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MEMORANDUM

DATE: July 20, 2012

TO: Chris Moore, Executive Director

FROM: Jessica Coakley and Kiley Dancy, Staff

SUBJECT: Scup Management Measures for 2013, 2014, 2015

Executive Summary

Based on the July 2012 assessment update, the scup stock is not overfished and overfishing is not occurring. The ASAP model estimated spawning stock biomass (SSB) was 420.0 million lb (190,424 mt) in 2011 (207% of the biomass at maximum sustainable yield, SSB_{MSY}). Staff recommends scup specifications be set for 3 years (2013, 2014, 2015), and that the acceptable biological catch (ABC) and associated catch limits be held constant for that period. Based on updated projections for scup and the Council risk policy on overfishing a "typical" stock, the staff recommendation for ABC is 38.71 million lb (17,557 mt) for 2013, 2014, and 2015. The staff recommend a commercial ACL and recreational ACL of 30.19 mil lb (13,694 mt) and 8.52 mil lb (3,863 mt), respectively. Staff also recommend a commercial annual catch target (ACT) of 30.19 million lb (13,694 mt), a commercial quota less 3% research set-aside (RSA) of 23.53 million lb (10,671 mt), a recreational ACT of 7.24 million lb (3,283 mt), and a recreational harvest limit less 3% RSA of 6.42 million lb (2,911 mt), for 2013, 2014, and 2015. Staff do not recommend any change to the current minimum fish size (9 inch-TL), gear requirements, possession limits, or gear restricted areas (GRAs). Staff recommend up to 3% of the total allowable landings (TAL) be made available to the RSA Program.

Introduction

The Magnuson-Stevens Act (MSA) requires each Council's Scientific and Statistical Committee (SSC) to provide, among other things, ongoing scientific advice for fishery management decisions, including recommendations for ABC, preventing overfishing, and 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 fishery management plan (FMP) established Monitoring Committees which develop recommendations for management measures designed to achieve the recommended catch limits. The SSC will recommend an ABC for scup that addresses scientific uncertainty and the Monitoring Committee will focus on recommending measures to address management uncertainty (ACTs). Based on the SSC and Monitoring Committee recommendations, the Council will make a recommendation to the National Marine Fisheries Service (NMFS) Northeast Regional Administrator. 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 recommend 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 2013, 2014, and 2015 fishery 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

Based on the assessment update, the 2011, commercial and recreational landings were 15.03 million lb (6,817 mt) and 3.66 million lb (1,660 mt), respectively. The 2012 commercial landings as of the week ending July 14, 2012, indicate that 23% of the summer period quota has been landed (Table 1).

Table 1. The 2012 scup summer period quota and the amount of scup landed by commercial fishermen in the summer period, in each state as of week ending July 14, 2012.

| State | Commercial Summer Period | | | Research |
|---------------|---------------------------------------|-------------------------------------|----------------------|--------------------------------------|
| | Cumulative Landings (lb) ^a | 2012 Summer Quota (lb) ^b | Percent of Quota (%) | Set-Aside Landings (lb) ^a |
| ME | 0 | | | 0 |
| NH | 0 | | | 0 |
| MA | 586,045 | | | 747 |
| RI | 945,752 | | | 0 |
| CT | 129,905 | | | 3,463 |
| NY | 785,785 | | | 134,810 |
| NJ | 6,503 | | | 0 |
| DE | 1 | | | 0 |
| MD | 0 | | | 0 |
| VA | 543 | | | 0 |
| NC | 0 | | | 0 |
| Other | 0 | | | 0 |
| Totals | 2,454,534 | 10,870,390 | 23 | 139,020 |

^a Quotas adjusted for research set-aside and overages. Source: NMFS Weekly Quota Report for week ending July 14, 2012.

Regulatory Review

In October of 2011, after the Council had taken action to recommend scup specifications for 2012, a new scup stock assessment update became available from the Northeast Fisheries Science Center. Given

this new information, the SSC and the Monitoring Committee were asked to reconsider their recommendations for 2012. While the biological reference points remained unchanged, the overfishing limit was reduced by 24% to 50.48 million lbs (22,897 mt). This was based on the 2011 projected $B/B_{msy} > 1$, Council risk policy $P^* = 0.4$, and a lognormal distribution with of $CV = 100\%$. The associated 2012 commercial quota was 27.91 million lb (12,660 mt) and the recreational harvest limit was 8.45 million lb (3,833 mt).

