



Mid-Atlantic Fishery Management Council

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MEMORANDUM

DATE: July 7, 2017

TO: Chris Moore, Executive Director

FROM: Julia Beaty, Staff

SUBJECT: 2018-2019 Scup Management Measures

Executive Summary

In 2015, the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Management Board (the Board) set scup catch and landings limits for 2016-2018, including commercial quotas and recreational harvest limits (RHLs). In June 2017, the Northeast Fisheries Science Center (NEFSC) provided a scup stock assessment update with data through 2016. Council staff recommend that the previously-implemented 2018 scup catch and landings limits be revised and that 2019 limits be set based on the information in the stock assessment update and recommendations from the Scientific and Statistical Committee (SSC) and the Monitoring Committee.

Based on the 2017 stock assessment update, the scup stock was not overfished and overfishing was not occurring in 2016. Spawning stock biomass (SSB) was estimated to be about 397 million pounds (179,898 mt) in 2016, about 2.1 times the SSB_{MSY} proxy reference point (i.e. $SSB_{40\%}$) of 192 million pounds (87,302 mt). Fishing mortality on fully selected age 3 scup was 0.139 in 2016, about 63% of the F_{MSY} proxy reference point ($F_{40\%}$) of 0.220. At 252 million fish, the 2015 year class was estimated to be about 2.1 times the average recruitment (i.e. number of age 0 scup) over 1984-2016. The 2016 year class was estimated to be about 46% below the 1984-2016 average at 65 million fish (NEFSC 2017).

Staff recommend that the SSC use a similar approach for developing 2018-2019 Acceptable Biological Catch (ABC) recommendations to that used in 2015 for the 2016-2018 ABCs (described on page 6). As such, staff recommend that the SSC set a revised 2018 ABC of 39.14 million pounds (17,755 mt) and a 2019 ABC of 36.43 million pounds (16,525 mt). These proposed ABCs are respectively 45% and 35% higher than the previously-implemented 2018 ABC of 27.05 million pounds (12,270 mt). There is no previously-implemented 2019 ABC.

Under the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (FMP), 78% of the scup ABC is allocated as a commercial annual catch limit (ACL) and 22% is allocated as a recreational ACL. Based on the above ABCs, this would result in a 2018 commercial ACL of 30.53 million pounds (13,849 mt), a 2018 recreational ACL of 8.61 million pounds (3,906 mt), a 2019 commercial ACL of 28.42 million pounds (12,890 mt), and a 2019 recreational ACL of 8.01 million pounds (3,636 mt).

The Monitoring Committee is responsible for recommending annual catch targets (ACTs) which are equal to or reduced from the sector-specific ACLs to account for management uncertainty. The proposed 2018 ABCs and ACLs allow for a 45% increase compared to the previously-implemented 2018 measures. Staff recommend that 2018 ACTs be revised to achieve half of this allowable increase (i.e. a 22.5% increase from the previously-implemented measures, instead of a 45% increase). Staff also recommend that the 2019 ACTs be set equal to those in 2018. Thus, the recommended 2018 and 2019 commercial ACT is 25.85 million pounds (11,724 mt) and the recommended 2018 and 2019 recreational ACT is 6.65 million pounds (3,018 mt). The main justification for considering this more moderate increase is that it would create some degree of stability in management measures (see pages 8-9 for more details). After subtracting projected discards, the recommended 2018 and 2019 commercial quota is 20.69 million pounds (9,386 mt) and the recommended 2018 and 2019 RHL is 6.54 million pounds (2,966 mt; Table 1).

In the past, the Council and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Management Board (the Board) have set scup catch and landings limits for up to three years at a time; however, Council staff do not recommend setting 2020 catch and landings limits at this point. The Marine Recreational Information Program (MRIP) plans to release a revised historical time series of recreational scup catch, landings, and discards in mid-2018. The NEFSC plans to provide the Council with a new stock assessment update after the revised MRIP estimates are available. As such, staff recommend that the Council and Board set measures for 2020, and possibly revise the 2019 measures, after the revised MRIP time series is available.

