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MEMORANDUM

DATE: July 8, 2014

TO: Chris Moore, Executive Director

FROM: Kiley Dancy, Staff

SUBJECT: Review of Scup Management Measures for 2015

Executive Summary

In 2012, three-year specifications were recommended for scup, establishing management measures for the 2013-2015 fishing years. Catch and landings limits are already in place for 2015 and may remain unchanged if the Scientific and Statistical Committee (SSC), Council, and ASMFC's Summer Flounder, Scup, and Black Sea Bass Board determine that the previously recommended Acceptable Biological Catch (ABC) for 2015 (33.77 mil lb; 15,320 mt) is still appropriate. Similarly, the Monitoring Committee will review recent fishery performance and make a recommendation to the Council and Board regarding any necessary modifications to the implemented 2015 commercial management measures.

Based on the latest stock assessment update in July of 2012, the scup stock is not overfished and overfishing is not occurring. The assessment model estimated spawning stock biomass (SSB) was 419.81 million lb (190,424 mt) in 2011 (207% of the biomass at maximum sustainable yield, SSB_{MSY}).

Staff recommends maintaining the specified ABC (33.77 mil lb) as the basis for management measures in 2015. This ABC resulted in a commercial Annual Catch Limit (ACL) of 26.34 million lb (11,950 mt), and a recreational ACL of 7.43 million lb (3,370 mt). Based on the recommendation of the Monitoring Committee, both the commercial Annual Catch Target (ACT) and the recreational ACT were set equal to their respective sector ACLs for 2015. Last year, the Council recommended that up to 3% of the commercial and recreational quotas be reserved for research set-aside (RSA) in 2015.[1] After adjusting for projected discards and 3% RSA, the 2015 commercial quota is 20.60 mil lb, and the recreational harvest limit is 6.60 mil lb (Table 1).

Staff does not recommend any changes to the current commercial minimum fish size (9 inch-TL), gear requirements, or possession limits.

[1]The Council is scheduled to have a separate discussion at the August 2014 meeting regarding the future of the RSA program.

Table 1: Current multi-year catch and landings limits for scup in 2014 and 2015. (Numbers may not add precisely due to rounding error.)

Management Measure	Current (2014)		2015		Basis
	mil lb.	mt	mil lb.	mt	
ABC	35.99	16,325	33.77	15,320	Projections
ABC Landings Portion	29.87	13,550	28.03	12,716	Projections
ABC Discards Portion	6.12	2,775	5.74	2,604	Projections
Commercial ACL (=ACT)	28.07	12,734	26.34	11,950	78% of ABC (per FMP)
Comm. discards (projected)	5.45	2,471	5.11	2,318	89% of ABC discards portion, based on 2009-2011 average % discards by sector
RSA deduction (3%)	0.68	308	0.64	289	3% of pre-RSA Comm. Quota
Commercial quota (adjusted)	21.95	9,955	20.60	9,343	Comm. ACT less discards and RSA
Recreational ACL (=ACT)	7.92	3,592	7.43	3,370	22% of ABC (per FMP)
Rec. discards (projected)	0.67	304	0.63	286	11% of ABC discards portion, based on 2009-2011 average % discards by sector
RSA deduction (3%)	0.22	99	0.20	93	3% of pre-RSA RHL
Recreational Harvest Limit (adjusted)	7.03	3,188	6.60	2,991	Rec. ACT less discards and RSA

Introduction

The Magnuson-Stevens Act (MSA) requires each Council's Scientific and Statistical Committee (SSC) to provide ongoing scientific advice for fishery management decisions, including recommendations for Acceptable Biological Catch (ABC), prevention of 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. In addition, the Monitoring Committees established by the Fishery Management Plan (FMP), are responsible for developing recommendations for management measures designed to achieve the recommended catch limits.

