



Mid-Atlantic Fishery Management Council
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MEMORANDUM

Date: November 3, 2021
To: Chris Moore, Executive Director
From: Karson Coutré, Staff
Subject: Scup Recreational Management Measures for 2022

Background and Summary

The information in this memo is intended to assist the Monitoring Committee (MC), Advisory Panels, the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) in developing recommendations for scup recreational measures for 2022.

In August 2021, the Council and Board adopted a recreational harvest limit (RHL) of 6.08 million pounds for 2022, which represents a slight increase (0.01 mil lb) from the 2021 RHL (Table 1). This RHL is based on the 2021 management track assessment and recommendations of the Scientific and Statistical Committee (SSC) and Monitoring Committee (MC).

Each year, the MC is tasked with recommending recreational management measures (possession limits, size limits, and seasons) for the upcoming year. The Council and Board agree to federal waters recreational management measures for scup for the upcoming year that apply throughout federal waters from Maine through North Carolina. State waters measures are determined separately through the Commission process.

This memo summarizes staff recommendations regarding estimated 2022 recreational harvest under status quo measures and considerations related to preventing RHL overages. As described in more detail on page 13, a 56% reduction in harvest may be needed to prevent an RHL overage in 2022.

The Council and Board recommended status quo recreational measures despite expected RHL overages in 2020 and 2021 based on considerations related to major revisions in the recreational harvest data, multiple ongoing management actions which may impact the recreational fisheries in future years (i.e., the Commercial/Recreational Allocation Amendment, the Harvest Control Rule Framework/Addendum, and other Recreational Reform Initiative Actions), biomass that was double the target level, and negative socioeconomic impacts from notably restricting recreational harvest without a perceived conservation need. The Council and Board emphasized that this was a temporary approach to allow more time to

consider how to best respond to the revisions in the recreational data and to further develop the Commercial/Recreational Allocation Amendment and the Recreational Reform Initiative topics. The Council and Board have not yet taken final action on these management actions; therefore, their impacts on fisheries management in future years is unknown. The MC, Advisory Panels, Council, and Board should consider that it may not be appropriate to recommend a third year of status quo measures despite expected RHL overages as this was intended as a temporary approach.

Data Considerations

In July 2018, MRIP released revisions to their time series of recreational catch and harvest estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology, namely, a transition from a telephone-based effort survey to a mail-based effort survey. The revised estimates for most years are several times higher than the previous estimates for shore and private boat modes, substantially raising the overall scup catch and harvest estimates. Recreational data included in this memo reflect revised MRIP data except where otherwise stated.

MRIP estimates for 2020 were impacted by the COVID-19 pandemic. The mail-based Fishing Effort Survey (FES), continued uninterrupted in 2020; however, the Access Point Angler Intercept Survey (APAIS), which forms the basis for catch estimates, was suspended starting in late March or April and resumed between May and August 2020, depending on the state. MRIP staff used imputation methods to fill the resulting 2020 data gaps with data collected in 2018 and 2019. These proxy data match the time, place, and fishing modes that would have been sampled had APAIS sampling continued uninterrupted. Proxy data were combined with observed data to produce 2020 catch estimates using the standard estimation methodology. When complete 2021 data are available in 2022, MRIP staff will evaluate the effects of including 2021 data (e.g., alongside 2019 data and instead of 2018 data) in the imputation. Because these effects are unknown, the agency cannot predict whether it will seek to revise the 2020 catch estimates in 2022.

Estimates of dead discards in weight in 2020 are not currently available. The method for estimating the weight of recreational discards relies on age and length information that is not complete at this time. Estimates of dead discards through 2019 are available in the draft 2021 management track stock assessment report.¹

Past RHLs and Management Measures

Scup RHLs were first implemented in 1996. Since then, the RHL varied from a low of 1.24 million pounds in 1999 and 2000 to a high of 8.45 million pounds in 2012. As previously stated, the RHL is 6.08 million pounds in 2022 (Table 1).

