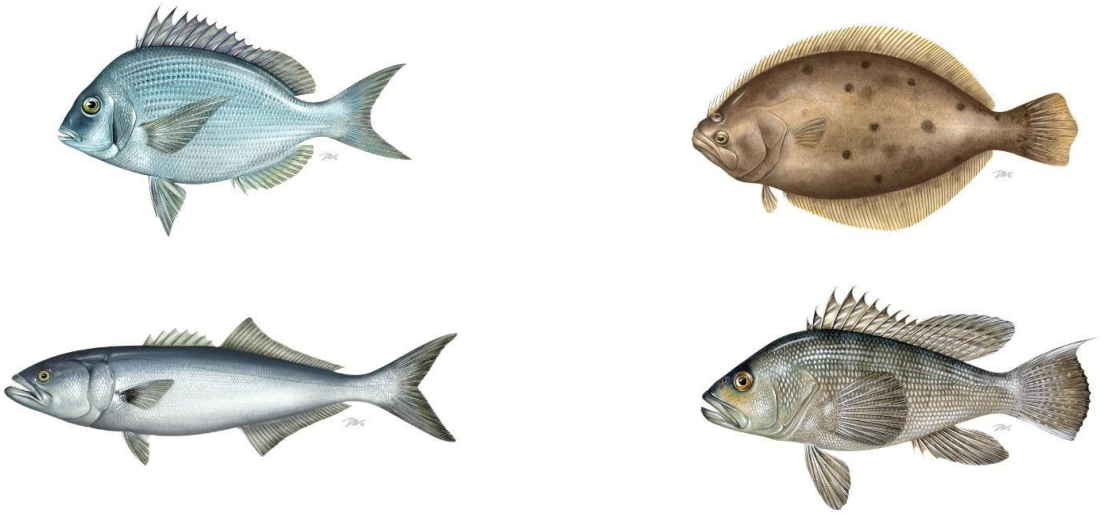
Atlantic States Marine Fisheries Commission

ADDENDUM XXXVI TO THE SUMMER FLOUNDER, SCUP, AND BLACK SEA BASS FISHERY MANAGEMENT PLAN AND ADDENDUM III TO THE BLUEFISH FISHERY MANAGEMENT PLAN

Recreational Measures Setting Process
for Summer Flounder, Scup, Black Sea Bass, and Bluefish



Approved April 2025

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

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1.0 Introduction

The summer flounder, scup, black sea bass, and bluefish fisheries are managed cooperatively by the Atlantic States Marine Fisheries Commission (ASMFC or Commission) in state waters (0-3 miles) and by the Mid-Atlantic Fishery Management Council (MAFMC or Council) and NOAA Fisheries in federal waters (3-200 miles). Summer flounder, scup, and black sea bass are managed under one fishery management plan (FMP) and bluefish is managed under a separate FMP. The management unit for summer flounder is U.S. waters from the southern border of North Carolina northward to the U.S.-Canadian border. The management unit for scup and black sea bass is U.S. waters from Cape Hatteras, North Carolina northward to the Canadian border. Bluefish are managed in U.S. waters along the entire eastern seaboard, from Maine through Florida.

The Commission and Council jointly agree to recreational annual catch limits (ACLs), annual catch targets (ACTs), and recreational harvest limits (RHLs) for all four species, which apply throughout the management units. They also jointly agree to the overall approach to setting recreational bag, size, and season limits (i.e., recreational measures).

The current process for setting recreational measures for these species, referred to as the percent change approach, was implemented through the Harvest Control Rule Framework/Addenda in 2023. The goal of the Harvest Control Rule Framework/Addenda was to establish a process such that recreational measures aim to prevent overfishing, are reflective of stock status, appropriately account for uncertainty in the recreational data, take into consideration angler preferences, and provide an appropriate level of stability and predictability in changes from year to year.

The percent change approach sunsets at the end of 2025, therefore the goal of the Recreational Measures Setting Process Addenda is to establish a process for setting recreational measures for summer flounder, scup, black sea bass, and bluefish for 2026 and beyond. Based on the decision by the Interstate Fisheries Management Program Policy Board (Policy Board) and the Council in April 2025, the Recreational Measures Setting Process will use a harvest-based approach as has been used historically until 2030. Starting in 2030 and beyond, these four species will move to a catch-based management approach.

2.0 Overview

2.1 Statement of Problem

As described in more detail in Section 2.2, the Commission and Council have faced a number of challenges in setting recreational management measures for summer flounder, scup, black sea bass, and bluefish. These challenges included concerns related to uncertainty and variability in the recreational fishery catch estimates and the need to frequently change measures based on those data, especially in a direction often perceived as contrary to stock status. The interim approach to address these challenges (i.e., the percent change approach) expires at the end of 2025.

2.2 Background

As stated above, the Commission's species management boards and the Council jointly set recreational ACLs, recreational ACTs, and RHLs for all four species (Figure 1). The recreational ACLs account for landings and dead discards and are set based on the recreational allocation percentages defined in the FMPs. The ACTs are set less than or equal to the ACLs to account for management uncertainty. The RHL for each species is set equal to the ACT minus expected recreational dead discards. None of the management programs in this document change the process for setting the ACLs, ACTs, and RHLs.

The ACLs, ACTs, and RHLs are revised when new stock assessment information becomes available. For the foreseeable future, updated stock assessments are expected to be available every other year for these four species.

