

2005 REVIEW OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
FISHERY MANAGEMENT PLAN
SCUP (*Stenotomus chrysops*)

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2005 Review of the Atlantic States Marine Fisheries Commission Fishery Management Plan for Scup

I. Status of the Fishery Management Plan

ASMFC management of scup was initiated as one component of a multi-species FMP addressing summer flounder, scup and black sea bass. 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-inch commercial minimum size, 4-inch mesh restriction for vessels retaining over 4,000 pounds of scup, and a 7-inch recreational minimum size. The biological reference point to define overfishing is F_{MAX} , or $F=0.25$. To allow flexibility in 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 F_{MAX} serving as a proxy for F_{MSY} .

Addendum 1 to the Summer Flounder, Scup, and Black Sea Bass FMP explains the quota management procedure for management and distribution of the coastwide commercial quota that was approved in September 1996 and implemented as a coastwide Total Allowable Catch (TAC) in 1997. Addendum 1 to the Summer Flounder, Scup, and Black Sea Bass FMP also 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 underestimated the commercial landings of scup. Massachusetts also stated that the resulting quota share discriminated against Commonwealth of Massachusetts residents. 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 that sets forth state-by state quotas in compliance with the National Standards. The court order does not technically affect the state-by-state quota allocations that are included in the ASMFC Addendum 1 to the Summer Flounder, Scup, and Black Sea Bass FMP. The Summer Flounder, Scup, and Black Sea Bass Management Board 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 $F_{MAX}=0.26$.

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. Addendum V 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. The addendum had no application after 2002.

Addendum IX established a state specific management program for the 2003 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. The addendum had no application after 2003.

Addendum X allows for any unused quota from the winter I scup fishery to be rolled over into the winter II fishery period. It also increased the possession limit by 500 lbs per 500,000 pounds of scup that are rolled over. The addendum also establishes an alternative to the start date of the summer period. States can allow for landings of scup by state permit holders beginning on April 15th. If there is a closure prior to April 15th, state permit holders can land and sell scup caught exclusively in state waters to state and federally permitted dealers after April 15th and prior to the Federal opening of the summer period on May 1st.

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. The Summer Flounder, Scup, and Black Sea Bass Technical Committee addresses

technical issues. 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 since the mid-to late 90s however the NEFSC spring survey results indicate that spawning stock biomass has decreased in 2004 (3-year average= 0.69). This is below the biomass threshold value of 2.77, therefore the stock is considered overfished. The spring survey index increased significantly in 2004 to 1.85 relative to the low value of 0.15 in 2003. The 2004 index is the highest value in the spring survey since 1978, excluding the high value in 2002. In 2005, the spring index dropped to 0.10. The winter trawl survey exhibited a similar trend increasing from 0.49 in 2003 to 3.82 in 2004, and then decreasing in 2005 to 1.96.

The NEFSC autumn trawl survey indicates that strong year classes were produced from 1999-2002. The predominance of the 2000-year class is also evident in several of the state surveys. The most recent information indicates a below average year class was produced in 2004. 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 fishing mortality 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 2002 value is about 3% of the 1997 value.

III. Status of the Fishery

The reduced landings of scup in recent years are a reflection of low stock abundance and the effect of quota management. Commercial scup landings, which had declined by over 33% to 8.8 million pounds in 1998, increased to 15.6 million pounds in 1991, then dropped to the lowest value in the time series, 2.7 million pounds in 2000. Commercial landings then increased to almost 7 million pounds in 2002. Total landings have increased slightly each year to about 8.2 million pounds in 2001. The 2002 commercial landings of 3.8 million pounds were only about 15% of the over 48.5 million pound peak observed in 1960. For several years Rhode Island and New Jersey have harvested the largest share of the total commercial landings of scup. In 2004 landings were below average at 9.1 million pounds.

The recreational fishery for scup is significant. Recreational fishermen accounted for 17 to 67% of total annual catches from 1985–2001. Recreational landings declined steadily from a 1986 value of 11.6 million pounds to 0.9 million pounds in 1998, the lowest value in the time series. Recreational landings then increased to 8.5 million pounds in 2003 and 4.4 million pounds in 2004. By state, anglers in New York, Massachusetts, and Connecticut caught the greatest proportion of scup in 2003.