Until 2002, the recreational scup fishery was managed with coastwide measures as dictated by the FMP. These measures included a common minimum fish size, possession limit, and open season that were implemented in both state and federal waters. Since 2003, the Commission has applied 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. In federal waters, regulations have been unchanged since 2015 and include a minimum size of 9 inches total length,

¹ Available at: <https://www.mafmc.org/ssc-meetings/2021/july21-23>

a year-round open season, and a possession limit of 50 scup (Table 1). Management measures in state waters vary by state, mode (e.g., private, for-hire), and season (Table 2). State waters measures remained unchanged from 2015 through 2017. The states of Massachusetts through New York reduced their recreational minimum size limits and New Jersey extended their recreational fishing season to the full year in 2018 (Table 3). In 2019, Massachusetts through New York increased their party/charter bag limit from 45 to 50 fish during a portion of their open season. Massachusetts through New York extended their recreational fishing season to the full year (opening fishing during waves 1 and 2) in 2019. All state waters measures remained unchanged from 2019 to 2021 (Table 2).

Table 1: Summary of federal management measures for the scup recreational fishery, 1997-2021. ABCs, TACs, ACLs, RHLs, and harvest are in millions of pounds. Recreational harvest values are for Maine through North Carolina and old and revised MRIP estimates are shown.

Year	TAC/ABC	Rec. ACL	RHL	Rec. harvest (Old MRIP)	% over/under RHL	Rec. harvest (New MRIP)	Bag limit (# of fish)	Size limit (inches, total length)	Open season
1997	9.10	-	1.95	1.20	-38%	2.54	-	7	1/1 - 12/31
1998	7.28	-	1.55	0.87	-44%	1.82	-	7	1/1 - 12/31
1999	5.92	-	1.24	1.89	+52%	4.63	-	7	1/1 - 12/31
2000	5.92	-	1.24	5.44	+339%	11.39	-	-	1/1 - 12/31
2001	8.37	-	1.76	4.26	+142%	9.77	50	9	8/15 - 10/31
2002	12.92	-	2.71	3.62	+34%	6.23	20	10	7/1 - 10/2
2003	18.65	-	4.01	8.48	+111%	17.21	50	10	1/1 - 2/28 7/1 - 11/30
2004	18.65	-	3.99	7.28	+82%	12.83	50	10	1/1 - 2/28 9/7 - 11/30
2005	18.65	-	3.96	2.69	-32%	4.30	50	10	1/1 - 2/28 9/18 - 11/30
2006	19.79	-	3.99	3.72	-7%	5.93	50	10	1/1 - 2/28 9/18 - 11/30
2007	13.97	-	2.74	4.56	+66%	7.10	50	10	1/1 - 2/28 9/18 - 11/30
2008	9.9	-	1.83	3.79	+107%	5.76	15	10.5	1/1 - 2/28 9/18 - 11/30
2009	15.54	-	2.59	3.23	+25%	6.28	15	10.5	1/1 - 2/28 10/1 - 10/31
2010	17.09	-	3.01	5.97	+98%	12.48	10	10.5	1/1 - 2/28 10/1 - 10/31
2011	31.92	-	5.74	3.67	-36%	10.32	10	10.5	6/6 - 9/26
2012	40.88	31.89	8.45	4.17	-51%	8.27	20	10.5	1/1 - 12/31
2013	38.71	30.19	7.55	5.37	-29%	12.57	30	10	1/1 - 12/31
2014	35.99	28.07	7.03	4.43	-37%	9.84	30	9	1/1 - 12/31
2015	33.77	26.35	6.8	4.41	-35%	11.93	50	9	1/1 - 12/31
2016	31.11	6.84	6.09	4.26	-30%	10.00	50	9	1/1 - 12/31
2017	28.4	6.25	5.50	5.42	-1%	13.54	50	9	1/1 - 12/31
2018	39.14	8.61	7.37	5.61	-24%	12.98	50	9	1/1 - 12/31
2019	36.43	8.01	7.37	5.40 ^b	-27%	14.12	50	9	1/1 - 12/31
2020	35.77	7.87	6.51	-	+98%	12.91	50	9	1/1 - 12/31
2021	34.81	7.66	6.07	-	-	14.68 ^a	50	9	1/1 - 12/31
2022 ^c	32.11	7.06	6.08	-	-	-	TBD	TBD	TBD
2023 ^c	29.67	6.53	5.41	-	-	-	TBD	TBD	TBD

^a Projected - methodology described on pages 5-6.

^b Provided to the National Marine Fisheries Service Greater Atlantic Regional Fisheries Office by the Northeast Fisheries Science Center

^c Pending approval and implementation by NMFS.