Staff recommend no changes to the commercial management measures for the scup fishery at this time.

Table 1: Scup catch and landings limits for 2018 and 2019 based on the standard approach and staff recommendation.

Management measure	Previously-Implemented		Revised Using Standard Approach					Staff Recommended Revision				
	2018		2018		2019		Basis	2018		2019		Basis
	mil lb	mt	mil lb	mt	mil lb	mt		mil lb	mt	mil lb	mt	
OFL	29.70	13,464	45.05	20,433	41.03	18,612	Assessment projections	45.05	20,433	41.03	18,612	Identical to OFL under standard approach
ABC	27.10	12,270	39.14	17,755	36.43	16,525	Assessment projections & risk policy	39.14	17,755	36.43	16,525	Identical to ABC under standard approach
ABC discards	4.50	2,043	5.91	2,679	5.08	2,304	Assessment projections	5.91	2,679	5.08	2,304	Assessment projections
Commercial ACL	21.10	9,571	30.53	13,849	28.42	12,890	78% of ABC (per FMP)	30.53	13,849	28.42	12,890	78% of ABC (per FMP)
Commercial ACT	21.10	9,571	30.53	13,849	28.42	12,890	Set equal to commercial ACL	25.85	11,724	25.85	11,724	Previously-implemented 2018 commercial ACT increased by 22.5%
Projected commercial discards	3.76	1,705	5.15	2,338	4.43	2,011	87.3% of ABC discards (avg. % of dead discards from commercial fishery, 2014-2016)	5.15	2,338	4.43	2,011	87.3% of ABC discards (avg. % of dead discards from commercial fishery, 2014-2016)
Commercial quota	17.30	7,866	25.38	11,511	23.98	10,879	Commercial ACT minus discards	20.69	9,386	20.69	9,386	Commercial ACT minus projected 2018 discards
Recreational ACL	5.95	2,699	8.61	3,906	8.01	3,636	22% of ABC (per FMP)	8.61	3,906	8.01	3,636	22% of ABC (per FMP)
Recreational ACT	5.95	2,699	8.61	3,906	8.01	3,636	Set equal to recreational ACL	7.29	3,307	7.29	3,307	Previously-implemented 2018 recreational ACT increased by 22.5%
Projected recreational discards	0.75	338	0.75	341	0.65	293	12.7% of the ABC discards (avg. % of dead discards from rec. fishery, 2014-2016)	0.75	341	0.65	293	12.7% of the ABC discards (avg. % of dead discards from rec. fishery, 2014-2016)
RHL	5.21	2,361	7.86	3,565	7.37	3,342	Recreational ACT minus discards	6.54	2,966	6.54	2,966	Recreational ACT minus projected 2018 discards

Introduction

The Magnuson-Stevens Act (MSA) requires that the Council's SSC provide scientific advice for fishery management decisions, including recommendations for ABC, prevention of overfishing, and achieving maximum sustainable yield (MSY). The SSC must recommend ABCs that address scientific uncertainty. The MSA mandates that the Council's catch limit recommendations cannot exceed the respective ABCs recommended by the SSC.

The Monitoring Committee is responsible for developing recommendations for management measures to achieve the ABCs recommended by the SSC. Specifically, the Monitoring Committee recommends ACTs that are equal to or less than the ACLs to address management uncertainty, and also recommends management measures designed to achieve these ACTs.

Summer flounder, scup, and black sea bass are cooperatively managed by the Council and the Atlantic States Marine Fisheries Commission (the Commission) under a joint Fishery Management Plan (FMP). The Council and the Commission's Summer Flounder, Scup, and Black Sea Bass Management Board meet jointly each year to consider SSC and Monitoring Committee recommendations before deciding on proposed scup catch limits and other scup management measures. The Council and Board may set specifications for scup for up to three years at a time. The Council and Board submit their recommendations to the National Marine Fisheries Service (NMFS), which is responsible for implementation and enforcement of federal fisheries regulations.