Multi-year specifications may be set for scup for up to three years at a time. For fishing year 2015, the SSC previously recommended an ABC for scup as part of the multi-year specifications setting process for the 2013-2015 fishing years. The SSC recommended an ABC that addresses scientific uncertainty, while the Monitoring Committee recommended an annual catch target (ACT) and management measures that address management uncertainty. Both the SSC and Monitoring Committee will review the measures currently implemented and determine if any changes may be warranted. Based on the SSC and Monitoring Committee recommendations, the Council will make a recommendation to the National Marine Fisheries

Service (NMFS) Greater Atlantic Regional Administrator, if changes to the specifications are believed to be warranted. Because the FMP is cooperatively managed with the Atlantic States Marine Fisheries Commission, the Commission's Summer Flounder, Scup, and Black Sea Bass Board will meet jointly with the Council to revisit scup management measures. In this memorandum, information is presented to assist the SSC and Monitoring Committee in developing recommendations for the Council and Board to consider for the 2015 fishing year for scup.

Additional relevant information about the fishery and past management measures is presented in the Fishery Performance Report for scup developed by the Council and Commission Advisory Panels, as well as in the corresponding Scup Information Document prepared by Council staff.

Catch and Landings Update

According to the Scup Data Update for 2014, commercial landings in 2013 were 17.88 mil lb (8,108 mt), and recreational landings were 5.34 mil lb (2,424 mt). The 2014 commercial landings as of the week ending April 27, 2014 indicate that 67% of the Winter I (January-April) quota had been landed. As of the week ending June 21, 2014, the coastwide landings report indicated that 32% of the Summer period quota has been landed (Table 2).

Table 2: The 2014 scup summer period quota and the amount of scup landed by commercial fishermen in the summer period, in each state as of week ending June 21, 2014.

State	Cumulative Landings (lb)[a]	2014 Summer Quota (lb)	Percent of Quota (%)	Set-Aside Landings (lb)
ME	0	--	--	0
NH	0	--	--	0
MA	343,241	--	--	267
RI	1,326,998	--	--	20,062
CT	82,542	--	--	0
NY	784,365	--	--	86,846
NJ	166,040	--	--	0
DE	1	--	--	0
MD	2,808	--	--	0
VA	29,924	--	--	0
NC	5,446	--	--	0
Other	0	--	--	0
Totals	**2,741,365**	**8,548,264**	**32**	**107,175**

[a] Quotas adjusted for research set-aside and overages. Source: NMFS Weekly Quota Report for week ending June 21, 2014.

Stock Status and Biological Reference Points

The most recent benchmark assessment on scup was peer-reviewed and accepted in December 2008 by the DPSWG Peer Review Panel. Documentation associated with this assessment and previous stock assessments, such as reports on stock status, including annual assessment and reference point update reports, Stock Assessment Workshop (SAW) reports, and Stock Assessment Review Committee (SARC) panelist reports, are available online at the NEFSC website: http://www.nefsc.noaa.gov/saw/.

The biological reference points for scup include a fishing mortality threshold of $F_{MSY} = F_{40\%}$ (as F_{MSY} proxy) = 0.177 and $SSB_{MSY} = SSB_{40\%}$ (as SSB_{MSY} proxy) = 202.92 million lb (92,044 mt; 2008 Data Poor Stock Working Group Peer Review Panel). The minimum stock size threshold, one-half SSB_{MSY}, is estimated to be 101.46 million lb (46,022 mt).

The July 2012 assessment update indicates that the scup stock is not overfished and overfishing is not occurring relative to the biological reference points. Fishing mortality in 2011 was estimated to be 0.034, below the fishing mortality threshold reference point (F_{MSY} = 0.177). SSB in 2011 was about 420 million lb (190,424 mt).

Regulatory Review

In July 2012, the SSC met to specify an ABC for scup for fishing year 2013, and to consider specifying multi-year ABCs for up to three years. The SSC recommended three-year ABCs for scup, for 2013, 2014, and 2015 based on a constant fishing mortality rate.