Table 2: 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	January 1-December 31
MA (party/charter)	9	30 fish	Jan 1-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 3: State recreational fishing measures for scup in 2018.

State	Minimum Size (inches)	Possession Limit	Open Season
MA	9	30 fish; 150 fish/vessel with 5+ anglers on board	May 1-December 31
MA party/charter	9	45 fish	May 1-June 30
		30 fish	July 1-December 31
RI private & shore	9	30 fish	May 1-December 31
RI shore program (7 designated shore sites)	8		
RI party/charter	9	30 fish	May 1-August 31; November 1-December 31
		45 fish	September 1-October 31
CT private & shore	9	30 fish	May 1-December 31
CT shore program (46 designated shore sites)	8		
CT party/charter	9	30 fish	May 1-August 31; November 1-December 31
		45 fish	September 1-October 31
NY private & shore	9	30 fish	May 1-December 31
NY party/charter	9	30 fish	May 1-August 31; November 1-December 31
		45 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	8	50 fish	January 1-December 31

Recreational Catch and Harvest Trends and 2021 Projections

Since 1981, estimated recreational scup catch fluctuated from a peak of 37.31 million fish in 1986 to a low of 6.60 million fish in 1997. Estimated harvest fluctuated from a high of 14.18 million pounds and 30.43 million fish in 1986 to a low of 1.82 million pounds and 2.74 million fish in 1998. In 2020, based on imputed MRIP data, recreational harvest was about 14.49 million fish and 12.91 million pounds, and approximately 27.27 million scup were caught, with a release rate of 47% (Table 4).

Recreational catch and landings data from MRIP are currently available as preliminary estimates for the first four waves (January - August) of 2021. The Council and Board typically develop federal waters recreational management measures for the next year late in the current year after reviewing preliminary wave 1-4 (i.e., January - August) MRIP data for the current year. Preliminary MRIP estimates indicate that through August 2021, 21.64 million scup were caught and 11.99 million scup (corresponding to about 11.81 million pounds) were harvested from Maine through North Carolina (Table 5).

For most states, preliminary wave 1-4 data for 2021 were used to project harvest in weight for the entire year by assuming the same proportion of landings by wave and state as in 2019-2020 (Table 7). A two-year average was used because there were no changes to state or federal measures during those years. Delaware and Maryland had zero harvest estimated for waves 1-4 and the 2019-2020 average annual harvest was used for their 2021 projected annual harvest. The 2019-2021 average harvest for Massachusetts wave 1- 4 was used in place of the 2021 wave 1-4 preliminary estimate due to anomalously high harvest values largely influenced by a single intercept (Table 9). This may be more appropriate for projections used to predict 2022 harvest.

Based on the methodology outlined in the previous two paragraphs, projected 2021 harvest from Maine through North Carolina is 14.54 million pounds. 2021 projected annual harvest was also calculated using the coastwide (i.e., Maine through North Carolina) proportions of harvest by wave in 2021, rather than projecting by state. This resulted in a projected 2021 harvest of 14.68 million pounds (Table 7).

During 2016-2020 about 6% of recreational scup harvest (in pounds) originated in federal waters and 94% came from state waters (Table 9). Recreational scup harvest in New Hampshire through New Jersey and Virginia were predominantly from state waters and harvest in Delaware, Maryland, and North Carolina mostly originated in federal waters (Table 10). During 2016-2020 about 11% of recreational harvest was from party/charter vessels, 27% was from shore-based anglers and 62% was from private/rental boats (Figure 1).

Table 4: Recreational scup catch (i.e., harvest and live and dead discards) and harvest by year, ME - NC, 1981-2021 based on new MRIP estimates. 2021 values are preliminary and are for waves 1-4 only.

Year	Catch (mil of fish)	Harvest (mil of fish)	Harvest (mil lb)	% Released	Avg. weight of landed fish (lb)
2012	21.24	7.33	8.27	65%	1.13
2013	25.79	11.49	12.57	55%	1.09
2014	20.37	9.17	9.84	55%	1.07
2015	24.87	11.33	11.93	54%	1.05
2016	31.49	9.14	10.00	71%	1.09
2017	41.20	13.84	13.54	66%	0.98
2018	30.37	14.55	12.98	52%	0.89
2019	28.67	14.95	14.12	48%	0.94
2020	27.27	14.49	12.91	47%	0.89
2021 (w1-4 only)	21.64	11.99	11.81	45%	0.98

Table 5: Recreational scup catch and harvest, waves 1-4 (January - August), 2017-2021, Maine through North Carolina, based on MRIP data downloaded October 25, 2021. 2021 values are preliminary.

