Species</td><td>Overfished status defined by the MSA</td><td>Alternatives that would maintain or are projected to result in a stock status above an overfished condition*</td><td>Alternatives that would maintain or are projected to result in a stock status below an overfished condition*</td><td>Alternatives that do not impact stock / populations</td></tr>
<tr><td>ESA-listed Protected Species (endangered or threatened)</td><td>Populations at risk of extinction (endangered) or endangerment (threatened)</td><td>Alternatives that contain specific measures to ensure no interactions with protected species (i.e., no take)</td><td>Alternatives that result in interactions/take of listed resources, including actions that reduce interactions</td><td>Alternatives that do not impact ESA listed species</td></tr>
<tr><td>MMPA Protected Species (not also ESA listed)</td><td>Stock health may vary but populations remain impacted</td><td>Alternatives that will maintain takes below PBR and approaching the Zero Mortality Rate Goal</td><td>Alternatives that result in interactions with/take of marine mammals that could result in takes above PBR</td><td>Alternatives that do not impact marine mammals</td></tr>
<tr><td>Physical Environment / Habitat / EFH</td><td>Many habitats degraded from historical effort</td><td>Alternatives that improve the quality or quantity of habitat</td><td>Alternatives that degrade the quality, quantity or increase disturbance of habitat</td><td>Alternatives that do not impact habitat quality</td></tr>
<tr><td>Human Communities (Socioecon-omic)</td><td>Highly variable but generally stable in recent years</td><td>Alternatives that increase revenue and social well-being of fishermen and/or communities</td><td>Alternatives that decrease revenue and social well-being of fishermen and/or communities</td><td>Alternatives that do not impact revenue and social well-being of fishermen and/or communities</td></tr>
<tr><td></td><th colspan="4">Magnitude of Impact</th></tr>
<tr><td rowspan="6">A range of impact qualifiers is used to indicate any existing uncertainty</td><td>Negligible</td><td colspan="3">To such a small degree to be indistinguishable from no impact</td></tr>
<tr><td>Slight, as in slight positive or slight negative)</td><td colspan="3">To a lesser degree / minor</td></tr>
<tr><td>Moderately positive or negative</td><td colspan="3">To an average degree (i.e., more than “slight”, but not “high”)</td></tr>
<tr><td>High, as in high positive or high negative</td><td colspan="3">To a substantial degree (not significant unless stated)</td></tr>
<tr><td>Significant</td><td colspan="3">Affecting the resource condition to a great degree, see 40 CFR 1508.27.</td></tr>
<tr><td>Likely</td><td colspan="3">Some degree of uncertainty associated with the impact</td></tr>
<tr><td colspan="5">*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.</td></tr>
</table>

7.1 IMPACTS TO HUMAN COMMUNITIES

7.1.1 Socioeconomic Impacts of the Commercial/Recreational Allocation Alternatives

The following sections describe the expected impacts of the commercial/recreational allocation alternatives on the commercial and recreational fisheries for summer flounder, scup, and black sea bass. Impacts are first described in a general sense and then specific considerations for each alternative are described.

These impacts determinations rely in part on the percent shift in allocation from the commercial to the recreational sectors under each alternative. As previously stated, summer flounder and black sea bass are currently managed under a landings-based allocation and scup is currently managed under a catch-based allocation. It is straightforward to calculate the total percent shift in allocation if the allocation remains landings-based for summer flounder and black sea bass or catch-based for scup. For a transition from a landings-based to a catch-based allocation or vice versa, the implemented split of landings or catch limits in 2022 (see Appendix D for details) was used as the baseline for determining total percent shift. For these comparisons, a shift in allocation of 5% or less was considered a slight impact, a shift of 6-24% was considered a moderate impact, and a shift of 25% or more was considered a high impact. As described below, these impacts determinations were modified in several instances based on other pieces of information.

As described in the species-specific sections below, for sectors with recent consistent trends of under- or over-harvesting their landings limits or a strong disconnect between the revised fishery data and recent landings limits, the percent shift in allocation should not be the sole predictor of socioeconomic impacts. For these reasons, recent landings by sector were also compared to example landings limits (i.e., commercial quotas and RHLs) under each alternative. Specifically, average 2019-2021 landings by sector were compared to average example landings limits based on the 2019-2021 ABCs for each species. Example landings limits were calculated using the methodology described in Appendix C, except for the no action alternative where the actual limits for 2019-2021 were used in the comparison. A difference between average landings and average example landings limits of 1% or less was considered a negligible impact, a difference of 2-10% was considered a slight impact, a difference of 11-30% was considered a moderate impact, and a difference of more than 30% was considered a high impact. Different thresholds for slight, moderate, and high were used for this comparison and for the percent shift in allocation to reflect the fact that landings and landings limits in both sectors commonly fluctuate over time and therefore the fisheries have adapted to some level of variability, while changes in allocations are a more predictable, longer-term impact. In some cases, a combination of the two comparisons (i.e., the percent shift in allocation described in the previous paragraph and the recent landings to example limits comparison described in this paragraph) as well as other qualitative considerations specific to each fishery were used to determine the overall magnitude and direction of expected socioeconomic impacts under each alternative.

Impacts determinations assumed market conditions, catch per unit effort, and fishing behavior will remain similar to recent conditions and that impacts will largely be driven by reductions or increases in the annual commercial quotas and RHLs driven by changes in allocation. These determinations focused on recent years given noteworthy changes in the recreational harvest data and resulting impacts on the assessments in recent years. Most allocation percentage alternatives have a range of expected socioeconomic impacts to account for a range of conditions associated with the comparisons described above. It should be noted that the direction and magnitude of these impacts may vary if future ABCs are notably different than recent ABCs. None of the impacts are considered significant (Table 52).

Impacts to Commercial Fisheries for Summer Flounder, Scup, and Black Sea Bass

Aside from the no action/status quo alternatives (alternatives 1a-4, 1b-1, and 1c-4), all commercial/recreational allocation percentage alternatives for all three species would result in reduced commercial allocations. Assuming ABCs remain similar to recent levels, this would generally be expected to result in lower commercial quotas than the current allocations. Lower quotas could result in lower landings and therefore, reduced revenues. However, as described for each species in Sections 7.1.1.1-7.1.1.3 below, this will depend on the species and on the degree of the decrease in the quota as some fisheries have not achieved their commercial quotas in recent years due to market demand and other factors. For all three species, any loss in revenue associated with reduction in quota is not expected to be linear, as the relationship between price and volume landed in the fisheries is variable over time and by species. Other factors such as variation in costs can also affect revenue. Some negative impacts associated with quota reductions might be partially offset by the potential for increased prices paid by dealers if decreased quotas result in decreased supply. However, the degree to which this happens depends on the relationship between demand and price which is impacted by many factors and is difficult to accurately predict.

The impacts of a reduction in commercial quota will not be felt equally across all commercial industry participants. For example, the coastwide commercial quota is divided into state quotas for summer flounder and black sea bass, and seasonal quota periods for scup. Of the three scup quota periods, only the summer period quota is further allocated among states. Some states typically fully utilize their quota, while other states tend to underutilize their quota. Commercial fishermen from states that fully utilize quota are more likely to experience loss in revenue, restrictive trip limits, and/or seasonal closures to account for the reduced commercial quota. States that have historically underutilized their quota may still be impacted in the medium- to long-term as reduced access to quota may inhibit the ability for market expansion in the future. These states could also be impacted in the near-term, depending on the magnitude of allocation reduction. If the commercial allocation is substantially reduced, quotas in some states may drop below recent levels of landings.

Depending on the specific management program for each species and in each state, lower commercial quotas could result in lower trip limits and/or shorter seasons. Lower trip limits can incentivize high-grading (i.e., discarding smaller fish in favor of larger fish that sometimes have a higher price per pound). Shorter seasons could result in market instability through greater fluctuations in price, as well as "race to fish" conditions if seasons are shortened substantially. A reduction in commercial quotas could also reduce the availability of these species to consumers. Changes in commercial quotas can also affect the economic health of communities with notable employment in the harvesting, processing, distribution, and retail aspects of the commercial fisheries. The scale of the impacts will depend on the scale of the change and the degree of local economic dependence on these fisheries.

Impacts to Recreational Fisheries for Summer Flounder, Scup, and Black Sea Bass

Aside from the no action/status quo alternatives (alternatives 1a-4, 1b-1, and 1c-4), all commercial/recreational allocation percentage alternatives for all three species would result in increased recreational allocations. Assuming ABCs remain similar to recent levels, this would generally result in higher RHLs than the current allocations. RHLs are tied to recreational measures such as possession limits, fish size restrictions, and open/closed seasons. These measures are adjusted as needed with the goal of allowing harvest to meet but not exceed the RHL. As described in more detail in the following sections, depending on the magnitude of the increase, an increased recreational allocation may not allow for liberalized recreational management measures compared to recent years in all cases, as recreational measures also depend on recent harvest trends relative to the upcoming year's limits. In some cases, recreational restrictions may still be needed if the allocation increase is not enough to account for recent increases in the MRIP harvest estimates.

Liberalizing or restricting recreational measures can impact angler access to these species. Increased access could mean more fish to take home (under higher possession limits or lower minimum fish sizes) and more opportunities to target these species (under longer open seasons). Decreased access could mean the ability to retain fewer fish and reduced opportunities to target these species. This can affect angler satisfaction, revenues for for-hire businesses (e.g., by impacting demand for for-hire trips), and revenues for support businesses such as bait and tackle shops.

At the community level, these impacts may be greatest for communities with or near recreational fishing sites, communities where for-hire and support businesses such as bait and tackle shops are based, and communities with tourism that is impacted by recreational fishing.

7.1.1.1 Summer Flounder Allocation Alternatives

Using the calculation of the total percent shift in allocation described in Section 7.1.1, aside from the no action alternative (alternative 1a-4), the summer flounder allocation alternatives would shift between 1% and 19% from the commercial to the recreational sector relative to 2022 (Table 53). The preferred alternative, Fluke-5, results in the smallest percent shift (1%). As such, Fluke-5 may result in landings limits that are close to those under status quo allocations (alternative 1a-4). Alternative 1a-7 has the largest percent shift in allocation (i.e., a 19% shift in allocation from the commercial to recreational fishery).

Recent trends in landings can further inform impacts beyond what would be expected by looking at the percent shift in allocation alone. Incorporation of revised MRIP data into the summer flounder stock assessment contributed to increases in estimated stock biomass that increased catch limits by approximately 50% between 2018 and 2019. Since this increase, the commercial summer flounder fishery has landed between 79-83% of the commercial quota annually (Section 6.1.1, Table 18). Because the commercial fishery is underharvesting their recent limits, the impacts associated with a decrease in commercial allocation are expected to be less negative than if the fishery were fully utilizing recent quotas, assuming future ABCs remain similar to recent levels.

The recreational summer flounder fishery has been more variable in performance relative to implemented limits, with harvest approximately at the RHL in 2019, 30% over in 2020, and 21% under in 2021 (Section 6.1.1, Table 18). Adjustments to the recreational measures are frequently made to account for recent harvest trends, given that it is more difficult to predict and control recreational catch and effort compared to the commercial fishery. As such, the impacts to the recreational sector from revised allocations may be more variable and fall within a wider range given uncertainties about future trends in recreational catch and effort.

A comparison of 2019-2021 average landings to 2019-2021 average example landings limits under each allocation alternative can allow for an assessment of how each sector may have been impacted by each allocation alternative in recent years. For the commercial sector, several alternatives result in average example commercial quotas that are higher than recent landings, given recent underharvest in the commercial sector. These include alternatives Fluke-5, Fluke-4, 1a-4, 1a-5, and Fluke-3. Alternative 1a-4 is the no action/status quo alternative, which is expected to result in moderative positive impacts on the commercial sector given that it does not reduce the commercial allocation and it maintains the ability for the commercial sector to continue landing summer flounder at recent levels or increase somewhat beyond those levels. For alternatives Fluke-5, Fluke-4, 1a-5, and Fluke-3, the impacts of reallocation on commercial communities may be lesser in magnitude than impacts predicted by percent shift alone. While these alternatives may negatively impact the commercial sector over time by lowering their allocation, depending on future ABCs and discard projections, these alternatives (particularly Fluke-5) may have little effect on near-term commercial effort and landings compared to current conditions. In this sense, the impacts to the commercial sector from these allocation options may be negligible, or may be slight negative over time due to loss of fishing opportunity in future years if conditions change, such as ABC levels, market conditions, or discard projection methods.

The remaining alternatives (Fluke-2, 1a-1, 1a-2, 1a-3, Fluke-1, 1a-6, and 1a-7) result in example commercial quotas that are lower than recent landings. These alternatives represent a shift in allocation from the commercial sector of between 11-19%. These alternatives are expected to result in slight to moderate negative impacts on the commercial sector, depending on future ABCs, market conditions, and discard projection methods.

For the recreational fishery, most summer flounder alternatives have example average 2019-2021 limits that are higher than average harvest in those years. This indicates that under these alternatives, if recent trends in harvest continue and ABCs remain at similar levels, the recreational sector could increase harvest relative to 2019-2021. In 2022, recreational measures were relaxed to allow an approximately 16.5% increase in harvest as the result of an increased RHL in 2022 that is substantially higher than recent harvest. Under revised allocations that would be effective in 2023, any future liberalizations would need to account for the adjustments made in 2022, but overall alternatives Fluke-4, Fluke-2, 1a-1, 1a-2, 1a-3, Fluke-3, Fluke-1, 1a-6, and 1a-7 could positively impact the recreational sector by increasing fishing opportunities, depending on future ABCs and harvest trends. These impacts are expected to range from slight to moderate positive, depending on future harvest and discard trends as well as future ABCs. Three alternatives (Fluke-5, 1a-4, and 1a-5) result in average example 2019-2021 RHLs that are lower than recent recreational harvest. Because averages are used in this comparison and because of the variability in recreational harvest as noted above, this does not necessarily mean that negative impacts to the recreational sector would result from these alternatives. These alternatives represent the lowest percent shift in allocation (from 0-5%) and therefore would represent conditions closer to status quo, where recreational harvest has fluctuated above and below the RHL in recent years, resulting in variable impacts to the recreational sector. These three alternatives would be expected to result in slight negative to slight positive impacts to the recreational sector, depending on future harvest, discards, and ABCs.

ABCs and resulting example limits for 2022-2023 are notably higher than during 2019-2021. Example limits based on the 2023 ABC are shown in Table 53. While it is not possible to predict future ABCs, if ABCs remain similar to 2022-2023, this would help mitigate potential negative impacts to the commercial sector, and increase the likelihood of additional liberalizations in recreational measures under revised allocations in future years.

The summer flounder allocation alternatives which may result in changes in commercial landings may also impact ex-vessel prices (Figure 17). Using the equation in Figure 17, prices can be estimated under different landed quantities. For example, assuming full utilization of the 2023 example commercial quota in alternative 1a-7 (10.79 million pounds), the average ex-vessel price is predicted to be $1.90 per pound and would yield $20.5 million in total ex-vessel revenue (both in 2019 dollars). If the same process is followed for the alternative 1a-4 example quota (the no action/status quo alternative, 15.53 million pounds), the average ex-vessel price is estimated at $0.63 per pound and revenues are predicted at $9.7 million, despite the higher quota. These are rough estimates, and price is influenced by many other factors aside from landings, such as changes in consumer preferences or product substitution. This simplified example does offer some limited support that full utilization of the quota under the highest commercial quota alternative may not maximize fishery-wide revenues.

As previously stated, the summer flounder commercial quota is further allocated among the states based on allocation percentages defined in the FMP. As of January 1, 2021, as the result of Amendment 21 to the FMP,[31] the commercial allocations of the summer flounder quota among the states vary based on the overall coastwide commercial quota amount. Quota below 9.55 million pounds is allocated among states based on the state allocations that have been in place since Amendments 2 and 4 (1993). When the quota exceeds 9.55 million pounds, the first 9.55 million pounds is allocated according to the previous (Amendments 2 and 4) allocations. Any surplus quota above 9.55 million pounds will be allocated differently. As shown in Table 53, some example commercial quotas under average 2019-2021 ABCs are not above that threshold (Fluke-2, 1a-1, 1a-2, 1a-3, Fluke-1, 1a-6, 1a-7) while others are (Fluke-5, Fluke-4, 1a-4, 1a-5, Fluke-3). Therefore, these alternatives are likely to have implications for how the summer flounder quota is allocated among states, depending on future ABCs.

The Council funded a study consisting of an economic model to evaluate the current 60/40 summer flounder landings allocation (alternative 1a-4). The model, developed by Dr. Kurt Schnier (University of California, Merced) and Dr. Rob Hicks (College of William & Mary), aimed to determine which allocations would maximize marginal economic benefits (i.e., the marginal value to each sector of an additional pound of summer flounder allocation at a given allocation) to the commercial and recreational sectors. The original model was peer reviewed in November 2016 with a final report completed in 2017.[32] In 2019 and 2020, the model was updated with the revised MRIP estimates released in 2018, as well as more recent commercial fishery data. The results of the updated model suggest that the existing 60/40 commercial/recreational allocation is not suboptimal from an economic efficiency perspective. However, it also suggested that modest allocation changes in either direction would not likely lower the economic benefits received from both sectors of the fishery combined.[33] Using the new recreational data, the value of the fishery to the recreational sector increased relative to the results of the prior report. The point estimate of the recreational sector's marginal willingness to pay is higher and would potentially support higher

[31] See https://www.mafmc.org/actions/summer-flounder-amendment for additional information on this amendment.

[32] The final 2017 report is available at: https://www.mafmc.org/s/Hicks-Schnier-Summer_flounder_allocation_report_final_4_11_2017.pdf.

[33] The updated report (December 2020) is available at: https://www.mafmc.org/s/Hicks-Schnier_Summer_Flounder_allocation_report_UPDATE-Dec-2020.pdf.

recreational allocations; however, the confidence intervals for the recreational and commercial sectors' willingness to pay estimates have substantial overlap due to high uncertainty in these estimates, particularly for the recreational sector. This means that due to data limitations, more concrete guidance about optimal allocations could not be generated due to the inability to more precisely estimate the recreational sector's value.

The overall magnitude and direction of impacts to the commercial sector from the summer flounder allocation alternatives are expected to vary from moderative negative to moderate positive, as shown in Table 54. Impacts to the recreational sector are expected to range from slight negative to moderate positive.

When ranked in terms of greatest potential positive impacts to greatest potential negative impacts to the commercial sector, the summer flounder alternatives rank as follows: 1a-4 (no action), Fluke-5 (preferred), 1a-5, Fluke-4, Fluke-3, Fluke-2, 1a-1, Fluke-1, 1a-2, 1a-6, 1a-3, 1a-7. When ranked in terms of greatest potential positive impacts to lowest potential positive impacts to the recreational sector, the summer flounder alternatives rank as follows: 1a-7, 1a-3, 1a-6, 1a-2, Fluke-1, 1a-1, Fluke-2, Fluke-3, Fluke-4, 1a-5, Fluke-5 (preferred), 1a-4 (no action) (Table 53).

Table 53. Evaluation of the socioeconomic impacts of summer flounder alternatives, including percent shift in allocation (based on the methodology described in Appendix D), comparison of average example limits and recent landings from 2019-2021, and example limits for 2023. Example quotas and RHLs are in millions of pounds and developed based on the methodology described in Appendix C. Alternative Fluke-5 is the preferred alternative. Alternative 1a-4 is the no action alternative.

	CATCH-BASED ALTERNATIVES						LANDINGS-BASED ALTERNATIVES					
	Fluke-5	**Fluke-4**	**Fluke-2**	**1a-1**	**1a-2**	**1a-3**	**1a-4[a]**	**1a-5**	**Fluke-3**	**Fluke-1**	**1a-6**	**1a-7**
Com. allocation	55%	50%	45%	44%	43%	40%	60%	55%	51%	47%	45%	41%
Rec. allocation	45%	50%	55%	56%	57%	60%	40%	45%	49%	53%	55%	59%
% shift comm. to rec.[b]	1%	6%	11%	12%	13%	16%	No change	5%	9%	13%	15%	19%
Commercial Sector												
Average 2019-2021 example quota	11.58	10.45	9.33	9.11	8.88	8.20	11.48	10.72	9.94	9.16	8.77	7.99
Average 2019-2021 comm. Landings	9.51	9.51	9.51	9.51	9.51	9.51	9.51	9.51	9.51	9.51	9.51	9.51
Difference avg 2019-2021 example quota vs. landings	22%	10%	-2%	-4%	-7%	-14%	21%	13%	4%	-4%	-8%	-16%
Example 2023 comm. quota	15.14	13.69	12.24	11.95	11.66	10.79	15.53	14.48	13.42	12.37	11.84	10.79
Recreational Sector												
Average 2019-2021 example RHL	8.25	9.36	10.47	10.69	10.91	11.58	7.90	8.77	9.55	10.33	10.71	11.50
Average 2019-2021 rec. harvest	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93	8.93
Difference avg 2019-2021 example RHL vs. harvest	-8%	5%	17%	20%	22%	30%	-12%	-2%	7%	16%	20%	29%
Example 2023 RHL	11.12	12.55	13.98	14.27	14.55	15.41	10.36	11.84	12.90	13.95	14.47	15.53

[a] Alternative 1a-4 is the no action/status quo alternative. The values shown for this alternative represent actual implemented catch and landings limits for 2019-2021 and 2023, not example measures.

[b] For catch-based alternatives, the starting point for this calculation is the current (2022) split of the sector-specific ACLs (which incorporates dead discards) instead of the landings limit allocation. Here, this shift is calculated by starting from the 2022 specifications which includes a commercial ACL that is 56% of the ABC, and a recreational ACL that is 44% of the ABC (see Appendix D). For landings-based alternatives, the starting point for this calculation is the current landings-based allocation (60% commercial/40% recreational).

Table 54. Expected socioeconomic impacts of the summer flounder commercial/recreational allocation alternatives by sector.