IV. Status of Assessment Advice

A quantitative assessment for the scup stock has not been conducted. The SAW-31 SARC attempted the most recent quantitative assessment. 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. The NEFSC sea sampling program collects commercial discard information. 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. The Commonwealth of Massachusetts collected length frequency information for the recreational fishery 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 can 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 coastwide and is limited by 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 its 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.

Minimum size of possession: 9" Total Length

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 of 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. Otter trawls must have a minimum mesh size of 5" for the first 75 meshes from the terminus of the net and a minimum mesh size of 5" throughout the net for codends constructed with fewer than 75 meshes.

Threshold to Trigger Minimum Mesh Requirements: 500 pounds of scup from November 1 through April 30 and 200 pounds or more of scup from May 1 through October 31.

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: 12.34 million pounds (adjusted for overages and research set-asides)

Winter I and II landing limits: Winter I = 15,000 lbs, 1,000 @ 80%; Winter II = 1,500 lbs

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 IX 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 was 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 were required to implement an 8” minimum size, a 50 fish bag limit and no seasonal closure.

The following measures may change annually:

2004 Recreational Measures

2004 Minimum size, possession limits and seasonal closure: Table 4

2004 Recreational Harvest Limit: 4.01 million pounds.

2005 Recreational Measures

2005 Minimum size, possession limits and seasonal closure: Table 5

2005 Recreational Harvest Limit: 4.01 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) addressing recreational overages, 3) multi-year management, 4) more complete characterization of commercial and recreational discards. 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. All states implemented regulations in compliance with the requirements approved by the Board.

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	5/1/97
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 Fishery

Quota Management Measures

Size limit	6/30/96
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General

States submit annual monitoring and compliance report	6/1 annually
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2005 Annual Specifications

Commercial

Winter I Landing Limits	1/1/05
Winter II Landing Limits	11/1/05

Recreational

Massachusetts– New York (inclusive)	
State specific minimum size, possession limit and season	11/1/05
New Jersey – North Carolina (inclusive)	
Board-established regulations	3/1/05

VIII.

Recommendations

SARC Data Needs

1. 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.
2. 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.
3. 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.

4. Additional information on compliance with regulations (e.g. length limits) and hooking mortality is needed to interpret recreational discard data.
5. Biological studies to investigate factors affecting annual availability of scup to research surveys and maturity schedules.
6. Investigate the statistical properties of the three commercial discard estimation approaches presented for consideration in future analyses.
7. 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.
8. Continue exploration of relative biomass and relative exploitation calculations based on CPUE data from the recreational private boat fishery.
9. Explore other approaches for analyzing survey data, including bootstrap resampling methods to generate approximate confidence intervals around the survey index point estimates.
10. 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.
11. Design an optimal sampling plan that would be considered for implementation by the fishery observer sampling, recreational and commercial port sampling program.
12. Explore alternative biomass indices for development of biomass proxies for reference point determination based on multiple survey indices.
13. Evaluate the current biomass reference point and consider alternative proxy reference points such as B_{max} (the relative biomass associated with F_{max}).
14. Surveys should be evaluated to test the assumption of equal catchability at age in projections (i.e. through forward projection methods).
15. Explore alternative decision support methodologies for updating TALs directly from relative trends in abundance without relying on direct estimates of F .

Table 1. Summary of scup management measures, 1996-2005.

Management measures	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
TAC (m lbs)	-	9.1	7.28	5.92	5.92	8.37	12.92	18.65	18.65	18.65
Commercial TAC (m lbs)	-	7.1	5.68	4.62	4.62	6.53	10.08	14.55	14.55	14.55
Commercial quota–initial (m lbs)	-	6	4.57	2.53	2.53	4.44	8	12.47	12.47	12.47
Commercial quota–adjusted (m lbs)	-	-	-	-	1.75	3.53	7.25 ^a	12.10 ^d	12.34 ^e	12.23 ^f
Commerical. landings	6.5	4.84	4.17	3.32	2.66	4.07	7.28	9.75	9.05	-
Recreational TAC (m lbs)	-	2	1.6	1.3	1.3	1.84	2.84	4.1	4.1	4.1
Recreational harvest limit-initial (m lbs)	-	1.95	1.55	1.24	1.24	1.77	2.77	4.03	4.03	4.02
Recreational harvest limit-adjusted (m lbs)	-	-	-	-	-	-	2.71 ^b	4.01 ^d	4.01 ^e	3.96 ^f
Recreational landings	2.16	1.2	0.88	1.89	5.44	4.26	3.62	9.33	4.38	-
Commercial fish size (in)	9	9	9	9	9	9	9	9	9	9
Min. mesh size (in, diamond)	4	4.5	4.5	4.5	4.5	4.5	4.5/5.0	4.5/5.0 ^c	4.5/5.0 ^c	5
Mesh threshold	4000/ 1000	4000/ 1000	4000/ 1000	200/ 100	200/100	500/ 100	500/100	500/100	500/100	500/200