Year	Wave 1-4 catch (millions of fish)	Wave 1-4 harvest (millions of fish)	Wave 1-4 harvest (millions of pounds)
2017	27.59	9.35	9.06
2018	19.58	9.50	8.39
2019	19.67	10.54	9.65
2020	19.25	10.31	9.08
2021 (preliminary)	21.64	11.99	11.81

Table 6: Percent of scup harvest (in weight) by wave for each state in 2019-2020, based on MRIP data downloaded October 25, 2021. Only North Carolina has MRIP sampling during wave 1. Values may not add to 100% due to rounding.

State	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
ME	0%	0%	0%	0%	0%	0%
NH	0%	0%	0%	0%	0%	0%
MA	0%	0%	35%	22%	44%	0%
RI	0%	0%	22%	41%	37%	0%
CT	0%	0%	23%	39%	38%	0%
NY	0%	0%	32%	45%	21%	2%
NJ	0%	0%	0%	1%	98%	0%
DE	0%	0%	0%	0%	0%	0%
MD	0%	0%	0%	0%	13%	87%
VA	0%	0%	0%	0%	100%	0%
NC	0%	92%	4%	0%	1%	4%
Total	0%	0%	29%	40%	30%	1%

Table 7: 2021 projected recreational harvest (in pounds) by state and values used to calculate projections. Projections were calculated using methodology outlined on pages 5-6.

State	2019-2020 avg. w1-4 harvest as % of annual	2021 preliminary w1-4 harvest	2019-2020 avg. annual harvest	2021 projected annual harvest	% of projected 2021 total harvest
ME	0%	0	0	0	0%
NH	0%	0	0	0	0%
MA	72%	1,930,245 ^a	1,549,497	2,687,224	18%
RI	65%	1,645,762	2,093,428	2,534,176	17%
CT	75%	1,541,105	2,597,253	2,045,057	14%
NY	70%	5,045,677	6,612,177	7,257,791	50%
NJ	51%	7,399	659,888	14,536	0%
DE	0%	0	316	316	0%
MD	0%	0	511	511	0%
VA	0%	512	229	512	0%
NC	85%	2,709	1,992	3,199	0%
Total state by state projections	69%	10,173,409	13,515,290	14,543,322	100%
Coastwide projections				14,683,231	

^aThe 2019-2021 average harvest for MA w1- 4 was used in place of 2021 due to anomalously high harvest values largely influenced by a single intercept. This may be more appropriate for projections used to predict 2022 harvest.

Table 8: Recreational scup harvest (in pounds) by state, waves 1-6 (January – December), 2016-2020. 2021 values are preliminary waves 1-4 (January – August) estimates. Values based on MRIP data downloaded October 25, 2021.

State	2016	2017	2018	2019	2020	2021 (w1-4)
ME	0	0	0	0	0	0
NH	0	2,156	0	0	0	0
MA	2,156,730	2,363,922	3,021,958	1,924,202	1,174,793	3,564,716
RI	1,552,395	1,113,035	2,030,259	2,856,459	1,330,397	1,645,764
CT	1,373,234	1,712,421	2,574,308	2,242,549	2,951,959	1,541,105
NY	4,252,718	6,626,059	4,906,041	6,970,873	6,253,478	5,045,676
NJ	480,659	1,708,354	443,700	118,830	1,200,943	7,399
DE	1	118	362		316	
MD	147	6	369	444	578	
VA	183,405			229		512
NC		508	420	2,637	1,346	2,708
Total	9,999,289	13,526,579	12,977,417	14,116,223	12,913,810	11,807,880

Table 9: Percentage of recreational scup harvest (in pounds) in state and federal waters, ME-NC, 2016-2020 based on MRIP data downloaded October 25, 2021. Area information is self-reported based on the area where the majority of fishing activity occurred on each trip.

Year	State Waters (<= 3 miles)	EEZ (> 3 miles)
2016	95%	5%
2017	96%	4%
2018	95%	5%
2019	97%	3%
2020	88%	12%
Average	94%	6%

Table 10: Proportion of 2016-2020 recreational harvest (in pounds) from state and federal waters by state based on MRIP data downloaded October 25, 2021. Area information is self-reported based on the area where the majority of fishing activity occurred for each trip.