At the July 2011 meeting, the SSC considered scup to be a level 3 assessment (based on the control rules in the proposed Omnibus Amendment), and considered the following to be the most significant sources of uncertainty: although older age scup (age 3+) are represented in the catch used in the assessment model, ages 3+ are not represented in the survey data that were used as input to the model; commercial discard estimates are imprecise and represent a considerable portion of the total catch; uncertainty exists with respect to the estimate of natural mortality (M) used in the assessment; uncertainty in the stock status due to uncertainties in the estimates of both the stock's biomass and the biological reference points; the assessment does not contain a characterization of uncertainty for the OFL and other biological reference points; 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; and concern about the application of trawl calibration coefficients (ALBATROSS IV vs BIGELOW) and their influence on the selectivity pattern and results of the assessment.

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 increase from 30,000 lb in 2011 to 50,000 lb in 2012.

Biological Reference Points

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) = 202.9 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 101.5 million lb (46,022 mt).

Stock Status and Projections

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 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). Projections indicate that if the stock is fished at the fishing mortality threshold

of $F_{MSY} = F_{40\%}$ (as F_{MSY} proxy) = 0.177 in 2013, median landings are projected to be 39.641 million lb (17,981 mt), with median discards of 8.203 million lb (3,721 mt), and median total catch 47.796 million lb (21.680 mt). This projected median total catch is equivalent to the Overfishing Limit (OFL) for 2013, and is greater than the MSY of 35.629 million lb (16,161 mt).

Basis for 2013, 2014, and 2015 ABC Recommendation

Input through the Council's Visioning process and Fishery Performance Reports prepared by the Advisory Panel highlight stakeholder interest in having stable fishery management measures; therefore, staff recommends scup specifications be set for 3 years, 2013, 2014, and 2015. Staff recommends that the 2013 ABC be applied to 2014 and 2015 as well. A 3-year constant catch (ABC) approach should provide a more conservative and stable method for setting multi-year ABCs, when compared to setting increasing or decreasing ABCs over the period in response to changes in projected F and SSB.

The recommended OFL for 2013 of 47.796 million lb (21.680 mt) is defined by the fishing mortality threshold of $F=0.177$ and projected biomass in 2013 (432.0 million lb, 196,236 mt; 212% of SSB_{MSY}). It is clear that recommendations for ABC, which would equal the OFL, would not account for any scientific uncertainty associated with estimation of OFL and the assessment of the scup stock. Last year, the SSC classified the scup assessment as level 3 and applied the Council risk policy for a typical stock using a lognormal OFL distribution with a CV equal to 100%. Staff recommend the same approach be applied to derive the 2013 ABC, and that the same ABC be utilized for 2014 and 2015. Based on the 2012 projected $SSB/SSB_{MSY} = 212\%$, Council risk policy $P^* = 0.4$, and a lognormal distribution with of $CV = 100\%$, the staff recommend an ABC of 38.71 million lb (17,557 mt) for 2013, 2014, and 2015 (Table 2). This ABC is about 81% of the OFL. Based on projections at this ABC for 2013, the stock is expected to continue to grow to a 2013 SSB of 482.8 million lb (219,000 mt) with a 2013 $F=0.142$. Applying this same ABC to 2014 and 2015 would not be expected to result in overfishing of the stock given the current stock conditions.

Other Management Measures

Recreational and Commercial ACLs

In the Omnibus Amendment, $ABC=TAC$ and the sum of the commercial and recreational ACL equals the ABC (Figure 1).