Alternative	Expected impacts to the commercial sector	Expected impacts to the recreational sector
Fluke-5 (preferred)	Negligible to slight negative	Slight negative to slight positive
Fluke-4	Negligible to slight negative	Slight negative to slight positive
Fluke-2	Slight to moderate negative	Slight to moderate positive
1a-1	Slight to moderate negative	Slight to moderate positive
1a-2	Slight to moderate negative	Slight to moderate positive
1a-3	Slight to moderate negative	Slight to moderate positive
1a-4 (no action/status quo)	Moderate positive	Slight negative to slight positive
1a-5	Negligible to slight negative	Slight to moderate positive
Fluke-3	Slight to moderate negative	Slight to moderate positive
Fluke-1	Slight to moderate negative	Slight to moderate positive
1a-6	Slight to moderate negative	Slight to moderate positive
1a-7	Slight to moderate negative	Slight to moderate positive

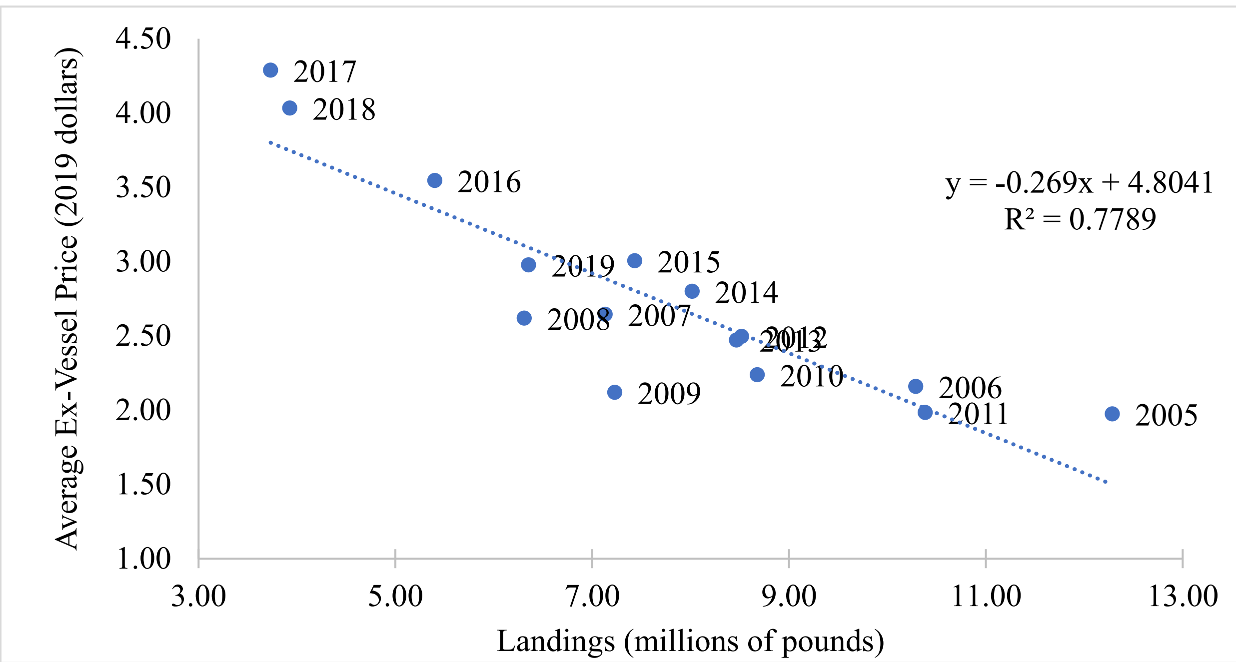

Figure 17. Commercial summer flounder landings and average ex-vessel prices, 2005-2019, in 2019 dollars. Source: NEFSC Social Sciences Branch, personal communication.

7.1.1.2 Scup Allocation Alternatives

Table 55 compares the percent shift in allocation from the commercial to the recreational sector across all scup alternatives based on the comparison to 2022 outlined in Appendix D. This long-term change in allocations and can have variable impacts to each sector. Table 55 also includes example quotas and RHLs using the 2019-2021 average ABC compared to the 2019-2021 average landings provide insight into the potential near term impacts of the alternatives given recent fishery conditions.

Alternatives 1b-2 through 1b-7 would increase the recreational scup allocation, which is beneficial to the recreational sector relative to the status quo alternative (alternative 1b-1). However, under all scup alternatives except 1b-7 (highest shift in allocation to the recreational sector), including the no action/status quo alternative, recreational harvest would need to be reduced from recent levels (through 2021; see below for considerations regarding 2022) to prevent exceeding the RHL in the near term. This is because the revised MRIP harvest estimates for recent years are notably higher than the example RHLs under each alternative (assuming recent ABC levels). For alternatives 1b-1, 1b-2, Scup-4, Scup-2, 1b-3, Scup-1, Scup-3, and 1b-5 the 2019-2021 landings were 12-54% higher than example RHLs and would be expected to result in moderate negative socioeconomic impacts to the recreational sector (Table 56). Average landings were 10% above the example RHLs under alternatives 1b-4 and 1b-6, resulting in expected reductions and slight negative impacts in the near term. The 2019-2021 average landings are 2% below the example RHL for alternative 1b-7, resulting in expected slight positive near-term socioeconomic impacts to the recreational sector (Table 56). This alternative would provide the most benefit to the recreational sector in the form of higher angler satisfaction, greater economic opportunity, and more revenue for the for-hire sector compared to the other allocation alternatives.

Recreational harvest in 2022 under status quo bag, size, and seasons limits was expected to notably exceed the 2022 RHL; therefore, the Council and Board adopted measures to reduce scup recreational harvest approximately 33%. Because of these adopted measures, and depending on future ABCs and fishery performance, there may not be a need for further restrictions under some reallocation alternatives. This reduction already taken, in addition to the long-term gain in percent allocation may result in socioeconomic impacts that are less negative, negligible, or slight positive compared with the conclusions derived from the example RHL and landings comparisons alone. For example, average 2019-2021 landings are within 10% of the example RHLs under alternatives 1b-4 and 1b-6, therefore after the reduction implemented in 2022, there may be the ability to liberalize recreational measures in the near term. These conditions in addition to the long term gain in allocation percent may lead to slight positive socioeconomic impacts under these alternatives (Table 56).

When comparing the alternatives to each other using the percent shift in allocation from the commercial to the recreational sector in Table 56, alternative 1b-1 (no action/status quo) is the most negative for the recreational sector, followed by 1b-2 (preferred), Scup-4, Scup-2, 1b-3, Scup-1, 1b-4, Scup-3, 1b-5, 1b-6 and 1b-7 (Table 56).

Alternatives 1b-2 through 1b-7, including Scup-1 through Scup-4, include lower commercial allocations than the no action/status quo alternative (1b-1). The status quo alternative is expected to have moderate positive socioeconomic impacts to the commercial sector because harvest levels can remain at recent levels or increase, for example due to expanding markets. There is also no long-term loss in allocation under the status quo alternative. The commercial sector has not fully utilized its quota since 2007 so a decrease in allocation would not necessarily lead to a decrease in commercial landings or revenues in the near term. Average landings from 2019 to 2021 do not exceed the average 2019-2021 example quotas under any alternative. If future ABCs are similar to recent levels, revising the allocation may have negligible impacts on the commercial industry. However, all reallocation alternatives limit the potential for market expansion and future increases in landings and ex-vessel revenue compared to the no action/status quo alternative (1b-1; Table 56).

According to the most recent stock assessment information, in 2019, the scup stock was at 196% of the biomass target level and trending down to the target. The compounding effects of reductions in allocation to the commercial sector combined with a reduction in the overall ABC could result in lower commercial quotas in the future. Alternatives 1b-2 through 1b-7 represent a long-term shift in allocation of approximately 13-27% away from the commercial sector, therefore impacts are expected to extend beyond the near term (Table 55). Under decreased ABCs, these alternatives may result in varying levels of restrictive commercial quotas, resulting in decreased landings and potentially revenues. Therefore, alternatives 1b-2 through 1b-6 are expected to have a range of impacts from moderate negative (due to decreased quotas, especially if ABCs continue to decline) to negligible (due to example quotas that exceed recent landings), and alternative 1b-7 is expected to have impacts ranging from high negative (due to decreased quotas, especially if ABCs continue to decline) to negligible (due to example quotas that exceed recent landings) socioeconomic impacts. Any needed commercial reductions may more negatively impact commercial industry members in states that fully utilize their state quota during the summer scup quota period. Impacts may be felt more equally across states in the winter 1 and 2 quota periods when there are no state allocations and there is a coastwide trip limit.

When comparing the alternatives to each other using the percent shift in allocation from the commercial to the recreational sector, alternative 1b-7 is the most negative for the commercial sector, followed by 1b-6, 1b-5, 1b-4, Scup-3, Scup 1, 1b-3, Scup-2, Scup-4, 1b-2 (preferred), and 1b-1 (no action/status quo; Table 56).

Ex-vessel prices may change if changes in the allocation result in changes in commercial landings (Figure 18). Using the equation in Figure 18, prices can be estimated under different landed quantities. Ex-vessel revenues are not predicted to vary greatly under alternatives 1-b2 through 1b-7. Full utilization of the quota under the highest quota alternative, alternative 1b-1 (no action/status quo), would result in lower predicted revenues following these methods. Average scup landings over the last five years are 14.39 million pounds (through 2020), meaning full utilization of the quota at 17.87 million pounds under alternative 1b-1 would appear unlikely. Based on the price responses to changes in quantity, achieving full utilization in this highest commercial quota scenario may not be economically desirable for the commercial scup fishery as a whole.

Table 55. Percent allocation shift from the commercial to the recreational sector and example quotas and RHLs in millions of pounds for each scup alternative under the 2019-2021 average ABC and 2023 ABC. The methodology for example quotas and RHLs is described in Appendix C. Alternative 1-b2 is the preferred alternative for scup.

	Catch-Based Alternatives						Landings-Based Alternatives				
	1b-1	**1-b2**	**Scup-4**	**Scup-2**	**1b-3**	**1b-4**	**Scup-1**	**Scup-3**	**1b-5**	**1b-6**	**1b-7**
Com. Allocation	78.0%	65.0%	63.5%	62.0%	61.0%	59.0%	59.0%	58.0%	57.0%	56.0%	50.0%
Rec. allocation	22.0%	35.0%	36.5%	38.0%	39.0%	41.0%	41.0%	42.0%	43.0%	44.0%	50.0%
% shift comm. to rec. [b]	No change	13%	15%	16%	17%	19%	18%	19%	20%	21%	27%
Commercial Sector											
Example quota	19.94[a]	16.77	16.40	16.03	15.79	15.30	17.38	17.08	16.78	16.49	14.71
Average 2019-2021 landings	13.43	13.43	13.43	13.43	13.43	13.43	13.43	13.43	13.43	13.43	13.43
% Difference from 2019-2021 example quota	48%	25%	22%	19%	18%	14%	29%	27%	25%	23%	10%
Example 2023 commercial quota	14.10	13.79	13.49	13.28	12.88	13.99	13.76	13.52	13.28	11.85	14.10
Recreational Sector											
Example RHL	6.67[a]	11.03	11.53	12.04	12.37	13.04	12.07	12.37	12.66	12.95	14.71
Average 2019-2021 landings	14.44	14.44	14.44	14.44	14.44	14.44	14.44	14.44	14.44	14.44	14.44
% Difference from 2019-2021 example RHL	-54%	-24%	-20%	-17%	-14%	-10%	-16%	-14%	-12%	-10%	2%
Example 2023 RHL	9.06	9.47	9.89	10.17	10.73	9.73	9.96	10.20	10.43	11.85	9.06

[a] The values shown for alternative 1b-1 (the no action/status quo alternative) represent actual implemented catch and landings limits for 2019-2021 and 2023, not example measures using the methodology described in this appendix.

[b] For landings-based alternatives, the starting point for this calculation is the 2022 split of the sector-specific landings limits (commercial quota and RHL). This includes a commercial quota that is 77% of the total allowable landings, and an RHL that is 23% of the total allowable landings (see Appendix D).

Table 56. Expected socioeconomic impacts of the scup commercial/recreational allocation alternatives by sector.

Alternative	Expected impacts to the commercial sector	Expected impacts to the recreational sector
1b-1 (no action/status quo)	Moderate +	Moderate-
1-b2 (preferred)	Moderate - to Negligible	Moderate - to Negligible
Scup-4	Moderate - to Negligible	Moderate - to Negligible
Scup-2	Moderate - to Negligible	Moderate - to Negligible
1b-3	Moderate - to Negligible	Moderate - to Negligible
1b-4	Moderate - to Negligible	Slight - to Slight+
Scup-1	Moderate - to Negligible	Moderate - to Negligible
Scup-3	Moderate - to Negligible	Moderate - to Negligible
1b-5	Moderate - to Negligible	Moderate - to Negligible
1b-6	Moderate - to Negligible	Slight - to Slight+
1b-7	High - to Negligible	Slight +

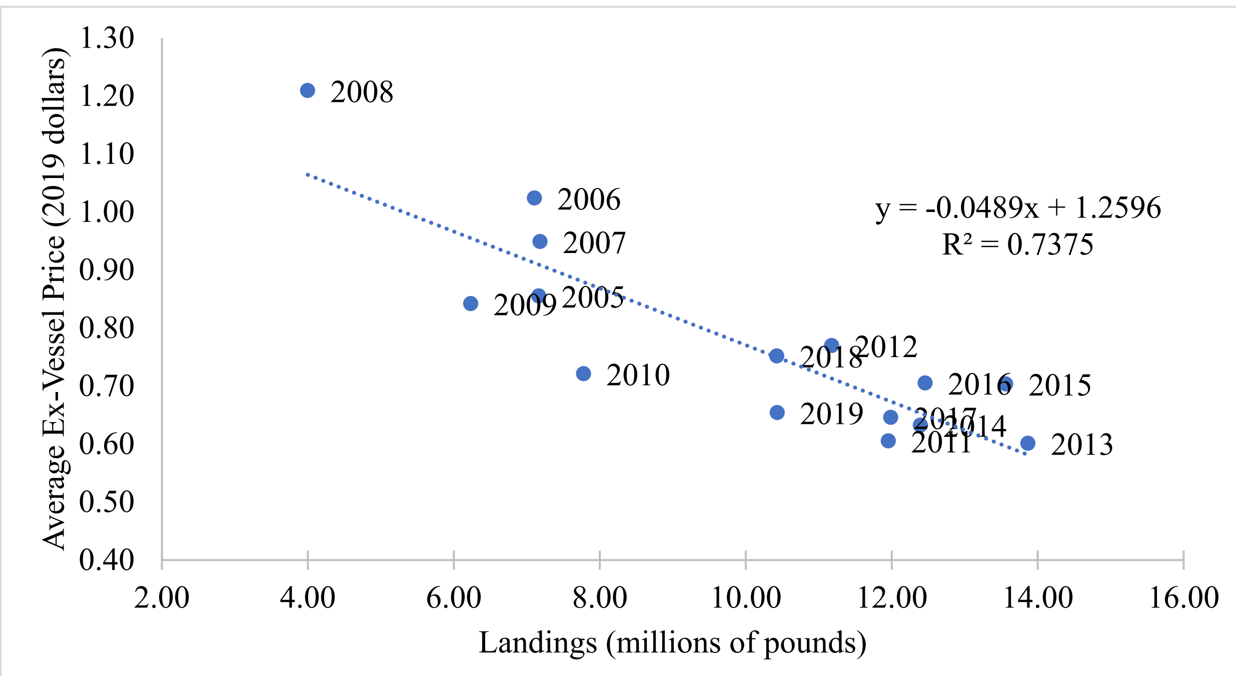

Figure 18. Commercial scup landings and average ex-vessel prices, 2005-2019, in 2019 dollars. Source: NEFSC Social Sciences Branch, personal communication.

7.1.1.3 Black Sea Bass Allocation Alternatives

As shown in Table 57, aside from the no action/status quo alternative (alternative 1c-4), the black sea bass allocation alternatives would shift between 4% and 30% allocation from the commercial to the recreational sector compared to 2022 (see Appendix D for methodology). As with summer flounder and scup, a combination of this percent shift and recent landings by sector informed the determination of expected socioeconomic impacts of each black sea bass allocation alternative.

Impacts to the Commercial Sector

Incorporation of the revised MRIP data into the black sea bass stock assessment contributed to increases in estimated stock biomass, which in turn led to a 59% increase in the commercial quota and RHL between 2019 and 2020. Commercial landings in 2020 and 2021 were respectively 25% and 26% below the commercial quotas. These quota underages were likely at least in part due to impacts of the COVID-19 pandemic on market demand, especially in 2020. Prior to 2020, commercial black sea bass landings were generally within about 10% above or below the quota (Section 6.1.3, Table 36). Because the commercial fishery did not land the full amount of the increased quotas in 2020 and 2021, the impacts associated with decreased allocation may be less negative than if the fishery were fully utilizing recent quotas, assuming future ABCs are similar to recent ABCs. Therefore, when determining socioeconomic impacts for the commercial sector, consideration was given to both the scale of the decrease in allocation as well as to how average example 2019-2021 quotas under each alternative compare to average example landings in those years. In some cases, a decrease in allocation could still allow for increased landings compared to recent years, assuming ABCs remain similar to recent levels (Table 57).

Based on these comparisons, three alternatives (alternatives 1c-2, 1c-3, and 1c-7) are expected to have **high negative impacts** on the commercial sector. For these alternatives, the decrease in commercial allocation (based on the comparison to 2022 outlined in Appendix D) ranged from 26% to 30%. The average example 2019-2021 quotas were 33%-42% below average 2019-2021 landings (Table 57, Table 58).

Four alternatives (alternatives BSB-4, BSB-2, 1c-1, and 1c-6) are expected to have **moderate negative impacts** on the commercial sector. For these alternatives, the decrease in commercial allocation (based on the comparison to 2022 outlined in Appendix D) ranged from 12% to 22%. The average example 2019-2021 quotas were 12%-23% below average 2019-2021 landings (Table 57, Table 58).

Two alternatives (alternatives BSB-5 - the preferred alternative - and BSB-1) are expected to have **moderate negative to slight negative impacts** on the commercial sector. These alternatives respectively include a 9% and 12% decrease in commercial allocation (based on the comparison to 2022 outlined in Appendix D). The average example 2019-2021 quotas were respectively 4% and 7% below average 2019-2021 landings (Table 57, Table 58).

Alternative BSB-3 is expected to have **negligible to moderate negative impacts** on the commercial sector. Under this alternative, the allocation would decrease by 8% (based on the comparison to 2022 outlined in Appendix D). However, the average example 2019-2021 quota is 2% above average 2019-2021 landings (Table 57, Table 58).

Alternative 1c-5 is expected to have **slight negative to slight positive impacts** on the commercial sector. Under this alternative, the allocation would decrease by 4% (based on the comparison to 2022 outlined in Appendix D). However, the average example 2019-2021 quota is 10% above average 2019-2021 landings (Table 57, Table 58).

Only alternative 1c-4 (the no action/status quo alternative) is expected to have **moderate positive impacts** on the commercial sector because the commercial sector would not lose allocation and commercial landings could increase beyond recent levels if ABCs remain similar to recent levels (Table 57, Table 58).

When ranked in terms of greatest potential positive impacts to greatest potential negative impacts to the commercial sector, the black sea bass alternatives rank as follows: 1c-4 (no action), 1c-5, BSB-3, BSB-5 (preferred), BSB-1, BSB-4, BSB-2, 1c-6, 1c-1, 1c-2, 1c-3, 1c-7. None of these impacts are expected to be significant based on the definition in Table 52, including for alternatives that include high negative impacts within the range of expected impacts.

Ex-vessel prices for commercial landings may change in response to different quotas (Figure 19). Using the equation in Figure 19, prices can be estimated under different landed quantities. For example, assuming full utilization of the example commercial quota under alternative 1c-7 (2.84 million pounds) the average ex-vessel price is estimated at $3.19 per pound and would yield about $9.1 million in ex-vessel revenue. If the same process is followed for the alternative 1c-4 quota (i.e., the quota adopted for 2023, 5.71 million pounds, which is higher than all other example quotas), the average ex-vessel price is estimated at $2.41 per pound. Expected revenues would be $13.7 million, which is higher than the expected revenues under alternative 1c-7 despite the lower ex-vessel price per pound due to the higher overall quota under 1c-4. These are rough estimates, and price is influenced by many other factors aside from landings, such as changes in consumer preferences or product substitution. These results, however, do suggest that black sea bass commercial revenues would increase under higher quotas with full utilization.

Impacts to the Recreational Sector

As previously noted, incorporation of the revised MRIP data into the black sea bass stock assessment contributed to increases in estimated stock biomass, which in turn led to a 59% increase in the commercial quota and RHL between 2019 and 2020. However, recreational harvest based on the revised MRIP data has been well above even this increased RHLs in recent years (Section 6.1.3, Table 36). Starting in 2020, the RHL must now be measured against recreational harvest in the revised MRIP units, rather than with the older MRIP data. The 59% increase in the RHL from 2019 to 2020 was not great enough to prevent the need for restrictions in the recreational fishery to prevent RHL overages. After leaving recreational measures unchanged in 2020 and 2021 as a temporary approach, the Council and Board agreed to revise measures in 2022 with the goal of reducing harvest by 20.7% compared to 2018-2021 average harvest with the goal of preventing an overage of the 2022 RHL. The impact of these restrictions on harvest has yet to be determined.

The impact considerations for the recreational fishery take into account the restrictions in 2022 as well as a comparison of average harvest during 2019-2021 to average 2019-2021 example RHLs under each alternative. Given the greater scale of the disconnect between recent landings and landings limits under the current allocations for the recreational sector compared to the commercial sector, a lesser emphasis was placed on the scale of the allocation change when evaluating impacts for the recreational sector compared to the commercial sector.

Based on these considerations, two alternatives (alternatives 1c-4 - the no action/status quo alternative - and 1c-5) are expected to have **high negative impacts** on the recreational sector. Under these alternatives, the recreational allocation would remain unchanged (under alternative 1c-4) or would increase by 4% (under alternative 1c-5, based on the comparison to 2022 outlined in Appendix D). The average example 2019-2021 RHLs under these alternatives are respectively 46% and 44% below average 2019-2021 harvest. Depending on future ABCs and assumptions about future harvest, further restrictions beyond those implemented for 2022 may be necessary to prevent future RHL overages under these alternatives (, Table 54). Additional restrictions in the recreational black sea bass fishery, especially restrictions beyond those implemented for 2022, are likely to have negative socioeconomic impacts through reduced access to black sea bass to catch (e.g., through shortened seasons) and/or keep (e.g., through higher minimum size limits or lower possession limits), reduced angler satisfaction, reduced revenues from for-hire trips, and reduced revenues for fishery support businesses. Many anglers have expressed frustration with the black sea bass measures in recent years given high availability of black sea bass to anglers and the lack of an obvious conservation need for restricting harvest given that biomass is more than double the target level (Section 6.2.3).

Two alternatives (alternatives BSB-5 - the preferred alternative - and BSB-3) are expected to have **high negative to slight negative impacts** on the recreational sector. Under these alternatives, although the recreational allocation would increase by 9% and 12%, respectively (based on the comparison to 2022 outlined in Appendix D), the average example 2019-2021 RHLs are both approximately 39% below average 2019-2021 harvest. Depending on future ABCs and the impacts of the restrictions implemented for 2022, further restrictions may not be needed to prevent future RHL overages. However, the increased allocations under these alternatives are likely not great enough to reverse the restrictions implemented in 2022 (Table 57, Table 58).