State	State Waters (<= 3 miles)	EEZ (> 3 miles)
MAINE	--	--
NEW HAMPSHIRE	100%	0%
MASSACHUSETTS	95%	5%
RHODE ISLAND	97%	3%
CONNECTICUT	98%	2%
NEW YORK	94%	6%
NEW JERSEY	76%	24%
DELAWARE	0%	100%
MARYLAND	24%	76%
VIRGINIA	100%	0%
NORTH CAROLINA	0%	100%

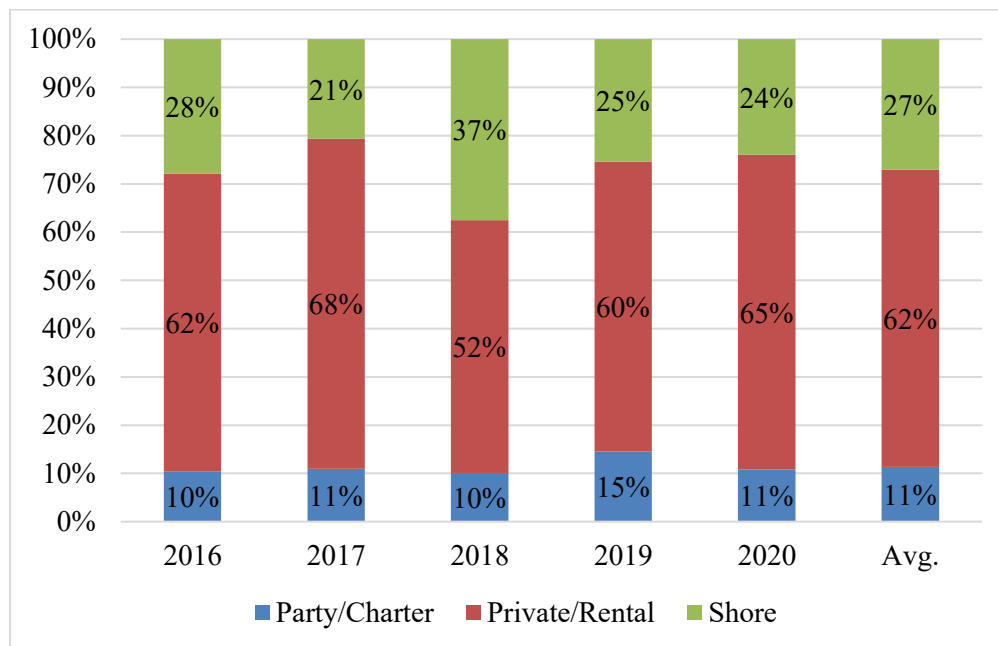


Figure 1: Proportion of 2016-2020 recreational harvest (in pounds) by mode based on MRIP estimates downloaded October 25, 2021.

Expected 2022 Harvest and 2022 RHL

Projections based on preliminary current year data can be used as a proxy for expected harvest in the upcoming year if measures remain unchanged. This is based on the assumption that next year’s fishery will be similar to this year’s fishery in terms of availability, angler behavior, and other factors which drive harvest. Focusing on the current year may also be appropriate if measures were notably different in prior years. However, use of a single year of data does not account for variability and uncertainty in the MRIP data across years. For example, MRIP estimates can show notable variation in harvest in years when measures are unchanged. The degree to which these

differences are due to true differences in the fishery as opposed to uncertainty and variability resulting from the estimation methodology is unknown.

In past years, the MC has recommended the use of coastwide projections informed by multiple year averages, when appropriate, as the basis for estimated catch in the upcoming year under status quo measures. Coastwide projections informed by multiple year averages may represent a more appropriate use of the MRIP data compared to state by state projections based on a single year proportions as the data can be less precise when broken down into smaller increments.

Based on the considerations above and because measures have remained status quo from 2019-2021, appropriate methods to predict 2022 harvest may include an average of 2019 through 2020 to only consider years with final MRIP estimates, or an average of 2019 through 2021 (projected) harvest (Table 11).

Table 11: Examples of harvest estimates which could be used to predict 2022 harvest under status quo measures and comparison to 2022 RHL. Estimates for 2019-2020 are final MRIP harvest estimates. Values for 2021 are projected based on the methodology described above.

