



Mid-Atlantic Fishery Management Council
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MEMORANDUM

Date: July 17, 2023
To: Chris Moore, Executive Director
From: Hannah Hart, Staff
Subject: Scup Specifications for 2024-2025

Executive Summary

This memorandum includes information to assist the Mid-Atlantic Fishery Management Council's (Council's) Scientific and Statistical Committee (SSC) and Monitoring Committee in recommending 2024-2025 catch and landings limits for scup, as well as scup commercial management measures for 2024. Additional information on fishery performance and past management measures can be found in the 2023 Scup Fishery Information Document and the 2023 Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report developed by advisors.¹

In June 2023, the Northeast Fisheries Science Center (NEFSC) provided a management track assessment update for scup, which updated the current assessment model with data through 2022.² The assessment indicated that the scup stock was not overfished, and overfishing was not occurring in 2022 relative to the updated biological reference points calculated through the assessment. Retrospective adjustments were made to the model results. Adjusted spawning stock biomass (SSB) was estimated to be about 425 million pounds (193,087 mt) in 2022, about 2.5 times the SSB_{MSY} proxy reference point of 173.27 million pounds (78,593 mt). Adjusted fishing mortality on fully selected age 4 scup was 0.098 in 2022, about 52% of the F_{MSY} proxy reference point of 0.190. The 2017-2022 year classes are estimated to be below average.

The Magnuson-Stevens Act requires the Council's SSC to provide ongoing scientific advice for fishery management decisions, including recommendations for Acceptable Biological Catch limits (ABCs), preventing overfishing, and achieving maximum sustainable yield. The Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABC recommendation of the SSC.

There are currently no catch and landings limits in place for scup beyond the 2023 fishing year. The SSC should recommend ABCs for 2024-2025 for the Council and Atlantic States Marine

¹ Available at: <https://www.mafmc.org/fishery-performance-reports>

² Available at: <https://apps-nefsc.fisheries.noaa.gov/saw/sasi.php>

Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Board (Board) to consider at their joint August 2023 meeting. Two-year specifications are recommended to align with the current stock assessment schedule for scup, under which the next update is expected in 2025 to inform 2026-2027 specifications.

ABC projections for 2024-2025 were provided by NEFSC staff using the updated FMSY proxy = $F40\% = 0.190$. The projections sample from the estimated recruitment for 1984-2022 and assume that the OFL CV = 60% per MAFMC SSC precedent. Projections were provided for both varying ABCs from 2024-2025, as well as an averaging approach where the 2024-2025 ABCs are identical. The Council and Board have requested the ability to determine which approach is more appropriate from a policy standpoint; therefore, the SSC is requested to provide recommendations for both varying and averaged ABCs. The resulting ABCs and associated staff-recommended commercial and recreational limits are provided in Table 1. Staff recommend that the Council and Board adopt the varying ABC approach for 2024-2025. This would result in a 2024 ABC of 44.13 million pounds (20,015 mt) and a 2025 ABC of 39.99 million pounds (18,139 mt), which would represent a 48.7% increase in 2024 and 34.8% increase in 2025 from the 2023 ABC of 29.67 million pounds (13,458 mt).

Based on the SSC's recommendations for ABCs, the Monitoring Committee recommends sector specific catch and landings limits and management measures to constrain catch and landings to these limits. Specifically, the Monitoring Committee should review recent fishery performance and make a recommendation to the Council and Board regarding 2022-2023 commercial and recreational Annual Catch Limits (ACLs) and Annual Catch Targets (ACTs), commercial quotas, and recreational harvest limits. The Monitoring Committee will also consider whether any revisions are needed to the commercial management measures (minimum fish size, minimum mesh size, possession limits, etc.) for 2022. Recreational measures for 2022 will be considered later in 2021.

Table 1: The current (2023) catch and landings limits for scup as well as staff recommended limits for 2024-2025. The final 2024-2025 values may differ based on the recommendations of the SSC, Monitoring Committee, Council, and Board.

Mgmt. measure	2023		Basis	2024		2025		Basis
	mil lbs.	mt		mil lbs.	mt	mil lbs.	mt	
OFL	30.09	13,649	Assessment projections	44.74	20,295	40.55	18,393	Assessment projections
ABC	29.67	13,458	Assessment projections & risk policy	44.13	20,015	39.99	18,139	Assessment projections & risk policy
ABC discards	6.39	2,900	Assessment projections	9.55	4,334	9.16	4,154	Assessment projections
Com. ACL	19.29	8,750	65% of ABC <i>(new com. allocation)</i>	28.68	13,010	25.99	11,790	65% of ABC
Com. ACT	19.29	8,749	No deduction from ACL for management uncertainty	28.68	13,010	25.99	11,790	No deduction from ACL for management uncertainty
Projected com. discards	5.28	2,394	82.6% of ABC discards (avg. % of dead discards from commercial fishery, 2017-2019)	7.39	3,350	7.08	3,211	77.3% of ABC discards (avg. % of dead discards from commercial fishery, 2020-2022)
Com. quota	14.01	6,355	Com. ACT minus projected com. discards	21.30	9,660	18.91	8,579	Com. ACT minus projected com. discards
Rec. ACL	10.39	4,713	35% of ABC <i>(new rec. allocation)</i>	15.44	7,005	14.00	6,349	35% of ABC
Rec. ACT	10.39	4,713	No deduction from ACL for management uncertainty	15.44	7,005	14.00	6,349	No deduction from ACL for management uncertainty
Projected rec. discards	1.12	506	17.4% of the ABC discards (avg. % of dead discards from rec. fishery, 2017-2019)	2.17	984	2.08	943	22.7% of the ABC discards (avg. % of dead discards from rec. fishery, 2020-2022)
RHL	9.27	4,205	Rec. ACT minus projected rec. discards	13.27	6,021	11.92	5,406	Rec. ACT minus projected rec. discards

Stock Status and Biological Reference Points

In June 2023, the NEFSC provided the 2023 management track assessment for scup. This assessment retained the model structure of the previous benchmark stock assessment, completed in 2015,³ and incorporated fishery catch and fishery-independent survey data through 2022.