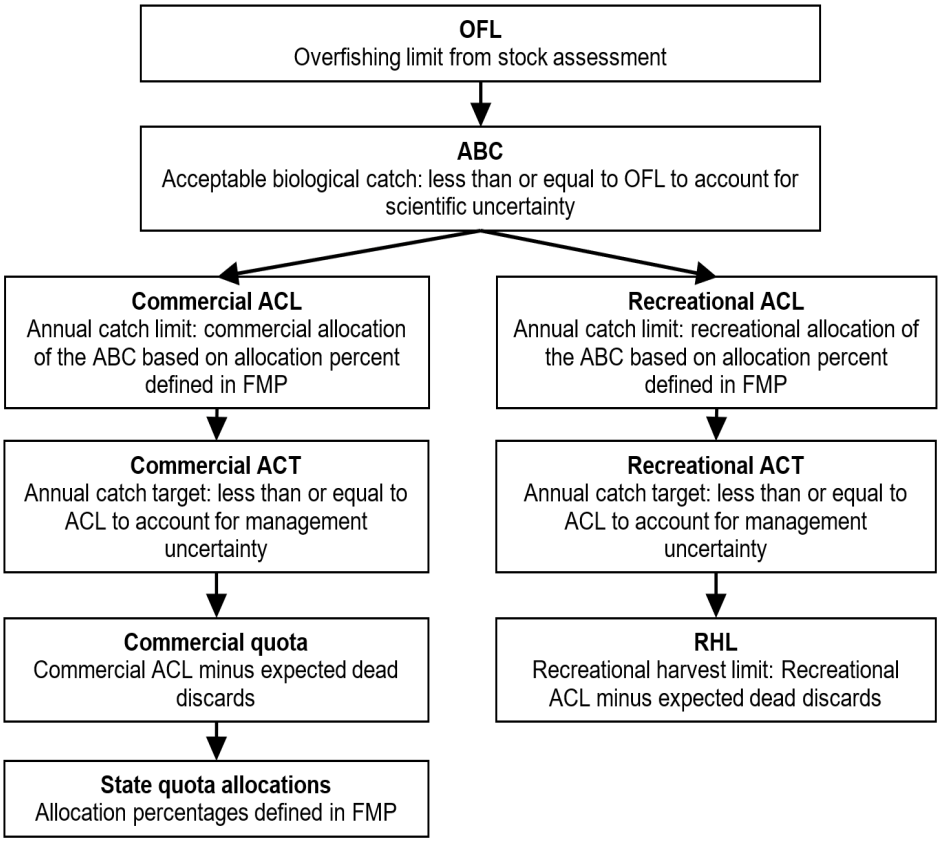

Figure 1. Example flowchart for the process for defining recreational and commercial catch and landings limits for summer flounder, scup, black sea bass, and bluefish. The specific requirements for each species are defined in the FMPs.

The Commission's species management boards and Council determine whether measures should remain status quo, or if there should be an overall percentage liberalization or reduction in harvest. These bodies jointly set federal waters measures and state waters measures are subsequently approved by the Boards.

Prior to the Harvest Control Rule Addenda/Framework, recreational measures (i.e., bag, size, and season limits) were set with the goal of allowing harvest to meet but not exceed the RHL. In preventing RHL overages, recreational measures also aimed to prevent ACL overages and overfishing.

Of the four species' fisheries, those that tend to meet or exceed their RHL required frequent changes to the recreational bag, size, and season limits aimed at preventing future RHL overages. This has not only been frustrating for stakeholders but also can lead to issues with the enforceability of the management measures and can increase the likelihood of unintentional violations (ASMFC 2024a). In some cases, the required changes in measures appear to have responded to variability in recreational catch and uncertainty in the Marine Recreational Information Program (MRIP) estimates rather than a clear conservation need. This challenge has been referred to as "chasing the RHL." In addition, many recreational stakeholders expressed frustration that measures for these species did not appear reflective of stock status. For example, black sea bass measures have been more restrictive in recent years when the stock is more than double the target level compared to when the stock was under a rebuilding plan.

The percent change approach, which was implemented through the Harvest Control Rule Framework/Addenda in 2023, aimed to address these issues by setting measures for two years at a time, requiring consideration of uncertainty in the MRIP harvest estimates through use of confidence intervals, and adding additional considerations for stock status. The percent change approach uses the RHL and other information to define a harvest target for setting recreational measures. This harvest target can be higher than, lower than, or equal to the RHL. The harvest target is based on two factors: 1) Comparison of a confidence interval around an estimate of expected harvest under status quo measures to the average RHL for the upcoming two years and 2) Biomass compared to the target level, as defined by the most recent stock assessment.

Through the Recreational Measures Setting Process Addenda/Framework, the Commission and Council further evaluated the percent change approach and other possible approaches to determine the appropriate long-term process for setting recreational measures for all four species.

The FMPs for the four species do not specify what methods should be used to determine which recreational management measures are expected to meet the relevant target (i.e., the RHL prior to 2023 or the level of harvest required by the percent change approach since 2023). The methods can differ based on recommendations from the Commission's Technical Committees and the Council's Monitoring Committees. Since 2023, a tool referred to as the Recreation Demand Model has been used to set recreational measures for summer flounder, scup, and black sea bass (Carr-Harris et al. 2024). The model produces estimates of recreational catch, harvest, and discards given a suite of proposed regulatory measures for each state. The Recreation Demand Model incorporates data on recent recreational harvest and discards from MRIP, as well as information on angler behavior from a survey administered to anglers who recently fished for summer flounder, scup, or black sea bass. The Recreation Demand Model

also incorporates information from the stock assessments on availability of the three species. The Recreation Demand Model is not available for bluefish. Therefore, bluefish measures are set based on an analysis of MRIP data only, as was also done for summer flounder, scup, and black sea bass prior to 2023. Improved analysis or modeling approaches for setting bluefish measures can be considered in the future without requiring a change to the FMP.

These Addenda include special considerations for stocks in a rebuilding plan. The management program outlined in this document is not meant to replace any species rebuilding measures. The bluefish stock was declared overfished in 2019, triggering the development of a rebuilding plan and a need for more restrictive management measures than had previously been in place. Any measures implemented for bluefish must comply with the rebuilding plan.

2.3 Status of the Stocks

2.3.1 Summer Flounder

The most recent summer flounder management track stock assessment was completed in June 2023, using data through 2022 (NEFSC 2023a). The assessment approach is a statistical catch-at-age model incorporating a broad array of fishery and survey data. Results from the 2023 assessment indicated the summer flounder stock was not overfished, but overfishing was occurring in 2022 with fishing mortality estimated at 103% of the overfishing threshold proxy (Figure 2). Spawning stock biomass (SSB) was estimated to be 83% of the biomass target and stock recruitment has been below average since 2011.