Harvest estimate basis	Value (pounds)	Difference from 2022 RHL
Average of final 2019 - 2020 MRIP harvest estimates	13,515,290	122%
2021 state by state harvest projection	14,543,322	139%
2021 coastwide harvest projection	14,683,231	142%
2018-2021 average (2021 projected state by state)	13,857,785	128%
2018-2021 average (2021 projected coastwide)	13,904,422	129%

Accountability Measures

Federal regulations include proactive accountability measures (AMs) to prevent the scup ACL from being exceeded and reactive AMs to respond when an ACL is exceeded. Proactive recreational AMs include adjusting management measures (bag limits, size limits, and season) for the upcoming fishing year, if necessary, to prevent the RHL and ACL from being exceeded. The NMFS Regional Administrator no longer has in-season closure authority for the recreational fishery if the RHL or ACL is expected to be exceeded. For reactive AMs, paybacks of ACL overages may be required in a subsequent fishing year, depending on stock status and the magnitude of the overage, as described below. ACL overages in the recreational fishery are evaluated by comparing the most recent 3-year average recreational ACL against the most recent 3-year average of recreational dead catch (i.e., landings and dead discards). If average catch exceeds the average ACL, then the appropriate AM is determined based on the following criteria:

1. If the stock is overfished ($B < \frac{1}{2} B_{MSY}$), under a rebuilding plan, or the stock status is unknown: The exact amount, in pounds, by which the most recent year's recreational ACL has been exceeded will be deducted in the following fishing year, or as soon as possible once catch data are available.
2. If biomass is above the threshold, but below the target ($\frac{1}{2} B_{MSY} < B < B_{MSY}$), and the stock is not under a rebuilding plan:
 - a. If only the recreational ACL has been exceeded, then adjustments to the recreational bag, minimum fish size, and/or season limits will be made in the following year, or as soon as possible once catch data are available. These

adjustments will take into account the performance of the measures and conditions that precipitated the overage.

- b. If the Acceptable Biological Catch is exceeded in addition to the recreational ACL, then a single year deduction will be made as a payback, scaled based on stock biomass. The calculation for the payback amount is: (overage amount)* $(B_{msy}-B)/\frac{1}{2} B_{msy}$.
3. If biomass is above the target ($B > B_{MSY}$): Adjustments to the recreational bag, minimum fish size, and/or season limits will be considered for the following year, or as soon as possible once catch data are available. These adjustments will take into account the performance of the measures and conditions that precipitated the overage.

The recreational ACLs through 2019 did not account for the recent revisions to the MRIP estimation methodology; therefore, it is necessary to use catch estimates based on the old MRIP estimation methodology to compare recreational catch to the ACLs through 2019. As previously discussed, 2020 recreational data collection was impacted by suspension of the intercept survey in all states due to COVID-19. While MRIP developed 2020 harvest estimates using imputation methods, dead discard estimates in weight for 2020 are not available due to the need for age and length information that is not available. Thus, 2017-2019 are the most recent three years for which complete catch data are available. Based on a comparison of average 2017-2019 dead catch to the 2017-2019 average ACL, AMs have not been triggered for the recreational scup fishery (Table 1). However, it is important to note that the 2020 ACL was exceeded based on harvest alone (Table 1). The full scale of the 2020 ACL overage cannot be predicted without estimates of dead discards in weight. The National Marine Fisheries Service (NMFS) will make final determinations regarding AM evaluations. It is not yet known if the agency will use 2020 catch estimates (including dead discards) in their evaluation. If a reactive AM is triggered based on the evaluation performed by NMFS, then consideration must be given to adjusting the bag, size, and season limits, taking into account the performance of the measures and conditions that precipitated the overage. Given that biomass is above the target level, the regulations do not require adjustments to be made; however, adjustments must be considered and the recommended outcome (either no change or a modification) must be justified.

Staff Recommendation

The MC is tasked with developing recommendations for recreational bag, size, and season limits for 2022. Using the 2019-2021 (projected coastwide) average scup harvest of 13.90 million pounds, a 56% reduction in harvest would be needed to prevent a 2022 RHL overage.

