



## Mid-Atlantic Fishery Management Council

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# MEMORANDUM

**DATE:** July 7, 2016

**TO:** Chris Moore, Executive Director

**FROM:** Julia Beaty and Kiley Dancy, Staff

**SUBJECT:** Review of 2017-2018 Scup Management Measures

### Executive Summary

The Mid-Atlantic Fishery Management Council (Council) set multi-year specifications for scup in 2015, establishing catch and landings limits for the 2016-2018 fishing years. The Council and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Management Board (Board) will review the 2017 scup management measures during their joint meeting in August 2016. These measures may remain unchanged if the Scientific and Statistical Committee (SSC) determines that the previously recommended Acceptable Biological Catch (ABC) for 2017 (28.40 million pounds; 12,881 metric tons) is still appropriate and if the Council and Board recommend no changes to the previously implemented catch and landings limits. The Summer Flounder, Scup, and Black Sea Bass Monitoring Committee will also review recent fishery performance and make a recommendation to the Council and Board regarding any necessary modifications to the previously implemented 2017 Annual Catch Targets (ACTs) and commercial management measures (e.g., possession limits, quota period provisions, gear restrictions, and minimum fish size).

The most recent benchmark stock assessment for scup was peer-reviewed and accepted by the Stock Assessment Review Committee (SARC) in June 2015. The assessment indicated that the scup stock was not overfished and overfishing was not occurring in 2014. The assessment model estimated a spawning stock biomass (SSB) of 403.27 million pounds (182,915 mt) in 2014. This is more than double the biomass at maximum sustainable yield ( $SSB_{MSY\ proxy} = SSB_{40\%} = 192.47$  million pounds = 87,302 mt). The fishing mortality rate on fully selected age 3 scup was 0.127 in 2014. This is 42% lower than the fishing mortality threshold reference point of 0.220 ( $F_{MSY\ proxy} = F_{40\%}$ ; NEFSC 2015).

The Northeast Fisheries Science Center (NEFSC) provided a data update on scup fishery catch, landings, and discards, as well as NEFSC and state survey catches through 2015. This information indicates that scup biomass continues to be high, relative exploitation ratios remain low, and the 2015 year class appears to be large. Reported 2015 landings in the commercial fishery were 17.03 million pounds (7,725 mt), about 80% of the 2015 commercial quota (21.24 million pounds, 9,632 mt). Estimated 2015 landings in the recreational fishery were 5.06 million pounds (2,295 mt), about 70% of the recreational harvest limit (7.25 million pounds, 3,288 mt). Total commercial and recreational landings in 2015 were 22.09 million pounds (10,020 mt). Total commercial and recreational discards were 4.41 million pounds (2,000 mt). Total catch in 2015 was about 26.50 million pounds (12,020 mt), about 79% of the 2015 ABC (NEFSC 2016).

Staff recommend maintaining the previously adopted 2017 ABC of 28.40 million pounds as the basis for scup management measures in 2017. This ABC results in a commercial Annual Catch Limit (ACL) of 22.15 million pounds (10,047 mt) and a recreational ACL of 6.25 million pounds (2,834 mt). In 2015 the Monitoring Committee recommended no reduction from the commercial and recreational ACLs to account for management uncertainty; therefore, both the commercial and recreational ACTs were set equal to their respective ACLs for 2017. The previously implemented 2017 scup commercial quota is 18.38 million pounds (8,337 mt) and the recreational harvest limit is 5.50 million pounds (2,495 mt; Table 1).

In 2015 the Monitoring Committee carried out a thorough review of the commercial management measures for the summer flounder, scup, and black sea bass fisheries which may be modified through the annual specifications process (MAFMC 2015B). The Council reviewed the Monitoring Committee's recommendations and Advisory Panel input in December 2015 and voted to increase the scup incidental possession limit for federally-permitted trawl vessels during November – April from 500 to 1,000 pounds. No new analysis of commercial scup management measures has been completed since late 2015; therefore, staff recommend no changes to the commercial management measures for the scup fishery at this time.