Two alternatives (alternatives BSB-4 and BSB-1) are expected to have **high negative to slight positive impacts** on the recreational sector. Under these alternatives, the recreational allocation would increase by 14% and 12%, respectively (based on the comparison to 2022 outlined in Appendix D). However, the average example 2019-2021 RHLs are respectively 12% and 7% below average 2019-2021 harvest. Depending on future ABCs, the impacts of the restrictions implemented for 2022, and assumptions about future harvest, some liberalizations compared to 2022 measures, but not compared to 2019-2021 measures, may be possible under these alternatives (Table 57, Table 58).

Six alternatives (alternatives BSB-2, 1c-1, 1c-2, 1c-3, 1c-6, and 1c-7) are expected to have **moderate negative to slight positive impacts** on the recreational sector. Under these alternatives, the recreational allocation would increase by 18% - 30% (based on the comparison to 2022 outlined in Appendix D). However, the average example 2019-2021 RHLs are 13% -28% below average 2019-2021 harvest. Depending on future ABCs, the impacts of the restrictions implemented for 2022, and assumptions about future harvest, some liberalizations compared to 2022 measures, but not compared to 2019-2021 measures, may be possible under these alternatives (Table 57, Table 58).

When ranked in terms of greatest potential positive impacts to greatest potential negative impacts to the recreational sector, the black sea bass alternatives rank as follows: 1c-7, 1c-3, 1c-2, 1c-6, 1c-1, BSB-2, BSB-4, BSB-1, BSB-5 (preferred), BSB-3, 1c-5, 1c-4 (no action). None of these impacts are expected to be significant based on the definition in Table 52, including for alternatives that include high negative impacts within the range of expected impacts.

Table 57. Evaluation of the socioeconomic impacts of the black sea bass alternatives, including percent shift in allocation (based on methodology described in Appendix D), comparison of average example limits and recent landings from 2019-2021, and example limits for 2023. Example quotas and RHLs are in millions of pounds and developed based on the methodology described in Appendix C. Alternative BSB-5 is the preferred alternative. Alternative 1c-4 is the no action alternative.

	Catch-Based Alternatives						Landings-Based Alternatives					
	BSB-5	BSB-4	BSB-2	1c-1	1c-2	1c-3	1c-4[a]	1c-5	BSB-3	BSB-1	1c-6	1c-7
Com. allocation	45%	40.5%	36%	32%	28%	24%	49%	45%	41%	37%	29%	22%
Rec. allocation	55%	59.5%	64%	68%	72%	76%	51%	55%	59%	63%	71%	78%
% shift com. to rec.[b]	9%	14%	18%	22%	26%	30%	No change	4%	8%	12%	20%	27%
Commercial Sector												
Avg. example quota, 2019-2021 ABCs	3.92	3.61	3.29	3.02	2.74	2.46	5.06	4.50	4.15	3.80	3.06	2.38
2019-2021 avg. com. landings	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09
Difference avg. 2019-2021 example quota and avg. landings	-4%	-12%	-19%	-26%	-33%	-40%	23%	10%	2%	-7%	-25%	-42%
Example 2023 quota	4.56	4.18	3.81	3.47	3.14	2.8	5.71	5.37	4.96	4.53	3.65	2.84
Recreational Sector												
Avg. example RHL, 2019-2021 ABCs	5.98	6.48	6.97	7.42	7.86	8.29	5.27	5.50	5.97	6.47	7.49	8.43
2019-2021 avg. rec landings	9.74	9.74	9.74	9.74	9.74	9.74	9.74	9.74	9.74	9.74	9.74	9.74
Difference 2019-2021 avg. example RHL and avg. landings	-39%	-33%	-28%	-24%	-19%	-15%	-46%	-44%	-39%	-34%	-23%	-13%
Example 2023 RHL	7.23	7.83	8.42	8.95	9.48	10.01	5.95	6.56	7.13	7.72	8.94	10.07

[a]Alternative 1c-4 is the no action/status quo alternative. The values shown for this alternative are actual implemented catch and landings limits for 2019-2021 and 2023, not example measures.

[b] For catch-based alternatives, the starting point for this calculation is the 2022 split of the sector-specific ACLs (which incorporates dead discards) instead of the landings limit allocation. Here, this shift is calculated by starting from the 2022 specifications which includes a commercial ACL that is 54% of the ABC, and a recreational ACL that is 46% of the ABC (see Appendix D). For landings-based alternatives, the starting point for this calculation is the current landings-based allocation (49% commercial/51% recreational).

Table 58. Expected socioeconomic impacts of the black sea bass commercial/recreational allocation alternatives on the commercial and recreational sectors.

Alternative	Commercial sector impacts	Recreational sector impacts
BSB-5 (preferred)	Moderate negative to slight negative	High negative to slight negative
BSB-4	Moderate negative	High negative to slight positive
BSB-2	Moderate negative	Moderate negative to slight positive
1c-1	Moderate negative	Moderate negative to slight positive
1c-2	High negative	Moderate negative to slight positive
1c-3	High negative	Moderate negative to slight positive
1c-4 (no action)	Moderate positive	High negative
1c-5	Slight negative to slight positive	High negative
BSB-3	Negligible to moderate positive	High negative to slight negative
BSB-1	Moderate negative to slight negative	High negative to slight positive
1c-6	Moderate negative	Moderate negative to slight positive
1c-7	High negative	Moderate negative to slight positive

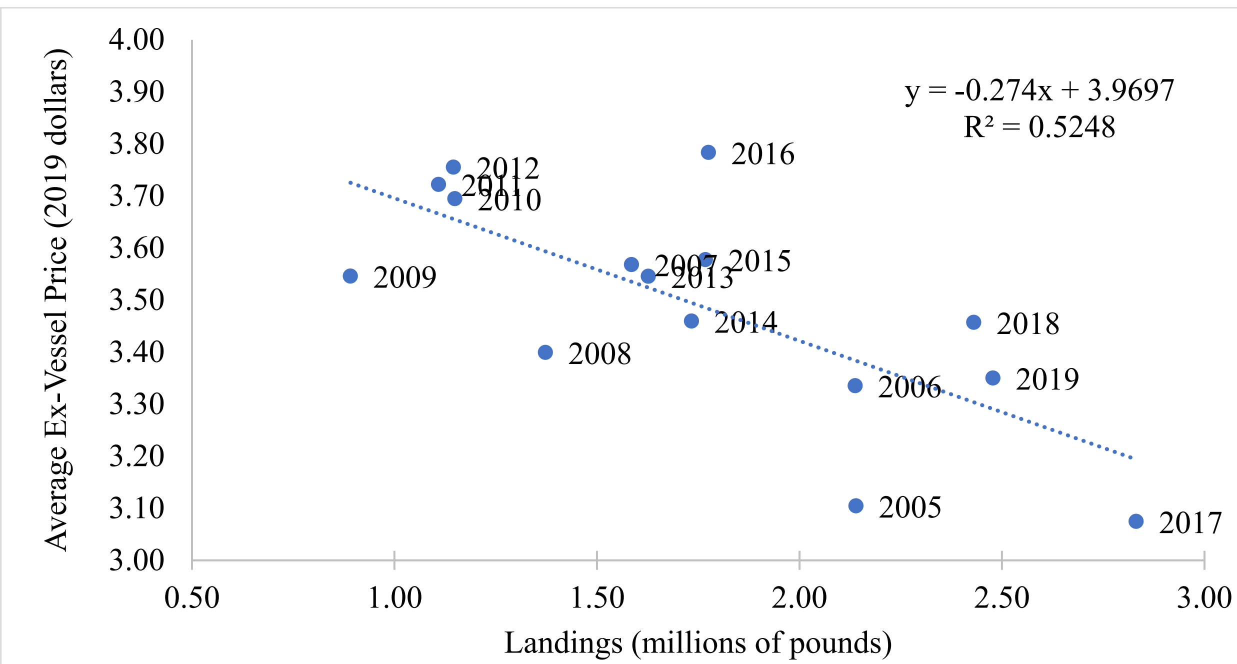

Figure 19. Commercial black sea bass landings and average ex-vessel prices, 2005-2019, in 2019 dollars. Source: NEFSC Social Sciences Branch, personal communication.

7.1.1.4 Phase-In Provision Impacts

As previously described, all but the no action alternatives would increase the recreational allocation and decrease the commercial allocation for all three species. Appendix D outlines assumptions made to calculate percent shifts when switching between a catch-based and landings-based allocation. Based on these calculations, the commercial and recreational sector allocations could shift by as much as 13.5% per year, or as little as 0.8% per year under the phase-in timeframes of 2-5 years, depending on the allocation percentage alternative with which the phase-in alternative would be coupled. For summer flounder, the annual phase-in would range from 1% per year to 9.5% per year depending on the allocation change and the phase-in alternative (Table 60). For scup, the annual phase-in would range from 2.6% per year to 13.5% per year (Table 61). For black sea bass, the annual phase-in would range from 0.8% per year to 15% per year (Table 62).

As described in Sections 7.1.1.1 through 7.1.1.3, the impacts of an increased recreational allocation and decreased commercial allocation are not expected to be positive for the recreational fishery and negative for the commercial fishery in all cases, depending on recent trends in landings and the scale of the allocation change. Therefore, further consideration is needed beyond the direction of the allocation change and the length of the phase-in period.

As described in Sections 7.1.1.1 through 7.1.1.3, some alternatives may not impact commercial or recreational landings compared to recent levels (e.g., due to a small overall change in the allocation and/or recent trends of underharvesting quotas). In these cases, the phase-in alternatives may have negligible impacts on the commercial and/or recreational sectors (depending on the allocation percentage alternative) as they would not be expected to impact landings, commercial or for-hire revenues, angler satisfaction, or other socioeconomic factors.

For allocation alternatives where the decreased commercial allocation percentage is expected to require reductions in commercial landings (and therefore revenues) compared to recent levels, phasing in this change over a longer time period (alternative 1d-4, followed by 1d-3 and 1d-2) could result in less negative impacts than if the change were implemented in a single year (alternative 1d-1). In these cases, spreading the impacts of the reduced allocation over multiple years (i.e., alternatives 1d-2, 1d-3, and 1d-4) could have slight positive impacts for the commercial sector, compared to if the reduced allocation were not phased in (alternative 1d-1), which, by comparison, could have slight negative impacts for the commercial sector.

In instances where the increased recreational allocation percentage is expected to allow increased recreational harvest (and therefore increased for-hire revenues and angler satisfaction) compared to recent levels, phasing in this change over a longer time (alternative 1d-4, followed by 1d-3 and 1d-2) could result in less positive impacts than if the change were implemented in a single year (alternative 1d-1). Therefore, alternative 1d-1 (no phase-in) would be expected to have slight positive impacts on the recreational sector by allowing for a faster transition to increased allocations. Alternatives 1d-2 (two year phase in), 1d-3 (three year phase in), and 1d-3 (five year phase in) could have slight negative impacts to the recreational sector by comparison as the transition to an increased allocation and associated benefits would be slower.

As described in Sections 7.1.1.1 through 7.1.1.3, some alternatives could require reduced recreational harvest compared to recent levels, even under increased recreational allocations. In these cases, implementing the full allocation increase in a single year (alternative 1d-1) would have more positive impacts than if the increase were phased-in over a longer time (alternative 1d-4, followed by 1d-3 and 1d-2). In this sense, when comparing the phase-in allocation alternatives to each other, alternative 1d-1 (no phase-in) is expected to have slight positive impacts and alternatives 1d-2 through 1d-4 are expected to have slight negative impacts for the recreational sector.

When comparing the phase-in alternatives to each other, alternative 1d-1 (no phase-in) would have the most positive impacts on the recreational sector and the most negative impacts on the commercial sector, followed by a two year phase-in (alternative 1d-2) and a three year phase in (alternative 1d-3). A five year phase-in (alternative 1d-4) would have the least positive impacts on the recreational sector and the least negative impacts on the commercial sector.

Table 59. Expected socioeconomic impacts of the allocation change phase-in alternatives. In all cases the impacts vary based on the allocation percentage change alternative from alternative sets 1a - 1c with which the phase-in alternative would be paired.

Alternative	Commercial sector impacts	Recreational sector impacts
1d-1 (no phase-in, preferred)	Negligible to slight negative	Negligible to slight positive
1d-2 (two year phase-in)	Negligible to slight positive	Negligible to slight negative
1d-3 (three year phase-in)	Negligible to slight positive	Negligible to slight negative
1d-4 (five year phase-in)	Negligible to slight positive	Negligible to slight negative

Table 60. Percent shift in allocation per year for all summer flounder allocation change alternatives.

Alternatives	Total allocation shift [a]	1d-2: Two year phase-in	1d-3: Three year phase-in	1d-4: Five year phase -in
Catch-Based				
Fluke-5: 55% com., **45%** rec.	**1%**	**0.5%** per year	**0.33%** per year	**0.2%** per year
Fluke-4: 50% com., **50%** rec.	**6%**	**3%** per year	**2%** per year	**1.2%** per year
Fluke-2: 45% com., **55%** rec.	**11%**	**5.5%** per year	**3.7%** per year	**2.2%** per year
1a-1: 44% com., **56%** rec.	**12%**	**6%** per year	**4%** per year	**2.4%** per year
1a-2: 43% com., **57%** rec.	**13%**	**6.5%** per year	**4.3%** per year	**2.6%** per year
1a-3: 40% com., **60%** rec.	**16%**	**8%** per year	**5.3%** per year	**3.2%** per year
Landings-Based				
1a-4 (status quo): 60% com., **40%** rec.	**0%**	**N/A**	**N/A**	**N/A**
1a-5: 55% com., **45%** rec.	**5%**	**2.5%** per year	**1.7%** per year	**1%** per year
Fluke-3: 51% com., **49%** rec.	**9%**	**4.5%** per year	**3%** per year	**1.8%** per year
Fluke-1: 47% com., **53%** rec.	**13%**	**6.5%** per year	**4.3%** per year	**2.6%** per year
1a-6: 45% com., **55%** rec.	**15%**	**7.5%** per year	**5%** per year	**3%** per year
1a-7: 41% com., **59%** rec.	**19%**	**9.5%** per year	**6.3%** per year	**3.8%** per year

[a] For catch-based alternatives, the starting point for this calculation is the current (2022) split of the sector-specific ACLs (which incorporates dead discards) instead of the landings limit allocation. Here, this shift is calculated by starting from the 2022 specifications which includes a commercial ACL that is 56% of the ABC, and a recreational ACL that is 44% of the ABC (see Appendix D).

[b] For landings-based alternatives, the starting point for this calculation is the current landings-based allocation (60% commercial/40% recreational).

Table 61. Percent shift in allocation per year for all scup allocation change alternatives.

Alternatives	Total allocation shift[a]	1d-2: Two year phase-in	1d-3: Three year phase-in	1d-4: Five year phase - in
Catch-Based				
1-b1 (status quo): 78.0% com., **22.0%** rec.	**0%**	**N/A**	**N/A**	**N/A**
1b-2: 65.0% com., **35.0%** rec.	**13%**	**6.5%** per year	**4.3%** per year	**2.6%** per year
Scup-4: 63.5% com., **36.5%** rec.	**14.5%**	**7.3%** per year	**4.8%** per year	**2.9%** per year
Scup-2: 62.0% com., **38.0%** rec.	**16%**	**8%** per year	**5.3%** per year	**3.2%** per year
1b-3: 61.0% com., **39.0%** rec.	**17%**	**8.5%** per year	**5.7%** per year	**3.4%** per year
1b-4: 59.0% com., **41.0%** rec.	**19%**	**9.5%** per year	**6.3%** per year	**3.8%** per year
Landings-Based				
Scup-1: 59.0% com., **41.0%** rec.	**18%**	**9%** per year	**6%** per year	**3.6%** per year
Scup-3: 58.0% com., **42.0%** rec.	**19%**	**9.5%** per year	**6.3%** per year	**3.8%** per year
1b-5: 57.0% com., **43.0%** rec.	**20%**	**10%** per year	**6.7%** per year	**3.4%** per year
1b-6: 56.0% com., **44.0%** rec.	**21%**	**10.5%** per year	**7%** per year	**4 %** per year
1b-7: 50.0% com., **50.0%** rec.	**27%**	**13.5%** per year	**9%** per year	**5.4%** per year

[a] For catch-based alternatives, the starting point for this calculation is the current catch-based allocation percentage (78% commercial/22% recreational).

[b] For landings-based alternatives, the starting point for this calculation is the current (2022) split of the sector-specific landings limits (commercial quota and RHL). This includes a commercial quota that is 77% of the total allowable landings, and an RHL that is 23% of the total allowable landings (see Appendix D).

Table 62. Percent shift in allocation per year for all black sea bass allocation change alternatives.

Alternatives	Total allocation shift [a]	1d-2: 2 year phase-in	1d-3: 3 year phase-in	1d-4: 5 year phase -in
Catch-Based				
BSB-5 (preferred): 45.0% com., **55.0%** rec.	**9%**	**4.5%** per year	**3%** per year	**1.8%** per year
BSB-4: 40.5% com., **59.5%** rec.	**13.5%**	**6.8%** per year	**4.5%** per year	**2.7%** per year
BSB-2: 36.0% com., **64.0%** rec.	**18%**	**9%** per year	**6%** per year	**3.6%** per year
1c-1: 32.0% com., **68.0%** rec.	**22%**	**11%** per year	**7.3%** per year	**4.4%** per year
1c-2: 28.0% com., **72.0%** rec.	**26%**	**13%** per year	**8.7%** per year	**5.2%** per year
1c-3: 24.0% com., **76.0%** rec.	**30%**	**15%** per year	**10%** per year	**6%** per year
Landings-Based				
1-c4 (status quo): 49.0% com., **51.0%** rec.	**0%**	**N/A**	**N/A**	**N/A**
1c-5: 45.0% com., **55.0%** rec.	**4%**	**2%** per year	**1.3%** per year	**0.8%** per year
BSB-3: 41.0% com., **59.0%** rec.	**8%**	**4%** per year	**2.7%** per year	**1.6%** per year
BSB-1: 37.0% com., **63.0%** rec.	**12%**	**6%** per year	**4%** per year	**2.4%** per year
1c-6: 29.0% com., **71.0%** rec.	**20%**	**10%** per year	**6.7%** per year	**4%** per year
1c-7: 22.0% com., **78.0%** rec.	**27%**	**13.5%** per year	**9%** per year	**5.4%** per year

[a] For catch-based alternatives, the starting point for this calculation is the current (2022) split of the sector-specific ACLs (which incorporates dead discards) instead of the landings limit allocation. Here, this shift is calculated by starting from the 2022 specifications which includes a commercial ACL that is 54% of the ABC, and a recreational ACL that is 46% of the ABC for black sea bass (see Appendix D).

[b] For landings-based alternatives, the starting point for this calculation is the current landings-based allocation (49% commercial/51% recreational).

7.1.2 Socioeconomic Impacts of the Quota Transfer Provision Alternatives

7.1.2.1 Impacts of Quota Transfer Alternatives

As described in Section 5.2, the current FMP does not allow for the annual transfer of landings between the commercial and recreational sectors. Transfers were considered as a way to provide flexibility when a landings limit is restrictive in one sector and the other sector is expected to have a surplus.

Under alternative 2a (no action), there would be no change to the FMP to allow transfers. This alternative could have both slight negative and slight positive socioeconomic impacts. Impacts could be slight positive due to increased stability and predictability in landings limits, compared to if transfers were allowed (alternative 2b). However, the inability to transfer could lead to slight negative socioeconomic impacts due to lack of flexibility in cases where one sector is expected to exceed their limits and the other is expected to not achieve their limit. This situation could reduce the likelihood of achieving OY, and could lead to more restrictive management measures, reduced revenues and/or reduced angler satisfaction in the sector requiring restrictions. For summer flounder and black sea bass, quota is typically highly utilized by both sectors, so this situation is rare and tends to be short-term when it does occur. For scup, in recent years (since approximately 2011) there has been a trend of commercial underharvest. In the past few years, under revised MRIP data, the scup recreational sector has been overharvesting its RHL. In this case, the inability to transfer quota between sectors may have had slight negative impacts on the recreational scup sector. Persistent underutilization in one sector could indicate a need for longer-term solutions such as further changes to the allocations, reducing the potential applicability of transfers.

In contrast, in cases where each sector tends to harvest their limits, alternative 2a could result in continued slight positive impacts due to each sector retaining the opportunity to harvest their full allocation. Alternative 2a also allows for increased stability in annual landings limits and increased predictability in deriving sector limits from the ABC, compared to if transfers were allowed.

Alternative 2b would establish a process for annual transfer of quota between sectors, in either direction depending on need. This could result in a range of socioeconomic impacts for either sector depending on if a transfer is used and the magnitude of the transfer. The impacts of any potential transfer would be evaluated at the time of transferring through the specifications process. Alternative 2b simply establishes a mechanism for transfers within the FMP but does not propose specifics about the frequency, direction, or calculation of a transfer amount. As such, the socioeconomic impacts of alternative 2b are primarily those that result from establishing a process that allows for transfers, rather than the impacts of future transfers themselves.

The socioeconomic impacts of alternative 2b are expected to range from slight negative to slight positive. Alternative 2b would allow for greater flexibility in modifying annual sector-specific limits with the potential to better achieve OY, potentially resulting in slight positive impacts. These impacts are expected to be small in magnitude given that the theoretical benefits of transfers may be difficult to achieve due to disconnects in the timing of data availability and difficulty accurately predicting sector needs for the following fishing year. The preferences of each's sector's stakeholders may also influence how often a transfer would occur and in what magnitude. For example, stakeholders in either sector may prefer a liberalization in measures over a transfer.

Alternative 2b could result in slight negative socioeconomic impacts if it results in less predictability and stability in the setting of sector-specific catch and landings limits. Variation and unpredictability in the amount, frequency, and direction of transfers from year to year could compound any annual fluctuations in landings limits resulting from projected stock biomass declines or increases. This could lead to greater annual fluctuations in sector limits if transfers were used frequently.

The impacts of a transfer are also dependent on the marginal economic value of additional allowable landings for each sector, as well as the positive or negative impacts on angler satisfaction that may arise from modifying or maintaining recreational measures. Additional factors influencing how the commercial and recreational fisheries may be impacted by a transfer include market conditions, overall availability of the species, availability of substitute species, and trends in effort driven by external factors. These factors would be analyzed through separate rulemaking during the specifications process for the applicable future fishing year.

7.1.2.2 Impacts of Transfer Cap Alternatives

Alternative set 2c (Section 5.1.2) contains options for setting a cap on the total amount of transfer between sectors.