As previously stated, the Council and Board left the recreational measures unchanged across 2019-2021 despite expected RHL overages based on considerations related the revised MRIP estimates, the ongoing Commercial/Recreational Allocation Amendment and Recreational Reform Initiative, very high black sea bass biomass, and expected negative socioeconomic impacts from further restricting the recreational fishery due to changes in the data rather than a perceived conservation need. When the Council and Board made these recommendations in 2019 and 2020, they emphasized that this was a temporary approach while the Commercial/ Recreational Allocation Amendment and Recreational Reform Initiative actions, including the Harvest Control Rule Framework/Addendum, are ongoing. Final action on the Commercial/Recreational Allocation Amendment is expected in December 2021, to allow for implementation for the 2023 fishing year. Final action on the Recreational Harvest Control Rule Framework/Addendum may occur in 2022, with the potential for use in setting 2023 measures. Other Recreational Reform Initiative Actions may not be implemented by 2023. The Council and Board have not yet taken final action on any

of these actions; therefore, it is unknown how they may impact recreational fisheries management in 2023 and beyond. It is important to emphasize that the Recreational Harvest Control Rule Framework/Addendum and the other Recreational Reform Initiative Actions will not change the Magnuson-Stevens Fishery Conservation and Management Act requirements for ACLs and prevention of overfishing.

The recreational ACL and RHL are based on the best available science, are intended to prevent overfishing, and are reflective of recent stock status. Therefore, allowing multiple years of recreational overages may pose a risk to the stock, even at high biomass levels. In addition, NMFS has indicated that although status quo measures were justified for 2020 and 2021 despite expected RHL overages, this approach may not be justifiable for 2022. The MC should take this into consideration when developing their recommendations for 2022 recreational measures.

Restrictions to achieve a 56% reduction in harvest raise concern over the negative socioeconomic impacts to the recreational sector resulting from changes in the MRIP estimation methodology. Based on the 2021 management track assessment, the scup stock is healthy with SSB estimated to be about 2 times the SSB_{MSY} proxy reference point in 2019, however recruitment has been below average and 2019 is estimated to be the lowest of the time series. If reductions are deemed appropriate this year due to the considerations described above, an estimated 56% reduction in harvest to prevent exceeding the RHL, bag limit reductions, size restrictions, and/or season closures could be used.

It is important to note that only 6% of scup recreational harvest occurred in federal waters based on the most recent 5-year average (Table 10). Because of this, the MC may decide that it's more appropriate to recommend the bulk of the 56% reduction occur in state waters where the majority of harvest is occurring. Federal measures that take some portion of reduction in federal waters while allowing states flexibility to develop measures that would further reduce harvest could prevent large differences in state and federal measures, implement an equitable reduction across states, and allow states to address their specific needs (e.g., different seasonal availability and mode specific programs).

Based on the 2018-2020 MRIP data, increasing the minimum size coastwide (in both state and federal waters) to 10 inches total length would result in a reduction of up to 33% in total scup harvest (Table 13, Figure 2). The true reduction may be lesser in magnitude as this analysis does not take into account the average weight at different lengths. The MC may wish to provide advice on how to best address this.

If reductions to federal measures are recommended, staff recommend this increase in minimum size to 10 inches to make an initial reduction to harvest. Coastwide harvest can be further reduced through different state waters measures to achieve the appropriate level of reduced harvest. Federal waters and the majority of states have a recreational minimum size of 9 inches total length. MRIP length frequency estimates are provided in fork length and were converted to total length and rounded to the nearest inch for minimum size limit analyses.

Major changes in the bag limit would be needed to notably reduce coastwide harvest because most anglers do not take the full bag limit of 30 to 50 fish. For example, changing the bag limit from 50 fish to 25 fish in state and federal waters would result in an estimated 3% decrease in total harvest. Changing the bag limit from 50 fish to 7 fish in state and federal waters would result in an estimated 51% decrease in total harvest (Table 12). Bag limit analyses assume that levels of non-compliance with a revised bag limit would be identical to levels of non-compliance with the 2018-2020 bag

limit. Changing the federal bag limit is not recommended because bag limit decreases would be more appropriate on a state by state basis where they may choose to break it down by mode. Stakeholders have expressed concerns about bag limit reductions disproportionately impacting the for-hire sector. For example, for-hire captains can benefit from advertising the ability to retain the full bag limit, even if customers do not always succeed in reaching the limit on each trip. Currently, several states have a ‘bonus wave’ for the party/charter sector with a higher bag limit and states could consider how best to adjust these seasonal limits. The assumption of identical levels of non-compliance under a bag limit reduction may not be accurate due to the degree of restriction these measures would impose on the recreational fishery compared with the current federal 50 fish bag limit.

