2002 REVIEW OF THE ATLANTIC STATES MARINE FISHERIES COMMISSION FISHERY MANAGEMENT PLAN

SCUP *(Stenotomus chrysops)*

Prepared by:

Michael Lewis

Scup Plan Review Team

Robert Beal, (ASMFC), Chairman

Mike Armstrong, MA

Bill Figley, NJ

John Mason, NY

Chris Moore, MAFMC

David Simpson, CT

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2002 Review of the Atlantic States Marine Fisheries Commission Fishery Management Plan for Scup

I. Status of the Fishery Management Plan

Commission management of scup was initiated as one component of a multi-species FMP addressing summer flounder, scup and black sea bass. In 1990, summer flounder was singled out for immediate action under a joint ASMFC and Mid-Atlantic Fishery Management Council Plan. Further action on the scup-black sea bass plan was delayed to expedite the summer flounder FMP and a series of amendments that followed. In 1993 the Commission and Council resumed work on a joint scup FMP. The Commission approved the Fishery Management Plan for Scup in March 1996. Amendment 12 to the Summer Flounder, Scup, and Black Sea Bass FMP, which established revised overfishing definitions, identification and description of essential fish habitat, and defined the framework adjustment process, was approved by the Commission in October 1998.

The FMP includes a seven-year plan for reducing fishing effort and restoring the stock. The primary concerns are excessive discarding of scup and near collapse of the stock. Management measures implemented in the first year of the plan (1996) included: dealer and vessel permitting and reporting, 9" commercial minimum size, 4" mesh restriction for vessels retaining over 4,000 pounds of scup, and a 7" recreational minimum size. The biological reference point to define overfishing is Fmax, defined as F=0.25. To provide management flexibility for addressing unforeseen conditions in the fishery, the plan contains framework provisions that allow implementation of time and area closures. Changes in the recreational minimum size and bag limit, or implementation of a seasonal closure, may also be established on an annual basis. Amendment 12 to the multi-species management plan changed the overfishing definition, with Fmax serving as a proxy for Fmsy. Under current stock conditions Fmax is 0.26.

A coastwide Total Allowable Catch (TAC) was implemented in the second year of the plan (1997). The Commission and Council developed a procedure for management and distribution of the coastwide commercial quota during 1996. The quota management protocol is detailed in Addendum 1 to the Scup FMP, approved in September 1996.

Addendum 1 to the Scup FMP details the state-by-state quota system for the summer period (May through October) that was implemented in 1997. Each state receives a share of the summer quota based on historical commercial landings from 1983-1992. In June 1997, the Commonwealth of Massachusetts filed a lawsuit against the Secretary of Commerce stating that the historical data used to determine the quota shares underestimate the commercial landings of scup. Massachusetts also stated that the resulting quota share discriminated against residents of the Commonwealth. On April 27, 1998, the U.S. District Court voided the state-by-state quota allocations for the summer quota period in the federal fishery management plan, and ordered the Secretary of Commerce to promulgate a regulation which sets forth state-by state quotas in compliance with the National Standards. This court order does not technically affect the state-by-state quota allocations that are included in the ASMFC Addendum 1 to

the Scup FMP. The Summer Flounder, Scup, and Black Sea Bass Management Board have developed three Emergency Rules to address the quota management during the summer quota period during 1999, 2000 and 2001.

Amendment 12 to the Summer Flounder, Scup and Black Sea Bass FMP established a biomass threshold for scup based on the maximum value of the 3-year moving average of the NEFSC spring bottom trawl survey index of spawning stock biomass – 2.77 kg/tow, 1977-1979. The scup stock is overfished when the spawning stock biomass index falls below this value. Amendment 12 also defined overfishing for scup to occur when the fishing mortality rate exceeds the threshold fishing mortality of Fmax=0.26.

In 2002, the Board developed Addendum V to the FMP in order to avoid the necessity of developing annual Emergency Rules for summer period quota management. This addendum established state shares of the summer period quota based on historical commercial landings from 1983-1992, including additional landings from Massachusetts added to the NMFS database in 2000. State shares implemented by this addendum will remain in place until the Board takes direct action to change them.

Another significant change to scup management occurred with the approval of Addendum VII in February 2002. This document established a state specific management program for the 2002 recreational scup fishery based on the average landings (in number of fish) for 1998-2001. Only Massachusetts through New York (inclusive) were permitted to develop individual management programs. Due to the extremely limited data available, the Board developed specific management measures for the states of New Jersey, Delaware, Maryland, Virginia and North Carolina. This addendum has no application beyond 2002.