This memorandum includes information to assist the SSC and Monitoring Committee in reviewing and possibly revising the previously implemented 2018 scup catch and landings limits and in recommending catch and landings limits for 2019, as well as commercial management measures for 2018. Additional information on fishery performance and past management measures can be found in the 2017 Scup Fishery Information Document (MAFMC 2017A) and the 2016 Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report developed by the Council and Commission Advisory Panels (MAFMC 2017B).

Recent Catch and Landings

In 2016, the commercial scup fishery landed 15.76 million pounds (7,147 mt) of scup, about 77% of the 2016 commercial quota (20.47 million pounds, 9,284 mt), and discarded about 6.11 million pounds of scup (2,772 mt). Estimated recreational landings in 2016 were 4.26 million pounds (1,932 mt), about 70% of the RHL (6.09 million pounds, 2,763 mt) and recreational dead discards were about 0.78 million pounds (354 mt). Total catch in 2016 was about 26.91 million pounds (12,205 mt), about 81% of the 2016 ABC (NEFSC 2017). Since 2011, total catch has been 14-47% below the ABC, commercial landings have been 20-47% below the quota, and recreational landings have been 29-51% below the RHL (Figure 1).

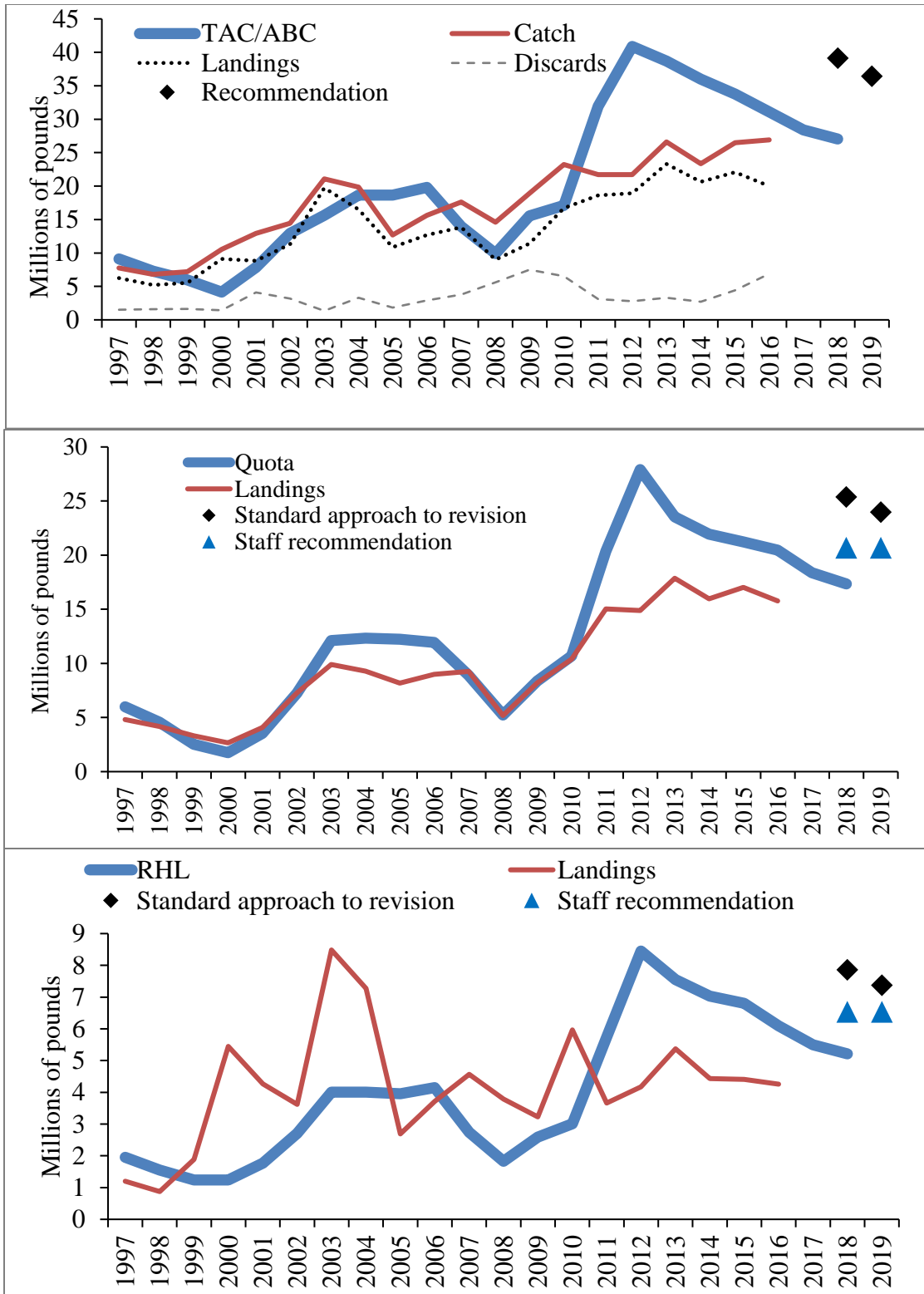


Figure 1: *Top:* total commercial and recreational catch, landings, and discards compared to ABCs. *Middle:* commercial landings compared to commercial quotas. *Bottom:* recreational landings compared to RHL. Black diamonds represent the possible 2018-2019 ABCs, quotas, or RHLs using the standard approach for calculating these measures. Blue triangles represent the staff-recommended quotas and RHLs.

The commercial scup quota is allocated among three quota periods: Winter I (January 1 – April 30, allocated 45.11% of the annual quota), Summer (May 1 – October 31, allocated 38.95% of the annual quota), and Winter II (November 1 – December 31, allocated 15.94% of the annual quota). About 68% of the 2017 Winter I commercial scup quota was landed. As of the week ending June 24, 2017, 40% of the Summer