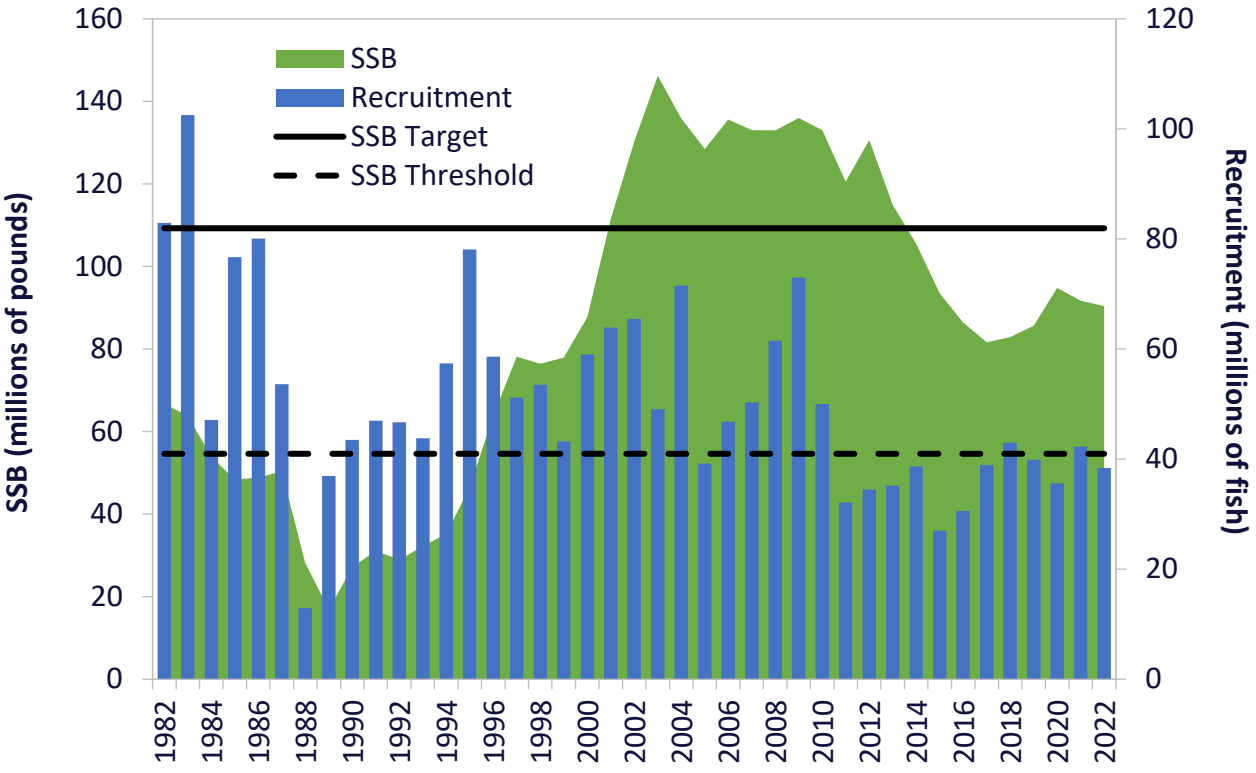

Figure 2. Summer flounder spawning stock biomass and recruitment. Source: 2023 Management Track Assessment Report, Northeast Fisheries Science Center.

2.3.2 Scup

The most recent scup management track stock assessment was completed in June 2023, using data through 2022 (NEFSC 2023b). The assessment approach is a statistical catch-at-age model incorporating a broad array of fishery and survey data. Results from the 2023 assessment indicated that the scup stock was not overfished, with biomass 246% of the biomass target, and overfishing was not occurring in 2022 (Figure 3). Fishing mortality was 52% of the overfishing threshold proxy.