**Table 1:** Currently implemented catch and landings limits for scup for 2016-2018.

Management Measure	2016		2017		2018		Basis
	mil lb	mt	mil lb	mt	mil lb	mt	
<b>OFL</b>	35.80	16,238	32.09	14,556	29.70	13,464	Stock assessment projections.
<b>ABC</b>	31.11	14,110	28.40	12,881	27.10	12,270	Stock assessment projections and Council risk policy.
<b>ABC landings portion</b>	26.56	12,047	23.88	10,832	22.60	10,227	Stock assessment projections.
<b>ABC discards portion</b>	4.55	2,063	4.52	2,049	4.50	2,043	Stock assessment projections.
<b>Commercial ACL</b>	24.26	11,006	22.15	10,047	21.10	9,571	78% of ABC (per FMP).
<b>Commercial ACT</b>	24.26	11,006	22.15	10,047	21.10	9,571	Set equal to commercial ACL as per Monitoring Committee recommendation.
<b>Projected commercial discards</b>	3.80	1,721	3.77	1,710	3.76	1,705	83.4% of the ABC discards portion (the average percentage of dead discards attributable to the commercial fishery from 2012-2014).
<b>Commercial quota</b>	20.47	9,284	18.38	8,337	17.30	7,866	Commercial ACT minus discards.
<b>Recreational ACL</b>	6.84	3,104	6.25	2,834	5.95	2,699	22% of ABC (per FMP).
<b>Recreational ACT</b>	6.84	3,104	6.25	2,834	5.95	2,699	Set equal to recreational ACL as per Monitoring Committee recommendation.
<b>Projected recreational discards</b>	0.75	342	0.75	339	0.75	338	16.6% of the ABC discards portion (the average percentage of dead discards attributable to the recreational fishery from 2012-2014).
<b>Recreational harvest limit</b>	6.09	2,763	5.50	2,495	5.21	2,361	Recreational ACT minus discards.

## **Introduction**

The Magnuson-Stevens Act (MSA) requires that the Council's SSC provide ongoing 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 addresses scientific uncertainty. The MSA mandates that the Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABC recommended by the SSC.

The Council's Monitoring Committees are responsible for developing recommendations for management measures designed to achieve the ABCs recommended by the SSC. Specifically, the Monitoring Committee must recommend ACTs that are equal to or less than the ACLs to address management uncertainty, and must also recommend 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 Commission's Summer Flounder, Scup, and Black Sea Bass Management Board and the Council meet jointly to consider the recommendations of the SSC and Monitoring Committee before deciding on proposed scup catch limits and other scup management measures. The Council and Board may set multi-year specifications for scup for up to three years at a time. The Council and Board submit their scup management 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 their recommendations for 2017 management measures for the scup fishery, which were developed in 2015. Additional information about fishery performance and past management measures can be found in the 2016 Scup Fishery Information Document prepared by Council staff (MAFMC 2016A) and the 2015 Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report developed by the Council and Commission Advisory Panels (MAFMC 2016B).

## **Recent Catch and Landings**

Reported 2015 landings in the commercial scup fishery were 17.03 million pounds (7,725 mt), about 80% of the 2015 commercial quota (21.24 million pounds, 9,632 mt). Estimated 2015 landings in the recreational fishery were 5.060 million pounds (2,295 mt), about 70% of the recreational harvest limit (7.249 million pounds, 3,288 mt). Total commercial and recreational landings in 2015 were 22.090 million pounds (10,020 mt). Total commercial and recreational discards were 4.409 million pounds (2,000 mt). Total catch in 2015 was about 26.500 million pounds (12,020 mt), about 79% of the 2015 ABC (NEFSC 2016).

The scup commercial quota is allocated among three quota periods: Winter I (January 1 – April 30), Summer (May 1 – October 31), and Winter II (November 1 – December 31). About 64% of the 2016 Winter I commercial scup quota was landed. As of the week ending June 25, 2016, 30% of the Summer commercial scup quota had been landed (Table 2).

**Table 2:** The amount of scup landed in the commercial fishery during the Winter I and Summer quota periods (as of the week ending June 25, 2015), according to NMFS weekly landings reports. The Winter I quota is a coast-wide quota. The Summer period quota is allocated among states by the Atlantic States Marine Fisheries Commission.

<b>State</b>	<b>Winter I</b> Landings (pounds) January 1 – April 30, 2016	<b>Summer</b> Landings (pounds) May 1 – June 25, 2016
Maine	0	0
New Hampshire	0	0
Massachusetts	251,252	462,317
Rhode Island	1,368,717	1,167,793
Connecticut	462,859	117,669
New York	1,575,409	599,565
New Jersey	1,792,798	6,353
Delaware	2	1
Maryland	37,500	2
Virginia	283,622	16,180
North Carolina	101,610	9
Other	0	0
<b>Total landings</b>	<b>5,873,769</b>	<b>2,369,889</b>
<b>Quota</b>	<b>9,232,987</b>	<b>7,972,176</b>

Source: NMFS Weekly Quota Report for week ending June 25, 2016.