commercial scup quota had been landed (Table 2). In June 2017, the Council and Board voted to modify the dates of the Summer and Winter II quota periods such that October will become part of the Winter II period, rather than the Summer period. The allocation percentages will remain unchanged. This change is expected to take effect in 2018.

Table 2: Commercial scup landings during the 2017 Winter I and Summer quota periods (as of the week ending June 24, 2017), according to NMFS weekly landings reports. The Winter I quota is a coast-wide quota. The Summer period quota is allocated among states under the Commission’s FMP.

State	Winter I Landings (pounds) January 1 – April 29, 2017*	Summer Landings (pounds) May 1 – June 24, 2017*
Maine	0	0
New Hampshire	2	0
Massachusetts	1,151,969	451,252
Rhode Island	1,069,556	1,432,447
Connecticut	384,777	138,114
New York	1,486,474	843,225
New Jersey	1,087,648	25,878
Delaware	0	3
Maryland	38,226	0
Virginia	302,871	741
North Carolina	132,193	11,346
Other	0	0
Total landings	5,653,716	2,903,006
Quota	8,291,190	7,158,986

*Note: The Winter I period lasts from January 1 through April 30. The 2017 Summer period lasts from May 1 through October 31. Landings in this table are from the NMFS quota monitoring site (<https://www.greateratlantic.fisheries.noaa.gov/aps/monitoring/scup.html>), which reports landings by week, rather than by quota period; thus, the Winter I landings shown above do not account for 100% of the 2017 Winter I landings.

2018-2019 OFL and ABC Projections

In 2015, the Council and Board set scup specifications for 2016-2018 based on the recommendations of the SSC and Monitoring Committee. The SSC derived their ABC recommendations from the Council’s risk policy and OFL projections provided with the 2015 benchmark stock assessment (NEFSC 2015). These projections assumed that 75% of the 2015 ABC would be caught and that F in 2016 and 2017 would be 0.22 (F_{MSY}). The SSC assigned a 60% coefficient of variation (CV) to the OFL. The SSC used a probability of overfishing (p^*) of 40% to derive the 2016-2018 ABCs, based on the Council’s risk policy for a species with a typical life history.