The overfishing limit (OFL) for 2013 was 47.80 million lb (21,680 mt), defined by the fishing mortality threshold of F=0.177 and projected biomass in 2013 (432.63 million lb, 196,236 mt; 212% of SSB_{MSY}). Based on the 2012 projected SSB/SSB_{MSY} = 212%, Council risk policy P* = 0.4, and a lognormal distribution with of CV = 100%, the SSC set an ABC of 38.71 million lb (17,557 mt) for 2013. A constant fishing mortality rate approach was applied to derive the ABCs for 2014 and 2015. The fishing mortality rate associated with the 38.71 mil lb (17,557 mt) removal in 2013 was 0.142. This rate, applied in 2014 and 2015, resulted in ABCs of 35.99 mil lb (16,325 mt) and 33.77 mil lb (15,320 mt), respectively.

In September 2013, the SSC reviewed the existing multi-year ABCs for scup and determined that available scientific evidence was not compelling enough to warrant a change to its ABC recommendations for 2014 and 2015.

The SSC considered scup to be a level 3 assessment, and considered the following to be the most significant sources of uncertainty:

- 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 (M) used in the assessment;
- Uncertainty in the stock status results from uncertainties in the estimates of both the stock's biomass and the biological reference point proxy used for F_{MSY};
- The SSC assumed that OFL has a lognormal distribution with a CV = 100%, based on a meta-analysis of survey and SCA accuracies;

- Recruitment appears high in recent years, but it is unclear how these recent high levels would compare to historical levels of recruitment;
- Survey indices are particularly sensitive to scup availability, which results in high inter-annual variability;
- Uncertainties resulting from the application of trawl calibration coefficients (ALBATROSS IV vs BIGELOW) and their influence on the selectivity pattern and results of the assessment; and
- The projection on which the ABC was determined was based on an assumption that the quota would be landed in 2012, 2013, and 2014.

Management measures in the commercial fishery other than quotas and harvest limits (i.e., minimum fish size, GRAs, etc.) have remained generally constant in recent years with the exception of the increase in the Winter I possession limit from 30,000 lb in 2011 to 50,000 lb in 2012, and the increase in the Winter II possession limit from 2,000 lb in 2013 to 12,000 lb in 2014.

Basis for 2014 and 2015 ABC Recommendation

Input from the Council's Visioning and Strategic Planning processes as well as from the Advisory Panel Fishery Performance Reports highlight stakeholder interest in increasing the stability of fishery management measures. Multi-year specifications were set for scup from 2013-2015, with the understanding that recent fishery data would be reviewed in interim years to identify any potentially critical issues in the fishery or problems with maintaining the implemented measures. Available data described in this memo as well as in the staff Fishery Information Document, the Advisory Panel Fishery Performance Report, and the Scup Data Update for 2014 do not suggest any major issues that would necessitate revising the current measures. Therefore, staff recommends scup catch limits and commercial management measures remain unchanged from those previously specified for 2015.

Other Management Measures

Recreational and Commercial ACLs

The acceptable biological catch (ABC) ABC is equivalent to the total allowable catch (TAC) and the sum of the commercial and recreational ACL equals the ABC (Figure 1).