Alternative 2c-1 (no transfer cap) would allow the Council and Board to recommend any amount of the ABC be transferred between sectors during the annual specifications process. This allows for maximum flexibility in changing the effective allocation in each year; however, this is also likely to increase the difficulty of determining an appropriate transfer amount during the specifications process. No transfer cap could mean a wide range of potential transfer amounts to consider and analyze, leading to less predictability and potentially more frequent fluctuations in sector-specific landings limits from year to year, which could be amplified by changes in overall catch limits resulting from fluctuating stock projections. This could partially negate some of the slight positive impacts associated with increased ability to achieve OY described in Section 7.1.2.1.

Alternatives 2c-2, 2c-3, and 2c-4 would set transfer caps set at 5%, 10%, and 15% of the ABC, respectively. This would provide less flexibility in adapting to circumstances where there may be a surplus of allocation in one sector but a deficit in the other. However, a transfer cap also provides greater stability in effective sector allocations from year to year. A lower transfer cap (alternative 2c-2) would accomplish this more so than a larger cap (alternative 2c-4).

As described in Section 7.1.2.1, socioeconomic impacts associated with future transfers occurring under all transfer cap alternatives would be evaluated through the specifications process. All alternatives in alternative set 2c are expected to have slight negative to slight positive socioeconomic impacts. Future transfer impacts under any caps would be variable and dependent on a wide variety of factors as described in Section 7.1.2.1. While higher transfer caps may influence the degree of transfer impacts by increasing flexibility and increasing potential annual fluctuation in quota, these impacts would intersect with these other factors in ways that are difficult to predict. A transfer cap also may not drive the amount of transfer in a given year because only amounts predicted to be unused by one sector would be transferred, and there is no requirement to transfer the full amount of the cap.

When comparing transfer cap alternatives, alternative 2c-2 (cap at 5% of ABC) would be expected to have the smallest magnitude of slight negative or slight positive impacts, depending on the circumstances, given the smallest possible transfer percentage and therefore the smallest potential increase in flexibility and decrease in stability. This is followed by alternative 2c-3 (cap at 10% of

ABC), then 2c-4 (cap at 15% of ABC), then 2c-1 (no transfer cap). Alternative 2c-1 would have the largest magnitude of slight negative or slight positive impacts given the highest possible amount of flexibility and greatest potential for instability in quotas by sector.

7.1.3 Socioeconomic Impacts of the Framework Provision Alternatives

As described in Section 5.3, alternatives 3a and 3b consider whether any future modifications to the commercial/recreational allocations or allocation transfer systems would require a full FMP amendment (alternative 3a) or could be considered through a framework action (for the Council) and addendum (for the Commission; alternative 3b, the preferred alternative). Frameworks/addenda are generally shorter and more efficient actions than amendments; however, the timeline and complexity of either type of management action depends on the nature of the specific options considered. The impacts of any specific changes considered through a future amendment or framework/addendum would be analyzed through a separate process with associated public comment opportunities and a full description of expected impacts.

Neither alternative 3a or 3b would have any direct impacts on the environment or human communities as they are both administrative in nature.

Alternative 3b could simplify and improve the administrative efficiency of future actions related to allocations and transfers. Alternative 3b would have no effect on summer flounder, scup, and black sea bass management until a future framework/addendum action was developed and implemented through a separate process.

7.2 Impacts to Summer Flounder, Scup, Black Sea Bass

7.2.1 Impacts of the Commercial/Recreational Allocation Alternatives on Summer Flounder, Scup, and Black Sea Bass

7.2.1.1 Commercial/Recreational Allocation Alternatives

Under all commercial/recreational allocation percentage alternatives (alternative sets 1a, 1b, and 1c), total dead catch in both sectors will continue to be constrained by management measures which are designed to prevent overfishing and are based on the best scientific information available. All alternatives are expected to continue to prevent overfishing for all three species. Scup and black sea bass biomass is currently above the target levels (Sections 6.2.2 and 6.2.3). All allocation alternatives are expected to maintain scup and black sea bass biomass levels that are at or above the target levels. Summer flounder biomass is below the target level, but above the threshold level that defines an overfished state (Section 6.2.1). The management program under all allocation alternatives for summer flounder is intended to bring summer flounder biomass to the target level over time. Therefore, all allocation percentage alternatives are expected to have moderate positive impacts for all three species by maintaining their currently positive stock status. The scale of these moderate positive impacts is not expected to vary across alternatives.

As described in Sections 7.1.1.1 - 7.1.1.3, all but the no action/status quo alternatives (i.e., alternatives 1a-4, 1b-1, and 1c-4) would reduce the commercial allocations, which would in turn result in lower commercial quotas than the no action/status quo alternatives. Several alternatives which would increase the recreational allocation may still require additional restrictions in the recreational fisheries in the near term for some species compared to the measures used in recent years due to the mismatch between the revised MRIP data and the RHLs which could result from the allocations under many alternatives.

Depending on the scale of the change, changes in allocation could lead to changes in regulatory discards of these species compared to recent levels if regulations are substantially restricted or relaxed in response to changes in fishery limits. Total dead discards depend on many factors in addition to the regulations (e.g., market factors, availability of other target species, year class strength) and will continue to be monitored and accounted for through the process of setting catch and landings limits. Under all reallocation alternatives for summer flounder, scup, and black sea bass, the fisheries will continue to be monitored and managed using the best available estimates of both harvest and dead discards. Management measures will continue to be adjusted as necessary to prevent overages of the commercial and recreational ACLs and to respond as specified in the Council's AMs when overages do occur. A preliminary analysis taking into account the different levels of precision of the estimates of landings and dead discards in each sector for all three species suggested that the risk of exceeding the ABC does not vary greatly under a wide range of different proportions of total dead catch from each sector (Dr. Paul Rago, personal communication). This suggests that changes in the commercial/recreational allocation, especially changes within the range considered, may not have notably different impacts on the risk of exceeding the ABC.

7.2.1.2 Allocation Change Phase-In Provisions

Alternatives 1d-1 through 1d-4 consider if any changes to the allocation percentages under alternative sets 1a, 1b, and 1c should occur in a single year (alternative 1d-1, no phase in) or if the change should be spread over two, three, or five years (alternatives 1d-2 through 1d-4). As described in the previous section, all allocation alternatives are expected to have moderate positive impacts to target species by continuing to prevent overfishing, maintaining biomass at or above the target levels (for scup and black sea bass), or bringing biomass to the target level over time (for summer flounder). These impacts are not expected to be influenced by the number of years over which allocation changes are phased in. As such, all alternatives 1d-1 through 1d-4 are expected to have no impacts on summer flounder, scup, and black sea bass as these alternatives merely propose a process for transitioning to revised allocations, the impacts of which are described in Section 7.2.1.1.

7.2.2 Impacts of the Quota Transfer Provision Alternatives on Summer Flounder, Scup, and Black Sea Bass

As described in Section 5.2, alternatives 2a, 2b, and 2c-1 through 2c-4 address the establishment of a process for bi-directional quota transfers between the commercial and recreational sector. As noted in Section 7.1.2, the impacts of future transfers are difficult to predict and will vary based on a number of factors None of these alternatives are expected to have direct impacts on summer flounder, scup, or black sea bass. These alternatives define the process and parameters around the transfer process. They are not expected to directly change patterns in landings, discards, or fishing effort. Because of this, alternative set 2 is expected to have no impacts to target species across alternatives. Any expected impacts of a specific transfer under 2b would be evaluated through the specifications process at the time of consideration.

7.2.3 Impacts of the Framework Provision Alternatives on Summer Flounder, Scup, and Black Sea Bass

As described in Section 5.3, alternatives 3a and 3b consider whether any future modifications to the commercial/recreational allocations or allocation transfer systems would require a full FMP amendment (alternative 3a) or could be considered through a framework action (for the Council) and addendum (for the Commission; alternative 3b, the preferred alternative). Frameworks/ addenda are generally shorter and more efficient actions than amendments; however, the timeline and complexity of either type of management action would depend on the nature of the specific options considered.

Neither alternative 3a or 3b would have any direct impacts on the environment or human communities as they are both administrative in nature. The impacts of any specific changes considered through a future amendment or framework/addendum would be analyzed through a separate process with associated public comment opportunities and a full description of expected impacts.

7.3 Impacts to Non-Target Species

7.3.1 Impacts of the Commercial/Recreational Allocation Alternatives on Non-Target Species

7.3.1.1 Commercial/Recreational Allocation Alternatives

As previously described, all but the no action/status quo alternatives (i.e., alternatives 1a-4, 1b-1, and 1c-4) would reduce the commercial allocations, which would in turn result in lower commercial quotas than the no action/status quo alternatives. Several alternatives which would increase the recreational allocation may still require additional restrictions in the recreational fisheries for some species compared to the measures used in recent years due to the mismatch between the revised MRIP data and the RHLs which could result from the allocations under many alternatives.

As described in Section 7.2.1, all allocation alternatives (Fluke-5 through 1a-7, 1a-1 through 1b-7, and BSB-5 through 1c-7) will still constrain the fisheries to the overall ABC, limiting total commercial and recreational fishing effort. Depending on the scale of allocation change, some allocation alternatives could result in minor changes in interaction rates with non-target species based on shifts in fishing effort between the commercial and recreational fisheries. However, none of these shifts are expected to change patterns in landings, discards, or fishing effort in such a way that they negatively impact stock status of any non-target species. As such, all alternatives are expected to have slight positive impacts on the non-target species with a currently positive stock status and slight negative impacts on non-target species with a currently negative stock status. Non-target species and their stock status are identified in Section 6.3. The scale of these slight negative to slight positive impacts is not expected to vary across alternatives.

7.3.1.2 Allocation Phase-In Alternatives

Alternatives 1d-1 through 1d-4 consider if any changes to the allocation percentages under alternative sets 1a, 1b, and 1c should occur in a single year (alternative 1d-1, no phase in, the preferred alternative) or if the change should be spread over two, three, or five years (alternatives 1d-2 through 1d-4). As described in the previous section, all allocation alternatives are expected to have slight positive to slight negative impacts to non-target species, depending on the current stock status of each non-target species, as none of the alternatives are expected to alter current stock status of non-target species. These impacts are not expected to be influenced by the number of years over which they are phased in under alternative set 1d. As such, all alternatives 1d-1 through 1d-4 are expected to have no direct impacts on non-target species as these alternatives merely propose a process for transitioning to revised allocations, the impacts of which are described in Section 7.3.1.1.

7.3.2 Impacts of the Quota Transfer Provision Alternatives on Non-Target Species

The establishment of a transfer process with or without transfer caps under alternative set 2 is not expected to have direct impacts on non-target species. These alternatives set up the process and parameters around the transfer process. They are not expected to directly change patterns in landings, discards, or fishing effort. Because of this, alternative set 2 is expected to have no impacts to non-target species across alternatives. Any expected impacts of a specific transfer under 2b would be evaluated through the specifications process at the time of consideration.

7.3.3 Impacts of the Framework Provision Alternatives on Non-Target Species

As described in Section 5.3, alternatives 3a and 3b consider whether any future modifications to the commercial/recreational allocations or allocation transfer systems would require a full FMP amendment (alternative 3a) or could be considered through a framework action (for the Council) and addendum (for the Commission; alternative 3b, the preferred alternative). Frameworks/addenda are generally shorter and more efficient actions than amendments; however, the timeline and complexity of either type of management action would depend on the nature of the specific options considered.

Alternatives 3a and 3b are both administrative in nature. Neither alternative will impact fishing effort or the location of or duration of time that fishing gear is in the water; therefore, neither alternative is expected to impact non-target species. The impacts of any specific changes considered through a future amendment or framework/addendum would be analyzed through a separate process with associated public comment opportunities and a full description of expected impacts.

7.4 Impacts to Habitat

7.4.1 Impacts of the Commercial/Recreational Allocation Alternatives on Habitat

7.4.1.1 Commercial/Recreational Allocation Alternatives

As previously described, all but the no action/status quo alternatives (i.e., alternatives 1a-4, 1b-1, and 1c-4) would reduce the commercial allocations, which would in turn result in lower commercial quotas than the no action/status quo alternatives. Several alternatives which would increase the recreational allocation may still require additional restrictions in the recreational fisheries for some species compared to measures used in recent years due to the mismatch between the revised MRIP data and the RHLs which could result from the allocations under many alternatives.

As described in section 6.4, the gear types used in the summer flounder, scup, and black sea bass fisheries (i.e., predominantly bottom otter trawl and pots/traps in the commercial fisheries 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 less negative impact on physical habitat than the dominant commercial gear types. Status quo levels of commercial and recreational fishing effort are not likely to change the current conditions of physical habitat. As described in Section 7.2.1, under all allocation alternatives (alternative sets 1a, 1b, and 1c), total commercial and recreational fishing effort will still be constrained by a variety of management measures designed to prevent overfishing. Depending on the scale of allocation change, and trends in recent landings, some allocation alternatives could result in minor changes in habitat interactions by shifting effort from the commercial fishery (predominantly bottom otter trawls and pots/traps) to the recreational fishery (predominantly hook and line). However, any such shifts are not expected to contribute to either further degradation or restoration of any habitats currently impacted by the fisheries.

Under all allocation alternatives for all three species, 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 these and many other fisheries which operate in the same areas. For these reasons, all allocation alternatives are expected to have slight negative impacts to physical habitat. The scale of these slight negative impacts is not expected to vary across alternatives.

7.4.1.2 Allocation Change Phase-In Provisions

Alternatives 1d-1 through 1d-4 consider if any changes to the allocation percentages under alternative sets 1a, 1b, and 1c should occur in a single year (alternative 1d-1, no phase in) or if the change should be spread over two, three, or five years (alternatives 1d-2 through 1d-4). As described in the previous section, all allocation alternatives are expected to have the same degree of slight negative impacts to habitat. These impacts are not expected to be influenced by the number of years over which they are phased in under alternative set 1d. These alternatives merely propose a process for transitioning to revised allocations. As such, all alternatives 1d-1 through 1d-4 are expected to have no direct impacts on habitat.

7.4.2 Impacts of the Quota Transfer Provision Alternatives on Habitat

The establishment of a transfer process with or without transfer caps under alternative set 2 is not expected to have direct impacts to habitat. These alternatives set up the process and parameters around the transfer process. They are not expected to directly change patterns in landings, discards, or fishing effort. Because of this, alternative set 2 is expected to have no impacts to habitat across alternatives. Any expected impacts of a specific transfer under 2b would be evaluated through the specifications process at the time of consideration.

7.4.3 Impacts of the Framework Provision Alternatives on Habitat

As described in greater detail in Section 5.3, alternatives 3a and 3b consider whether any future modifications to the commercial/recreational allocations or allocation transfer systems would require a full FMP amendment or could be considered through a framework action (for the Council) and addendum (for the Commission). Frameworks/addenda are generally shorter and more efficient actions than amendments; however, the timeline and complexity of either type of management action would depend on the nature of the specific options considered.

Alternative 3a or 3b are both administrative in nature. Neither alternative will impact fishing effort or the location of or duration of time that fishing gear is in the water; therefore, neither alternative is expected to impact habitat. The impacts of any specific changes considered through a future amendment or framework/addendum would be analyzed through a separate process with associated public comment opportunities and a full description of expected impacts.

7.5 Impacts to Protected Species

As described in the introduction to Section 7, the impacts on protected species may vary between ESA-listed and MMPA-protected species. Any action that could result in take of ESA-listed species is expected to have some level of negative impacts, including actions that reduce interactions. Impacts for MMPA-protected species vary based on the stock condition of each species and the potential for each alternative to impact fishing effort. For marine mammal stocks/species that have their PBR level reached or exceeded, some negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), any action not expected to change fishing behavior or effort such that interaction risks increase relative to what has been seen in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal (Table 52).

Interaction risks to protected species are strongly associated with the amount of gear in the water, the duration of time the gear is in the water (e.g., tow time, soak time), and the level of overlap between the fishery and listed species' ranges. Given the uncertainty of exactly how effort or the prosecution of the fishery may change under reallocation options, any resulting changes in interaction risk with ESA-listed or MMPA-protected species is highly uncertain; therefore, a range of possible impacts is provided.

7.5.1 Impacts of the Commercial/Recreational Allocation Alternatives on Protected Species

7.5.1.1 Commercial/Recreational Allocation Alternatives

As previously described, all but the no action/status quo alternatives (i.e., alternatives 1a-4, 1b-1, and 1c-4) would reduce the commercial allocations, which would in turn result in lower commercial quotas than the no action/status quo alternatives. Several alternatives which would increase the recreational allocation may still require additional restrictions in the recreational fisheries for some species compared to measures used in recent years due to the mismatch between the revised MRIP data and the RHLs which could result from the allocations under many alternatives.

Depending on the scale of allocation changes between the commercial and recreational fisheries proposed under alternatives sets 1a, 1b, and 1c, shifts in fishing effort between the commercial and recreational fisheries are possible. However, relative to current operating conditions in the fisheries, any shift in effort, areas fished, and amount of gear in the water is expected to be negligible. Specifically, as described in Section 7.2.1, under all allocation alternatives (alternative sets 1a, 1b, and 1c), the fisheries will still be constrained by a variety of management measures designed to prevent overfishing, limiting total commercial and recreational fishing effort.

MMPA (Non-ESA Listed) Species Impacts

Taking into consideration the above information, and the fact that there are non-listed marine mammal stocks/species whose populations may or may not be at optimum sustainable levels, impacts of the allocation alternatives (alternative sets 1a, 1b, and 1c) on non-ESA listed species of marine mammals are likely to range from slight negative to slight positive.

As provided in section 6.5, some bottlenose dolphin 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/stock's ability to recover from this condition. As provided above, 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 time), 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 effort under the allocation alternatives over the short or long term are not expected to greatly change from current operating conditions, the allocation alternatives (alternative sets 1a, 1b, and 1c) are 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 tow or soak duration, and the overlap between protected species and fishing gear (i.e., bottom trawl or pot/trap), in space and time, is not expected to change relative to current operating conditions in the fishery. Given this information, and the information provided in section 6.3), the allocation alternatives are likely to result in slight negative impacts to non-ESA listed marine mammal stocks/species in poor condition (i.e., bottlenose dolphin 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 conditions as they have over the past several years, it is expected that these slight positive impacts would remain. As provided above, the allocation alternatives are not expected to greatly change fishing effort relative to the status quo. Given this, and the fact that the potential risk of interacting with gear types used in the fishery varies between non-ESA listed marine mammal species in good condition (e.g., no observed or documented interactions between bottom trawl gear and humpback or minke whales; see section 6.5), the impacts of alternative sets 1a, 1b, and 1c on these non-ESA listed species of marine mammals are expected to be negligible to slight positive (i.e., continuation of operating conditions similar to status quo is not expected to result in exceedance of any of these stocks/species PBR level). Therefore, the allocation alternatives (alternative sets 1a, 1b, and 1c) are expected to have slight negative to slight positive impacts on MMPA (non-ESA listed) protected species of marine mammals; with slight negative impacts expected for MMPA species in poor condition (i.e., PBR levels have been exceeded), and negligible to slight positive impacts for MMPA protected species in good condition (i.e., PBR levels have not been exceeded). These impacts are not expected to vary across allocation alternatives.

ESA Listed Species Impacts

As provided in section 6.5, interactions between ESA-listed species and hook and line, bottom trawl, and/or pot/trap gear have been observed or documented. Based on this, the summer flounder, scup, and black sea bass fisheries are likely to result in some level of negative impacts to ESA listed species. Taking into consideration fishing behavior/effort under the allocation alternatives, as well the fact that interaction risks with protected species are strongly associated with amount, time, and location of gear in the water, the allocation alternatives are not expected to introduce new or elevated interaction risks to ESA listed species (i.e., no substantial increase in the amount, time, and location of gear in the water). Based on this, and taking into consideration the listed species status (see section 6.5), and the variation in the level of interaction risk between ESA-listed species and gear type (e.g., interactions between ESA-listed species of large whales and bottom trawl gear have never been documented/observed; see section 6.5) the impacts of the allocation alternatives (alternative sets 1a, 1b, and 1c) on ESA listed species is expected to be slight moderate negative (i.e., more negative than slight negative, but less negative than moderate negative) to negligible, and are not expected to vary across alternatives.

Overall Protected Species Impacts

Overall, all allocation alternatives (alternative sets 1a, 1b, and 1c) are expected to have slight moderate negative to slight positive impacts on protected species, with slight negative to slight positive impacts expected for MMPA (non-ESA listed) species, and slight moderate negative to negligible impacts expected for ESA-listed species. These impacts are not expected to vary across alternatives.

7.5.1.2 Allocation Change Phase-In Provisions

Alternatives 1d-1 through 1d-4 consider if any changes to the allocation percentages under alternative sets 1a, 1b, and 1c should occur in a single year (alternative 1d-1, no phase in, the preferred alternative) or if the change should be spread over 2, 3, or 5 years (alternatives 1d-2 through 1d-4). These alternatives merely propose a process for transitioning to revised allocations and are not expected to cause the operation of the fishery (e.g., effort, behavior, area fished, gear quantity) to change relative to current operating conditions. Therefore, Alternatives 1d-1 through 1d-4 are expected to have no direct or indirect impacts to protected species. .

7.5.2 Impacts of the Quota Transfer Provision Alternatives on Protected Species

The establishment of a transfer process with or without transfer caps under alternative set 2 is not expected to have direct or indirect impacts to protected species. These alternatives set up the process and parameters around the transfer process. They are not expected to cause the operation of the fishery (e.g., effort, behavior, area fished, gear quantity) to change relative to current operating conditions.. Therefore, alternative set 2 is expected to have no impacts to protected species across alternatives. Any expected impacts of a specific transfer under 2b would be evaluated through the specifications process at the time of consideration.

7.5.3 Impacts of the Framework Provision Alternatives on Protected Species

As described in greater detail in Section 5.3, alternatives 3a and 3b consider whether any future modifications to the commercial/recreational allocations or allocation transfer systems would require a full FMP amendment (alternative 3a) or could be considered through a framework action (for the Council) and addendum (for the Commission; alternative 3b, preferred). Frameworks/addenda are generally shorter and more efficient actions than amendments; however, the timeline and complexity of either type of management action would depend on the nature of the specific options considered.

Alternative 3a and 3b both administrative in nature. Neither alternative will impact fishing effort or the location of or duration of time that fishing gear is in the water; therefore, neither alternative is expected to impact protected species. The impacts of any specific changes considered through a future amendment or framework/addendum would be analyzed through a separate process with associated public comment opportunities and a full description of expected impacts.