The NEFSC provided updated 2018-2019 OFL and ABC projections with the 2017 assessment update (NEFSC 2017). Two projection scenarios were included. The first scenario assumes, based on patterns

in the 2016 fishery, that 87% of the 2017 ABC will be caught and F in 2018 and 2019 will be 0.22 (F_{MSY} proxy). This is similar to the assumption used for the SSC's recommend 2016-2018 ABCs. The second scenario assumes that 100% of the 2017 ABC will be caught and F in 2018 and 2019 will be 0.22 (F_{MSY} proxy). Staff recommend that the SSC use the first OFL projection scenario when developing 2018-2019 ABC recommendations. This results in a revised 2018 OFL of 45.05 million pounds (20,433 mt), a revised 2018 ABC of 39.14 million pounds (17,755 mt), a 2019 OFL of 41.03 million pounds (18,612 mt), and a 2019 ABC of 36.43 million pounds (16,525 mt; Table 3).

Table 3: OFL, ABC, F, and SSB based on projections from the 2017 stock assessment update (NEFSC 2017) using an OFL CV of 60% and the Council's risk policy ($p^*=40\%$) and assuming that 87% of the ABC will be caught in 2017 and F would be at F_{MSY} proxy of 0.22 in subsequent years.

Year	OFL		ABC Catch		ABC Landings		ABC Discards		F	SSB	
	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt		mil lb	mt
2017	24.70	11,206	24.70	11,206	19.76	8,962	4.95	2,244	0.112	404.10	183,296
2018	45.05	20,433	39.14	17,755	33.24	15,076	5.91	2,679	0.220	396.18	179,704
2019	41.03	18,612	36.43	16,525	31.35	14,221	5.08	2,304	0.220	361.84	164,129

The SSC considered the following to be the most significant sources of uncertainty in the 2015 benchmark assessment (MAFMC 2015A):

- 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.
- Uncertainty exists with respect to the estimate of natural mortality used in the assessment.
- Uncertainty exists as to whether the MSY proxies ($SSB_{40\%}$, $F_{40\%}$) selected and their precisions are appropriate for this stock.
- The SSC assumed that OFL has a lognormal distribution with a 60% CV, based on a meta-analysis of survey and statistical catch at age model accuracies.
- Survey indices are particularly sensitive to scup availability, which results in high inter-annual variability. Efforts were made to address this question in the Stock Assessment Workshop and Stock Assessment Review Committee (SAW/SARC) that should be continued; and
- The projection on which the ABC was determined is based on an assumption that the quotas would be landed in 2016, 2017, and 2018.

Stock Status and Biological Reference Points

Biological reference points estimated by the 2015 benchmark scup stock assessment include (NEFSC 2015):

- A biomass reference point of $SSB_{MSY\ proxy} = SSB_{40\%} = 192.47$ million pounds (87,302 mt)
- A minimum biomass threshold of $\frac{1}{2} SSB_{MSY\ proxy} = \frac{1}{2} SSB_{40\%} = 96.23$ million pounds (43,651 mt)
- A fishing mortality reference point of $F_{MSY\ proxy} = F_{40\%} = 0.220$.

Based on the 2017 stock assessment update, the scup stock was not overfished and overfishing was not occurring in 2016 relative to the biological reference points from the 2015 benchmark stock assessment. SSB was estimated to be about 397 million pounds (179,898 mt) in 2016, about 2.1 times the SSB_{MSY} proxy reference point (i.e. $SSB_{40\%}$) of 192 million pounds (87,302 mt). Fishing mortality on fully selected age 3 scup was 0.139 in 2016, about 63% of the F_{MSY} proxy reference point (i.e. $F_{40\%}$) of 0.220. At 252 million fish, the 2015 year class was estimated to be about 2.1 times the average recruitment (i.e. number of age 0 scup) over 1984-2016. The 2016 year class was estimated to be about 46% below the 1984-2016 average at 65 million fish (NEFSC 2015, NEFSC 2017).