Reducing harvest through seasonal closures could also be considered. Currently, the scup recreational fishery is open year-round in federal and state waters. Based on 2019-2020 estimates, waves 3-5 comprise approximately 99% of the total recreational scup harvest (Table 6). The proportion of harvest by wave differs across the states, with some states harvesting the majority of their scup in one wave while other states harvest scup more evenly across multiple waves. Because of this, coastwide closures by wave would not apply harvest reductions equitably across the states with high harvest (e.g., Table 6 and Table 8). Reductions to harvest through seasonal closures may be more appropriately applied at the state or regional level.

Table 12: Predicted percent change in total harvest under various bag limits based on MRIP estimates from 2018-2020. During 2018-2020, the state and federal waters bag limits were 30-50 fish, depending on the state, mode, and time of year.

Bag Limit	Percent coastwide reduction in harvest
25	-3%
20	-6%
15	-12%
10	-28%
7	-51%
6	-62%

Table 13. Predicted percent change in total harvest under increased minimum size limits based on MRIP estimates from 2018-2020. During 2018-2020, the federal minimum size was 9 inches in total length.

Minimum size	Percent coastwide reduction in harvest
10 inches	-33%
11 inches	-56%
12 inches	-71%

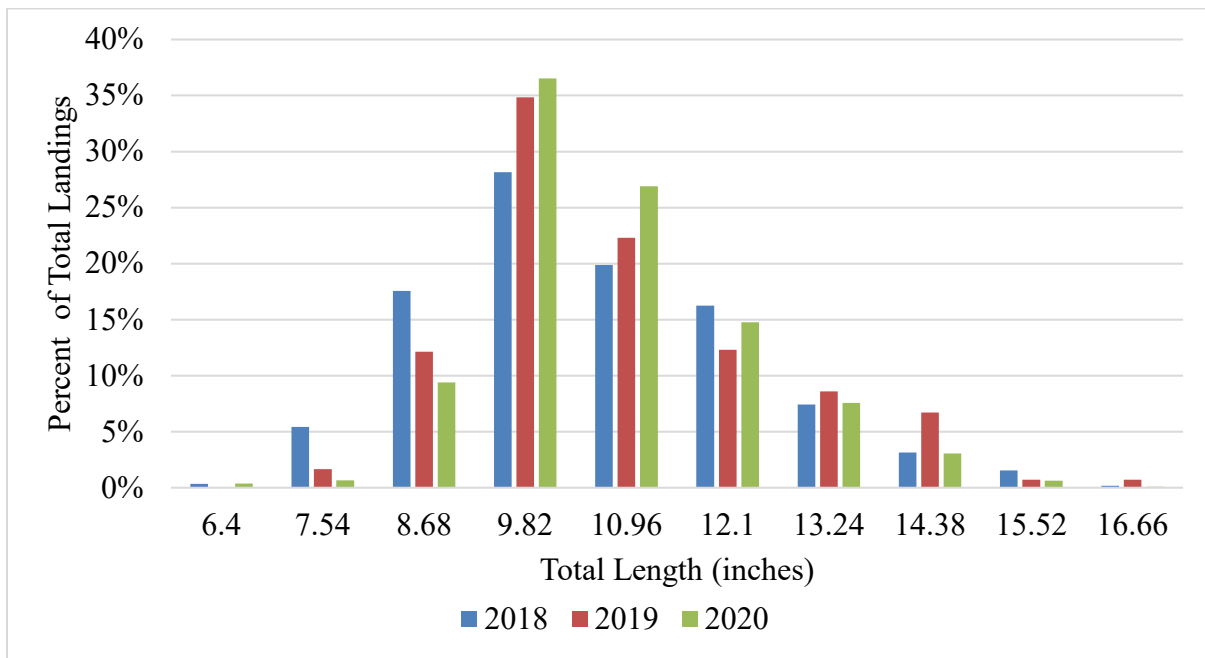


Figure 2: Expanded length frequencies of scup landed, 2018-2020, from Maine through North Carolina, as a percent of total scup recreational landings. MRIP estimates length frequencies in fork length which was converted to total length based on Hamer 1979 ($TL = 1.14*FL - 0.44$).