### **Currently Implemented 2016-2018 ABCs**

The Council and Board set scup specifications for the 2016-2018 fishing years in 2015 based on the SSC's ABC recommendations. The SSC used the Council's risk policy to derive their 2016-2018 ABC recommendations from OFL projections provided with the 2015 benchmark stock assessment. The SSC used OFL projections which 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, which is double the CV recommended by the SARC, but below the CV of 100% typically used by the SSC for species of this assessment level. 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.

**Table 3:** OFL, ABC, F, and SSB based on projections from the 2015 benchmark scup stock assessment (NEFSC 2015) and the SSC's application of the Council's risk policy ( $p^*=40\%$ ) and an OFL CV of 60%. The ABC catch level shown for 2015 is 75% of the 2015 ABC. Projected catch, landings, discards, and SSB for 2016-2018 were calculated based on the assumption that 75% of the ABC will be caught in 2015.

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
2015	25.33	11,490	25.33	11,490	22.17	10,058	3.16	1,432	0.143	413.32	187,477
2016	35.80	16,238	31.11	14,110	26.56	12,047	4.56	2,067	0.189	376.69	170,862
2017	32.09	14,556	28.40	12,881	23.88	10,832	4.52	2,049	0.189	346.00	156,946
2018	29.70	13,464	27.05	12,270	22.54	10,227	4.50	2,043	0.192	320.90	145,560

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  $F_{MSY\ proxy} = F_{40\%} = 0.220$ .

According to the 2015 benchmark scup stock assessment, the scup stock was not overfished and overfishing was not occurring in 2014. The assessment model estimated an SSB of 403.27 million pounds (182,915 mt) in 2014. This is more than double the biomass at MSY ( $SSB_{MSY\ proxy} = SSB_{40\%} = 192.47$  million pounds = 87,302 mt). The fishing mortality rate on fully selected age 3 scup was 0.127 in 2014. This is 42% lower than the fishing mortality threshold reference point of 0.220 ( $F_{MSY\ proxy} = F_{40\%}$ ).

The average recruitment from 1984 to 2014 was 109 million age 0 scup. The 2014 year class was estimated to be about 112 million fish (NEFSC 2015).

Catch and survey data through 2015 indicate that scup SSB remains high, relative exploitation ratios remain low, and the 2015 year class appears to be large (NEFSC 2016).

## **Other Management Measures**

### ***Recreational and Commercial Annual Catch Limits***

The ABC is divided into a commercial ACL and a recreational ACL (Figure 1). As specified in the Summer Flounder, Scup, and Black Sea Bass FMP, the commercial scup ACL is 78% of the ABC and the recreational ACL is 22% of the ABC. The ACLs include both landings and discards. Staff recommend no changes to the previously implemented 2017 commercial ACL of 22.15 million pounds (10,047 mt) and recreational ACL of 6.25 million pounds (2,834 mt).