The updated fishing mortality (F) reference point is $F_{MSY} \text{ proxy} = F_{40\%} = 0.190$ and the updated spawning stock biomass (SSB) reference point is $SSB_{MSY} \text{ proxy} = SSB_{40\%} = 173.27$ million pounds (78,593 mt). The minimum biomass threshold of $\frac{1}{2} SSB_{MSY} \text{ proxy} = \frac{1}{2} SSB_{40\%} = 86.64$ million pounds (39,297 mt, Table 2).

Table 2: Scup biological reference points from the 2023 management track stock assessment.

	Spawning stock biomass	Fishing mortality rate (F)
Terminal year estimate (2022)	425 mil lbs. (193,087 mt)	0.098
Target	173.27 mil lbs. (78,593 mt)	N/A
Threshold	86.64 mil lbs. (39,297 mt)	0.190
Status	Not overfished	Not overfishing

According to the 2023 assessment, the scup stock from Cape Hatteras, North Carolina extending north to the US-Canada border was not overfished and overfishing was not occurring in 2022.⁴ Retrospective adjustments were made to the model results. The retrospective adjustments increased the SSB estimate and decreased the F estimate. Adjusted values are used in the projections and management. Adjustments have not been required in previous scup assessment given retrospective patterns were not strong in previous assessment. From the 2023 management track assessment, adjusted SSB was estimated to be about 425 million pounds (193,087 mt) in 2022, about 2.5 times the $SSB_{MSY} \text{ proxy}$ reference point of 173.27 million pounds (78,593 mt, Figure 1), meaning that the stock was not overfished in 2022. There was a notable increasing trend in SSB since the early 2000s; however, in recent years SSB has declined from a peak in 2017 (Figure 1).

Adjusted fishing mortality on fully selected age 4 scup was 0.098 in 2022, about 52% of the $F_{MSY} \text{ proxy}$ reference point of 0.190 (Figure 2), meaning that overfishing was not occurring in 2022. The 2015 year class is estimated to be the largest in the time series at 569 million fish, while the 2017-2022 year classes are estimated to be below average (Figure 2).

The Northeast Regional Coordinating Council (NRCC)'s stock assessment process now has scup receiving management track updates every two years. The next management track assessment update is expected in 2025 to inform 2026-2027 catch and landings limits.

³ 60th Northeast Stock Assessment Workshop (2015) assessment report and peer review summaries are available at: <https://repository.library.noaa.gov/view/noaa/4975>