7.6 CUMULATIVE EFFECTS ANALYSIS

7.6.1 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. Council on Environmental Quality guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective. Rather, the intent is to focus on those effects that are truly meaningful. The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed summer flounder, scup, and black sea bass fisheries.

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.

7.6.1.1 Consideration of the VECs

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

- Human communities
- Target species (summer flounder, scup, and black sea bass)
- Non-target species
- Habitat
- Protected species (ESA and MMPA protected species)

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.

7.6.1.2 Geographic Boundaries

The analysis of impacts focuses on actions related to recreational and commercial harvest of summer flounder, scup, and black sea bass. The Western Atlantic Ocean is the core geographic scope for each VEC. The core geographic scope for managed species is the management unit (Section 4.3). For non-target species, that range may be expanded and would depend on the range of each species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ but includes all habitat utilized by summer flounder, scup, black sea bass, and non-target species in the Western Atlantic Ocean. The core geographic scope for protected species is their range in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities in coastal states from Maine through North Carolina directly involved in the commercial or recreational harvest or processing of summer flounder, scup, and black sea bass (Section 6.1).

7.6.1.3 Temporal Boundaries

Overall, while the effects of the historical summer flounder, scup, and black sea bass fisheries are important and considered in the analysis, the temporal scope of past and present actions for summer flounder, scup, black sea bass, 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, 1996 for scup, and 1997 for black sea bass). 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 2028, 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 Section 7.6.4 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.

7.6.2 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.

7.6.2.1 Fishery Management Actions

Summer Flounder, Scup, and Black Sea Bass FMP Actions

Past, present, and reasonably foreseeable future actions for summer flounder, scup, and black sea bass management include the establishment of the original FMP, all subsequent amendments and frameworks, and the setting of annual specifications (ACLs and measures to constrain catch and harvest). Additional information about the management history of this FMP can be found in Section 4.4; 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.

Amendment 23 revised the allocations of the black sea bass commercial quota among the states. These allocations will now be 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 through the specifications process each time updated information on biomass distribution is available. These revised allocations went into effect through the ASMFC FMP in 2022. They are anticipated to be added to the Council's FMP in the near future. The different implementation time frames for the Council and ASMFC FMPs will not change the impacts on the fisheries as the revised allocations are already in place through the ASFMC FMP. This action had 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.

Reasonably Foreseeable Future Actions: The ongoing Recreational Reform Initiative seeks to address a range of challenges in recreational fisheries management for summer flounder, scup, black sea bass, and bluefish through multiple management actions. The Recreational Harvest Control Rule Framework/Addenda is the first management action being developed. This framework/addenda considers changes to the process for setting recreational bag, size, and season limits for summer flounder, scup, black sea bass, and bluefish. 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, Scup, and Black Sea Bass)

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. Amendments 8 and 9 (both in 1996) added scup and black sea bass 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, 2021and 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.

Reasonably Foreseeable Future Actions: The ongoing Recreational Reform Initiative seeks to address a range of challenges in recreational fisheries management for summer flounder, scup, black sea bass and bluefish through multiple management actions. The Recreational Harvest Control Rule Framework/Addenda is the first management action being developed. This framework/addenda considers changes to the process for setting recreational bag, size, and season limits for summer flounder, scup, black sea bass, and bluefish. 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 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 currently reviewing EFH designations and scientific information on habitat for Council-managed species. Based on this review, the Council may choose to revise EFH descriptions, designate HAPCs, or implement other habitat management measures. These initiatives are expected to have positive impacts on habitat by improving the Council's ability to monitor and prioritize protections for important habitats.

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[34]. 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.

Reasonably Foreseeable Future Actions: The Atlantic Large Whale Take Reduction Plan (ALWTRP) recently completed their scoping process for phase two of the plan focusing on risk reduction in U.S. East Coast gillnet, Atlantic mixed species trap/pot, and Mid-Atlantic lobster/Jonah crab trap/pot fisheries. This is part of ongoing efforts to reduce the risk of entanglement to right, humpback, and fin whales in U.S. East Coast waters. For additional information the ALWTRP and future actions, refer to NMFS ALWTRP website (see footnote 34). Mitigation measures from this action would likely impact black sea bass and scup pot/trap fisheries.

In addition, 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.

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 level of injury and mortality to these protected species.

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

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

effort for other species, measures to protect habitat and forage species, and fishery monitoring and reporting requirements.

For example, the New England Fishery Management Council's omnibus habitat amendment revised EFH and habitat area of particular concern designations for NEFMC-managed species; revised or created habitat management areas, including gear restrictions to protect vulnerable habitat from fishing gear impacts; and established dedicated habitat research areas. This action is expected to have overall positive impacts on habitat and EFH, with expected long-term positive implications for target and non-target species, while having mixed socioeconomic impacts on various user groups.

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 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. Generally, these actions have had slight negative impacts on habitat, due to continued fishing operations which impact physical habitat; however, some actions have had direct or indirect long-term positive impacts on habitat by 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 a range of impacts on non ESA-listed marine mammals from slight negative to slight positive, depending on the species.

7.6.2.2 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),[35] 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.

[35] "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."

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

Offshore wind energy construction activities may have both direct and indirect impacts on marine species, ranging from temporary changes in distribution to behavior changes, injury, or mortality. 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. Species that reside in affected areas year round may experience different impacts than species that seasonally reside in or migrate through these areas. Some species that typically reside in areas where wind energy structures are installed may return to the area and adapt to habitat changes after construction is complete. Inter-array and export cables will generate electromagnetic fields, which can affect patterns of movement, spawning, and recruitment success for various species. Effects will depend on cable type, transmission capacity, burial depth, and proximity to other cables. Substantial structural changes in habitats associated with cables are not expected unless cables are left unburied (see below). However, the cable burial process may alter sediment composition along the corridor, thereby affecting infauna and emergent biota. Taormina et al. (2018) provide a review of various cable impacts, and Hutchinson et al. (2020) and Taormina et al. (2020) examine the effects of electromagnetic fields.

The full build out of offshore wind projects in currently leased areas will result in broad habitat alteration. For example, wind turbine and offshore substation foundations may alter hydrodynamics of the area, which may affect primary productivity and physically change the distribution of prey and larvae. It is not clear how these changes will affect the reproductive success of marine species. Scour and sedimentation could have negative effects on egg masses that attach to the bottom. Benthic habitat will be altered due to the placement of scour protection at wind turbine and offshore substation foundations and over cables that are not buried to target depth in the sediment, converting soft substrates into hard substrates. This could alter species composition and predator/prey relationships by increasing favorable habitat for some species and decreasing habitat for others. The placement of wind turbines and offshore substations will also establish new vertical structure in the water column, which could serve as artificial reefs for bottom species, fish aggregating devices for pelagic species, and substrate for the colonization of other species (e.g., mussels). Various authors have studied these types of effects (e.g., Bergström et al. 2013, Dannheim et al. 2019, Degraer et al. 2019, Langhamer 2012, Methratta and Dardick 2019, Stenberg et al. 2015).

Elevated levels of sound produced during site assessment activities, construction, and operation of offshore wind facilities will impact the soundscape.[36] Temporary acute noise impacts from construction activity could impact reproductive behavior and migration patterns for some species. The long-term impact of operational noise from turbines may also affect behavior of fish and prey species, through both vibrations in the immediate area surrounding them in the water column, and through the foundation into the substrate. Depending on the sound frequency and source level, noise impacts to species may be direct or indirect (Finneran 2015, Finneran 2016, Nowacek et al. 2007, NRC 2000, NRC 2003, NRC 2005, Madsen et al. 2006, Piniak 2012, Popper et al. 2014, Richardson et al. 1995, Thomsen et al. 2006). Exposure to underwater noise can directly affect species through behavioral modification (avoidance, startle, spawning) or injury (sound exposure

[36] See NMFS Ocean Noise Strategy Roadmap:
https://cetsound.noaa.gov/Assets/cetsound/documents/Roadmap/ONS_Roadmap_Final_Complete.pdf

resulting in internal damage to hearing structures or internal organs; Bailey et al. 2010, Bailey et al. 2014, Bergström et al. 2014, Ellison et al. 2011, Ellison et al. 2018, Forney et al. 2017, Madsen et al. 2006, Nowacek et al. 2007, NRC 2003, NRC 2005, Richardson et al. 1995, Romano et al. 2004, Slabbekoorn et al. 2010, Thomsen et al. 2006, Wright et al. 2007). Indirect effects are likely to result from changes to the acoustic environment, which may affect the completion of essential life functions for some species (e.g., migrating, breeding, communicating, resting, foraging; Forney et al. 2017, Richardson et al. 1995, Slabbekoorn et al. 2010, Thomsen et al. 2006). [37]

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) 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

One offshore wind pilot project off Virginia installed two turbines in federal waters in 2020**.** Two more projects were approved in 2021. More than 20 leases have been issued for future wind energy development in federal waters from Massachusetts to North Carolina (Figure 20). BOEM has a goal of deploying 30 gigawatts of wind energy production capacity in Federal waters by 2030. Currently, the majority of that proposed development is reasonably foreseeable along the Atlantic coast. As the number of wind projects increases, so too would the level and scope of impacts to affected habitats, marine species, and human communities.

All wind lease areas shown in Figure 20 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

[37] See previous footnote.

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.[38] 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 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.

38 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).

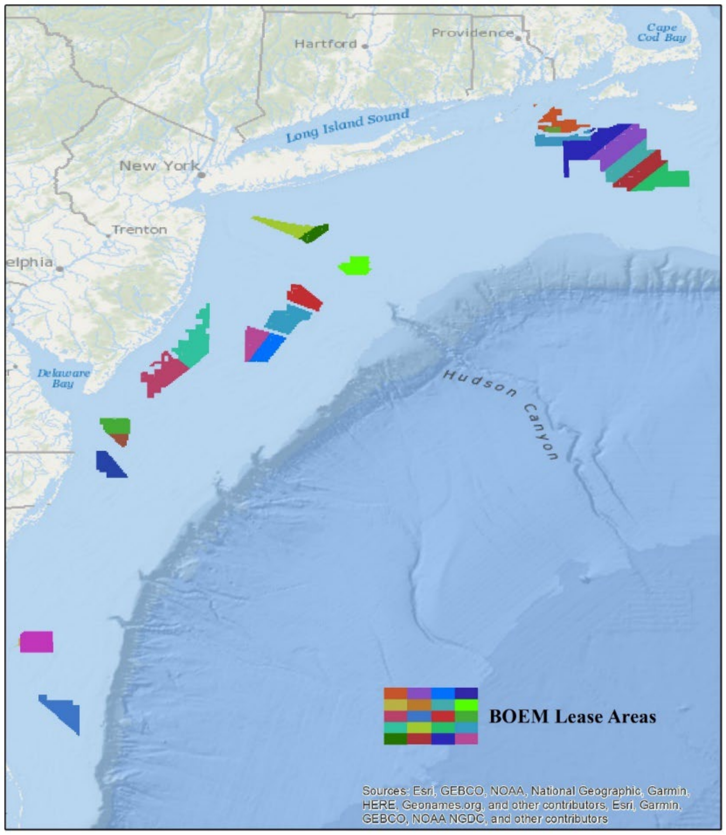

Figure 20. Offshore wind lease areas off New England and the Mid-Atlantic as of April 2022. Additional areas offshore of Delaware through North Carolina and in the Gulf of Maine are in the planning stages for lease sales which may occur over the next few years.

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.

Black sea bass had a high overall vulnerability to climate change. The exposure of black sea bass to the effects of climate change was determined to be "very high" due to the impacts of ocean surface temperature, ocean acidification, and air temperature. Exposure to all three factors occurs during all life stages. Black sea bass occur in coastal areas during warm months and migrate offshore in cold months and thus are exposed to changes occurring both in offshore and inshore waters. The distributional vulnerability for black sea bass was also rated as "high." The biological sensitivity of black sea bass to climate change was ranked as "moderate" (Hare et al. 2016).[39]

Overall vulnerability results for additional Greater Atlantic species, including most of the non-target species identified in this action, are shown in Figure 21 (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, 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.

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

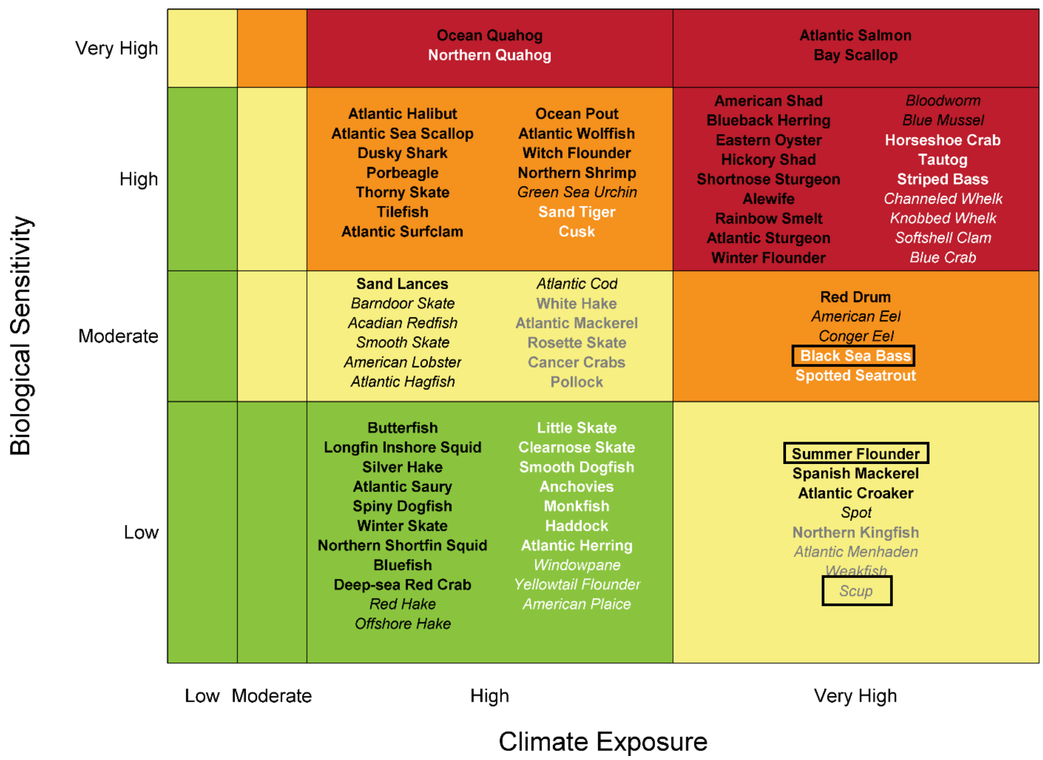

Figure 21. Overall climate vulnerability scores for Greater Atlantic Region species, with summer flounder, scup, and black sea bass highlighted with a black box. Overall climate vulnerability is denoted by color: low (green), moderate (yellow), high (orange), and very high (red). Certainty in score is 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.

7.6.3 Summary of Effects of the Proposed Actions

The preferred alternatives in this action are:

- Alternative Fluke-5; 55% com., 45% rec. catch-based allocation for summer flounder (Section 5.1.1)
- Alternative 1b-2; 65.0% com., 35.0% rec. catch-based allocation for scup (Section 5.1.2)
- Alternative BSB-5; 45% com., 55% rec. catch-based allocation for black sea bass (Section 5.1.3)
- Alternative 1d-1; No phase-in of selected allocation changes (Section 5.1.4)
- Alternative 2a; No allowance for annual quota transfers between sectors (Section 5.2.1)
- Alternative 3b; Allow future changes to commercial/recreational allocations and transfer provisions via framework action (Section 5.3)

The impacts of the proposed actions are described in Sections 7.1 through 7.5 and are summarized in Section 1.3 of this EA.

7.6.4 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 7.5 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.

7.6.4.1 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, scup, and black sea bass 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.

7.6.4.2 Magnitude and Significance of Cumulative Effects on Target and Non-Target Species

As described in Section 6, summer flounder, scup, black sea bass 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, none of the preferred alternatives are expected to result in any notable changes in fishing effort relative to current conditions. Therefore, impacts of the fisheries on summer flounder, scup and black sea bass and non-target species are not expected to change relative to current conditions under 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 black sea bass and non-target species.

7.6.4.3 Magnitude and Significance of Cumulative Effects on Habitat

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.

7.6.4.4 Magnitude and Significance of Cumulative Effects on Protected Species

Taking into consideration the above information and information provided in section 6.5, 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, assuming future ABCs remain similar to recent levels, this is expected to result in slight negative to slight positive impacts for non-ESA listed marine mammals and negligible to slight 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.

7.6.5 Proposed Action on all VECs

The preferred alternatives are described in detail in Section 5. The direct and indirect impacts of the proposed action on the VECs are described in Sections 7.1 through 7.5 and are summarized in the Executive Summary (Section 1.3). 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 7.6.4). 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, scup, and black sea bass 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 2028, it is anticipated that the cumulative effects will range from positive to slight negative, depending on the VEC (Table 63).

Table 63. Summary of cumulative effects of preferred alternatives.

	Human communities	**Target species**	**Non-target species**	**Habitat**	**Protected species**
Impacts of preferred alternatives	High negative to moderate positive (Section 7.1)	Moderate positive (Section 7.2)	Slight negative to slight positive (Section 7.3)	Slight negative (Section 7.4)	Slight moderate negative to slight positive (Section 7.5)
Combined cumulative effects assessment baseline conditions	Positive	Positive	Positive	Slight positive	Slight negative to slight positive
Cumulative effects (all non-significant)	Slight positive (Section 7.6.4.1)	Positive (Section 7.6.4.2)	Positive (Section 7.6.4.2)	Slight negative (Section 7.6.4.3)	Slight negative to slight positive (Section 7.6.4.4)

8 OTHER 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 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, optimum yield for summer flounder, scup, and black sea bass and the U.S. fishing industry. To achieve optimum yield, both scientific and management uncertainty are addressed when establishing catch limits. The Council develops recommendations that do not exceed the ABC recommendations of the Scientific and Statistical Committee, which explicitly address scientific uncertainty. The Council considers management uncertainty and other social, economic, and ecological factors, when recommending Annual Catch Targets. The Council uses the best scientific information available (National Standard 2) and manages these species 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 **Error! Reference source not found.**). 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 described in more detail in Section 5, the preferred alternatives would modify the commercial/recreational allocations for summer flounder, scup, and black sea bass as follows:

- The summer flounder commercial/recreational allocation would change from a 60% commercial/40% recreational landings-based allocation to a 55% commercial/45% recreational catch-based allocation (alternative Fluke-5; Section 5.1.1)
- The scup commercial/recreational allocation would change from a 78% commercial/22% recreational catch-based allocation to a 65% commercial/35% recreational catch-based allocation (alternative 1b-2; Section 5.1.2)
- The black sea bass commercial/recreational allocation would change from a 49% commercial/51% recreational landings-based allocation to a 45% commercial/55% recreational catch-based allocation (alternative BSB-5; Section 5.1.3)

The preferred alternatives would also add the ability to modify these allocations, or provisions which would allow transfers between the commercial and recreational sectors, via a framework action instead of an FMP amendment (alternative 3b, Section 5.3).

Potential Adverse Effects of the Action on EFH

The types of habitat impacts caused by the gears used in the summer flounder, scup, and black sea bass fisheries (predominantly bottom otter trawl and pot/trap in the commercial fisheries; predominantly hook and line gear in the recreational fishery) are summarized in section 6.4.3.

As described in Section 7.4, under the preferred alternatives for commercial/recreational allocation, existing habitat impacts from these fisheries are expected to continue largely unchanged. Overall effort in the fisheries will still be controlled by annual catch limits and associated regulations. Fishing locations, amount of gear in the water, and timing of fishing are not expected to change notably in a manner that would modify existing impacts to habitat. The habitats that are impacted by summer flounder, scup, and black sea bass fisheries have been impacted by many fisheries over many years. The levels of fishing effort expected under the preferred alternatives are not expected to cause additional habitat damage, but they are expected to limit the recovery of previously impacted areas. The preferred alternatives for phase-in provisions, transfer provisions, and framework provisions are not expected to have any direct impacts on habitat. Thus, the overall proposed action is expected to have continued slight negative impacts on habitat and EFH.

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

Amendment 13 considered measures in the Summer Flounder, Scup, and Black Sea Bass FMP which impact EFH (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 6.4.3 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, scup, or black sea bass 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.

Pursuant to Section 7 of the ESA, NMFS issued a Biological Opinion (Opinion) on May 27, 2021, that considered the effects of the NMFS' authorization of ten FMPs, NMFS' North Atlantic Right Whale Conservation Framework, and the New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment 2, on ESA-listed species and designated critical habitat. The ten FMPs considered in the Opinion include the: (1) American lobster; (2) Atlantic bluefish; (3) Atlantic deep-sea red crab; (4) mackerel/squid/butterfish; (5) monkfish; (6) Northeast multispecies; (7) Northeast skate complex; (8) spiny dogfish; (9) summer flounder/scup/black sea bass; and (10) Jonah crab FMPs. The American lobster and Jonah crab FMPs are permitted and operated through implementing regulations compatible with the interstate fishery management plans issued under the authority of the Atlantic Coastal Fisheries Cooperative Management Act, the other eight FMPs are issued under the authority of the MSA.

The 2021 Opinion determined that the NMFS' authorization of ten FMPs, NMFS' North Atlantic Right Whale Conservation Framework, and the New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment 2 may adversely affect, but is not likely to jeopardize, the continued existence of North Atlantic right, fin, sei, or sperm whales; the Northwest Atlantic Ocean DPS of loggerhead, leatherback, Kemp's ridley, or North Atlantic DPS of green sea turtles; any of the five DPSs of Atlantic sturgeon; Gulf of Maine DPS Atlantic salmon; or giant manta rays. The Opinion also concluded that the proposed action is not likely to adversely affect designated critical habitat for North Atlantic right whales, the Northwest Atlantic Ocean DPS of loggerhead sea turtles, U.S. DPS of smalltooth sawfish, Johnson's seagrass, or elkhorn and staghorn corals. An Incidental Take Statement was issued in the Opinion. The Incidental Take Statement 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.

Given the information provided above, it has been determined that the proposed action is within the scope of the Summer Flounder/Scup/Black Sea Bass FMP considered in the 2021 Opinion and will not create impacts to ESA-listed species or critical habitat that go above and beyond those considered in the 2021 Opinion completed by NMFS.