States with a declared interest in the Scup FMP are Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, and North Carolina. The Commission's Summer Flounder, Scup, and Black Sea Bass Management Board serves as the species management board, and the Demersal Species Committee guides plan development for the MAFMC. Technical issues are addressed by the Summer Flounder, Scup, and Black Sea Bass Technical Committee, Industry advice is solicited through the Scup and Black Sea Bass Advisory Panel, and annual review and monitoring is the responsibility of the Scup Plan Review Team.

II. Status of the Stock

Scup were assessed at the 35th Northeast Regional Stock Assessment Workshop (31st SAW) in June 2002. That assessment indicated that scup are no longer overfished but that "stock status with respect to overfishing cannot currently be evaluated." The SARC also concluded that, although the "relative exploitation rates have declined in recent years, the absolute value of F cannot be determined." However, they did indicate that " survey data indicate strong recruitment and some rebuilding of age structure" in recent years.

State and federal survey indices for scup indicate an increase in stock abundance in recent years. The NEFSC spring survey results indicate that spawning stock biomass has increased each year since 1998; the estimate for 2001 (3 year average) is 3.2 kg/tow, or about 15% above the biomass threshold of 2.77 kg/tow. The 2002 winter survey was also at an all time high, contributing to a 2002 estimate 374% abovethe 2001 value. In addition, the NEFSC autumn trawl survey indicates that strong year classes were produced from 1999-2001. The predominance of

the 2000 year class is also evident in several of the state surveys. It is important to note that estimates of fishing mortality rates for scup are uncertain. The 31st SARC conducted several analyses indicating that F was at least 1.0 for ages 0-3 scup throughout the 1984 – 2000 time series. SARC 31 could not estimate F's on older fish because they are not well represented in the surveys. Although the magnitude of the current mortality rates is unknown, relative exploitation rates have changed over the period. Relative exploitation rates based on total landings and the spring survey suggest a general increase in exploitation from 1981 to 1995. Since then, relative exploitation rates have declined; the 2001 value is about 5% of the 1997 value.

III. Status of the Fishery

The reduced landings of scup in recent years reflects low stock abundance and effect of quota management. The 1998 total landings of just over 5 million pounds is the lowest in the 1981-1999 time series. Total landings have increased slightly each year to about 8.2 million pounds in 2001. The 2001 commercial landings of 3.8 million pounds were only about 8% of the over 48.5 million pound peak observed in 1960. In past years Rhode Island and New Jersey have harvested the largest share of the total commercial landings of scup

The recreational fishery for scup is significant; recreational fishermen accounted for 17 to 67% of total annual catches from 1985–2001. Recreational fishermen caught 1.8 million pounds of scup in 1999, more than two times 1998 landings. Landings tripled to 5.4 million pounds in 2000, decreasing to 4.2 million pounds in 2001. Most recreational landings come from state waters. By state, anglers in New York, Rhode Island and Connecticut caught the greatest proportion of scup in 2001.

IV. Status of Assessment Advice

A quantitative assessment for the scup stock has not been conducted. The most recent quantitative assessment was attempted by the SAW-31 SARC. The 31st SAW rejected an exploratory VPA and the exploratory ASPIC run due to input data inadequacies. Major uncertainties in estimating total catch, primarily associated with commercial discards, continued to preclude an analytical stock assessment for scup during the 35th SAW in June 2002. As a result, the 35th SARC was unable to develop an absolute value for fishing mortality. Management advice from the SAW was based on an extremely high survey observation in 2002 and uncertainty associated with commercial discards.

V. Status of Research and Monitoring

Commercial landings data are collected by the NMFS Vessel Trip Report system and by state reporting systems. Commercial discard information is collected by the NEFSC sea sampling program. Biological samples (age, length) of the commercial fishery are collected through NEFSC weighout system and by the state of North Carolina. Recreational landings and discard information is obtained through the Marine Recreational Fisheries Statistics Survey. Length frequency information for the recreational fishery was collected by the Commonwealth of Massachusetts in 2001 as part of a federally funded effort to monitor the recreational and commercial directed fisheries. One non-directed fishery assumed to have substantial scup bycatch was also monitored. This monitoring

effort decreased substantially in 2002 as the study received funding for one year. Fishery independent abundance indices are available from surveys conducted by the NEFSC, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and the Virginia Institute of Marine Science.