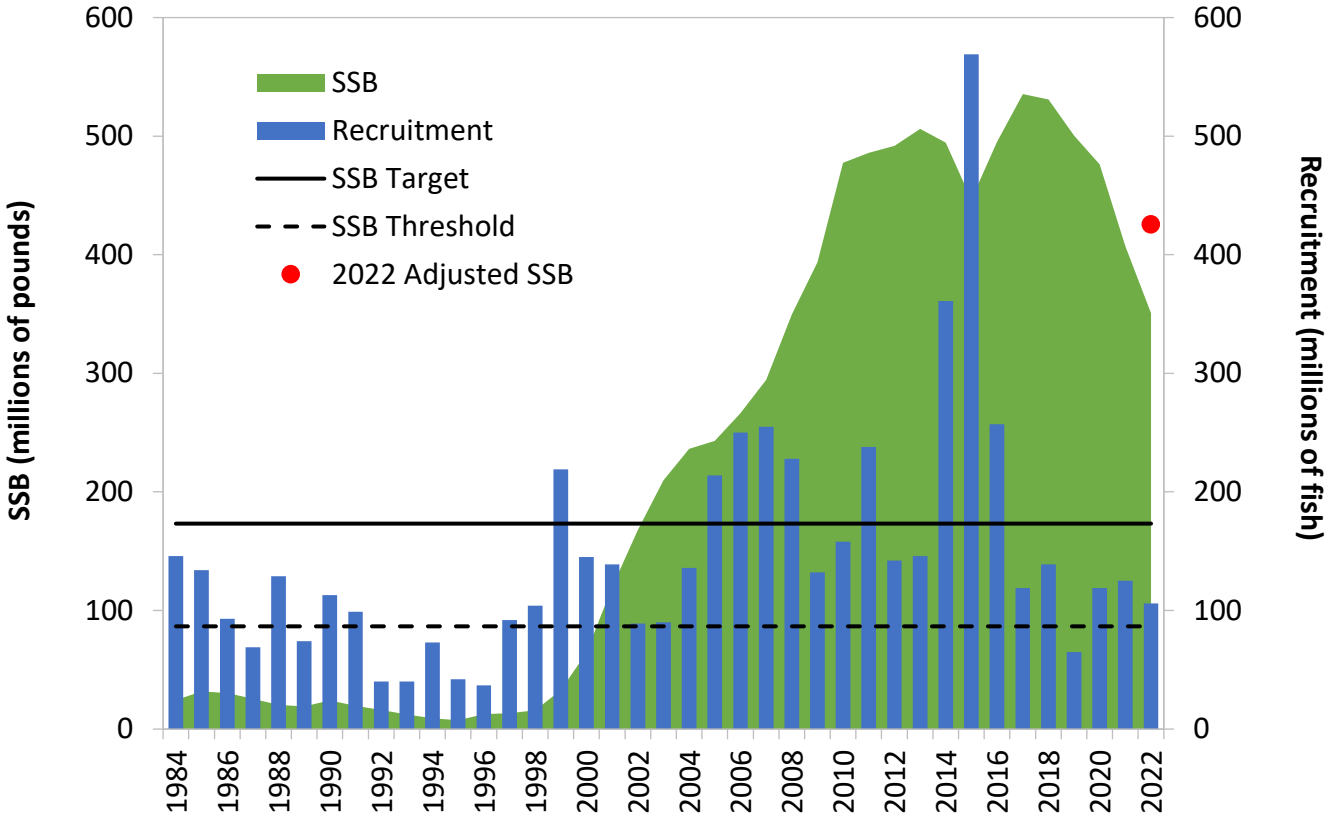

Figure 3. Scup spawning stock biomass and recruitment. 2022 spawning stock biomass was adjusted for a retrospective pattern with both the unadjusted and adjusted values shown above. The adjusted value was used in management. Source: 2023 Management Track Assessment Report, Northeast Fisheries Science Center.

2.3.3 Black Sea Bass

The most recent black sea bass stock assessment update was completed in June 2024, using data through 2023 (NEFSC 2024). The assessment used a combined-sex age-structured approach that modeled the stock as two sub-units, divided at Hudson Canyon, with mixing between the northern and southern sub-units. Results from the 2024 assessment indicated that the black sea bass stock was not overfished and overfishing was not occurring during 2023. SSB

in 2023 was estimated to be 219% of the biomass target (Figure 4), and fishing mortality was 77% of the overfishing threshold.

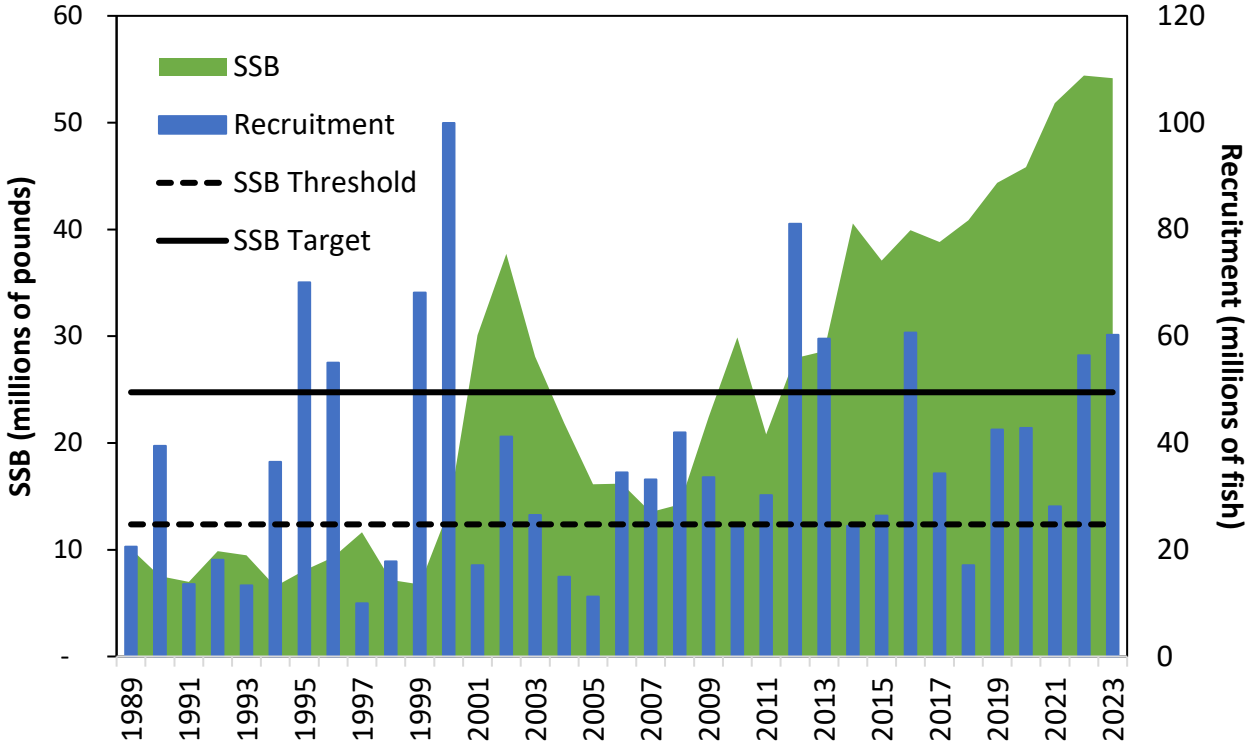

Figure 4. Black sea bass spawning stock biomass and recruitment. Source: 2024 Management Track Assessment Report, Northeast Fisheries Science Center.

2.3.4 Bluefish

The most recent bluefish management track stock assessment was completed in June 2023, using data through 2022 (NEFSC 2023c). The assessment approach is an analytical state-space model incorporating a broad array of fishery and survey data. Results from the 2023 assessment indicated that the bluefish stock was not overfished and overfishing was not occurring in 2022 (Figure 5). While the bluefish stock is not considered overfished based on the 2023 assessment, bluefish will remain in a rebuilding plan until SSB reaches the target level. In 2023, SSB was estimated to be 60% of the biomass target and fishing mortality was 64% of the overfishing threshold.