⁴ Available at: <https://apps-nefsc.fisheries.noaa.gov/saw/sasi.php>

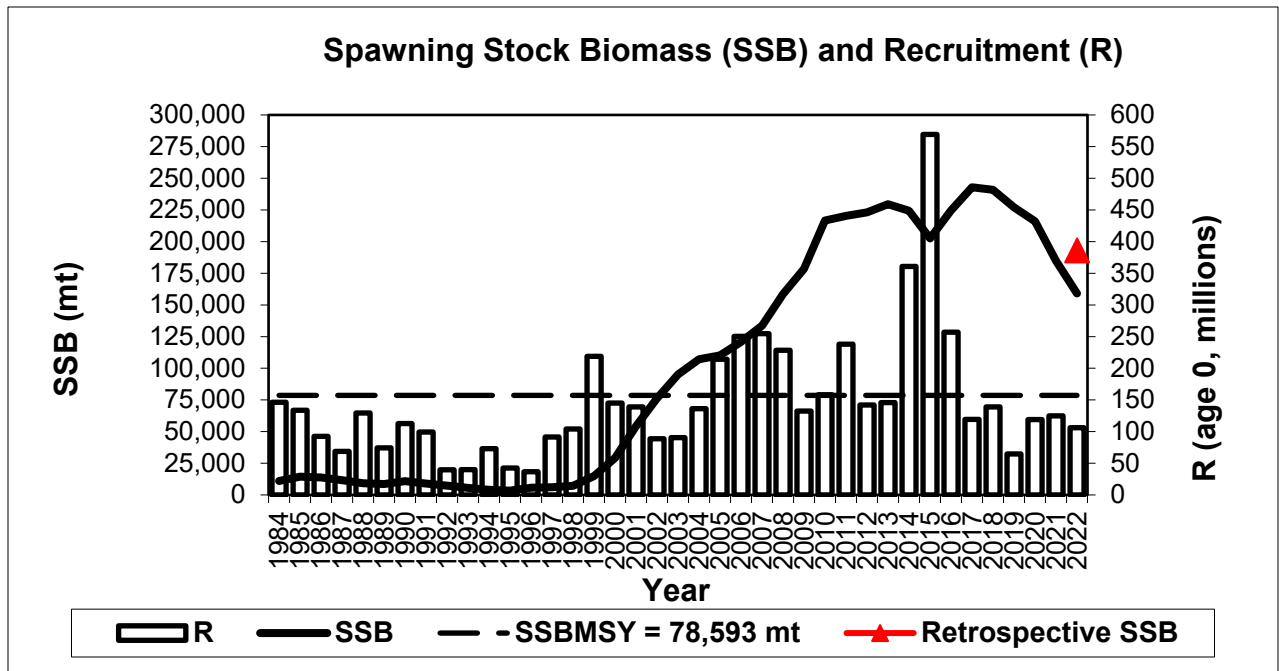


Figure 1: Scup spawning stock biomass and recruitment, 1984-2019. The horizontal dashed line represents the biomass target from the 2023 management track stock assessment. Adjusted SSB in 2022 for comparison against the SSB_{MSY} proxy reference point is 193,087 mt.

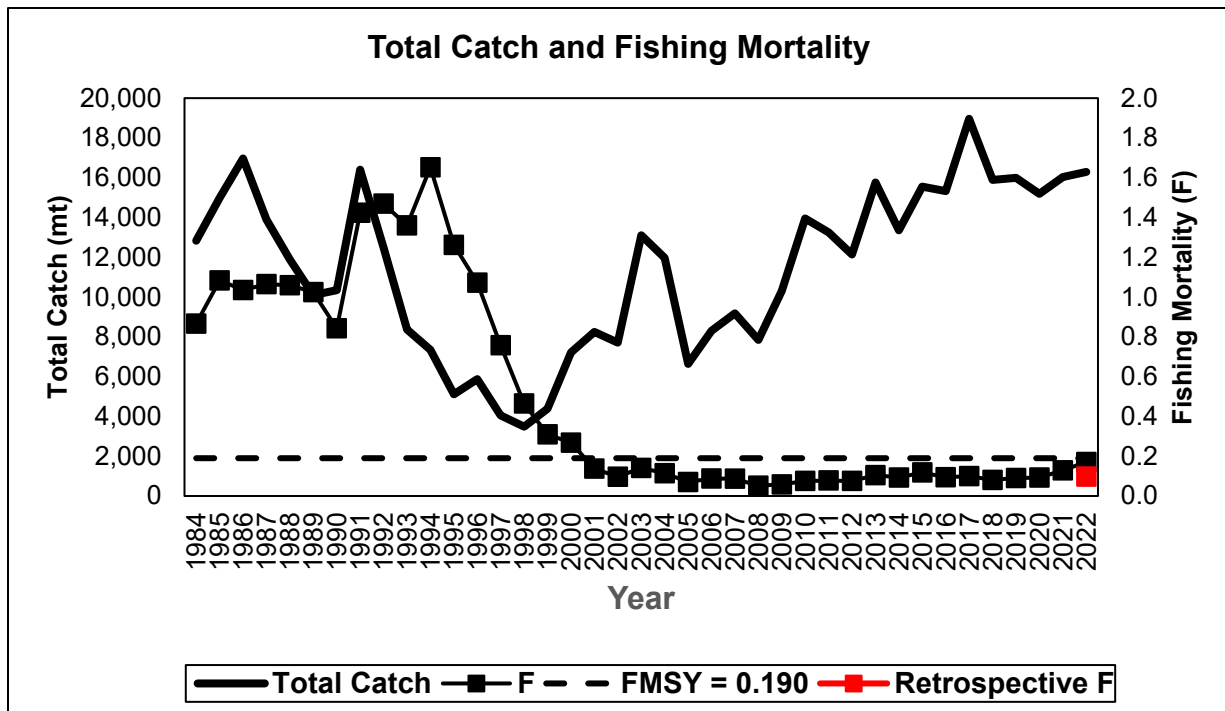


Figure 2: Total fishery catch and fishing mortality rate (F) for fully selected age 4 scup, 1984-2019. The horizontal dashed line is the fishing mortality reference point from the 2023 management track stock assessment. The red square is the retrospectively adjusted fishing mortality value for 2022. The adjusted value is used in management.

Recent Catch and Fishery Performance

Total Catch

Table 3 shows scup total catch and catch limits from 2019 through 2023, as well as the overfishing limit (OFL) from which the ABC is derived. The ABC is set less than or equal to the OFL to account for scientific uncertainty. The OFL for scup was likely exceeded in 2022. The scup ABC was exceeded in 2021, and likely again in 2022.

Table 3: Total scup catch (i.e., commercial and recreational landings and dead discards) compared to the OFL and ABC. All values are in millions of pounds. Total catch calculations use “old” MRIP data in 2019, and “new” MRIP data for 2020-2022. Catch data from 2023 management track assessment.^a

Year	Total catch^a	OFL	OFL overage/underage	ABC	ABC overage/underage
2019	26.55	41.03	-35%	36.43	-27%
2020	33.50	41.17	-19%	35.77	-6%
2021	35.35	35.3	0%	34.81	2%
2022	35.92	32.56	10%	32.11	12%
2023	--	30.09	--	29.67	--

^a Numbers here may vary slightly from those in the 2023 Fishery Information Document due to the Catch Accounting and Monitoring System (CAMS) commercial fishery estimates now being used for 2020-2022 as reflected in the 2023 MTA.