Scup Flowchart

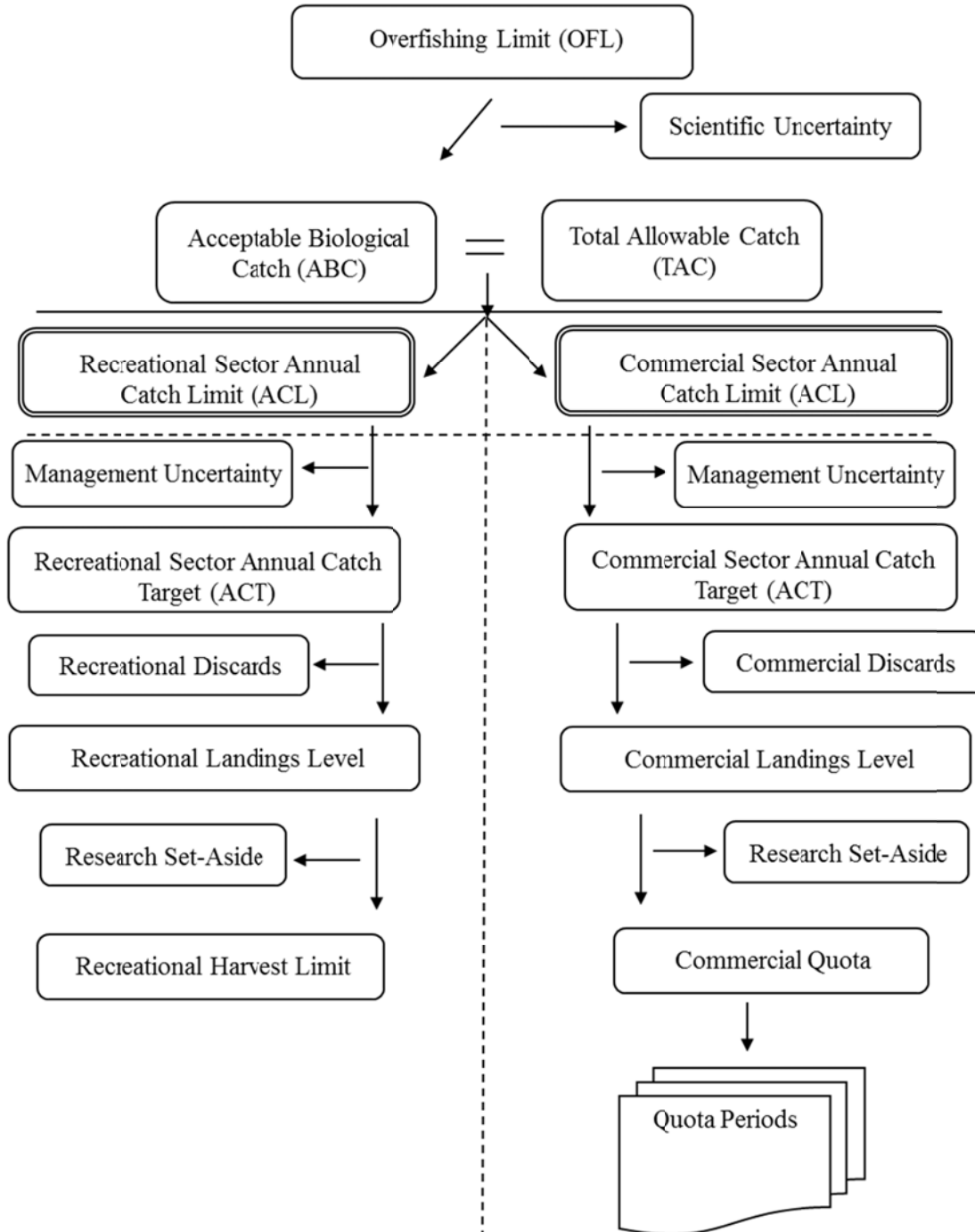


Figure 1. Scup catch and landings limits.

An ABC of 38.71 million lb (17,557 mt) is 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 are 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 2. Allocation of the scup ABC to the commercial and recreational ACLs for 2013, 2014, and 2015 (Staff recommended).

| | Catch (Landings + Discards) | Landings Portion | Discards Portion |
|-------------------------|--|--------------------------|-------------------------|
| ABC | 38.71 mil lb (17,577 mt) | 32.04 mil lb (14,532 mt) | 6.67 mil lb (3,025 mt) |
| Recreational ACL | 8.52 mil lb (3,863 mt) | 7.78 mil lb (3,531 mt) | 0.73 mil lb (332 mt) |
| Commercial ACL | 30.19 mil lb (13,694 mt) | 24.25 mil lb (11,001 mt) | 5.94 mil lb (2,693 mt) |

Considerations for ACTs

As described in the Omnibus Amendment, the Scup Monitoring Committee will be responsible for recommending ACTs for the Council to consider. The relationship between the recreational and commercial ACTs, and other catch components (current and proposed) are given in Figure 1. The Committee may provide other recommendations relevant to setting catch limits consistent with the MSA. The Monitoring Committee can consider all relevant sources of management uncertainty in the scup fishery and provide the technical basis, including any formulaic control rules, for any reduction in catch when recommending an ACT. The ACTs, technical basis, and sources of management uncertainty would be described and provided to the Council for consideration. 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 the recreational fishery had been somewhat variable in its performance relative to the harvest limits (Table 3). The proportional standard error on coastwide scup recreational catch (based on MRIP) is 15%. Because this serves as an indicator of the variability of the data, staff recommend an 15% reduction in catch from the recreational ACL to address potential imprecision in observed catch estimates relative to the catch target for 2013. This would result in a recreational ACT of 7.24 million lb (3,283 mt). The staff recommend the commercial ACL equal the commercial ACT because of the performance of commercial fishery and quota monitoring systems in place.