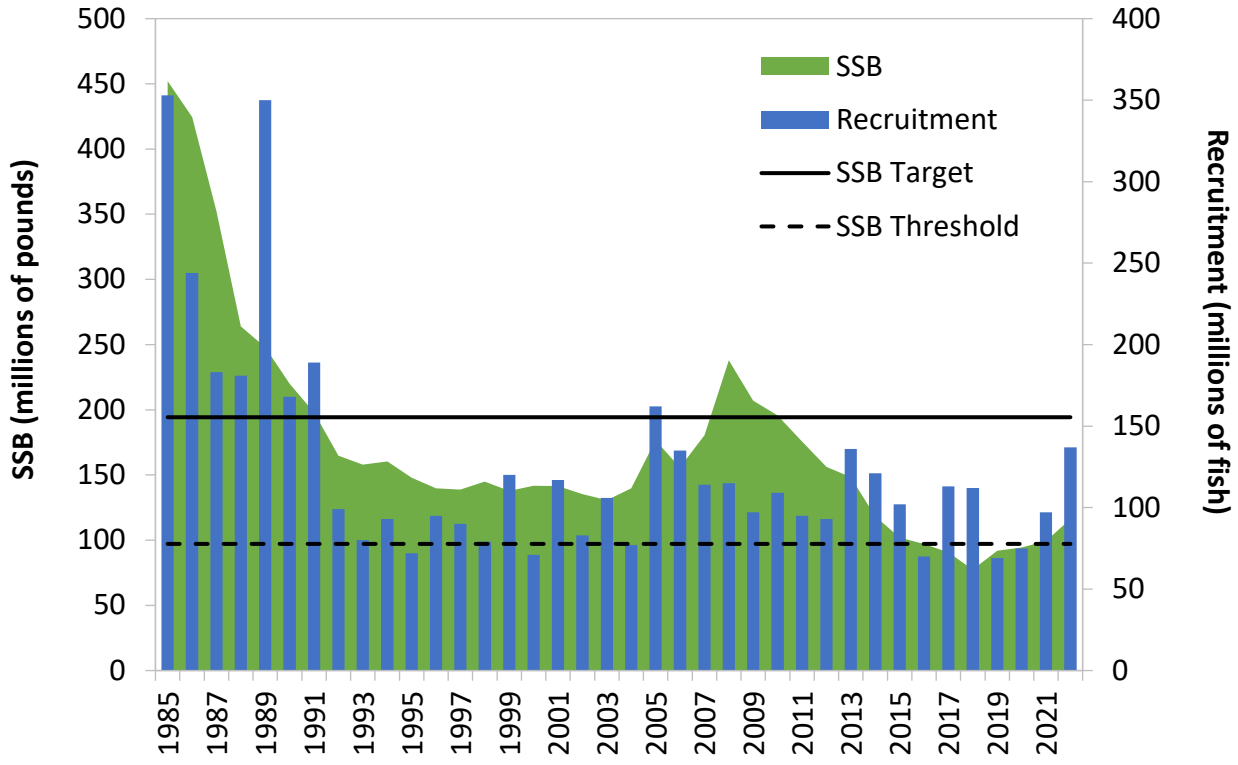

Figure 5. Bluefish spawning stock biomass and recruitment. Source: 2023 Management Track Assessment Report, Northeast Fisheries Science Center.

2.4 Status of the Fisheries

Note: Since these Addenda consider management of the recreational fisheries for summer flounder, scup, black sea bass, and bluefish, the following information focuses on those recreational fisheries. For information on the commercial fisheries, see the Reviews of the FMPs for Summer Flounder, Scup, Black Sea Bass, and Bluefish for the 2023 Fishing Year (ASMFC 2024b-e). MRIP data reported below were queried in July of 2024.

2.4.1 Summer Flounder

From 2014 through 2023, MRIP estimates indicate recreational summer flounder harvest was highest in 2014, with 5.36 million fish landed, totaling 16.23 million pounds. Recreational harvest reached a low in 2021 with 2.32 million fish landed (6.82 million pounds). Over the same time period, recreational catch (harvest plus live and dead discards) was highest in 2014 with 44.57 million fish caught and was lowest in 2018 with 22.67 million fish caught.

In 2023, 934 vessels held summer flounder federal party/charter permits. Many of these vessels also hold party/charter permits for scup and black sea bass. On average, an estimated 77% of the recreational landings (in numbers of fish) occurred in state waters over the past ten years. Most summer flounder are typically landed in New York and New Jersey. About 80% of recreational summer flounder harvest between 2021 and 2023 was from anglers who fished on

private or rental boats. About 5% was from party or charter boats, and about 15% was from anglers fishing from shore.

2.4.2 Scup

From 2014 through 2023, MRIP estimates indicate that recreational catch of scup (in number of fish) was highest in 2017 at 41.20 million scup and harvest was highest in 2022 with an estimated 17.71 million scup landed by recreational fishermen from Maine through North Carolina. Recreational catch was lowest in 2014 when an estimated 20.88 million scup were caught, and harvest was lowest in 2016 with 9.14 million fish landed.

In 2023, 748 vessels held scup federal party/charter permits. Many of these vessels also held party/charter permits for summer flounder and black sea bass. Between 2021 and 2023, on average 96% of recreational scup catch (in numbers of fish) occurred in state waters and about 4% occurred in federal waters. New York, Connecticut, Rhode Island, Massachusetts, and New Jersey accounted for over 99% of recreational scup harvest in 2023. About 53% of recreational scup landings (in numbers of fish) in 2023 were from anglers who fished on private or rental boats and about 36% were from anglers fishing from shore. Additionally, about 12% were from anglers fishing on party or charter boats.

2.4.3 Black Sea Bass

From 2014 through 2023, MRIP estimates indicate that recreational harvest of black sea bass has remained relatively stable, with a high in 2021 at 6.43 million fish, or 11.96 million pounds. During this same period, recreational harvest was lowest in 2014, at 3.97 million fish, or 7.24 million pounds. Total recreational black sea bass catch (i.e., harvest plus live and dead releases) from Maine through Cape Hatteras, North Carolina has exceeded 40 million fish each year for the most recent three years, peaking in 2021 at 42.67 million fish. Due to fishery regulations and other factors, most of these fish are released.