8.3 MARINE MAMMAL PROTECTION ACT

Section 6.5 describes the marine mammal species which inhabit the affected environment of this action. As described in Section 6.5.3, various marine mammal species have the potential to interact with the gear types used in the commercial summer flounder, scup, and black sea bass fisheries (predominately bottom trawl and pots/traps). The impacts of the proposed measures on marine mammals (Section 7.5) 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 PROCEDURES 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 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:

- October 9, 2019 Council and Board meeting in Durham, NC.
- December 11, 2019 Council and Board meeting in Annapolis, MD.
- Scoping hearings held at the following dates and locations:
    - February 13, 2020 in Buzzards Bay, MA
    - February 19, 2020 in Dover, DE
    - February 24, 2020 in Belmar, NJ
    - February 25, 2020 in Berlin, MD

    - February 25, 2020 in Galloway, NJ
    - February 25, 2020 in Washington, NC
    - February 26, 2020 in Narragansett, RI
    - February 26, 2020 in Old Lyme, CT
    - February 27, 2020 in Stony Brook, NY
    - March 2, 2020 in Fort Monroe, VA
    - March 3, 2020 via webinar
- April 14, 2020 Fishery Management Action Team meeting via webinar.
- May 6, 2020 Council and Board meeting via webinar.
- May 21, 2020 Fishery Management Action Team meeting via webinar.
- May 26, 2020 Fishery Management Action Team meeting via webinar.
- April 2, 2020 Advisory Panel meeting via webinar.
- June 16, 2020 Council and Board meeting via webinar.
- July 15, 2020 Fishery Management Action Team meeting via webinar.
- July 29, 2020 Advisory Panel meeting via webinar.
- August 12, 2020 Council and Board meeting via webinar.
- November 5, 2020 Fishery Management Action Team meeting via webinar.
- November 10, 2020 Advisory Panel meeting via webinar.
- December 16, 2020 Council and Board meeting via webinar.
- Public hearings held via webinar on the following dates:
    - February 17, 2021
    - February 18, 2021
    - February 24, 2021
    - March 1, 2021
    - March 2, 2021
- March 23, 2021 Advisory Panel meeting via webinar.
- March 24, 2021 Fishery Management Action Team meeting via webinar.
- April 6, 2021 Council and Board meeting via webinar.
- August 10, 2021 Council and Board meeting via webinar.
- December 14, 2021 Council and Board meeting via webinar.

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 DATA QUALITY ACT

Utility of Information Product

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 the changes proposed through 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 8.5). 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 this 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 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 NMFS Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

8.7 EXECUTIVE ORDER 13123 (FEDERALISM)

Executive Order 13131 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.

8.8 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.

8.9 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. 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. There is insufficient demographic data on participants in the summer flounder, scup, and black sea bass fisheries (i.e., vessel owners, crew, dealers, processors, employees of supporting industries) to quantify the income and minority status of potentially affected fishery participants. However, it is qualitatively known that people of racial or ethnic minorities constitute a substantial portion of the employees in the seafood processing sector. Without more data, it is difficult to fully determine how this action may impact various population segments. 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, scup, and black sea bass fisheries.

For primary port communities relevant to this action (Section 6.1), county level minority rates are similar to or below the state averages with the exception of Hampton, VA and Newport News, VA which are independent cities as opposed to counties (Table 64). Poverty rates are below or within 5% of state averages for most counties with the exception of Accomack County, VA, the city of Newport News, VA, and Hyde County, NC (Table 64).

The NOAA Fisheries Community Social Vulnerability Indices,[40] especially the poverty, population composition, and personal disruption indices can help identify the communities where environmental justice may be of concern. Englehard, NC; New Bedford, MA; and New London, CT are commercial summer flounder, scup, and/or black sea bass ports that ranked high for at least one of these three indices during 2016-2018.

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 in Mid-Atlantic or New England federal waters.

[40] Available at https://www.fisheries.noaa.gov/national/socioeconomics/social-indicators-coastal-communities

Table 64. Demographic data (minority rate and poverty rate) for summer flounder, scup, and black sea bass fishing communities (counties).

State	County	Minority Rate[a]	Poverty Rate
Massachusetts Minority rate: 28.9% Poverty rate: 9.4%	Bristol	18.2%	10.1%
Rhode Island Minority rate: 28.6% Poverty rate: 10.6%	Newport	14.4%	9.5%
	Washington	9.2%	7.8%
Connecticut Minority rate: 34.9% Poverty rate: 9.7%	New Haven	38.4%	11.2%
	New London	24.9%	8.0%
New York Minority rate: 44.7% Poverty rate: 12.7%	Suffolk	33.4%	6.1%
New Jersey Minority rate: 45.4% Poverty rate: 9.4%	Cape May	15.0%	9.6%
	Monmouth	24.9%	5.9%
	Ocean	15.7%	10.5%
Delaware Minority rate: 38.3% Poverty rate: 10.9%	Sussex	24.6%	11.0%
Maryland Minority rate: 50.0% Poverty rate: 9.0%	Worcester	20.0%	11.7%
Virginia Minority rate: 38.8% Poverty rate: 9.2%	Accomack	40.1%	17.6%
	Hampton[b]	62.6%	13.4%
	Newport News[b]	57.7%	14.5%
North Carolina Minority rate: 37.4% Poverty rate: 12.9%	Carteret	13.5%	9.3%
	Dare	13.0%	8.8%
	Hyde	38.2%	20.0%

Source: U.S. Census Bureau, 2021: https://www.census.gov/quickfacts/fact/table/US/PST045221
[a] Persons other than those who report as "White alone, not Hispanic or Latino."
b Hampton, VA, and Newport News, VA are independent cities without an associated county.

8.10 REGULATORY FLEXIBILITY ACT

8.10.1 Basis and Purpose of the Rule and Summary of Preferred Alternatives

This action is taken under the authority of the MSA and regulations at 50 CFR part 648. Section 4.1 includes the NEPA purpose and need for this action.

As described in more detail in Section 5, the preferred allocation percentage alternatives (i.e., Fluke-5, 1b-1, and BSB-5) would update the commercial/recreational allocations for all three species using the most recent data on total dead catch and/or landings from the same base years as the original allocations. For summer flounder and black sea bass, the allocations would also transition from landings-based to catch-based allocations. The scup allocations would remain catch-based. Based on the comparison to 2022 using the methodology outlined in Appendix D, the preferred alternatives would shift 1% allocation from the commercial to the recreational sector for summer flounder, 13% from the commercial to the recreational sector for scup, and 9% from the commercial to the recreational sector for black sea bass. Additional preferred alternatives include implementing the full allocation change in a single year (alternative 1d-1), not revising the FMP to establish a process for transfers between the commercial and recreational sectors (alternative

2a), and identifying commercial/recreational allocation changes and transfer provisions as items that can be modified through future framework actions and addenda.

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 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 (Section 4.1). 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."

8.10.2 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. Private recreational anglers are not considered "entities" under the Regulatory Flexibility Act, thus economic impacts on private anglers are not considered here. In addition, 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[41] 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 purposes of identifying small and large businesses which may be affected by this action.

[41] Affiliate data for 2018-2020 were provided by the NMFS NEFSC Social Science Branch. This is the latest affiliate data set available for analysis.

Commercial and recreational for-hire affiliates potentially regulated by this action include all those with valid commercial fishery permits for summer flounder, scup and back sea bass and any for-hire affiliates that reported landing summer flounder, scup or black sea bass in any year between 2018-2020. A total of **1,522 affiliates** were identified as being potentially regulated by this action, **1,513** (99%) of which were identified as small businesses and **9** (1%) were identified as large businesses based on their average revenues in 2018-2020.

Of these, a total of **455** affiliates reported that the majority of their revenues in 2020 came from for-hire fishing. Some of these affiliates may have also participated in commercial fishing. All 455 of the for-hire affiliates were categorized as small businesses based on their average 2018-2020 revenues. It is not possible to determine what proportion of their revenues came from fishing 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 for many of these affiliates at certain times of the year.

8.10.3 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 action should be evaluated by looking at the impacts 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

Among the potentially regulated commercial fishing affiliates, 777 reported revenues from commercial fishing in 2020. These entities had average total annual revenues of $953,016 and $47,056 on average in annual revenues from commercial landings of summer flounder, scup and/or black sea bass during 2018-2020. On average, these species accounted for 5% of the total revenues for these 777 affiliates (Table 65). Of these affiliates, 768 are classified as small businesses. Average total annual revenue for these small businesses was $718,393, with $44,734 in average annual revenues from commercial landings of summer flounder, scup, and/or black sea bass during 2018-2020. On average, these species accounted for 6% of the total revenues for these 768 small business affiliates.

The 9 potentially regulated large business affiliates had average total annual revenues of $21.0 million and $245,228 on average in annual revenues from commercial landings of summer flounder, scup, and/or black sea bass during 2018-2020. On average, these species accounted for approximately 1% of the total revenues for these 9 large business affiliates (Table 65).

Due to the higher dependence on summer flounder, scup, and black sea bass for the small commercial businesses compared to the large businesses, the small businesses may feel the effects of this action to a greater extent than the large businesses. Likewise, as shown in Table 65, the smaller of the small businesses (based on average annual total revenues) tended to have a greater reliance on these species than the larger small businesses. These smaller affiliates may feel the effects of this action to a greater extent than the larger small businesses which derive a lower proportion of their annual revenues from these three species.

Although summer flounder, scup, and black sea bass contributed to 6% of the annual revenues for the small business on average and approximately 1% for the large businesses, some individual businesses had a higher dependence on these species. The affiliates with a higher dependence on these species will experience the effects of this action to a greater extent than those with a lower dependence on them.

The economic impacts of the preferred alternatives on all potentially regulated commercial affiliates were evaluated primarily based on expected changes in revenues. Actual revenues in future years will depend on a variety of factors, including the commercial quotas, RHLs, and other management measures (e.g., possession limits); management measures for other commercially-harvested species; availability of summer flounder scup, black sea bass, and other species; market factors (e.g., price of these species compared to alternative species), weather, and other factors.

As described in more detail in Section 7.1.1.1, the preferred summer flounder allocation percentage alternative (alternative Fluke-5) is expected to have negligible to slight negative impacts on the commercial sector. The commercial allocation will decrease slightly under this alternative (slight negative impacts); however, because the commercial sector has not fully harvest their quota in recent years, this change in allocation may not be great enough to impact commercial landings, assuming future ABCs and other factors which impact landings remain similar to recent conditions (negligible impacts).

As described in more detail in Section 7.1.1.2, the preferred scup allocation percentage alternative (alternative 1b-2) is expected to have negligible to moderate negative impacts on the commercial sector. The commercial allocation would decrease by 13% (moderate negative impacts); however, because the commercial sector has not fully harvest their quota for several years, this change in allocation may not be great enough to impact commercial landings, assuming future ABCs and other factors which impact landings remain similar to recent conditions (negligible impacts).

As described in more detail in Section 7.1.1.3, the preferred black sea bass allocation percentage alternative (alternative 1b-2) is expected to have moderate negative to slight negative impacts on the commercial sector given that the commercial allocation would decrease by 9% compared to 2022 (moderate negative impacts); however, considering that commercial landings have been lower than the commercial quota since the quota was notably increased in 2020, this decreased allocation may allow landings to remain similar to recent levels, though it would represent a loss of potential landings compared to the current allocations (slight negative impacts).

In all cases, the expected socioeconomic impacts of the allocation changes for all three species assume future ABCs remain similar to recent ABCs and other factors which impact catches (e.g., availability, market demand and other economic factors, weather) do not vary notably from recent levels. These impacts may differ if future ABCs and other relevant conditions are notably different from recent trends.

As described in Section 7.1.1.4, preferred alternative 1d-1 (no phase in) is expected to have socioeconomic impacts ranging from negligible to slight negative for the commercial sector. As described in Sections 7.1.2.1 and 7.1.3, preferred alternatives 2a (do not modify the FMP to allow transfers of between the commercial and recreational sectors) and 3b (allow future changes through frameworks/addenda) are expected to have no socioeconomic impacts as they are administrative in nature.

Table 65. Average annual total revenues during 2018-2020 for the commercial small and large business affiliates likely to be affected by the proposed action, as well as average annual revenues from commercial landings of summer flounder, scup, and/or black sea bass. Only those businesses which reported commercial fishing revenue in 2020 are shown.

Avg. annual total revenue (millions of $)	Count of affiliates	2018-2020 avg. total annual revenues	2018-2020 avg. total annual revenues from summer flounder, scup, and/or black sea bass	Summer flounder, scup and/or black sea bass revenues as proportion of total revenues
<0.5	505	$114,594	$23,394	20%
0.5 to <1	64	$725,725	$128,825	18%
1 to <2	133	$1,480,972	$63,957	4%
2 to <5	53	$3,060,831	$80,784	3%
5 to <11	13	$6,785,882	$116,067	2%
11+	9	$20,974,133	$245,228	1%
All	777	$953,016	$47,056	5%

Expected Impacts on Recreational Entities

As previously stated, 455 of the 1,522 potentially regulated affiliates reported that the majority of their revenues in 2018-2020 came from for-hire fishing. All these affiliates were categorized as small businesses based on their revenues in 2018-2020.

As previously stated, it is not possible to derive what proportion of the overall revenues for these for-hire affiliates 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; weather; the economy; and other factors. Recreational measures to achieve future RHLs are not yet known as they are generally considered late in the year for the upcoming year.

As described in more detail in Section 7.1.1.1, the preferred summer flounder allocation percentage alternative (alternative Fluke-5) is expected to have slight negative to slight positive impacts on the recreational sector, depending on future ABCs and assumptions about future harvest. The allocation percentage change under this alternative is small (e.g., 1% compared to 2022) and could allow for future RHLs that are similar to recent RHLs. Recreational harvest in recent years has fluctuated above and below the RHLs; therefore, it is difficult to predict if measures will need to be modified in the near term to prevent future RHL overages under this alternative. Therefore, this alternative has a range of possible impacts for the recreational sector.

As described in more detail in Section 7.1.1.2, the preferred scup allocation percentage alternative (alternative 1b-2) is expected to have negligible to moderate negative impacts on the recreational sector. Although the recreational allocation would increase by 13%, the mismatch between the revised MRIP harvest estimates and example RHLs under this alternative is still great enough that harvest would need to be reduced below recent levels through 2021 to prevent future RHL overages (moderate negative impacts), assuming future ABCs and other factors which impact harvest remain similar to recent conditions. As described in Section 7.1.1.2, recreational scup measures were modified in 2022 with the intent of reducing harvest by 33% compared to 2019-2021 average harvest. The impact of this change on harvest has yet to be determined. It is possible that additional restrictions beyond those implemented in 2022 may not be needed to prevent future RHL overages under this alternative (negligible impacts).

As described in more detail in Section 7.1.1.3 , the preferred black sea bass allocation percentage alternative (alternative BSB-5) is expected to have high negative to slight negative impacts on the recreational sector. Although the recreational allocation would increase by 9% (based on the comparison to 2022 outlined in Appendix D), the average example 2019-2021 RHL is approximately 39% below average 2019-2021 harvest, suggesting that harvest would need to be notably reduced below 2019-2021 levels to prevent future RHL overages, assuming ABCs remain similar to recent levels (high negative impacts). Depending on future ABCs and the impacts of the restrictions implemented for 2022, further restrictions beyond those implemented for 2022 may not be needed to prevent future RHL overages. However, the increased allocations under these alternatives are likely not great enough to reverse the restrictions implemented in 2022 (slight negative impacts).

As described in Section 7.1.1.4, preferred alternative 1d-1 (no phase in) is expected to have socioeconomic impacts negligible to slight positive on the recreational sector. As described in Sections 7.1.2.1 and 7.1.3, preferred alternatives 2a (do not modify the FMP to allow transfers of between the commercial and recreational sectors) and 3b (allow future changes through frameworks/addenda) are expected to have no socioeconomic impacts as they are administrative in nature.

8.10.4 Analysis of Non-Preferred Alternatives

Additional non-preferred alternatives were also considered. All alternatives are described in detail in Section 5.

When considering the economic impacts of the alternatives under the Regulatory Flexibility Act, 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.

For summer flounder and scup, only the no action alternatives (alternatives 1a-4 and 1b-1, respectively) had greater positive expected impacts for the commercial sector than the preferred alternatives; however, those alternatives had greater negative impacts for the recreational sector than the preferred alternatives. For black sea bass, both the no action alternative (alternative 1c-4) and alternative 1c-5 were expected to have greater positive impacts for the commercial sector than the preferred alternative. However, as with summer flounder and scup, those alternatives had greater negative impacts for the recreational sector than the preferred alternative. In addition, alternative 1c-5 would have maintained a landings-based allocation for black sea bass, and the Council and Board supported switching to a catch-based allocation.

All alternatives that had a greater potential for positive impacts or a lesser potential for negative impacts to the recreational sector than the preferred alternatives had a greater magnitude of negative expected impacts for the commercial sector.

In addition, the no action alternatives for all three species were not selected as preferred given notable changes in data that have occurred since these allocations were first established. Therefore, it was determined that leaving the allocations unchanged would not be based on the best scientific information available.

As described in Sections 7.1.1.4, 7.1.2, and 7.1.3, the non-preferred alternatives for phase-in, transfers, and frameworks/addenda are not expected to have notably different socioeconomic impacts than the preferred alternatives.

8.11 REGULATORY IMPACT REVIEW

8.11.1 Determination of Significance Under E.O. 12866

Executive Order 12866 requires a Regulatory Impact Review in order to enhance planning and coordination with respect to new and existing regulations. This Executive Order requires the Office of Management and Budget to review regulatory programs that are considered to be "significant." This section demonstrates that this action is not a "significant regulatory action" because it will not affect in a material way the economy or a sector of the economy.

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

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

8.11.2 Objectives for and Description of the Proposed Action

As described in more detail in Section 5, the preferred allocation percentage alternatives (i.e., Fluke-5, 1b-1, and BSB-5) would update the commercial/recreational allocations for all three species using the most recent data on total dead catch and/or landings from the same base years as the original allocations. For summer flounder and black sea bass, the allocations would also transition from landings-based to catch-based allocations. The scup allocations would remain catch-based. Based on the comparison to 2022 using the methodology outlined in Appendix D, the preferred alternatives would shift 1% allocation from the commercial to the recreational sector for summer flounder, 13% from the commercial to the recreational sector for scup, and 9% from the commercial to the recreational sector for black sea bass. Additional preferred alternatives include implementing the full allocation change in a single year (alternative 1d-1), not revising the FMP to establish a process for transfers between the commercial and recreational sectors (alternative 2a), and identifying commercial/recreational allocation changes and transfer provisions as items that can be modified through future framework actions and addenda.

This action complies with the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (FMP)[42] and is taken under the authority of the Magnuson Stevens Act (MSA) and regulations at 50 CFR part 648.

8.11.3 Baseline Conditions for Determination of Significance

Recent landings limits and recent levels of landings in each sector for each species are summarized in Section 6.1. Recent commercial ex-vessel values are also summarized in Section 6.1. As previously noted, information on for-hire revenues by species is not available. Section 8.10.3 contains summary information on for-hire revenues across all for-hire affiliates.

8.11.4 Summary of Economic Effects of the Proposed Measures

The socioeconomic impacts of the preferred alternatives are described in Sections 7.1.1.1 - 7.1.1.3 and 8.10.3. These impacts derive from the proposed changes in the commercial/recreational allocation percentages (alternatives Fluke-5, 1b-2, and BSB-5) and the decision to not phase in these allocation changes (alternative 1d-1). The preferred alternatives for transfer provisions (2a) and frameworks/addenda (3b) are not expected to have socioeconomic impacts.

As previously described, the preferred alternatives could allow commercial landings, and therefore commercial revenues, for all three species to remain similar to recent levels. Recreational harvest for scup and black sea bass may need to decrease below pre-2021 levels under the preferred alternatives; however, depending on the impacts of the restrictions implemented in 2022, additional restrictions beyond those implemented in 2022 may not be necessary. For summer flounder, it is more difficult to predict if changes in recreational measures may be needed in future years as the RHL is not expected to notably change under the preferred alternative and recreational harvest has fluctuated above the summer flounder RHLs in recent years. Any decrease in recreational harvest could lead to reduced for-hire revenues if it leads to fewer for-hire trips or reduced demand for those trips.

8.11.5 Determination of Significant Regulatory Action

The proposed action does not constitute a significant regulatory action under EO 12866 as it will not have an annual effect on the economy of more than $100 million and is not predicted to have a significant adverse impact on ports, recreational anglers, and operators of party/charter businesses. In addition, this action is consistent with previous actions by the Council, NMFS, and the Commission. There is no known conflict with other agencies. There are no known impacts on any entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof. There are no known conflicts with other legal mandates, the President's priorities, or the principles set forth in Executive Order 12866. The proposed actions are not precedent-setting or novel. As such, the Proposed Action is not considered significant as defined by EO 12866.

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10 APPENDICES

10.1 APPENDIX A: CATCH VS. LANDINGS-BASED ALLOCATIONS

This appendix provides additional clarification on the differences between catch and landings-based allocations. These allocations are used to derive a set of required annual catch and landings limits for both sectors, including commercial and recreational annual catch limits and annual catch targets (ACLs and ACTs[43], which both account for landings and dead discards), and landings limits (commercial quota and RHL, both of which only account for landings). The same types of catch and landings limits are all required under both catch and landings-based allocations. These limits are calculated through the annual specifications process.

In both cases, all catch and landings limits are derived from the overall ABC, which applies to all dead catch and is set based on the best scientific information available. The main difference between catch and landings-based allocations is the step in the process at which the commercial/recreational allocation is applied and how dead discards are factored into the calculations.

A **catch-based** allocation allocates the total ABC (which accounts for both landings and dead discards) between the two sectors as commercial and recreational ACLs, based on the allocation percentages defined in the FMP (catch-based step 1 in the figures below). Dead discards are then estimated for each sector and subtracted from the sector ACLs to derive the annual sector landings limits (commercial quota and RHL).

A **landings-based** allocation applies the allocation percentage defined in the FMP to only the portion of the ABC that is expected to be landed (landings-based steps 1 and 2 in the figures below). This requires first calculating the amount of expected dead discards from both sectors combined and subtracting that from the ABC (landings-based step 1), so that the allocation percentage can be applied to the total allowable landings (landings-based step 2). Dead discards are still projected for each sector and incorporated into the ACLs under a landings-based allocation, but the process is more complex due to the need to separate out total landings first to apply the allocation. This process evolved because management of summer flounder and black sea bass was previously based on landings limits only and did not consider dead discards. When dead discards were first incorporated into management, the allocation percentages continued to be applied to landings only and it was determined that other methods were needed to split expected dead discards by sector.

As described in more detail below, in both cases, sector-specific dead discards are generally estimated based on recent trends in the fisheries. Therefore, **under a landings-based allocation, recent trends in dead discards in one sector have more of an impact on the catch and landings limits in the other sector. Under a catch-based allocation, the calculations of sector-specific catch and landings limits are more separate and recent trends in landings and dead discards in one sector have a lesser impact on the limits in the other sector**. This can have important implications due to sector-specific differences in factors such as how landings and discards are

[43] ACTs are set equal to or lower than the ACLs to account for management uncertainty. For these species, ACTs have typically been set equal to the ACLs in recent years.

estimated, the factors influencing discards (e.g., regulations, market demand, catch and release practices), and discard mortality rates.