Commercial Fishery

The commercial scup fishery has consistently underharvested their quota since 2014, ranging from 16% to 44% below the annual quotas. In 2022, commercial landings were about 12.14 million pounds (5,507 mt), about 40% below the commercial quota of 20.38 million pounds (9,244 mt; Table 4).

Since 2019, commercial dead discards compared to projected levels have been variable. Some years, like 2020 and 2022, projected discards resembled a good estimate for commercial discards while other years like 2022, were less accurate. However, since 2014 there was a single ACL overage in 2017, this overage was attributed to the higher-than-expected dead discards, as commercial fishery landings for scup are typically well controlled to the commercial quota (Table 4).

Preliminary 2023 commercial landings during the Winter I Quota Period indicate that 57.9% of the quota was landed and as of July 7, 2023, about 35.86% of the 2023 Summer Quota Period quota has been landed. Preliminary 2023 Winter I landings were slightly above 2022 landings; however, summer 2023 landings to date are slightly below last year’s trajectory.^{5,6}

⁵ Based on data available at https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/h/scup/FYALL_REPORTS//2021-04-29_scup_coast_qm.html.

⁶ Based on data available at https://www.greateratlantic.fisheries.noaa.gov/ro/fso/reports/h/scup/scup_coast_qm.html.

Table 4: Scup commercial landings, dead discards, and catch compared to the commercial quota and commercial ACL, 2014-2023. All values are in millions of pounds. Landings and discard data from 2023 management track assessment.^a

Year	Com. landings ^a	Com. quota	Quota over/under	Com. dead discards ^a	Proj. Com. dead discard	Proj. dead disc. over/under	Com. catch ^a	ACL	ACL over/under
2014	15.96	21.95	-27%	2.16	6.12	183%	18.12	28.07	-35%
2015	17.03	21.23	-20%	3.79	5.11	35%	20.82	26.35	-21%
2016	15.76	20.47	-23%	6.12	3.79	-38%	21.88	24.26	-10%
2017	15.45	18.38	-16%	10.43	3.77	-64%	25.88	22.15	17%
2018	13.37	23.98	-44%	7.26	4.43	-39%	20.63	30.53	-32%
2019	13.78	23.98	-43%	6.13	4.43	-28%	19.91	28.42	-30%
2020	13.62	22.23	-39%	5.76	5.80	1%	19.37	27.90	-31%
2021	13.10	20.50	-36%	4.18	6.65	59%	17.28	27.15	-36%
2022	12.14	20.38	-40%	4.79	4.67	-2%	16.93	25.05	-32%
2023	--	14.01	--	--	5.28	--	--	19.29	--

^a Numbers here may vary slightly from those in the 2023 Fishery Information Document due to the Catch Accounting and Monitoring System (CAMS) commercial fishery estimates now being used for 2020-2022 as reflected in the 2023 MTA.

Recreational Fishery

Recreational fishery performance relative to RHLs through 2019 cannot be evaluated using the revised MRIP data, since past RHLs were set based on assessments that used the old data. A performance evaluation for 2014-2022 using old or new MRIP data, depending on the year, is provided in Table 5. Recreational performance has been more variable relative to the limits compared to the commercial fishery but recreational landings and catch were above the limits in 2020 through 2022. Recreational harvest was estimated at approximately 17.36 million pounds (7,875 mt) in 2022, about 186% of the 2022 RHL.

As of this memo, recreational harvest estimates for 2023 are only available through April, which does not provide meaningful information about 2023 recreational harvest trends for scup given that in recent years wave 2 (March/April) has accounted for 0% to 10% of annual scup harvest depending on the year.

Table 5: Scup recreational landings, dead discards, and catch compared to the RHL, projected recreational dead discards, and recreational ACL, 2014-2023. Information is provided in the “old” MRIP units for 2014-2019, and in the “new” MRIP units from the 2023 management track assessment for 2020-2022. For scup, ACLs and RHLs did not account for the revised MRIP data until 2020. Therefore, overage/underage evaluations must be based in the old MRIP units through 2019 and the new MRIP units starting in 2020. All values are in millions of pounds.

Year	Version of MRIP data used	Rec. land.	RHL	RHL over/under	Rec. dead disc.	Proj. rec. dead disc.	Proj. dead disc. over/under	Rec. catch	ACL	ACL over/under
2014	Old MRIP (pre-revision)	4.43	7.03	-37%	0.50	0.89	76%	5.49	7.92	-31%
2015		4.41	6.8	-35%	0.50	0.63	27%	5.69	7.43	-23%
2016		4.26	6.09	-30%	0.78	0.75	-3%	6.16	6.84	-10%
2017		5.42	5.5	-1%	0.90	0.75	-17%	7.80	6.25	+25%
2018		5.61	7.37	-24%	0.60	0.65	8%	7.03	8.61	-18%
2019	Old MRIP (provided by NEFSC)	5.41	7.37	-27%	1.23	0.65	-48%	6.64	8.01	-17%
2020	New MRIP (post-revision)	12.91 ^a	6.51	+98%	1.19 ^a	1.36	14%	14.10 ^a	7.87	+79%
2021		16.62 ^a	6.07	+174%	1.44 ^a	1.59	11%	18.06 ^a	7.66	+136%
2022		17.36 ^a	6.08	+186%	1.63 ^a	0.99	-39%	18.99 ^a	7.06	+169%
2023		--	9.27	--	--	1.12	--	--	10.39	--

^a Data from 2023 management track assessment. Values here may vary slightly from those in the 2023 Fishery Information Document.