In 2023, 36% of black sea bass harvested by recreational fishermen from Maine through Cape Hatteras, North Carolina (in numbers of fish) were caught in state waters and 64% in federal waters. Most of the recreational harvest in numbers of fish in 2023 was landed in New Jersey (36%), followed by New York (18%). In 2023, 942 vessels held a federal party/charter black sea bass permit. About 90% of the recreational black sea bass harvest in numbers of fish in 2023 came from anglers fishing on private or rental boats, about 9% from anglers aboard party or charter boats, and 1% from anglers fishing from shore.

2.4.4 Bluefish

From 2014 through 2023, recreational catch averaged 36.45 million fish annually. Over those 10 years, catch has declined by 60%. In 2023, recreational catch was estimated at 22.01 million fish. In 2023, recreational anglers harvested an estimated 4.55 million fish weighing 11.03 million pounds. Harvest since 2018 has been exceptionally low compared to the performance of

the fishery prior to 2018. The 2023 average weight of landed fish was 2.4 pounds, which is the heaviest since 2008. This higher average weight is likely due to the majority of landings (by weight) occurring in northern states in 2023, which typically harvest a larger fish (relative to states south of Virginia). In 2023, the states with the highest recreational harvest (pounds) were New York (28%), North Carolina (14%), and Massachusetts (13%). Fish from southern states (North Carolina through Florida) made up 27% of the landings and are typically smaller on average than fish caught in northern states (Maine through Virginia). In 2023, recreational dead releases (9.4% of released alive fish) were estimated at 1.64 million fish. The qualitative trend in dead releases has been declining since about 2010.

3.0 Management Program

When taking final action on the Recreational Measures Setting Process, the Commission and Council approved a modified percent change approach using the RHL and harvest for setting recreational measures for 2026-2029 and transitioning to the modified percent change approach using the ACT and catch for setting recreational measures for 2030 and beyond for summer flounder, scup, and black sea bass. As noted in Section 2.2, bluefish is in a rebuilding plan (as of April 2025) and will be subject to the process for setting recreational measures outlined in the rebuilding plan until the stock reaches the target level of spawning stock biomass. If the stock comes out of the rebuilding plan, the Commission and Council approved to go back to the previous method of setting recreational measures for bluefish where measures must aim to achieve but not exceed the RHL until the 2028 specifications cycle, when bluefish will use the modified percent change approach using the RHL and harvest for setting recreational measures. Like the other species, for the 2030 specifications cycle and beyond, bluefish will transition to using the modified percent change approach using the ACT and catch.

Recreational measures are set in sync with the setting of catch and landings limits in response to updated stock assessment information. It is anticipated updated stock assessments will be available every other year for all four species; therefore, measures are set for two years at a time. In interim years, measures are reviewed and may be modified if new data suggest a major change in the expected impacts of those measures on the stock or the fishery.

Both approaches do not require specific methods for calculating the estimate of harvest or catch under status quo measures and the associated confidence interval. The Technical and Monitoring Committees provide advice each specifications cycle on the most appropriate methods. The Recreation Demand Model, which has been used in the process for setting summer flounder, scup, and black sea bass recreational measures since 2023, produces estimates of releases and harvest. The Recreation Demand Model is described in more detail in Section 2.2. As previously stated, the Recreation Demand Model is not available for bluefish; therefore, when either of the modified percent change approaches are used for bluefish once the stock is no longer in a rebuilding plan, different methods to calculate estimated catch will be used for bluefish (e.g., an analysis of MRIP data alone or a new modeling approach to be developed for bluefish).

The Board and Council may choose to implement more restrictive measures than would otherwise be required to address management uncertainty or concerns about the long-term sustainability of the stock.

Stocks under an approved rebuilding plan are subject to the measures of that rebuilding plan. The modified percent change approaches do not replace any rebuilding plan measures. In cases where a stock is declared overfished, but a rebuilding plan has not yet been implemented, this process may be used to set temporary measures to be replaced with rebuilding plan measures as soon as possible. It can take up to two years for a rebuilding plan to be developed, approved, and implemented after a stock is declared overfished.

3.1 Modified Percent Change Approach Using the RHL and Harvest

Recreational measures from 2026-2029 for summer flounder, scup, and black sea bass and 2028-2029 for bluefish (if the stock comes out of the rebuilding plan) must aim to achieve a specified percent change in harvest compared to the expectation of harvest in the upcoming two years under current measures. The resulting value of harvest in pounds is referred to as the harvest target.

The harvest target can be equal to, less than, or higher than the RHL. It varies based on the following two factors:

1. A confidence interval (CI) around an estimate of expected harvest in the upcoming two years under current measures compared to the average RHL for the upcoming two years
2. SSB compared to the target level (SSB_{MSY}), as defined by the most recent stock assessment.

The resulting percent change in expected harvest measures should aim to achieve is summarized in Table 1.

Table 1: Modified percent change approach using the RHL and harvest.

Future RHL vs Estimated Harvest	**Spawning stock biomass compared to target level** (SSB/SSB_{MSY})	**Change in Expected Harvest**
Future 2-year average RHL is **greater than** the upper bound of the harvest estimate CI (harvest expected to be lower than the RHL)	**Very high** (greater than or equal to 150% of target)	**Liberalization** %= difference between harvest estimate and 2-year avg. RHL, not to exceed 40%
	High (greater than or equal to 110% but less than 150%)	**Liberalization** %= difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Around the target (greater than or equal to 90% but less than 110%)	**Liberalization**: 10%
	Low (greater than or equal to 50% but less than 90%)	**No liberalization or reduction**: 0%
Future 2-year average RHL is **within** harvest estimate CI (harvest expected to be close to the RHL)	**Very high to low** (greater than 50%)	**No liberalization or reduction**: 0%
Future 2-year average RHL is **less than** the lower bound of the harvest estimate CI (harvest is expected to exceed the RHL)	**Very high** (greater than or equal to 150% of target)	**No liberalization or reduction**: 0% Unless an AM is triggered[1]
	High (greater than or equal to 110% but less than 150%)	**Reduction:** 10%
	Around the target (greater than or equal to 90% but less than 110%)	**Reduction** %= difference between harvest estimate and 2-year avg. RHL, not to exceed 20%
	Low (greater than or equal to 50% but less than 90%)	**Reduction** %= difference between harvest estimate and 2-year avg. RHL, not to exceed 40%
Biomass compared to target (SSB/SSB_{MSY})	**Change in Harvest**	
Overfished (less than 50% of target)	No liberalizations allowed. Reduction %= difference between harvest estimate and 2-year avg. RHL. To be replaced with rebuilding plan measures as soon as possible	