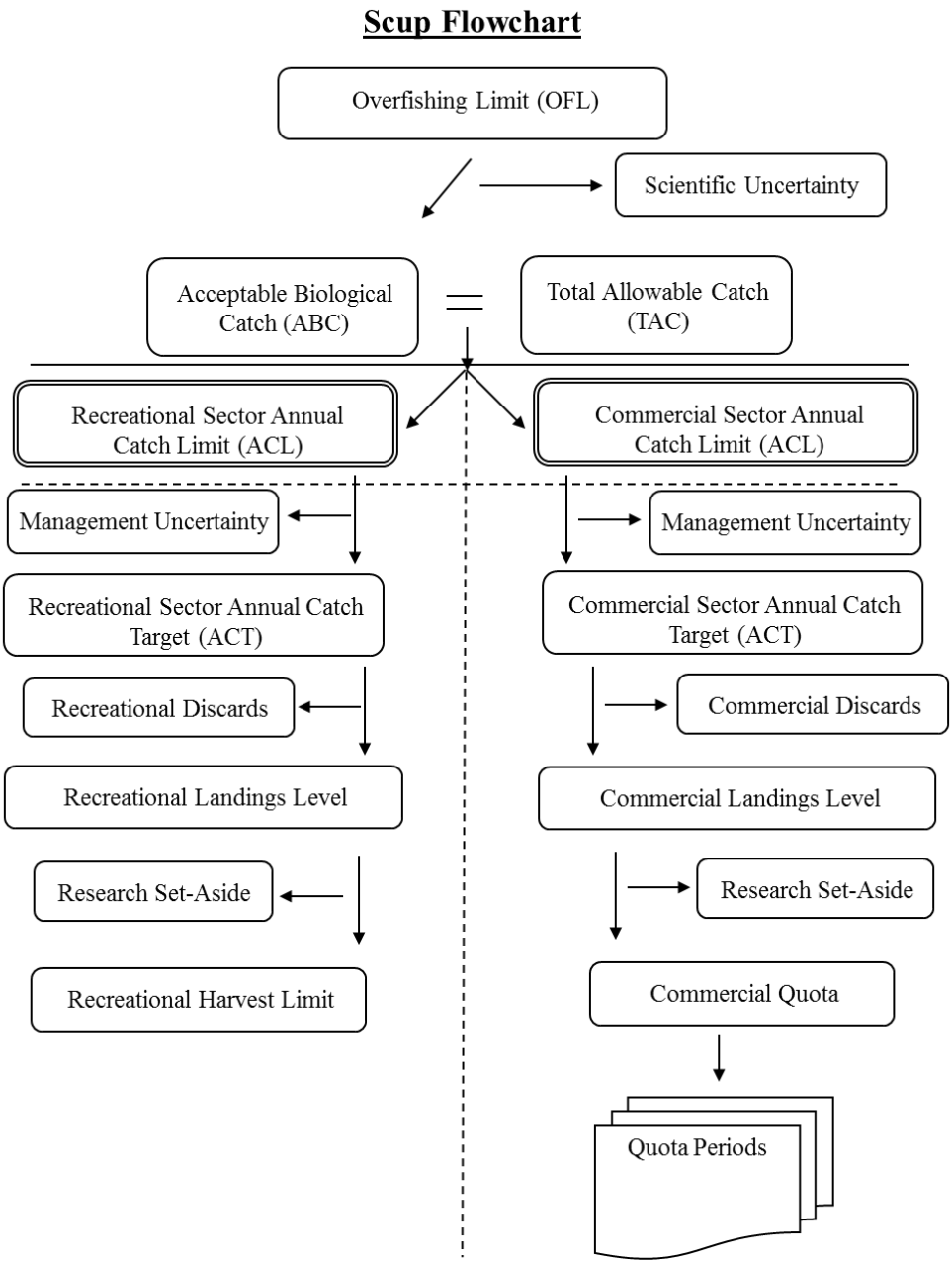

Figure 1: Flowchart for scup catch and landings limits.

The ABCs in place are comprised of both landings and discards. Based on the allocation percentages in the FMP, 78% of the catch is allocated to the commercial fishery, and 22% to the recreational. Discards were apportioned based on the contribution from each fishing sector using the 2009-2011 average ratios; 89% of the dead discards are attributable to the commercial fishery, 11% to the recreational (Table 1).

Annual Catch Targets

The Scup Monitoring Committee is responsible for recommending ACTs for the Council to consider. The relationship between the recreational and commercial ACTs and other catch components are given in Figure 1. The Monitoring Committee may provide other recommendations relevant to setting catch limits consistent with the MSA. The Monitoring Committee is responsible for considering all relevant sources of management uncertainty in the scup fishery and providing the technical basis, including any formulaic control rules, for any reduction in catch when recommending an ACT. The ACTs, technical basis for ACT recommendations, and sources of management uncertainty would be described and provided to the Council.