Review of Prior SSC Recommendations

In July 2022, the SSC recommended 2022 and 2023 ABCs for scup based on new stock status information and projections from the 2021 management track stock assessment.

The SSC recommended that a 60% coefficient of variation (CV) be applied to the OFL estimate to derive the ABC for scup. This decision came from the high data quality, as well as consistency of signals from surveys, catch at age, and model results. There was also a relatively low effect of revised MRIP estimates in the stock assessment; only minor retrospective patterns in the statistical catch-at-age model; and the unlikelihood that additional adjustments (e.g., for ecological factors or below-average recruitment in the past two years) would increase uncertainty. Several surveys show declines or low abundance in early years to record lows in the mid-1990s and increases in abundance thereafter. Age structure in surveys shows a decline or low abundance of older ages in survey catches in early years and increases in abundance of older ages in recent years. Age structure in commercial landings-at-age and recreational landings-at-age show similar trends of increasing abundance of older ages in the stock. Several large recruitment events have been indicated by survey indices. In combination, these trends are consistent with lower fishing mortality rates in recent years, and increasing stock abundance as indicated by model results. Although up to 44% of the catch weight is attributable to the recreational fishery, the increase in recreational catch

related to new MRIP estimates is relatively low in comparison to other stocks. There has been no obvious or clear trend in recent recruitment over the past decade, although a declining trend in recruitment is beginning to emerge, so adjustment of projected recruitment currently appears unwarranted. There is no discernible impact of thermal habitat on interannual variation in availability, so adjustment of survey indices to account for thermal habitat effects also appears unwarranted.

The SSC considered the following to be the most significant sources of scientific uncertainty with determination of the OFL and/or ABC:

- While older age scup (age 3+) are represented in the catch used in the assessment model, most indices used in the model do not include ages 3+. As a result, the dynamics of the older ages of scup are driven principally by catches and inferences regarding year class strength.
- A sizeable portion of the stock biomass is in older age classes which are assumed to have low F_s as a result of the selectivity pattern imposed in the model.
- Uncertainty exists with respect to the estimate of natural mortality (M) used in the assessment.
- Uncertainty exists as to whether the MSY proxies ($SSB_{40\%}$, $F_{40\%}$) selected and their calculated precisions are appropriate for this stock.
- The SSC assumed that OFL has a lognormal distribution with a $CV = 60\%$, based on a meta-analysis of survey and statistical catch at age (SCAA) model accuracies.
- Survey indices are particularly sensitive to Scup availability, which results in high inter-annual and regional variability – efforts were made to address this question by weighting surveys in the SAW/SARC that should be continued.
- The projection on which the ABC was determined is based on an assumption that the 2020 and 2021 ABCs will be caught.

Table 6 shows the SSC recommended 2022-2023 OFLs, ABCs, and P^* values. ABCs are based on projections that assume the ABC will be fully caught in each year; recruitment is sampled from 1984-2018. OFL total catches are catches in each year fishing at $F_{MSY} = 0.200$, prior to calculation of the associated annual ABC. The ABC projections were based on application of the Council’s risk policy for a stock with a typical life history, resulting in an ABC P^* of 49% in each year. Due to the Council’s risk policy adopted in 2019, only ABCs associated with the traditional (variable) approach could be offered for 2022 and 2023.

In July 2022, the SSC reviewed the previously adopted ABC along with a data update for scup, and recommended no changes to the previously recommended 2023 ABC adopted by the Council.

Table 6: Previously recommended 2022 and 2023 OFLs, ABCs, and ABC P^* value (Source: personal communication, Mark Terceiro, Northeast Fisheries Science Center).

Year	OFL total catch		ABC total catch		ABC P^*
	mil lbs.	mt	mil lbs.	mt	
2022	32.56	14,770	32.11	14,566	0.49
2023	30.09	13,648	29.67	13,458	0.49

2024-2025 ABCs

The ABC projections sample from the estimated recruitment for 1984-2022 and assume the 2022-2023 ABCs were caught (Table 7 and Table 8). The ABC projections are based on application of the Council’s risk policy, resulting in an annual ABC P* of 49% for the varying ABC approach and an average P* of 49% (2024-2025) for the averaged ABC approach. A CV of 60% was applied to the OFL, consistent with past SSC recommendations.

The SSC has been asked to recommend two sets of ABCs for 2024-2025, one based on assuming varying ABCs each year (Table 7) and one where ABCs are constant based on averaging the ABCs across 2024 and 2025 (Table 8). Whether or not to average the ABCs is a policy decision for the Council and Board. Because the Council is unable to recommend ABCs higher than what the SSC recommends for any given year, the SSC is asked to provide ABC recommendations for both approaches to allow the Council and Board to select their preferred approach.