VI. Management Measures and Developing Issues

The FMP establishes a 7 year program to reduce exploitation on scup and restore the stock. It also specifies minimum size requirements and commercial gear restrictions including minimum mesh size, maximum roller diameter, and pot and trap degradable fastener and escape vent provisions. Commercial operator, vessel and dealer reporting and permitting requirements are included in the FMP. Seasonal and area closures could be implemented in the future under framework provisions.

Addendum 1 to the Scup FMP specifies the commercial quota management scheme. The annual coastwide quota is divided among three periods. The Winter I period is January through April, the summer period is May through October, and November and December make up Winter II. During the winter periods the quota is available coastwide and is limited through trip limits. The summer allocation is divided into state shares. When a winter period allocation is landed the states and the NMFS must prohibit landings. When a state lands it summer allocation it is expected to close its fishery and the NMFS will close that state for landings by federally permitted vessels. The quota, as well as accompanying trip limits, will be set annually. [Note: The Federal FMP currently contains a coastwide commercial quota during the summer period due to the court decision described in Section I]

Scup FMP Compliance Criteria:

COMMERCIAL FISHERY

The following management measures may change annually. 2002 requirements are indicated

Minimum size of possession: 9”
Minimum mesh and threshold: for large nets, no more than 25 meshes of 4.5 inch mesh in the codend, with at least 100 meshes f 5.0 inch mesh forward of the 4.5 inch mesh; and for small nets with codends (including an extension) less than 125 meshes, the entire net must have 4.5 inch mesh or larger throughout after 500 pounds in the winter period and 100 pounds in the summer
Maximum roller rig trawl roller diameter: 18”
Pot and trap escape vents: 3.1” round, 2.25” square
Pot and trap degradable fastener provisions: a) untreated hemp, jute, or cotton string 3/16” (4.8 mm) or smaller; b) magnesium alloy timed float releases or fasteners; c) ungalvanized, uncoated iron wire of 0.094” (2.4mm) or smaller
Commercial quota: 7.32 million pounds
Winter I and II landing limits I = 10,000 pounds, 1,000 @ 80%
II = 2,000 pounds

The Summer Flounder, Scup, and Black Sea Bass Management Board passed, and the Mid-Atlantic Fishery Management Council recommended, a commercial total allowable landings (TAL) of 12.42 million pounds and a recreational harvest limit of 4.01 million pounds, including a scup research set-aside of 66,650 pounds, for 2003. Landing limits of 15,000 pounds per week for winter 1, and 1,500 pounds for winter 2 (Board action on the winter 2 possession limit is pending). No change in mesh thresholds, minimum fish size (9”TL) or minimum mesh size.

The following required measures are not subject to annual adjustment:

Vessel and dealer permitting requirements: States are required to implement a permit for fishermen fishing exclusively in state waters, and for dealers purchasing exclusively from such fishermen. In addition, states

are expected to recognize federal permits in state waters, and are encouraged to establish a moratorium on entry into the fishery.

Vessel and dealer reporting requirements: States are required to implement reporting requirements for state permitted vessels and dealers and to report landings from state waters to the NMFS.

Scup pot or trap definition: A scup pot or trap will be defined by the state regulations that apply to the vessels principal port of landing.

Quota management requirements:

Winter I and II: States are required to implement landing limits as specified annually, States are required to notify state and federal permit holders of initial period landing limits, in-period adjustments, and closures. States are required to prohibit fishing for, and landing of, scup when a period quota has been landed, based on projections by NMFS. States must report landings from state waters to the NMFS for counting toward the quota

Summer: States are required to implement a plan of trip limits or other measures to manage their summer share of the scup quota. States are required to prohibit fishing for, and landing of, scup when their quota share is landed. States may transfer or combine quota shares. States must report all landings from state waters to the NMFS for counting toward the state shares.

RECREATIONAL FISHERY

Addendum VII established a state-specific management program for Massachusetts through New York (inclusive), and specific management measures for the states of New Jersey, Delaware, Maryland, Virginia and North Carolina. The State of New Jersey is required to implement a 10-inch minimum size, a season of July 1 – October 31, and a 50 fish bag limit. The states of Delaware, Maryland, Virginia and North Carolina are required to implement an 8" minimum size, a 50 fish bag limit and no seasonal closure.

The following measures may change annually:

Minimum size, possession limit and seasonal closure
Recreational Harvest Limit: 2.71 million pounds

OTHER MEASURES

Reporting: States are required to submit an annual compliance report to the Chairman of the ASMFC Scup Plan Review Team by June 1 of each year. This report should detail the state's management program for the current year and establish proof of compliance with all mandatory management measures. It should include landings information from the previous year, and the results of any monitoring or research programs.