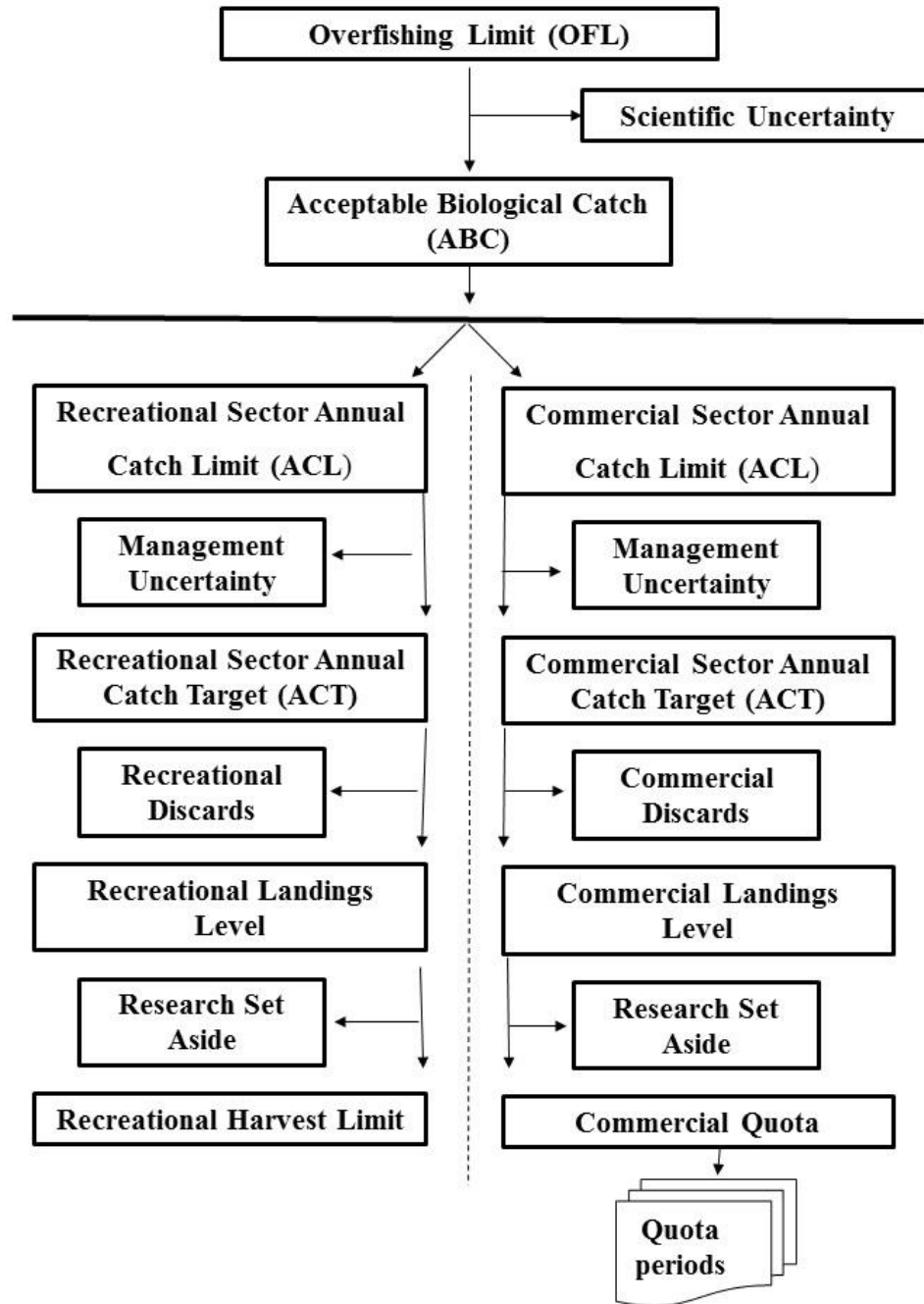
### ***Annual Catch Targets***

The Monitoring Committee is responsible for recommending ACTs for the Council and Board's consideration. The ACTs may either be equal to the ACLs or reduced from the ACLs to account for management uncertainty. The Monitoring Committee should consider all relevant sources of management uncertainty in the scup fishery and provide the technical basis for any reduction in catch when recommending ACTs. Management uncertainty includes 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 the catch (e.g., due to late reporting, under-reporting, and/or misreporting of landings or bycatch) or due to a lack of management precision (i.e., the ability to constrain catch to desired levels).

In 2015 the Monitoring Committee recommended no reduction from the commercial and recreational scup ACTs to the ACLs for 2016-2018. As indicated by the 2015 benchmark assessment and the 2016 data update, scup SSB is much higher than the biomass reference point. Both the commercial and recreational fisheries have landed well below their landings limits since 2011 (Table 4). For these reasons, staff recommend that the 2017 ACTs remain equal to the ACLs.

**Table 4:** Scup commercial and recreational fishery performance relative to quotas and harvest limits, 2011-2015.

<b>Year</b>	<b>Commercial Landings (mil lb)</b>	<b>Commercial Quota (mil lb)</b>	<b>Percent Underage</b>	<b>Recreational Landings (mil lb)</b>	<b>Recreational Harvest Limit (mil lb)</b>	<b>Percent Underage</b>
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%	5.43	7.55	-28%
2014	15.96	21.95	-27%	4.68	7.03	-34%
2015	17.03	21.23	-20%	5.05	6.80	-26%
Average	16.15	23.00	-29%	4.60	7.11	-35%



**Figure 1:** Illustration of how scup catch and landings limits are determined from the overfishing limit. The Research Set Aside program was suspended in 2014.



### ***Commercial Quotas and Recreational Harvest Limit***

Commercial quotas and recreational harvest limits for scup are determined by subtracting projected discards from the sector-specific ACTs. Projected discards from the stock assessment are apportioned between the recreational and commercial fisheries using the average percentage of dead discards attributable to each sector over the past three years. According to the 2015 benchmark stock assessment, commercial dead discards accounted for an average of 83.4% of all dead discards from 2012 through 2014. Recreational dead discards accounted for an average of 16.6% of all dead discards from 2012 through 2014.