The projected spawning stock biomass trajectory is similar in either scenario (Table 7 and Table 8) and there are tradeoffs to both ABC approaches. The average ABC approach would allow for stability in catch and landings limits across two years and would allow for a higher 2025 ABC than the varying approach; however, it would require a lower 2024 ABC than under the varying approach due to the declining biomass trajectory. The higher 2024 ABC using the varying approach will require less restriction on the recreational fishery in 2024 compared to the averaged approach. However, it will require a greater restriction of total catch in 2025 compared to the averaged approach and thus more restriction of the recreational fishery if sector allocations remain status quo. Additionally, under the averaging approach presented in Table 8 the p* in 2025 exceeds 0.5 and therefore is not a viable option under the provisions of the MSA. In 2021, the Council and Board recommended the varying ABC approach for 2022-2023 measures under similar decreasing biomass conditions. For these reasons, staff recommend that the Council and Board adopt ABCs for 2024-2025 based on the varying ABC approach.

Updated estimates of SSB, F, and recruitment are expected to be available in 2025 to inform 2026-2027 specifications. Unless an interim data update (i.e., updated fishery and survey data without updated estimates of SSB, F, and recruitment) shows strong signals of unexpected changes in the stock, it is unlikely that the 2025 catch and landings limits will be updated in 2024 based on biological, fishery, or survey data.

Table 7: Scup 2023 management track assessment projections for varying 2024-2025 ABCs, including OFL and ABC total catch, ABC projected F, projected SSB, and SSB/SSB_{MSY}. These projections assume application of the current Council risk policy with a 60% OFL CV.

Year	OFL Total Catch		ABC Total Catch		ABC F	ABC P*	SSB		SSB/SSB _{MSY}
	mil lb	mt	mil lb	mt			mil lb	mt	
2023	30.09	13,649	29.67	13,458	0.115	0.495	461.66	209,407	266%
2024	44.74	20,295	44.13	20,015	0.187	0.490	409.24	185,626	236%
2025	40.55	18,393	39.99	18,139	0.187	0.490	359.66	163,140	208%

Table 8: Scup 2023 management track assessment projections for averaged 2024-2025 ABCs, including OFL and ABC total catch, ABC projected F, projected SSB, and SSB/SSB_{MSY}. These projections assume application of the current Council risk policy with a 60% OFL CV.

Year	OFL Total Catch		ABC Total Catch		ABC F	ABC P*	SSB		SSB/SSB _{MSY}
	mil lb	mt	mil lb	mt			mil lb	mt	
2023	30.09	13,649	29.67	13,458	0.115	0.495	461.66	209,407	266%
2024	44.74	20,295	42.06	19,077	0.178	0.456	410.02	185,986	237%
2025	40.77	18,495	42.06	19,077	0.196	0.522	360.78	163,645	208%

Sector-Specific Catch and Landings Limits

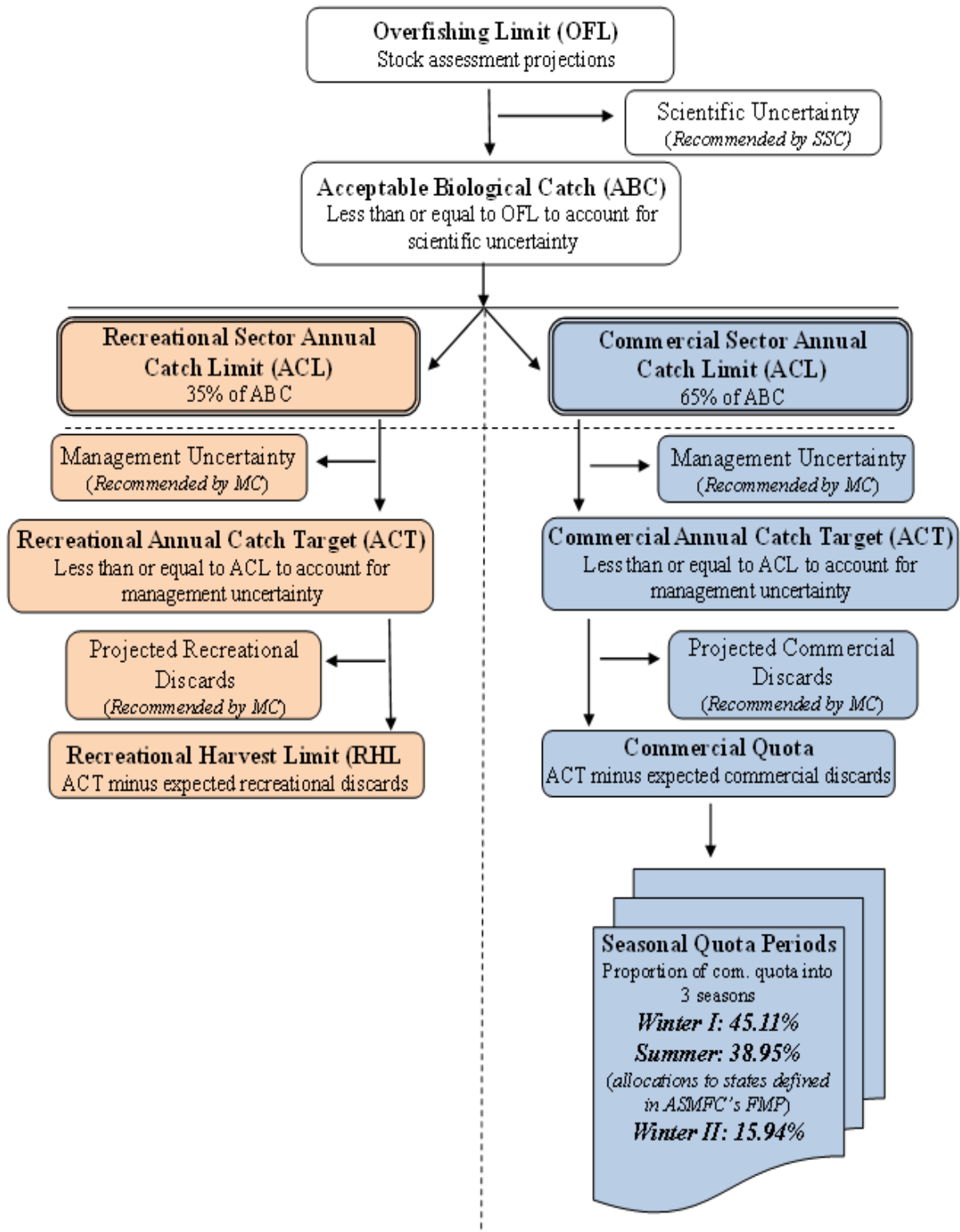
Commercial and Recreational Annual Catch Limits