Under both allocation approaches, the commercial/recreational allocation percentages are fixed (until modified through an FMP action) and do not vary based on recent trends in the fisheries. They would be defined based on one of the alternatives listed in Section 5 of this document.

More details, including a description of the subsequent steps to arrive at the commercial quota and RHL are included below. Examples of the implications of each approach are included at the end of this section.

Projected Discards Under Both Allocation Approaches

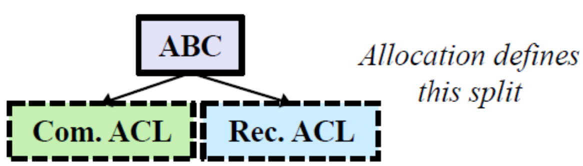
For scup and summer flounder, the total amount of the ABC expected to come from dead discards can be projected using the stock assessment model. These projections account for variations in the size of different year classes (i.e., the fish spawned in a given year) and catch at age information from the commercial and recreational sectors. The current stock assessment model for black sea bass does not allow for these projections, so alternative methods such as recent year average proportions need to be used.

Regardless of the allocation approach, the methodology for calculating sector-specific dead discards (as opposed to total dead discards) is not defined in the FMP and can vary based on annual considerations. The Monitoring Committee provides advice on this decision.

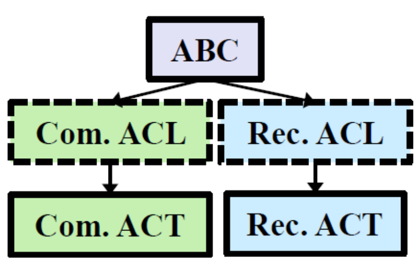
Under both approaches, only **dead** discards are factored into the allocation percentages and the catch and landings limits calculations. Discarded fish which are presumed to survive do not factor into these calculations.

Catch-based Allocation Process

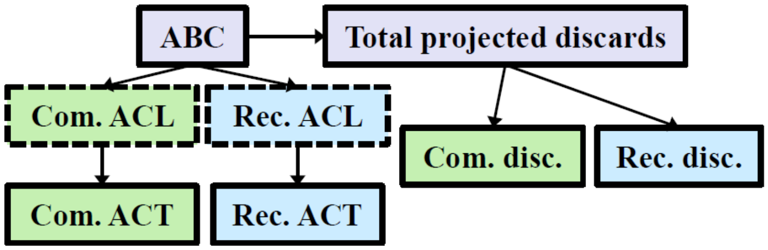
Catch-based Step 1. The ABC is divided into commercial and recreational ACLs based on the allocation percentages defined in the FMP.



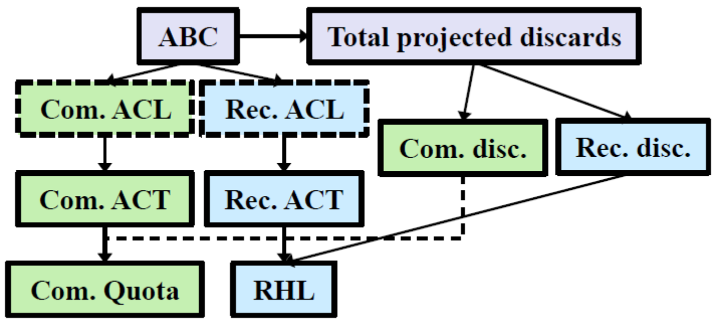
Catch-based Step 2. Commercial and recreational ACTs are set less than or equal to their respective ACLs to account for management uncertainty. The appropriate deduction for management uncertainty (if any) is not pre-defined and is based on annual considerations, including the advice of the Monitoring Committee.



Catch-based Step 3. Expected dead discards are calculated for each sector to derive the commercial quota and RHL from the sector-specific ACTs.

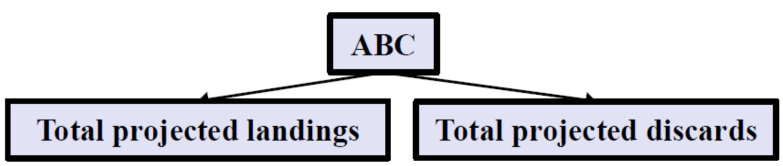


Catch-based Step 4. Commercial quotas and RHLs are determined by subtracting the sector-specific dead discards (see catch-based step 3) from the sector-specific ACTs.

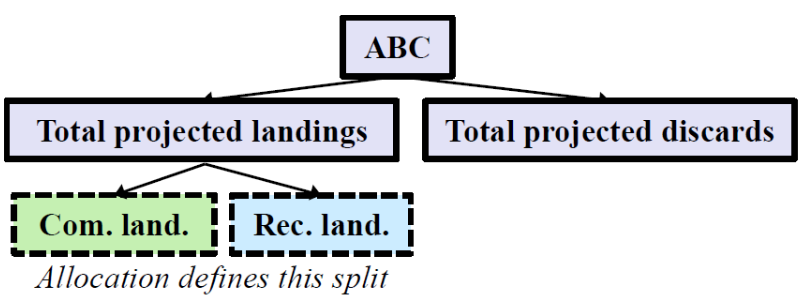


Landings-Based Allocation Process

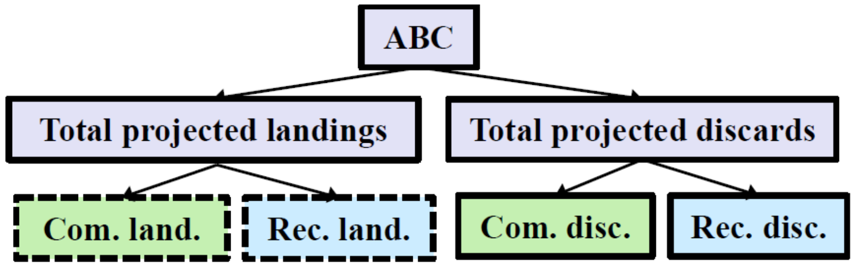
Landings-based Step 1. The ABC is first divided into the amount expected to come from landings (total projected landings) and the amount expected to come from dead discards (total projected dead discards). The methodology for this calculation is not defined in the FMP and can vary based on annual considerations. The Monitoring Committee provides advice on this decision.



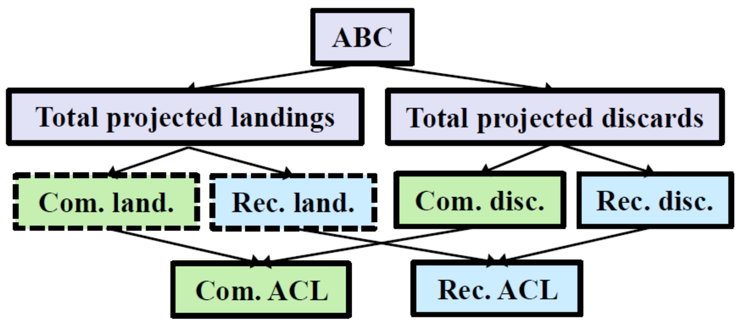
Landings-based Step 2. The total projected landings are allocated to the commercial and recreational sectors based on the allocation percentages defined in the FMP.



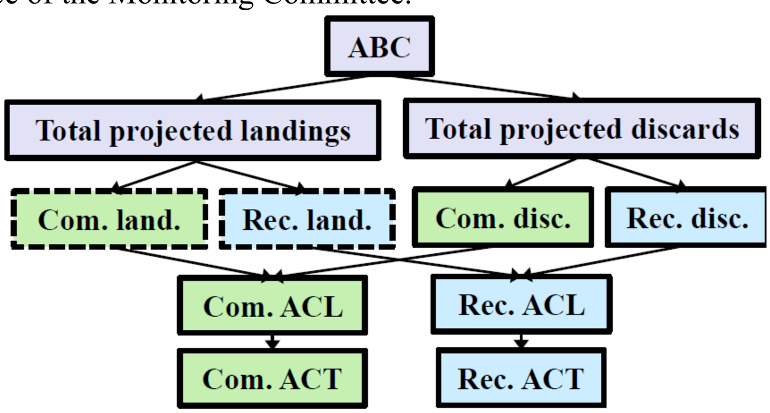
Landings-based Step 3. The total projected dead discards are split into projected commercial dead discards and projected recreational dead discards. The methodology for calculating sector-specific dead discards is not defined in the FMP and can vary based on annual considerations. The Monitoring Committee provides advice on this decision.



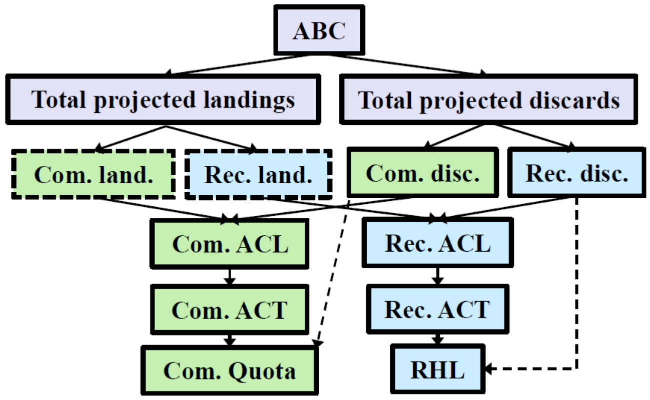
Landings-based Step 4. Commercial and recreational ACLs are calculated by adding the landings amount allocated to each sector and the sector-specific projected dead discards (see Steps 2 and 3 above).



Landings-based Step 5. Commercial and recreational ACTs are set less than or equal to their respective ACLs to account for management uncertainty. The appropriate deduction for management uncertainty (if any) is not pre-defined and is based on annual considerations, including the advice of the Monitoring Committee.



Landings-based Step 6. Commercial quotas and RHLs are determined by subtracting sector-specific discards from the sector-specific ACTs.



Implications of Catch vs. Landings-Based Allocation Approaches

One of the major differences between catch-based and landings-based allocations is at which step in the process the commercial/recreational allocation is applied to derive catch and landings limits. Under a catch-based allocation, the commercial/recreational allocation is applied in the first step of the process after the ABC is determined. Under a landings-based allocation, decisions about the total amount of expected landings and dead discards must be made before the commercial/ recreational allocation is applied. The commercial/recreational allocation is then applied to the total amount of expected landings (Figure 22).

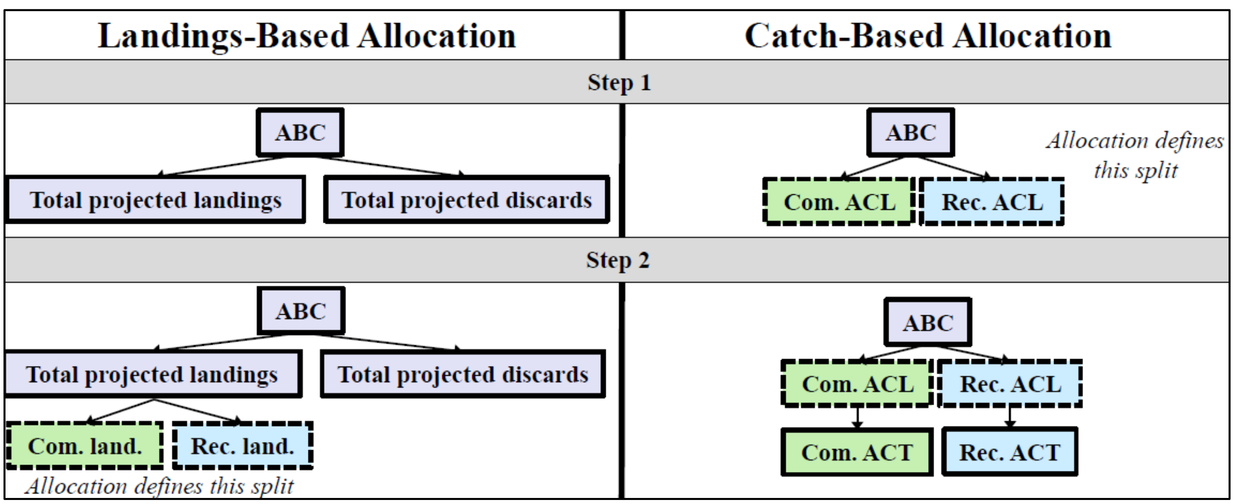


Figure 22. Comparison of first two steps of calculating commercial and recreational catch and landings limits under catch and landings-based allocations.

The method for determining total expected landings and dead discards under a landings-based approach is not specified in the FMP and can vary based on annual considerations. In practice, this typically involves consideration of stock assessment projections and/or recent trends in landings and dead discards, depending on the species. In this way, <u>considerations of recent trends in the stock and discard trends in either the commercial or recreational fishery impacts both sector's catch</u>

and landings limit under a landings-based allocation to a greater extent than under a catch-based allocation.

Under a catch-based allocation, the total ABC is always allocated among the commercial and recreational sectors in the same way (i.e., based on the allocation percentages defined in the FMP) regardless of recent trends in year classes or landings and dead discards in each sector. Put another way, under a catch-based allocation, changes in landings and dead discards in one sector do not influence the other sector's ACL as the entire ABC is always split among the sectors based on the allocation defined in the FMP, regardless of recent trends in landings and discards by sector. In theory, this can allow each sector to see the benefits of a reduction in their own dead discards to a greater extent than under a landings-based allocation. Under a catch-based allocation, a reduction in dead discards in one sector can result in an increase in that sector's landings limit in a future year. This was part of the rationale for implementing the current catch-based allocation for scup as it was expected to incentivize a reduction in commercial dead discards, which were of concern during development of Amendment 8. Under a landings-based allocation, changes in landings and dead discards in one sector can influence the catch and landings limits in both sectors; therefore, the benefits of a reduction in dead discards (or the negative impacts of an increase in dead discards) in one sector can also be felt by the other sector.

Although catch- and landings-based allocations may create different incentives for reducing dead discards in each sector, in reality, this may be a long-term impact. With the exception of the no action alternatives, all the allocation alternatives under consideration through this amendment are based on historical patterns in the fisheries considering the best available recreational and commercial data, either using the original base years or considering data through 2018 or 2019, depending on the alternative (Section 4.1). Therefore, the catch or landings-based allocations under many of the alternatives may not create an immediate notable incentive for change compared to recent operating conditions. Selection of catch versus landings-based allocations does have an immediate effect on each sector's landings limit. Appendix C presents a methodology for projecting landings limits under the catch- and landings-based allocation alternatives, and Section 4.2 compares recent trends in landings data to the projected landings limits under each allocation alternative.

10.2 APPENDIX B: BASIS FOR ALLOCATION ALTERNATIVES

This appendix describes the rationale behind each of the commercial/recreational allocation percentage alternatives in alternative sets 1a-1c (Section 5.1). These approaches are summarized in Table 66 and described in more detail below. Many alternatives share a common approach.

Table 66. Alternatives considered through this amendment for commercial/recreational allocation percentages (i.e., alternative sets 1a – summer flounder, 1b - scup, and 1c – black sea bass) grouped according to the approach used to derive the alternatives. *Indicates an alternative supported by multiple approaches.

Approach	Description	Associated Alternatives
A	No action/status quo	1a-4, 1b-1, 1c-4
B	Same base years as current allocations (varies by species) but with new data	1a-5, **1b-2 (preferred)**, 1b-5*, 1c-5
C	Same base years as current allocations (varies by species), with new data, and with landings percentages applied as catch-based allocations (only applicable for scup and black sea bass)	**Fluke-5 (preferred)** and **BSB-5 (preferred)**
D	2004-2018 base years	1a-1, 1a-6*, 1b-6, 1c-2
E	2009-2018 base years	1a-2*, 1a-6*, 1b-3*, 1b-5*, 1c-3, 1c-7*
F	2014-2018 base years	1a-3, 1a-7, 1b-5*, 1c-7*
G	Approximate status quo harvest per sector compared to 2017/2018 (summer flounder) or 2018/2019 (scup, black sea bass)	1a-2*, 1b-4, 1b-7, 1c-1, 1c-6*
H	Average of other approaches approved by Council/Board in June 2020	1a-2*, 1b-3*, 1c-6*
I	Average 2004-2018 catch or landings proportions with RHL overage years excluded	Fluke-1 and -2, Scup-1 and -2, BSB-1 and -2
J	50/50 weighting of the historical base years and 2004-2018 with RHL overage years excluded	Fluke-3 and -4, Scup-3, and -4, BSB-3 and -4

10.2.1 Approach A (No Action/Status Quo)

The no action/status quo alternatives would retaining the current commercial/recreational allocations. NEPA requires consideration of these alternatives. This approach is not the basis for any preferred alternatives.

10.2.2 Approach B (Same Base Years, New Data)

This approach would use updated recreational and commercial data from the same base years as the current allocations to inform new allocation percentages. This is the basis (or, depending on the alternative, part of the basis) for alternatives 1a-5, 1b-2, 1b-5, and 1c-5. These alternatives were developed by the Fishery Management Action Team (FMAT) and approved for inclusion by the Council and Board in June 2020. This approach is the basis for the preferred alternative for scup (alternative 1b-2). This is not the preferred approach for summer flounder or black sea bass.

Both catch and landings-based alternatives using this approach were considered for scup (alternatives 1b-2 and 1b-5, respectively). However, for summer flounder and black sea bass, only landings-based alternatives using this approach were considered (alternative 1a-5 for summer flounder and 1c-5 for black sea bass). This is because dead discard estimates in weight are not available for all the current base years for summer flounder (i.e., 1980-1989) and black sea bass (i.e., 1983-1992). Estimates of landings and dead discards in weight in both sectors are available for all the current base years for scup (i.e., 1988-1992).

MRIP does not provide estimates of recreational catch or harvest prior to 1981; therefore, the full 1980-1989 base years for summer flounder cannot be re-calculated for the recreational fishery. Instead, alternative 1a-5 uses 1981-1989 as the base years.

The rationale behind the selection of the current base years for each species is not explicitly defined in the FMP amendments that implemented the commercial/recreational allocations. The current base years for scup and black sea bass are all years prior to Council and Commission management. For summer flounder, the Commission FMP was adopted in 1982 but contained mostly management guidelines rather than requirements. The joint Council and Commission FMP was adopted in 1988, toward the end of the 1980-1989 base year period used to develop allocations. The management program for summer flounder was quite limited until Amendment 2 was implemented in 1993. The current base years for each species were likely chosen based on a desire to use as long of a pre-management time period as possible considering the limitations of the relevant data sets.

The approach of revising the commercial/recreational allocations using the same base years and new data allows for consideration of fishery characteristics in years prior to influence by the commercial/recreational allocations and other management measures, while also using what is currently the best scientific information available to understand the fisheries in those base years.

10.2.3 Approach C (Same Base Years, New Data, Applied as Catch-Based Allocations for Summer Flounder and Black Sea Bass)

This approach uses landings data to generate catch-based allocations for summer flounder and black sea bass using the same base years as the current allocations. These alternatives were added in March 2021 for summer flounder and December 2021 for black sea bass. This approach is the basis of the preferred alternatives for summer flounder and black sea bass (alternatives Fluke-5 and BSB-5).

As described in the previous section, the current base years can only be updated with recent landings data for summer flounder and black sea bass as estimates of dead discards are not available in all base years for these species. The Council and Board wished to consider catch-based allocations for all three species using the current base years and recent data. For scup, this could be achieved through Approach B, described above. For summer flounder and black sea bass, the Council and Board agreed that the best approach to achieve this, given the lack of discard data from all base years, would be to use the proportion of landings from each sector in the base years and apply those proportions as catch-based allocations.

10.2.4 Approach D (2004-2018 Base Years), Approach E (2009-2018 Base Years), And Approach F (2014-2018 Base Years)

Under approaches D, E, and F, the commercial/recreational allocation for each species would be based on the proportion of catch or landings from each sector during the most recent 15, 10, or 5 years through 2018, respectively. Final 2019 data from both sectors were not available during initial development of these alternatives; therefore, this amendment only considered catch and landings data through 2018. These alternatives were developed by the FMAT and approved for inclusion by the Council and Board in June 2020. As shown in Table 66, these approaches are the basis for many alternatives. These approaches are not the basis for any preferred alternatives.

The fisheries have changed notably since the commercial/recreational allocations were first implemented in 1993 for summer flounder, 1997 for scup, and 1998 for black sea bass. Most notably, all three species were under rebuilding programs when these allocations were first implemented. According to the most recent stock assessments, none of the three species are currently overfished or experiencing overfishing (Section 6.2).

Other characteristics of the fisheries have also changed. Limited access programs for the commercial fisheries were implemented after the initial allocation base years. Possession limits and minimum fish size limits in both sectors were implemented and have constrained both commercial and recreational harvest. Reporting and monitoring systems and requirements in both sectors have improved. Socioeconomic conditions such as demand for seafood and the demographics and number of both commercial and recreational fishermen have also shifted.

For these reasons, this amendment considered allocation percentages based on more recent trends in the fisheries compared to the initial base years. The FMAT, Council, and Board agreed that the most recent 15, 10, and 5 years (through 2018) were reasonable time periods to consider.

During these time periods, the fisheries were theoretically constrained by the current allocations. However, the commercial fisheries were generally held closer to their allocations than the recreational fisheries, even when measuring recreational harvest with the pre-calibration MRIP data available prior to 2018. Due to the nature of these fisheries, the commercial fisheries have been much more comprehensively monitored in a more timely manner than recreational fisheries during these time periods. All federally permitted commercial fishermen are required to sell their catch to federally permitted dealers, and those dealers must submit landings reports on a weekly basis. If commercial fisheries are projected to land their full quota prior to the end of the year or quota period, they can be shut down. The commercial fisheries have rarely exceeded their quotas by notable amounts over the past 15 years due to close monitoring and reporting.

Recreational harvest is monitored through a combination of voluntary responses to MRIP surveys and VTR data from federally permitted for-hire vessels. Preliminary MRIP data are provided in two month “wave” increments and are not released until approximately two months after the end of the wave. Final recreational data are generally not available until the spring of the following year. Due to the delay in data availability, in-season closures are not used for these recreational fisheries. Recreational fisheries are primarily managed with a combination of possession limits, minimum fish sizes, and open/closed seasons that are projected to constrain harvest to a certain level. However, recreational harvest is influenced by a number of external factors, and the level of harvest associated with a specific combination of possession limits, minimum fish sizes, and open/closed seasons can be difficult to accurately predict. Compared to commercial effort, recreational effort is more challenging to manage, especially as the recreational sector is open access. For these reasons, recreational harvest is not as tightly controlled and monitored as commercial landings.