De minimis: States having commercial landings during the summer period that are less than 0.1% of the summer period quota are eligible for *de minimis* consideration. States desiring *de minimis* classification must make a formal request in writing through the Plan Review Team for review and consideration by the Scup Management Board.

This summary of compliance criteria is intended to serve as a quick reference guide. It in no way alters or supersedes compliance criteria as contained in the Scup FMP and any Amendments thereto.

Developing Issues

There are a number of developing issues that may need to be addressed during the upcoming year: 1) Resolution of differences between state and federal commercial quota management during the summer quota period, and 2) rollover of unused quota between the Winter I and Winter II periods within a year, 3) addressing recreational overages, 4) multi-year management, 5) more complete characterization of commercial and recreational discards, 6) April 15 opening date for the scup summer quota period. The Summer Flounder, Scup, and Black Sea Bass

Management Board and the Mid-Atlantic Council will spend considerable time determining the most fair and equitable solution to these problems.

VII. State Compliance with Required Measures

Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, and North Carolina are required to comply with the provisions of the Scup FMP.

1996 - 2002 Scup FMP Compliance Schedule

1996 and 1997 initial FMP compliance dates:

Commercial Fishery		
Quota management measures		
ability to implement and enforce period landing limits		1/1/97
ability to notify permit holders of landing limits and closures		1/1/97
ability to close the summer fishery once the state share is harvested		5/1/97
ability to close the winter fisheries once the period quota is harvested		5/1/97
Size limit	6/30/96	
Minimum mesh		1/1/97
Pot and trap escape vents, degradable fasteners		6/30/96
Roller diameter restriction,		6/30/96
Vessel permit and reporting requirements, state		1/1/97
Dealer permit and reporting requirements, state		1/1/97
Recreational		
Size limit,		6/30/96
GENERAL		
States submit annual monitoring and compliance report		6/1 annually

2002 Annual Specifications

Commercial	
Winter I Landing Limits	1/1/02
Winter II Landing Limits	11/1/02
Recreational	
Massachusetts – New York (inclusive)	
State specific minimum size, possession limit and season	State-specific
New Jersey – North Carolina (inclusive)	
Board-established regulations	3/1/02

VIII. Recommendations

SARC Data Needs

The SARC discussed some of the reasons why the research recommendations from previous SARCs had not been adequately addressed. There is currently no mechanism for accountability, resulting in other research needs taking priority. It was suggested that summaries of research recommendations be forwarded to the NRCC for review and comment, followed by a feasibility analysis. At that point a list of priorities and perhaps assignments for research could be made. The SARC recommends that a working group be developed to assess what group would be best suited to address each research need.

Increased and more representative sea and port sampling data of the various fisheries in which scup are landed and discarded is critical to adequately characterize the length composition of both landings and discards. The current level of sampling, particularly of commercial discards, seriously impedes the development of analytic assessments and forecasts of catch and stock biomass for this stock. A pilot study to develop a sampling program to estimate discards should be implemented. Expanded age sampling of scup from commercial and recreational catches is required, with special emphasis on the acquisition of large specimens.

Commercial discard mortality has previously been assumed to be 100% for all gear types. The committee recommends that studies be conducted to better characterize the mortality of scup in different gear types to more accurately assess discard mortality.

Additional information on compliance with regulations (e.g. length limits) and hooking mortality is needed to interpret recreational discard data.

Biological studies to investigate factors affecting annual availability of scup to research surveys and maturity schedules.

Investigate the statistical properties of the three commercial discard estimation approaches presented for consideration in future analyses.

Quantify the percentage of commercial fishery trips that had discards, but no landings, and evaluate how such trips contribute to the total commercial fishery discard estimate.

Continue exploration of relative biomass and relative exploitation calculations based on CPUE data from the recreational private boat fishery.

Explore other approaches for analyzing survey data, including bootstrap resampling methods to generate approximate confidence intervals around the survey index point estimates.

In the absence of reliable estimates of the catch, consideration should be given to simple forward projection models that rely on trends from the survey indices in the absence of catch information.

Design an optimal sampling plan that would be considered for implementation by the fishery observer sampling, recreational and commercial port sampling program.

Explore alternative biomass indices for development of biomass proxies for reference point determination based on multiple survey indices.

Evaluate the current biomass reference point and consider alternative proxy reference points such as Bmax (the relative biomass associated with Fmax).

Surveys should be evaluated to test the assumption of equal catchability at age in projections (i.e. through forward projection methods).