The scup commercial/recreational allocation was recently revised via Amendment 22 to the Fishery Management Plan (FMP), effective in 2023, such that 65% of the ABC is allocated to the commercial fishery as a commercial ACL, and 35% is allocated to the recreational fishery as a recreational ACL.⁷ Figure 3 illustrates the current flowchart for deriving commercial and recreational catch and landing limit from the OFL and ABC.

Under the staff recommended varying ABCs, these allocation percentages would result in a commercial ACL of 28.68 million pounds (13,010 mt) and a recreational ACL of 15.44 million pounds (7,005 mt) in 2024, and a commercial ACL of 25.99 million pounds (11,790 mt) and a recreational ACL of 14.00 million pounds (6,349 mt) in 2025.

⁷ <http://www.mafmc.org/actions/sfsbsb-allocation-amendment>

Figure 3: Current catch and landing limit flowchart for scup, updated to reflect commercial/recreational allocation revisions that became effective in 2023.



Annual Catch Targets

The Monitoring Committee recommends ACTs for the Council and Board's consideration. ACTs may be set less than or equal to sector-specific ACLs to account for management uncertainty. Management uncertainty is comprised of two parts: uncertainty in the ability of managers to control catch and uncertainty in quantifying the true catch (i.e., estimation errors). Management uncertainty can occur because of a lack of sufficient information about the catch (e.g., due to late reporting, underreporting, and/or misreporting of landings or discards) or because of a lack of management precision (i.e., the ability to constrain catch to desired levels). The Monitoring Committee should consider all relevant sources of management uncertainty in the scup fishery when recommending ACTs.

Recreational harvest is estimated through a statistical survey design (the Marine Recreational Information Program), while commercial harvest is more census based due to mandatory vessel and dealer reporting requirements. Given these differences, the commercial fishery can be closed in-season when landings approach the quota but there is no in-season closure authority for the recreational fishery due to the timing of recreational data availability. For these reasons, recreational landings can be more difficult to constrain and predict than commercial landings.

The commercial quota monitoring system has largely been successful in preventing quota overages for scup, and as shown in Table 4, commercial landings have not exceeded the quota over the past 10 years. Although in the past 10 years there has not been a quota overage, in 2017 there was a commercial ACL overage. This overage, however, was attributed to the higher-than-expected dead discards, as commercial fishery landings for scup are typically well controlled to the commercial quota (Table 4).

From 2014-2019, recreational landings were consistently below the RHL but from 2020-2022 recreational landings were consistently above the RHL. The Percent Change Approach and the use of a new recreational harvest estimation model (the Recreational Demand Model) were both applied to the development recreational scup measures in 2023 for the first time. Application of this approach for scup in 2023 resulted in recreational measures that met the required coastwide 10% reduction in harvest. As previously stated, it is not possible to predict 2023 recreational harvest based on currently available data.

The Percent Change Approach considers the RHL in the upcoming year(s) as well as biomass compared to the target level when setting measures. In some cases, RHL and ACL overages are permitted under this approach. In other cases, this approach requires more restrictive measures than would be needed to prevent RHL and ACL overages. The Percent Change Approach will sunset after the 2025 fishing year with the goal of using an improved process for setting 2026 recreational measures. A management action to consider the appropriate replacement for the Percent Change Approach is currently in development.

Additionally, a separate amendment is under development to consider managing for-hire recreational fisheries separately from other recreational fishing modes (referred to as sector separation) and improvements to recreational catch accounting.

Given these ongoing management actions, staff recommend no buffer for management uncertainty in the recreational fishery, consistent with past practice for this fishery.

Projected Dead Discards

Projected discards are removed from the sector-specific ACTs to derive landings limits, which include annual commercial quotas and RHLs (Figure 3). The methodology to calculate projected dead discards is not prescribed in the FMP and can be modified on an annual basis. The methodology can also vary by sector. Typically, the Monitoring Committee has apportioned dead discards based on a 3-year moving average of the proportion of discards from each sector, applied to the total projected discards for the upcoming fishing year(s).

In 2022, when the Monitoring Committee first considered discard projections under the revised allocations, the group discussed a few different methods for generating projected dead discards by sector. One option considered by the Monitoring Committee, but not applied, was a linear regression approach examining sector dead discards as a function of sector catch, ACLs, or landings (not selected due to a lack of strong correlations for scup). Another option that was not adopted was a simple moving average (e.g., 3 years) of discards in pounds for each sector (not applied due to how much discard levels can vary based on availability of different size classes as well as regulations).