In summary, there are tradeoffs associated with allocations based on recent fishery performance. These allocations could better reflect the current needs of the fisheries and be more responsive to changes in the fisheries and stocks compared to allocations using the initial base years. However, these alternatives would reallocate based on time periods when the recreational fishery was effectively less constrained to their limits than the commercial fishery. The implications are different for each of the three species. From 2004-2018, scup tended to have more consistent quota and RHL underages in both sectors than summer flounder and black sea bass, and black sea bass had much more consistent RHL overages than the other two species (in all cases considering the pre-calibration MRIP data available prior to 2018).

10.2.5 Approach G: Approximate Status Quo Harvest Per Sector Compared to 2017/2018 (Summer Flounder) or 2018/2019 (Scup, Black Sea Bass)

This approach was developed by the FMAT and approved for inclusion by the Council and Board in June 2020. This approach is the basis (or, depending on the alternative, part of the basis) for alternatives 1a-2, 1b-4, 1b-7, 1c-1, 1c-6. This approach is not the basis for any preferred alternatives.

For the reasons described below, this approach attempted to maintain approximately status quo landings in each sector under the 2020-2021 ABCs compared to 2017-2018 average landings for summer flounder and 2018-2019 average landings for scup and black sea bass. The resulting allocations would be fixed percentages; therefore, they were not intended to maintain a certain level of landing over the long term as the resulting landings limits would change in response to changes to the ABCs and other factors. The methodology for calculating the allocations under this approach is complex and is not described in detail here but can be found in Appendix B of the Public Hearing Document.[44]

For summer flounder, incorporation of the revised MRIP time series in the stock assessment contributed to a 49% increase in the commercial quota and RHL in 2019 compared to 2018. Despite the increased RHL, recreational management measures could not be liberalized because the revised MRIP data showed that the recreational fishery was already harvesting close to the increased RHL. The increased commercial quota allowed for an increase in commercial landings.

For black sea bass, incorporation of the revised MRIP time series in the stock assessment contributed to a 59% increase in the commercial quota and RHL for 2020 compared to 2019. Status quo recreational measures for black sea bass were expected to result in an overage of the increased 2020 RHL; however, the Council, Board, and NMFS agreed to maintain status quo recreational management measures for 2020 and 2021 to allow more time to consider how to best modify recreational management in light of the new MRIP data, including through this amendment. Commercial landings increased in response to the increased quota; however, they did not increase by the full 59%, likely due to impacts of the COVID-19 pandemic on market demand in 2020.

The revised MRIP time series did not have a major impact on the scup stock assessment. The commercial quota and RHL for scup decreased by 7% and 12%, respectively, in 2020 compared to 2019. Status quo recreational measures for scup in 2020 and 2021 were maintained based on similar justifications described above for black sea bass as well as the expectation that the commercial fishery would continue to under-harvest their quota due to market reasons.

[44] Available at: https://www.mafmc.org/s/SFSBSB-Alloc-Am-PHD_Jan2021.pdf.

Given these circumstances, an attempt was made to calculate revised commercial/recreational allocations for all three species such that harvest in each sector could remain similar to pre-2019 levels for summer flounder and pre-2020 levels for scup and black sea bass (i.e., the years prior to management use of the stock assessments which first incorporated the revised time series of MRIP data), at least on a short-term basis under the 2020-2021 ABCs. This would require lower commercial quotas than those implemented for all three species. However, the Council and Board agreed that this approach warranted further consideration given that the commercial quotas for summer flounder and black sea bass increased by 49% and 59% respectively as a result of the 2018 and 2019 stock assessments and the commercial scup quota has been under-harvested for over 10 years. Meanwhile, the recreational black sea bass and scup fisheries faced the potential for severe restrictions based on a comparison of the revised MRIP data in recent years to recent RHLs under the existing allocations.

This method did not prove practical for a number of reasons. For example, when this approach was first developed, it was anticipated that the Council and Board would take final action in spring 2021 and revised allocations could be implemented for January 2022. However, the Council and Board chose to delay final action to December 2021 and implementation is now anticipated for January 2023. This places the timing of implementation of revised allocations at a greater disconnect from the years on which this approach is based (i.e., 2017-2019). In addition, this approach was developed prior to revisions to the 2021 ABCs to account for a change in the Council's risk policy, prior to completion of the 2021 management track assessments for all three species, and prior to adoption of the 2022-2023 ABCs. This approach was not modified to account for these changes. For these reasons, there is not a strong justification for using this approach and it was not selected as the preferred approach.

10.2.6 Approach H (Average of Other Approaches Approved by Council/Board in June 2020)

This approach calculates allocation percentages based on the average of other approaches approved by the Council and Board for inclusion in this action in June 2020. This approach is not the basis for any preferred alternatives.

Although this approach does not have a quantitative basis that is distinct from the other alternatives, the FMAT agreed that this is appropriate. They also emphasized that there is not necessarily a clear, objective scientific basis for a single best way to approach these allocations, and that the final decision must be a policy and judgement call between a number of defensible options.

10.2.7 Approach I: Average 2004-2018 Catch or Landings Proportions with RHL Overage Years Excluded

This approach was submitted by a group of four Council/Board members and approved for inclusion in this action in August 2021.[45] As described in the Section 10.2.4, allocation options based on recent time periods raised fairness concerns among some stakeholders and some Council and Board members due to differences in how the commercial and recreational sectors are managed and how closely they have been held to their respective limits in past years. Approach I attempts to address these concerns by basing allocation percentages on recent time periods while excluding years with RHL overages. A 15-year time series (2004–2018) was used to have

[45] https://www.mafmc.org/s/Tab07_SFSBSB-Allocation-Amd_2021-08.pdf

sufficient years remaining in the calculations (10 years for summer flounder and scup, and seven years for black sea bass; the 10- and 5-year time series result in only two and one years left in the calculation for black sea bass). Specifically, 2006-2008, 2014 and 2016 were removed for summer flounder; 2004 and 2007-2010 for scup; and 2009-2010, 2012-2016, and 2018 for black sea bass. This method was applied to both the catch data and landings data. The resulting allocations are represented by alternatives Fluke-1, Fluke-2, Scup-1, Scup-2, BSB-1, and BSB-2 (Section 5.1). This approach is not the basis for any preferred alternatives.

10.2.8 Approach J: 50/50 Weighting of the Historical Base Years and Recent Base Years with RHL Overage Years Excluded

This approach was submitted by a group of four Council/Board members and approved for inclusion in this action in August 2021.[46] As described in the proposal for these alternatives, during the public comment period held in early 2021, commercial fishery stakeholders largely favored no action (i.e., retaining the current allocations) and recreational fishery stakeholders largely favored allocations based on more recent time periods. Approach J attempts to balance these considerations while accounting for recent data approvements by averaging the allocations resulting from updating the historical base years (or reasonably proxy thereof, see below) with recent data and allocations based on the last 15 years of catch or landings (through 2018), excluding those in which the RHL was exceeded (as described in the previous section).

As previously described, it is not possible to update the current base years for summer flounder and black sea bass with catch data. The full base years for these species can only be calculated with landings data as data on dead discards are not available for all base years. Similar to approach C (Section 10.2.3), for the catch-based allocations for summer flounder and black sea bass under this approach, the proportions of landings in the base years using updated data and were applied as catch-based allocations. The scup base years can be calculated with both catch and landings data.

The resulting allocations are represented by alternatives Fluke-3, Fluke-4, Scup-3, Scup-4, BSB-3, and BSB-4 (Section 5.1). This approach is not the basis for any preferred alternatives.

10.3 APPENDIX C: Example Quotas and RHLs Under Each Allocation Alternative

This appendix provides examples of potential quotas and RHLs for each of the alternatives in alternative set 1 (Section 5.1). Commercial quotas and RHLs are developed or reviewed annually through consultation with the Monitoring Committee and approved by the Council and Board. As described below, given several assumptions that need to be made about how dead discards are handled, it is not possible to precisely predict what quotas and RHLs would be under each allocation alternative. This analysis provides the best approximation of possible limits available at this time.

Dead Discard Projection Methodology

Projecting dead discards is necessary to develop landings limits. Typically, summer flounder and scup total dead discards are based on the stock assessment projections. The Monitoring Committee then takes into consideration recent trends to split the total projected dead discards into dead discards by sector. For black sea bass, the Monitoring Committee relies on recent year average

[46] https://www.mafmc.org/s/Tab07_SFSBSB-Allocation-Amd_2021-08.pdf

proportions of dead discards by sector as the stock assessment projections do not predict landings separately from dead discards.

Projecting expected future commercial quotas and RHLs under revised allocations is complicated because notable shifts in allocations could impact recreational and commercial fishing effort, which may result in changes in dead discards for each sector in addition to changes in landings. As such, under modified allocations there would be a transition period where recent trends in dead discards by sector would not be particularly informative for projecting sector discards under new allocations. Expected dead discards by sector under revised allocations are thus better predicted by modeling the relationship between dead catch, landings, and dead discards. This can then be used to project dead discards under example catch and landings limits for each allocation alternative. The modeling process involves assumptions and is not necessarily the method that the Monitoring Committee will use in future specifications development.

The following methodology for producing dead discard projections was based on the assumption of a linear relationship between dead discards and catch/landings (e.g., Figure 23).

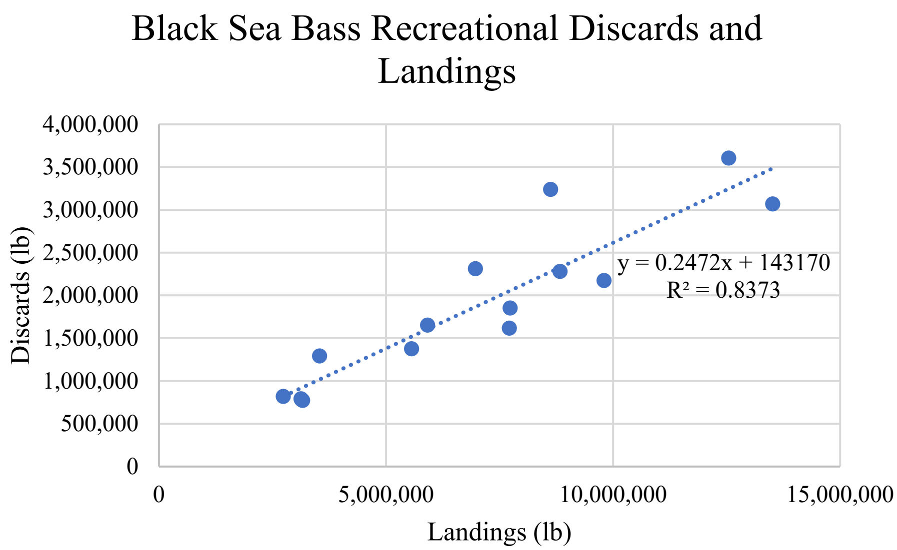


Figure 23. Black sea bass recreational dead discards and landings, 2005-2019.

Deriving Landings Limits for Catch-based Allocations

Expected dead discards in each sector for catch-based allocations were calculated based on a linear regression with catch as the dependent variable and discards as the independent variable, using data from 2005-2019. While the coefficients for catch were not statistically significant at the 90% confidence interval for all species and sectors, in all instances the regression analyses revealed a positive linear relationship.

Deriving Landings Limits for Landings-Based Allocations

Example landings limits for landings-based allocations were also calculated using a linear regression, but with landings as the independent variable and dead discards as the dependent variable. Dead discards were regressed on landings for the years 2005-2019 for all three species by sector. Although the coefficients for landings were not all statistically significant at the 90%, the regression analyses did reveal a positive linear relationship for all three species.

Example RHLs and Quotas Under Allocation Alternatives

The following tables provide the example commercial quotas and RHLs for each species under each allocation alternative using the methodology described above. As previously stated, the regressions were based on landings and dead discards data from 2005-2019. The 2023 ABC value was used. For the status quo allocation alternatives, the actual 2023 commercial quota and RHL values are displayed for comparison.

Table 67. Summer flounder example quotas and RHLs in millions of pounds, under an ABC of 33.12 million pounds. The values shown for alternative 1a-4 (the no action/status quo alternative) represent the catch and landings limits implemented for 2023, not example measures using the methodology described in this appendix. Alternative Fluke-5 is the preferred alternative.

Summer Flounder												
	CATCH-BASED						LANDINGS-BASED					
Alt.	Fluke-5	Fluke-4	Fluke-2	1a-1	1a-2	1a-3	1a-4	1a-5	Fluke-3	Fluke-1	1a-6	1a-7
Com. allocation	**55%**	**50%**	**45%**	**44%**	**43%**	**40%**	**60%**	**55%**	**51%**	**47%**	**45%**	**41%**
Rec. allocation	**45%**	**50%**	**55%**	**56%**	**57%**	**60%**	**40%**	**45%**	**49%**	**53%**	**55%**	**59%**
Com. ACL	18.22	16.56	14.90	14.57	14.24	13.25	18.48	17.26	16.12	14.98	14.41	13.27
Com. dead disc.	3.08	2.87	2.66	2.62	2.58	2.46	2.95	2.78	2.69	2.61	2.56	2.48
Com. quota	**15.14**	**13.69**	**12.24**	**11.95**	**11.66**	**10.79**	**15.53**	**14.48**	**13.42**	**12.37**	**11.84**	**10.79**
Rec. ACL	14.90	16.56	18.22	18.55	18.88	19.87	14.64	15.86	17.00	18.14	18.71	19.85
Rec. dead disc.	3.78	4.01	4.24	4.28	4.33	4.46	4.28	4.02	4.11	4.20	4.24	4.33
RHL	**11.12**	**12.55**	**13.98**	**14.27**	**14.55**	**15.41**	**10.36**	**11.84**	**12.90**	**13.95**	**14.47**	**15.53**

Table 68. Scup example quotas and RHLs in millions of pounds, under an ABC of 29.67 million pounds. The values shown for alternative 1b-1 (the no action/status quo alternative) represent the catch and landings limits implemented for 2023, not example measures using the methodology described in this appendix. Alternative 1-b2 is the preferred alternative for scup.

Scup											
	CATCH-BASED						LANDINGS-BASED				
Alt.	1b-1	1-b2	Scup-4	Scup-2	1b-3	1b-4	Scup-1	Scup-3	1b-5	1b-6	1b-7
Com. allocation	**78%**	**65%**	**63.5%**	**62%**	**61%**	**59%**	**59%**	**58%**	**57%**	**56%**	**50%**
Rec. allocation	**22%**	**35%**	**36.5%**	**38%**	**39%**	**41%**	**41%**	**42%**	**43%**	**44%**	**50%**
Com. ACL	23.14	19.29	18.84	18.40	18.10	17.51	18.57	18.33	18.08	17.83	16.34
Com. dead disc.	5.27	5.19	5.05	4.91	4.82	4.63	4.58	4.57	4.56	4.55	4.49
Com. quota	**17.87**	**14.10**	**13.79**	**13.49**	**13.28**	**12.88**	**13.99**	**13.76**	**13.52**	**13.28**	**11.85**
Rec. ACL	6.53	10.38	10.83	11.27	11.57	12.16	11.10	11.34	11.59	11.84	13.33
Rec. dead disc.	1.12	1.33	1.35	1.38	1.40	1.43	1.37	1.38	1.40	1.41	1.48
RHL	**5.41**	**9.06**	**9.47**	**9.89**	**10.17**	**10.73**	**9.73**	**9.96**	**10.20**	**10.43**	**11.85**

Table 69. Black sea bass example quotas and RHLs in millions of pounds, under an ABC of 16.66 million pounds. The values shown for alternative 1c-4 (the no action/status quo alternative) represent the catch and landings limits implemented for 2023, not example measures using the methodology described in this appendix. Alternative BSB-5 is the preferred alternative.

Black Sea Bass												
		CATCH-BASED					LANDINGS-BASED					
Alt.	BSB-5	BSB-4	BSB-2	1c-1	1c-2	1c-3	1c-4[a]	1c-5	BSB-3	BSB-1	1c-6	1c-7
Com. allocation	**45%**	**40.5%**	**36%**	**32%**	**28%**	**24%**	**49%**	**45%**	**41%**	**37%**	**29%**	**22%**
Rec. allocation	**55%**	**59.5%**	**64%**	**68%**	**72%**	**76%**	**51%**	**55%**	**59%**	**63%**	**71%**	**78%**
Com. ACL	7.50	6.75	6.00	5.33	4.66	4.00	8.93	8.33	7.62	6.89	5.36	3.96
Com. dead disc.	2.94	2.57	2.19	1.86	1.53	1.19	3.21	2.96	2.66	2.35	1.71	1.12
Com. quota	**4.56**	**4.18**	**3.81**	**3.47**	**3.14**	**2.80**	**5.71**	**5.37**	**4.96**	**4.53**	**3.65**	**2.84**
Rec. ACL	9.16	9.91	10.66	11.33	12.00	12.66	7.74	8.33	9.04	9.77	11.30	12.70
Rec. dead disc.	1.93	2.09	2.24	2.38	2.51	2.65	1.79	1.77	1.91	2.05	2.35	2.63
RHL	**7.23**	**7.83**	**8.42**	**8.95**	**9.48**	**10.01**	**5.95**	**6.56**	**7.13**	**7.72**	**8.94**	**10.07**

10.4 APPENDIX D: BASELINE FOR ALLOCATION SHIFT AND PHASE-IN CALCULATIONS

Both catch- and landings-based commercial/recreational allocation alternatives were considered for all three species (Section 5.1). Summer flounder and black sea bass are currently managed under a landings-based allocation and scup is currently managed under a catch-based allocation. It is straightforward to calculate the percent shift in allocation under each alternative if the allocation remains landings-based for summer flounder and black sea bass or catch-based for scup. Calculating the percent shift is more complicated when transitioning from a landings-based to a catch-based allocation or vice versa. Under a landings-based allocation, the division of expected dead discards to each sector is typically calculated using a moving average of recent trends. As a result, under a landings-based allocation, the percentage of the ABC (landings + dead discards) assigned to each sector typically varies from year to year and usually does not match the landings-based allocation percent. To illustrate this, the 2022 percent split of landings, dead discards, and sector ACLs for each species are shown in Table 70. As described below, when transitioning from a landings-based to a catch-based allocation or vice versa, the shift in allocation should not be calculated starting from the existing FMP allocation, as the actual split of catch does not match the landings-based allocation for summer flounder and black sea bass, and the actual split of landings does not match the catch-based allocation for scup. The allocation percent shift for each alternative can instead be calculated by using the 2022 limits as a starting point since these are the implemented measures that the transition would be away from. This includes the actual division of catch (for transition to a catch-based allocation) or landings (for transition to a landings-based allocation) in 2022. Additional details for each species are discussed below.

Table 70. The currently implemented recreational/commercial split for total landings, dead discards, and total dead catch for 2022 specifications. The current FMP-specified allocations for each species are highlighted in yellow.

Currently Landings-Based Allocations						
	Comm. % of TAL (allocation)	**Rec. % of TAL (allocation)**	**Expected comm. % of discards in 2022**	**Expected rec. % of discards in 2022**	**Comm. ACL % of ABC in 2022**	**Rec. ACL % of ABC in 2022**
Summer flounder	60	40	41	59	56	44
Black sea bass	49	51	64	36	54	46
Currently Catch-Based Allocation						
	Comm. % of TAL in 2022	**Rec. % of TAL in 2022**	**Expected comm. % of discards in 2022**	**Expected rec. % of discards in 2022**	**Comm. ACL % of ABC (allocation)**	**Rec. ACL % of ABC (allocation)**
Scup	77	23	83	17	78	22

Summer Flounder

If the summer flounder allocation is modified but a landings-based allocation is maintained (alternatives 1a-5 through 1a-7, Fluke-3, and Fluke-1), the percent shift amounts are easily calculated by taking the difference between the starting and ending allocations for each sector.

Under a transition from a landings-based to a catch-based allocation (Fluke-5, Fluke-4, Fluke-2, and 1a-1 through 1a-3), dead discards would first need to be incorporated into the current baseline to determine the total percent shift. Any allocation changes adopted may take effect starting in 2023; therefore, the specifications for 2022 can serve as this baseline for the current split of catch by sector. Specifically, the percentage of the ABC that each sector will receive in 2022 as a sector ACL is used as the starting point for calculating transition percentages.

For summer flounder, in 2022, the commercial ACL represents 56% of the ABC and the recreational ACL represents 44% of the ABC (Table 70). From these starting percentages, the total amount of catch-based allocation shift can be calculated, and for consideration with phase-in alternatives, evenly divided among the 2, 3, or 5 years depending on the phase-in alternative (Table 60; Section 7.1.1.4).

Scup

The current allocation for scup is catch-based. If the allocation is modified but a catch-based allocation is maintained (alternatives 1b-2 through 1b-4, Scup-4, and Scup-2), the total shift amounts are easily calculated by taking the difference between the starting and ending allocations for each sector. Under a transition from a catch-based to a landings-based allocation (alternatives 1b-5 through 1b-7, Scup-1, and Scup-5), dead discards would first need to be separated from the current baseline to determine the total and annual percent allocation shift. Because any allocation changes adopted may take effect in 2023, the specifications for 2022 can serve as this baseline for the current split of landings by sector. Specifically, the percentage of the total allowable landings (TAL) that each sector will receive in 2022 as sector landings limits (commercial quota and RHL) is used as the starting point for calculating transition percentages (Table 70).

For scup, in 2022, the commercial quota represents 77% of the TAL and the RHL represents 23% of the TAL (Table 70). From these starting percentages, the total amount of landings-based allocation shift can be calculated, and evenly divided among the 2, 3, or 5 years for phase-in alternatives (Table 61; Section 7.1.1.4).

Black Sea Bass

If the black sea bass allocation is modified but a landings-based allocation is maintained (alternatives 1c-5 through 1c-7, BSB-3, and BSB-1), the annual percent shift amounts are easily calculated by taking the difference between the starting and ending allocations for each sector. Under a transition from a landings-based to a catch-based allocation (alternatives 1c-1 through 1c-3, BSB-5, BSB-4, and BSB-2), dead discards would first need to be incorporated into the current baseline to determine the total and annual percent shift. Specifications for 2022 can serve as this baseline for the current split of catch by sector. Specifically, the percentage of the ABC that each sector will receive in 2022 as a sector ACL is used as the starting point for calculating transition percentages (Table 70).

For black sea bass, in 2022, the commercial ACL represents 54% of the ABC and the recreational ACL represents 46% of the ABC (Table 70). From these starting percentages, the total amount of allocation shift can be calculated, and for phase in alternatives, evenly divided among the 2, 3, or 5 years depending on the phase-in alternative (Table 62; Section 7.1.1.4).