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 bycatch) or because of a lack of management precision (i.e., the ability to constrain catch to desired levels).

The recent year sector-specific landings performance indicates that although the recreational fishery had previously been exceeding the recreational harvest limits, in the three years following significant quota increases, the recreational fishery has been well under the harvest limits. The commercial fishery similarly has been well under the commercial quotas in recent years (Table 3). Staff recommends no modifications to the current ACTs, which are set equal to the sector-specific ACLs for 2015.

Table 3: Scup commercial and recreational fishery performance relative to quotas and harvest limits, 2009-2013.

Year	Commercial Landings (mil lb)	Commercial Quota (mil lb)	Percent Overage(+)/ Underage(-)	Recreational Landings (mil lb)	Recreational Harvest Limit (mil lb)	Percent Overage(+)/ Underage(-)
2009	8.20	8.37	-2%	2.94	2.59	+14%
2010	10.73	10.68	0%	5.74	3.01	+91%
2011	15.03	20.36	-26%	3.66	5.74	-36%
2012	14.88	27.91	-47%	4.17	8.45	-51%
2013	17.88	23.53	-24%	5.34	7.55	-29%
5-yr Avg.	-	-	-20%	-	-	-2%

Commercial Quotas and Recreational Harvest Limit

The catch-based allocations (i.e., 78% commercial, 22% recreational) were maintained in the calculation of the sector-specific ACLs and ACTs such that the sum of the sector-specific TALs (total allowable landings) is equal to overall TAL (Table 1). Based on the implemented ACLs and ACTs given above and a 3% research set-aside deduction, the adjusted commercial quota in 2015 is 20.60 million lb (9,343 mt), and the adjusted recreational harvest limit is 6.60 million lb (2,991 mt).

The commercial quota is divided into three periods. These are Winter I (January-April; 45.11%), Summer (May-October; 38.95%), and Winter II (November-December; 15.94%). Therefore, the current

period quotas for 2014 are 9.29 million lb (4,214 mt) for Winter 1, 8.02 million lb (3,638 mt) for Summer, and 3.28 million lb (1,465 mt) for Winter II.

Specific management measures that will be used to achieve the harvest limit for the recreational fishery in 2015 will not be determined until after the first four waves of 2014 recreational landings are reviewed. These data will be available in October of 2014. The Monitoring Committee will meet in November to review these landings data and make recommendations regarding any necessary changes in the recreational management measures (i.e., possession limit, minimum size, and season). Given the performance of the recreational fishery relative to the recreational harvest limit in recent years, management measures (i.e., minimum size, possession limits, and seasons) should be implemented that are designed to achieve the recreational ACT while preventing the recreational ACL from being exceeded.

Possession Limits

The Winter I possession limit for 2014 is 50,000 lb, until 80 percent of the landings are reached, at which point the possession limit drops to 1,000 lb. This possession limit was first put in place in 2012, and represented an increase from the 2011 Winter I possession limit of 30,000 lb.

Effective in 2014, the Winter II possession limit has been increased to 12,000 lb, from the previous Winter II possession limit of 2,000 lb. This is an initial possession limit that increases if a transfer of quota occurs between Winter I and Winter II. In that case, the Winter II possession limit increases at 1,500 lb intervals for every 500,000 lb of scup transferred, i.e., if 1.0 million lb is transferred then the limit would be increased by 3,000 lb to result in a 15,000 lb possession limit. The possession limits were chosen as an appropriate balance between the economic concerns of the industry (i.e., landing enough scup to make the trip economically viable) and the need to ensure the equitable distribution of the quota over the period. Table 3 in the Advisory Panel Information Document summarizes the results of a threshold analysis giving the total number of vessels, trips, and landings for a given threshold (pounds of scup) in both winter periods of 2011-2013, as well as Winter I for 2014. These data indicate that since the implementation of the increased Winter I trip limit in 2012, there has been a moderate, steady increase in the number of trips and the number of associated pounds landed above the 30,000 lb threshold. However, trips landing scup in excess of 30,000 lb continue to comprise a very small percentage of overall trips in Winter I (0.3% of Winter I trips in 2013, and 0.4% of Winter I trips in 2014). The increased trip limit for the Winter II period was implemented in May 2014 and will be in place for Winter II in 2014. Based on this analysis, staff recommends no changes in possession limits in Federal waters.