Table 3. Scup commercial and recreational fishery performance relative to quotas and harvest limits, 2007-2011.

| Year | Commercial Landings (mil lb) | Commercial Quota (mil lb) | Percent Overage(+)/ Underage(-) | Recreational Landings (mil lb) | Recreational Harvest Limit (mil lb) | Percent Overage(+)/ Underage(-) |
|------------------|------------------------------|---------------------------|---------------------------------|--------------------------------|-------------------------------------|---------------------------------|
| 2007 | 9.25 | 8.90 | +4% | 4.60 | 2.74 | +67% |
| 2008 | 5.18 | 5.24 | -1% | 3.76 | 1.83 | +105% |
| 2009 | 8.19 | 8.37 | -2% | 3.23 | 2.59 | +14% |
| 2010 | 10.70 | 10.68 | 0% | 5.99 | 3.01 | +91% |
| 2011 | 15.03 | 20.36 | -26% | 3.60 | 5.74 | -36% |
| 5-yr Avg. | - | - | -5% | - | - | +67% |

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 (commercial and recreational landings levels) will be equal to overall TAL (Table 2). Based on the staff recommended ACTs given above and a recommended 3% research set-aside deduction, the commercial quota is 23.53 million lb (10,671 mt) and the recreational harvest limit is 6.42 million lb (2,911 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 period quotas based on the staff recommended commercial quota, would be 10.61 million lb (4,814 mt) for Winter I, 9.16 million lb (4,156 mt) for Summer, and 3.75 million lb (1,701 mt) for Winter II.

Specific management measures that will be used to achieve the harvest limit for the recreational fishery in 2013 will not be determined until after the first four waves of 2012 recreational landings are reviewed. These data will be available in October 2012. The Monitoring Committee will meet in November 2012 to review these landings data and make recommendations regarding changes in the recreational management measures (i.e., possession limit, minimum size, and season). The Committee may also meet in November 2013 and 2014 to recommend adjustments to recreational measures for the 2014 and 2015 fishing years. 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 2012 is 50,000 lb, until 80 percent of the landings are reached, at which point the possession limit drops to 1,000 lb. This was an increase from the 2011 Winter I possession limit of 30,000 lb. A possession limit of 2,000 lb is used in Winter II, unless 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 5,000 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, as well as Winter I for 2012. These data indicate that the overall number of trips taken in Winter I of 2012 increased relative to 2011. The increase is primarily in trips landing less than 500 lb of scup. Based on this analysis, staff recommend 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 2006 to 2011. 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.

Gear Regulations and Minimum Fish Size - Commercial Fishery

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 do not recommend a change in the gear requirements for otter trawls.

Industry members have argued that the minimum fish size should be reduced to 8 inch-TL. Staff is concerned that a drop in the minimum fish size would reduce yields and spawning potential if fishermen target smaller fish. In 2005, staff provided a supplemental memo that reviewed the available information on scup maturity, mesh selectivity, and discards. This information was reviewed and the monitoring committee did not recommend any changes based on this information. As such, staff recommend 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. GRAs became effective on November 1, 2000 for the northern area with an exemption for herring fishery. The GRAs were modified in size in late December, 2000 to include areas farther

south that were identified as areas of potential scup and *Loligo* interactions. Mackerel and herring small mesh fisheries were exempt from the regulations. Based on recommendations from the Monitoring Committee, the boundary of the southern GRA was moved 3 longitudinal minutes to the west in 2005. No modifications were made to the GRAs in 2006 through 2012. As stated in Amendment 10 to the Squid, Mackerel, Butterfish FMP, “During 1997-2000, the *Loligo* fishery was responsible for the following discards in terms of the percentage of all Northeast Fishery Observer Program (NEFOP) discards: butterflyfish- 56%, **scup- 78%**, silver hake- 69%, red hake- 48%, spiny dogfish- 12% and little skates- 3%. More recently (and since implementation of the Scup GRAs) during 2001-2006, the *Loligo* fishery was responsible for the following discards in terms of the percentage of all NEFOP Discards: butterflyfish- 68% , **scup- 8%** , silver hake- 56% , red hake- 31% , spiny dogfish- 10% and little skates- less than 1%.” Therefore, staff recommend no changes in the GRAs.

Pots and Traps Escape Vents

Current regulations require a circular escape vent of 3.1 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 which reviewed several vent size studies did not make any recommendations for changes in vent size as they relate to scup. Therefore, staff recommend no changes to escape vent size requirements in scup pots.