Staff recommend that for 2024-2025, sector discards continue to be calculated by applying the 3-year moving average proportion of discards by sector to total projected dead discards. These projected sector discards are then removed from the sector-specific ACTs. This approach relies on projections of total discards from the NEFSC which account for age structure of the population (Table 9). The NEFSC projected total discards assume total dead catch will be equal to the ABC and also account for the recent age structure of the population and selectivity of the fisheries. The NEFSC projections can account for higher or lower than average year classes when estimating discards in future years. For example, high discards in 2017 were likely driven by the peak in recruitment seen in 2015 as shown in Figure 1. This year class would not be expected to contribute to high discards in 2024 and 2025 given fisheries selectivity and the likely greatly diminished size of the year class.

Table 9: ABC projections split into projected total projected landings and discards, for both annual and averaged 2024-2025 ABCs.

Varying (staff recommendation)						
Year	ABC Total Catch		ABC Landings		ABC Discards	
	mil lb	mt	mil lb	mt	mil lb	mt
2023	29.67	13,458	23.59	10,701	6.08	2,757
2024	44.13	20,015	34.57	15,681	9.55	4,334
2025	39.99	18,139	30.83	13,985	9.16	4,154
Averaged						
Year	ABC Total Catch		ABC Landings		ABC Discards	
	mil lb	mt	mil lb	mt	mil lb	mt
2023	29.67	13,458	23.59	10,701	6.08	2,757
2024	42.06	19,077	32.95	14,944	9.11	4,133
2025	42.06	19,077	32.43	14,711	9.63	4,366

Evaluating the proportion of discards by sector from 2020-2022, 77.3% of dead discards came from the commercial fishery and 22.7% from the recreational fishery. Applying these proportions to the annual total projected dead discards in each year under the varying ABC approach, the resulting projected commercial and recreational dead discards are shown in Table 1.

Commercial Management Measures

The commercial measures that can be modified during specifications are discussed below, including the commercial Winter I and Winter II quota period possession limits, minimum size limit, minimum mesh sizes, and commercial pot and trap regulations. Given there is no new information to suggest changes to commercial management measure are needed, staff recommend no changes to commercial measures for 2024.

Commercial Winter I and Winter II Quota Period Possession Limits

Commercial possession limits are designed to help constrain landings to the seasonal period quotas. The Winter I possession limit is 50,000 pounds. After 80% of the Winter I quota is landed, the possession limit drops to 1,000 pounds. The Winter II possession limit is initially set at 12,000 pounds. If the Winter I quota is not fully harvested, as has been the case in recent years, the Winter II possession limit increases by 1,500 pounds for every 500,000 pounds of scup not landed during the Winter I period. There are no federal possession limits during the Summer quota period; however, there are state possession limits⁸. These quota period possession limits have not been modified since 2012.

Commercial Minimum Fish Size

The commercial minimum size limit for scup is 9 inches total length and has been in place since 1996. The minimum size limit applies to all commercial landings of scup, including landings of incidental catch. Over the years, advisors have expressed differing opinions on the commercial minimum size limit, but no changes have been adopted.

Commercial Trawl Mesh Size

Trawl vessels which possess more than 1,000 pounds of scup from October 1 through April 14, more than 2,000 pounds of scup from April 15 through June 15, and more than 200 pounds of scup from June 16 through September 30 must use a minimum mesh size of 5.0 inches.

⁸ Prior to 2018, October was included in the summer quota period. The allocation percentages were the same as shown above.

Hasbrouck et al. (2018) confirmed that the current minimum mesh sizes are effective at releasing most fish smaller than the commercial minimum size. This study also considered the potential for a common minimum mesh size for summer flounder, scup, and black sea bass. The results were not able to identify an effective common mesh size for all three species at the current size limits; however, the authors concluded that a common mesh size of 4.5 or 5 inches diamond for scup and black sea bass would be effective at releasing undersized fish.⁹ Further consideration of a shared minimum mesh size has not been prioritized by the Council and Board.

Commercial Pot and Trap Regulations

NMFS dealer data show that pots/traps accounted for about 3% of total commercial scup landings in 2021. Pots and traps used to commercially harvest scup must have either a circular escape vent measuring at least 3.1 inches in diameter, square escape vents with each side being at least 2.25 inches in length, or rectangle escape vents of equal or greater size.

Recreational Management Measures

Recreational management measures for 2024-2025 will be developed later this fall, using the Percent Change Approach. The Monitoring Committee will meet in the fall of 2023 to review available recreational data and Recreational Demand Model estimates of recreational harvest under current measures, and to make recommendations for any adjustments that may be needed to recreational bag, size, and season limits. This will be the first year that multi-year recreational measures (2024-2025) will be considered as specified under the Percent Change Approach.

⁹ Hasbrouck, E., S. Curatolo-Wagemann, T. Froelich, K. Gerbino, D. Kuehn, P. Sullivan, J. Knight. 2018. Determining Selectivity and Optimum Mesh Size to Harvest Three Commercially Important Mid-Atlantic Species - A Report to the Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission. Available at: http://www.mafmc.org/s/Tab08_SFSBSB-Mesh-Selectivity-Study-Apr2018.pdf