[1] AMs are highlighted here given that an RHL overage would be expected in this scenario; however, as described in more detail below, AMs apply under all outcomes illustrated in this table.

3.2 Modified Percent Change Approach Using the Recreational ACT and Catch

For setting 2030 measures and beyond, recreational measures under the modified percent change approach using the ACT and catch must aim to achieve a specified percent change in recreational catch (i.e., recreational harvest plus dead releases) compared to the expectation of recreational catch in the upcoming two years under current measures. The resulting value of catch in pounds is referred to as the recreational catch target.

The recreational catch target can be equal to, less than, or higher than the ACT. It varies based on the following two factors:

1) A CI around an estimate of expected catch in the upcoming two years under current measures compared to the average recreational ACT for the upcoming two years
2) SSB compared to the target level (SSB_{MSY}), as defined by the most recent stock assessment.

These two factors are the same as under the modified percent change approach using the RHL and harvest except the RHL is replaced with the recreational ACT and recreational harvest is replaced with recreational dead catch. The resulting percent change in expected catch that measures should aim to achieve is summarized in Table 2.

Table 2: Modified percent change approach using the recreational ACT and catch.

Future ACT vs Estimated Catch	**Spawning stock biomass compared to target level** (SSB/SSB_{MSY})	**Change in Expected Catch**
Future 2-year average ACT is **greater than** the upper bound of the catch estimate CI (catch expected to be lower than the ACT)	**Very high** (greater than or equal to 150% of target)	**Liberalization** %= difference between catch estimate and 2-year avg. ACT, not to exceed 40%
	High (greater than or equal to 110% but less than 150%)	**Liberalization** %= difference between catch estimate and 2-year avg. ACT, not to exceed 20%
	Around the target (greater than or equal to 90% but less than 110%)	**Liberalization**: 10%
	Low (greater than or equal to 50% but less than 90%)	**No liberalization or reduction**: 0%
Future 2-year average ACT is **within** catch estimate CI (catch expected to be close to the ACT)	**Very high to low** (greater than 50%)	**No liberalization or reduction**: 0%
Future 2-year average ACT is **less than** the lower bound of the catch estimate CI (catch is expected to exceed the ACT)	**Very high** (greater than or equal to 150% of target)	**No liberalization or reduction**: 0% Unless an AM is triggered[2]
	High (greater than or equal to 110% but less than 150%)	**Reduction:** 10%
	Around the target (greater than or equal to 90% but less than 110%)	**Reduction** %= difference between catch estimate and 2-year avg. ACT, not to exceed 20%
	Low (greater than or equal to 50% but less than 90%)	**Reduction** %= difference between catch estimate and 2-year avg. ACT, not to exceed 40%
Biomass compared to target (SSB/SSB_{MSY})	**Change in Harvest**	
Overfished (less than 50% of target)	No liberalizations allowed. Reduction %= difference between harvest estimate and 2-year avg. ACT. To be replaced with rebuilding plan measures as soon as possible	

[2] AMs are highlighted here given that an ACT overage would be expected in this scenario; however, as described in more detail below, AMs apply under all outcomes illustrated in this table.

3.3 Recreational Accountability Measures Under Modified Percent Change Approaches

The Council's framework revises the recreational accountability measures (AMs) for all four species. The AMs are included in the Council's FMP and they are not included in the Commission's FMP. The updated AMs will be implemented through the NOAA Fisheries final rulemaking. This section provides a brief summary of the changes to the AMs. See final Council framework rulemaking documents for plan specifics.

The updated recreational AMs for all four species align AM biomass categories with those used in the modified percent change approaches. They also allow status quo measures or a reduced scale of liberalization as an AM, where appropriate, when a liberalization is otherwise allowed. In addition, the revised AMs give greater consideration to if overfishing occurred based on the most recent stock assessment information when determining the appropriate AM response.

4.0 Compliance

These Addenda do not implement any changes to current compliance requirements.

5.0 Literature Cited

Atlantic States Marine Fisheries Commission. 2024a. Guidelines for Resource Managers on the Enforceability of Fishery Management Measures; https://asmfc.org/files/LEC/Guidelines_on_Enforceability_May2024.pdf

Atlantic States Marine Fisheries Commission. 2024b. Review of the Interstate Fishery Management Plan for Summer Flounder, 2023 Fishing Year; https://asmfc.org/uploads/file/66c5e9e5SummerFlounder_FMPReview_FY2023.pdf

Atlantic States Marine Fisheries Commission. 2024c. Review of the Interstate Fishery Management Plan for Scup, 2023 Fishing Year; https://asmfc.org/uploads/file/66c5ea58Scup_FMPReview_FY2023.pdf

Atlantic States Marine Fisheries Commission. 2024d. Review of the Interstate Fishery Management Plan for Black Sea Bass, 2023 Fishing Year; https://asmfc.org/uploads/file/66c5eb09BlackSeaBass_FMPReview_FY2023.pdf

Atlantic States Marine Fisheries Commission. 2024e. Review of the Interstate Fishery Management Plan for Bluefish, 2023 Fishing Year; https://asmfc.org/uploads/file/66c5eabeBluefish_FMPReview_FY2023.pdf