Table 4 in the Scup AP Information Document gives commercial scup landings, ex-vessel value, and average price per pound, by period, for 2007 to 2013. A price-volume relationship for scup was described in Amendment 14 to the FMP. The increase in commercial supply in 2010 in response to less restrictive quotas may have driven the slight decrease in price in 2010. As such, managers should consider the potential impacts of changes in volume on price in the commercial fishery.

Commercial Gear Regulations and Minimum Fish Size

Amendment 8 to the Summer Flounder, Scup, and Black Sea Bass FMP contains provisions that allow for changes in the minimum fish size and minimum net mesh. Current commercial regulations for scup require a 9 inch-TL minimum fish size in the commercial fishery and the following gear requirements for

otter trawls: minimum mesh size of 5 inch for the first 75 meshes from the terminus of the net and for codends constructed with fewer than 75 meshes, a minimum mesh size of 5 inch throughout the net. The threshold level used to trigger the minimum mesh requirements is 500 lbs of scup from November 1 through April 30 and 200 lb or more of scup from May 1 through October 31. In 2005, the Scup Monitoring Committee reviewed information on discards and did not recommend changes to the regulations. Recent discard estimates have remained substantially lower than the large discard event in 2002 which occurred prior to the implementation of the current regulations. Therefore, staff does not recommend a change in the gear requirements for otter trawls.

In 2012, industry members proposed a reduction in the minimum fish size to 8 inch-TL. Staff remains concerned that a drop in the minimum fish size would reduce yields and spawning potential if smaller fish are targeted. In 2005, staff provided a supplemental memo that reviewed the available information on scup maturity, mesh selectivity, and discards. This information was reviewed and at the time, the Monitoring Committee did not recommend any changes based on this information. In 2012, the Monitoring Committee commented that a reduction to 8 inches would be unlikely to have a considerable impact on the assessment and spawning capacity, however, concerns remained at the Monitoring Committee and Council levels regarding the lack of discard data for the pot/trap and hook and line fisheries, potential for reduced spawning capacity, and possible increased targeting of smaller scup. As such, staff recommends no changes to the minimum fish size and net mesh requirements.

Gear Restricted Areas (GRAs)

Gear restricted areas (GRA) were implemented by NMFS in 2000 to reduce discards of scup in small mesh fisheries. The scup GRAs were originally implemented and previously modified through the specifications process. In 2000, they were modified in size to include areas farther south that were identified as areas of potential scup and *Loligo* interactions, and in 2005, the boundary of the southern GRA was moved 3 longitudinal minutes to the west based on recommendations from the Monitoring Committee. No modifications were made to the GRAs in 2006 through 2013. As described in Amendment 14 to the Summer Flounder, Scup, and Black Sea Bass FMP, modifications to scup GRAs must be done through a Framework Adjustment. In 2013, the Council initiated a Framework Adjustment to analyze potential modifications to the GRAs. Action on this Framework has been postponed until completion of the Council's Deep Sea Corals amendment due to potentially conflicting alternatives currently contained in each action.

Pots and Traps Escape Vents

Current regulations require a circular escape vent of 3.10 inch, a square escape vent of 2.25 inch, or a rectangular escape vent of an equivalent size. A Council and Commission sponsored workshop in 2005 reviewed several vent size studies and did not make any recommendations for changes as they relate to scup. Therefore, staff recommends no changes to escape vent size requirements in scup pots.