The previously implemented 2017 commercial quota is 18.38 million pounds (8,337 mt) and the 2017 recreational harvest limit is 5.50 million pounds (2,495 mt).

As prescribed by the FMP, the commercial scup quota is divided into three periods: Winter I (January 1 – April 30; allocated 45.11% of the commercial quota), Summer (May 1 – October 31; allocated 38.95% of the commercial quota), and Winter II (November 1 – December 31; allocated 15.94% of the commercial quota). Based on the previously implemented 2017 scup commercial quota, the 2017 Winter I commercial quota will be 8.29 million pounds (3,761 mt), the Summer quota will be 7.16 million pounds (3,247 mt), and the Winter II quota will be 2.93 million pounds (1,329 mt), prior to any quota rollover from Winter I, if applicable.

Staff recommend no changes to the previously implemented 2017 commercial quota, the Winter I, Summer, and Winter II quotas, or the 2017 recreational harvest limit.

### ***Commercial Winter I and Winter II Quota Period Possession Limits***

The Council and Board use commercial scup possession limits to help constrain landings to the seasonal 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 12,000 pounds. The Winter II possession limit is an initial possession limit. 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 caught during the Winter I period. There are no federal possession limits during the Summer quota period; however, there are state possession limits.

In 2015 the Monitoring Committee recommended no changes to the Winter I and Winter II quota period possession limits (MAFMC 2015B). The Council and Board agreed with this recommendation. According to an analysis presented by Council staff, the majority of commercial scup trips in recent years landed well below the Winter I and Winter II possession limits. Based on this analysis, the Monitoring Committee saw no reason to modify these measures. Advisors have not recommended a change to these measures in recent years; however, one advisor noted that the staff analysis of these measures (MAFMC 2015B, MAFMC 2016A) appears to under-represent the number of trips which landed close to the Winter I possession limit in 2014 and 2015. Staff recommend no change to the Winter I and Winter II quota period possession limits for 2017.

### ***Commercial Minimum Fish Size***

The minimum size for retention of scup in the commercial fishery is 9 inches total length (TL). The Council and Board have not modified this measure since scup was first managed by the Council through

the 1996 amendment that added scup to the Summer Flounder FMP. The Council and Board considered modifying this measure in 2005, 2012, and 2015. As part of the commercial management measures review carried out by the Monitoring Committee in 2015, the Monitoring Committee recommended no change to the minimum fish size for scup in the commercial fishery. The Monitoring Committee noted that because such a high proportion of scup discards are smaller than 9 inches, reducing or eliminating the minimum size (as requested by some advisors) could significantly shift selectivity of the fishery and increase harvest of immature fish, which could have negative effects on scup biomass. The Monitoring Committee also noted that reducing or eliminating the minimum size could increase mortality in the commercial pot/trap and hook and line fisheries, which respectively accounted for 3.6% and 4.6%, of commercial scup landings between 2010 and 2014 (NEFSC 2015). Eliminating the commercial minimum size and relying on trawl mesh specifications to limit mortality of smaller scup, as proposed by some advisors, could create enforcement challenges given that scup are targeted using other commercial gear types. The federal commercial and recreational minimum scup sizes are currently identical, which is generally considered beneficial from an equity and enforceability perspective (MAFMC 2015B). In December 2015 the Council and Board agreed with the Monitoring Committee's recommendation and chose not to modify the minimum commercial scup size. Staff recommend that this regulation remain unchanged in 2017.

### ***Commercial Trawl Mesh Size***

Trawl vessels which possess more than 500 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 2015 the Council recommended that the winter (i.e., May – October) possession limit for vessels using mesh smaller than 5.0 inches be increased from 500 to 1,000 pounds. NMFS published a proposed rule to implement this change on May 23, 2016. The Council agreed to modify this measure in recognition of the substantial increase in SSB and the expansion of age structure of the population since this measure was last modified in 2004. Staff recommend no additional changes to this measure for 2017.

### ***Commercial Pot and Trap Regulations***

NMFS Vessel Trip Report data show that less than 1% of the 2015 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. Staff recommend no changes to these measures for 2017.

### ***Recreational seasons, possession limits, and minimum size***

The Council and Board will review recreational measures for 2017 (i.e., the recreational scup season, possession limits, and minimum fish sizes) at their December 2016 meeting. Data from the first four "waves" (i.e., the two-month reporting increments for recreational data) of 2016 recreational landings are expected to be available in October 2016. 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 2017 recreational management measures at this time.

## **References**

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