Other Management Measures

Commercial and Recreational Annual Catch Limits (ACLs)

As specified in the FMP, 78% of the ABC is allocated to the commercial fishery as a commercial ACL and 22% is allocated to the recreational fishery as a recreational ACL (Figure 2). ACLs include both landings and discards. If the SSC adopts the ABCs recommended on page 7, this would result in a revised 2018 commercial ACL of 30.53 million pounds (13,849 mt), a revised 2018 recreational ACL of 8.61 million pounds (3,906 mt), a 2019 commercial ACL of 28.42 million pounds (12,890 mt), and a 2019 recreational ACL of 8.01 million pounds (3,636 mt; Table 1).

Annual Catch Targets (ACTs)

The Monitoring Committee recommends ACTs for the Council and Board's consideration. ACTs may be either equal to the ACLs or reduced from the ACLs to account for management uncertainty. Management uncertainty can include uncertainty in the ability of managers to control catch and uncertainty in quantifying the true catch (i.e. estimation errors). This can occur due to a lack of sufficient information about catch (e.g. due to late reporting, under-reporting, and/or misreporting of landings or discards) or due to a lack of management precision (i.e. the ability to constrain catch to desired levels).

In recent years, the Monitoring Committee has recommended that the scup ACTs be set equal to their respective ACLs due to the high scup biomass and commercial and recreational landings that have been consistently below the commercial quotas and RHLs for several years (Figure 1, Table 4). Staff recommend that the Monitoring Committee deviate from their recent approach and reduce the 2018-2019 ACTs from the respective ACLs in order to help create more stable management measures. The 2018 ABCs and ACLs recommended in this document represent a 45% increase in the previously-implemented 2018 measures. The 2019 ABCs and ACLs represent a 35% increase in the previously-implemented 2018 measures (there are no previously-implemented 2019 measures). Staff recommend that the 2018 ACTs be set such that they increase by 22.5% compared to the previously-implemented 2018 ACTs, as opposed to 45% under the recommended ABCs and ACLs. Staff also recommend that the 2019 ACTs be set equal to the 2018 ACTs. This results in a 2018 and 2019 commercial ACT of 25.85 million pounds (11,724 mt) and a 2018 and 2019 recreational ACT of 7.29 million pounds (3,307 mt; Table 1).

The main justification for considering this more moderate increase is that it would create some degree of stability in management measures. It is possible that more restrictive management measures may be needed in future years given below average recruitment in 2016 (NEFSC 2017) and uncertainty in how the revised historical time series of recreational catch, landings, and discards from MRIP will impact future scup stock assessments and assessment updates. The new MRIP time series is expected to be available in mid-2018. Future recruitment and future changes in MRIP data can be considered sources of

future management uncertainty. Allowing a more moderate increase in the ACTs (and thus the commercial quotas and RHLs) than is otherwise allowed can help prevent future large fluctuations in these measures, which some advisors have said is beneficial from a business planning perspective. In addition, the full allowable increases under the proposed ABCs and ACLs may not result in significant benefits to the commercial and recreational fisheries given that landings in both sectors have been below their respective landings limits for several years (Figure 1, Table 4). Several advisors have said that scup are abundant and widely available, for the most part, but that commercial landings are limited by price and market demand and scup are generally not a highly sought after recreational species. For all these reasons, the proposed moderate increase in the ACTs is expected to provide some degree of stability to the fisheries while also allowing for landings to increase and continuing to ensure that the stock remains rebuilt.