Explore alternative decision support methodologies for updating TALs directly from relative trends in abundance without relying on direct estimates of F.

Table 1. Scup commercial landings by state 1982-1999 in thousands of pounds.

State	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
CT	71	90	147	664	791	196	364	633	426	326	313	197	219	110	98	96	156	108
DE	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0
ME	0	0	0	10	20	70	9	34	0	0	0	0	0	0	0	0	0	0
MD	12	37	30	0	3	2	9	34	37	23	22	2	45	2	12	1	0	2
MA	1,192	854	1,364	1,165	707	686	976	749	878	653	246	282	388	1,492	960	662	387	358
NH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NJ	4,887	3,291	4,177	4,005	2,940	2,688	2,215	4,320	3,252	4,016	3,209	2,391	2,515	1,315	1,671	796	557	1,150
NY	1,993	1,898	1,970	2,008	1,514	1,329	1,664	2,696	2,298	1,607	1,517	1,127	819	827	615	459	689	713
NC	1,556	852	460	322	218	55	241	206	342	177	307	24	64	2	15	1	0	0
RI	6,436	7,900	6,586	4,767	6,245	3,091	3,938	6,397	5,900	2,937	3,338	2,310	1,711	1,082	795	1,281	1,107	1,763
VA	1,485	164	601	513	281	99	165	123	161	167	203	45	158	4	9	28	2	58
Total	17,630	15,084	15,335	13,453	12,718	8,215	9,582	15,193	13,294	9,905	9,155	6,381	5,919	4,834	4,157	3,324	3,324	3,324

Table 2. Scup recreational landings, 1987-1999, by state in thousands of pounds. Data from MRFSS online query

STATE	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
MA	1,865.5	822.3	2,515.4	586	1,468.5	892.5	481.4	675.5	579.5	277.4	584.5	1,025.4	681.6
RI	750.9	517.6	1,072.2	529.3	467.6	439.0	430.7	563.5	183.6	167.4	392.0	1,159.4	897.0
CT	947.8	405.8	1,415.7	1,184.9	338.5	210.9	101.3	378.8	46.4	142.7	199.3	859.6	960.7
NY	1,782.1	2,202.6	2,616.6	1,854.8	875.1	557.8	43.4	515.8	369.0	279.1	575.3	2,322.7	1,526.2
NJ	186.7	82.0	282.6	231.5	33.5	499.9	248.5	102.9	13.4	4.7	133.5	53.3	193.1
DE	1.8	17.0	139.8	6.0	1.6	11.7	0.3	0.3	1.5	1.5	0.3	0.6	1.6
MD	1.4	15.8	7.7	0.9	0.0	0.1	0.0	0.0	0.0	0.0	1.1	0.0	0.0
VA	17.6	76.6	35.4	8.9	9.9	6.5	6.7	1.8	0.0	0.7	0.0	1.8	0.4
NC	2.6	9.4	0.9	0.2	0.0	0.0	0.0	0.0	4.4	1.3	0.0	0.1	1.9
Total	5,556.4	4,149.1	8,086.3	4,402.5	3,194.7	2,618.4	1,312.3	2,238.6	1,197.8	874.8	1,886.0	7,422.9	6,263.5

Table 3. Summary of Scup management measures and landings in millions of pounds, 1997-2002.

	1997	1998	1999	2000	2001	2002
TAC	9.1	7.275	5.922	5.922	8.37	12.92
Commercial TAL	6.0	5.675	4.619	3.164 (2.534[A])	4.44	8.00
Commercial Catch, actual	4.834	4.1747	3.323	2.659	3.946	?
Recreational Harvest Limit	1.997	1.601	1.303	1.238	1.76	1.76
Recreational Harvest, actual	1.198	0.875	1.886	5.443	4.262	?

[A] Federal Quota

Table 4: 2002 recreational management measures for scup by state.

STATE	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	9	100 fish for anglers on charter/party boats 50 fish for all other anglers	May 10 – December 31
Rhode Island	10	Period 1: 8 fish Period 2: 50 fish	Period 1: July 1 – August 23 Period 2: August 24 – December 31
Connecticut	10	50 fish	July 13 – September 25
New York	10	50 fish	Charter/Party Boats: June 25 – November 30 All other anglers: June 25 – September 15 October 1 – November 30
New Jersey	10	50 fish	July 1 – October 31
Delaware	8	50 fish	All Year
Maryland	8	50 fish	All Year
Virginia	8	50 fish	All Year
North Carolina	8	50 fish	All Year