Carr-Harris A, Bastille K, Steinback S. 2024. Developing and applying a decision support tool for recreational fishery management of Atlantic summer flounder, black sea bass, and scup. US Dept Commerce Northeast Fish Sci Cent Tech Memo 320. 48 p. https://doi.org/10.25923/76jb-ck50

NEFSC. 2023a. Summer Flounder Management Track Assessment Report for 2023; https://asmfc.org/uploads/file/65c38bffSF_Management_Track_Assessment_2023.pdf

NEFSC. 2023b. Scup Management Track Assessment Report for 2023; https://asmfc.org/uploads/file/65c38ccbScup_Managment_Track_Assessment_2023.pdf

NEFSC. 2023c. Atlantic Bluefish Management Track Assessment for 2023; https://asmfc.org/uploads/file/65c38974BF_2023_Management_Track_Assessment.pdf

NEFSC. 2024. Black Sea Bass 2024 Management Track Assessment Report; https://asmfc.org/uploads/file/670024522024_BSB_UNIT_REPORT-3.pdf

Appendices

Appendix A - List of Acronyms and Abbreviations

ACL	Annual Catch Limit
ACT	Annual Catch Target
AM	Accountability Measure
ASMFC	Atlantic States Marine Fisheries Commission
B	Biomass
B_{MSY}	Biomass at maximum sustainable yield (biomass target)
CI	Confidence interval
Commission	Atlantic States Marine Fisheries Commission
Council	Mid-Atlantic Fishery Management Council
FMP	Fishery Management Plan
MAFMC	Mid-Atlantic Fishery Management Council
MRIP	Marine Recreational Information Program
MSA	Magnuson-Stevens Fishery Conservation and Management Act
RHL	Recreational Harvest Limit
SSB	Spawning stock biomass
SSB_{MSY}	Spawning stock biomass at maximum sustainable yield (biomass target)

Appendix B - Decision Trees for the Modified Percent Change Approaches

This Appendix provides decision trees to aid readers in moving through how recreational measures would be changed under the modified percent change approaches and the questions asked through each step of the process.

Figure 6. Modified percent change approach using the RHL and harvest. For more information on this option, please refer to Section 3.1.

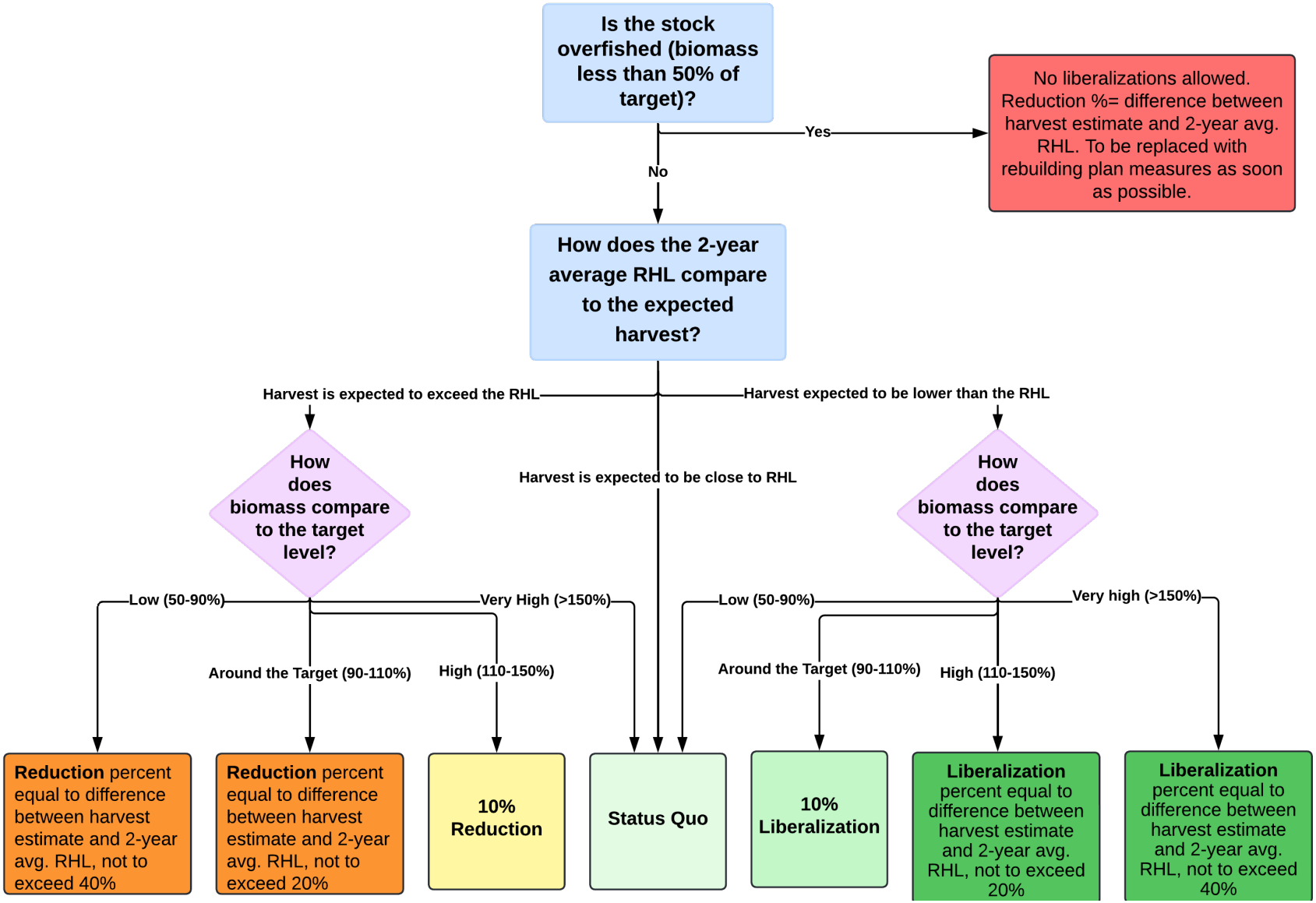

Figure 7. Modified percent change approach using the recreational ACT and catch. For more information on this option, please refer to Section 3.2.