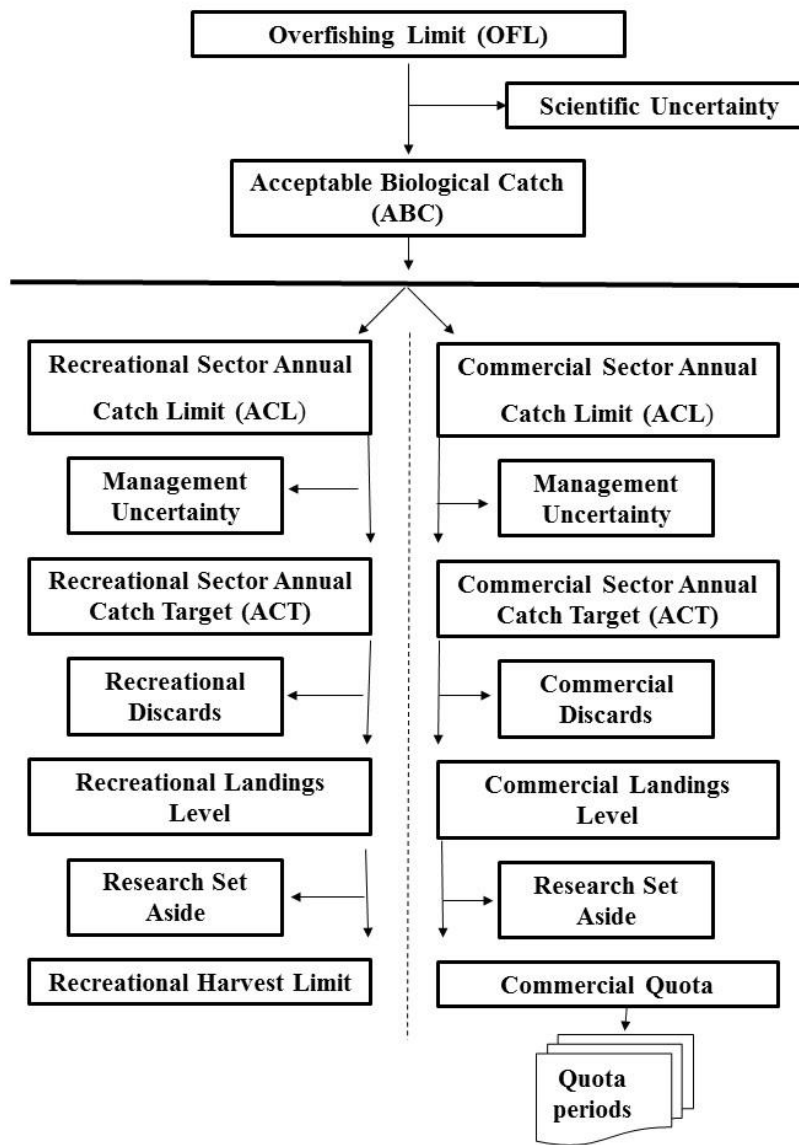


Figure 2: Scup catch and landings limit calculation methodology. The Research Set Aside program was suspended in 2014.

Table 4: Scup commercial and recreational fishery performance relative to quotas and RHLs, 2011-2016.

Year	Commercial Landings (mil lb)	Commercial Quota (mil lb)	Percent Underage	Recreational Landings (mil lb)	RHL (mil lb)	Percent Underage
2011	15.03	20.36	-26%	3.67	5.74	-36%
2012	14.88	27.91	-47%	4.17	8.45	-51%
2013	17.87	23.53	-24%	5.37	7.55	-29%
2014	15.96	21.95	-27%	4.43	7.03	-37%
2015	17.03	21.23	-20%	4.41	6.80	-35%
2016	15.76	20.47	-23%	4.26	3.09	-30%
Average	16.09	22.58	-28%	4.39	6.44	-36%

Commercial Quotas and Recreational Harvest Limits (RHLs)

Commercial scup quotas and RHLs are calculated by subtracting projected discards from the sector-specific ACTs. Projected discards from the stock assessment are apportioned between commercial and recreational fisheries using the average percent of dead discards attributable to each sector over the past three years. According to the 2017 assessment update (NEFSC 2017), commercial discards accounted for an average of 87.3% and recreational dead discards accounted for an average of 12.7% of all dead discards from 2014 through 2016. After subtracting projected discards from the recommended ACTs, the recommended 2018 commercial quota is 20.69 million pounds (9,386 mt) and the recommended 2018 RHL is 6.54 million pounds (2,966 mt; Table 1). Staff recommend that the 2019 commercial quota and RHL be set equal to the 2018 quota and RHL as an additional step towards management stability.

Compared to the standard approach for setting scup specifications (i.e. no reduction from ACL to ACT), the recommended 2018 commercial quota is 18% lower and the 2018 RHL is 17% lower. The recommended 2019 commercial quota is 14% lower and the 2019 RHL is 11% lower.

Under the staff recommended quotas, the 2018 and 2019 Winter I quota will be 9.33 million pounds (4,234 mt), the Summer quota will be 8.06 million pounds (3,656 mt), and the Winter II quota will be 3.30 million pounds (1,497 mt), prior to any quota rollover from Winter I, if applicable (see page 6).

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, 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 limits.

Most commercial scup trips in recent years landed well below the Winter I and Winter II possession limits. These possession limits have not been modified since 2012, when the Winter I limit increased from 30,000 to 50,000 pounds and 2014 when the initial Winter II limit increased from 2,000 to 12,000 pounds. In recent years, some advisors have said that the current Winter I possession limit can cause markets to be flooded with scup, which can lead to a decrease in price. However, many advisors support status quo possession limits and the Monitoring Committee has not recommended changes in recent years. Staff recommend no changes to the Winter I and Winter II possession limits for 2018.

Commercial Minimum Fish Size

The minimum size for retention of scup in the commercial fishery is 9 inches total length. This measure was first implemented in 1996, when scup were first managed by the Council and Commission. The Council and Board considered modifying this measure in 2005, 2012, and in 2015. After reviewing this measure in detail 2015, the Monitoring Committee, Council, and Board all recommended no changes. The rationale for this recommendation is described in MAFMC 2015B. As summarized in the Fishery Performance Report (MAFMC 2017b), advisors held differing opinions on the commercial minimum fish size. Staff recommend that this regulation remain unchanged in 2018.

Commercial Trawl Mesh Size

Trawl vessels which possess more than 1,000 pounds of scup from November 1 through April 30 and more than 200 pounds of scup from May 1 through October 31 must use a minimum mesh size of 5.0 inches. In late 2015, the Council approved an increase in the November-April incidental limit from 500 to 1,000 pounds in recognition of the substantial increase in SSB and expansion of the age structure of the population since this measure was last modified in 2004. Staff recommend no changes to this measure for 2018.

Commercial Pot and Trap Regulations

NMFS Vessel Trip Report data show that less than 1% of the 2016 commercial scup catch was taken with pots and traps. Pots and traps used in the commercial scup fishery must have either a circular escape vent with a 3.1 inch minimum diameter or square or rectangular escape vents with each side being at least 2.25 inches in length. The Council and Commission hosted a workshop in 2005 to review several studies on vent size. Workshop participants did not recommend any changes in the vent sizes for the commercial scup fishery. The Monitoring Committee reviewed these measures in 2015 and recommend no changes (MAFMC 2015B). Staff recommend no changes to these measures for 2018.

Recreational Seasons, Possession Limits, and Minimum Size

The Council and Board will discuss 2018 recreational scup seasons, possession limits, and minimum fish sizes at their joint meeting in December 2017. Data from the first four “waves” (i.e. the two-month reporting increments for recreational data) of 2017 recreational landings are expected to be available in October 2017. The Monitoring Committee will meet in November to review these landings data and make recommendations for any necessary changes in recreational management measures. Staff have no recommendations for 2018 recreational management measures at this time.

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