Table 2. Scup commercial landings by state 1994-2004 in thousands of pounds.

State	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004*
ME	0	0	0	0	0	0	0	0	0	0	0
NH	0	0	0	0	0	0	0	0	0	0	0
MA	246	282	388	1,492	960	662	387	358	713	897	1,034
RI	3,338	2,310	1,711	1,082	795	1,281	1,107	1,617	3,674	3,814	2,639
CT	313	197	219	110	98	96	156	108	220	292	
NY	1,517	1,127	819	827	615	459	689	713		1,850	1,600
NJ	3,209	2,391	2,515	1,315	1,671	796	557	1,150	923	2,306	1,901
DE	0	3	0	0	0	0	0	0	0	0	0
MD	22	2	45	2	12	1	0	2	2	0	27
VA	203	45	158	4	9	28	2	58	54	558	415
NC	307	24	64	2	15	1	0	0		109	524
Total	9,155	6,381	5,919	4,834	4,157	3,324	3,324	3,324	6,986	5,115	8,140

**Preliminary data for 2004 reported when available from state compliance reports, 8-4-05*

Table 3. Scup recreational landings, 1989-2004, by state in thousands of pounds. Data from MRFSS online query.

State	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
MA	893	481	676	580	277	585	1,025	682	793	888	2,697
RI	439	431	564	184	167	392	1,159	897	513	748	1,367
CT	211	101	379	46	143	199	860	961	849	1,528	936
NY	558	43	516	369	279	575	2,323	1,526	1,393	5,293	4,061
NJ	500	249	103	13	5	134	53	193	73	24	353
DE	12	0	0	2	2	0	1	2	1	0	4
MD	0	0	0	0	0	1	0	0	1	0	30
VA	7	7	2	0	1	0	2	0	1	3	79
NC	0	0	0	4	1	0	0	2	0	0	2
Total	2,618	1,312	2,239	1,198	875	1,886	7,423	6,264	3,624	8,485	9,529

Table 4. 2004 Recreational Measures by State.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	10	100 fish for anglers on charter/party boats from May 1 - June 30 and 40 fish from July 1 - October 7 and a 40 fish limit for private boats with an 80 fish limit for boats with two or more anglers.	Jan 1- Oct 6
Rhode Island	10.5	50	Jan 1 - July 25 and August 4 - Dec. 31
Connecticut	10.5	20 fish	July 23 - Oct. 12 and Nov. 1 - Dec. 31
New York	11	20 fish	June 16 - Oct. 17 and Nov.1 - Nov. 30
New Jersey	10	50 fish	Jan. 1 - Feb. 28 and July 1 – Dec. 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

Table 5. 2005 Recreational Measures for each state.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	10.5	25 fish; 50/private vessel with 2 or more anglers; party and charter may possess up to 60 fish from May 1 - June 30 (all other times limit is 25 fish for party/charter).	May 1 - Aug. 31
Rhode Island	10.5	25 fish; party/charter may possess up to 60 fish from Sept.1 - Oct.31 (all other times limit is 25 fish for party/charter).	July 1 - Oct. 31
Connecticut	10.5	25 fish; party/charter may possess up to 60 fish from Sept.1 - Oct.31 (all other times limit is 25 fish for party/charter).	July 1 - Oct. 31
New York	10.5	25 fish; party/charter may possess up to 60 fish from Sept.1 - Oct.31 (all other times limit is 25 fish for party/charter).	July 1 - Oct. 31
New Jersey	9	50 fish	Jan. 1 - Feb. 28 and July 1 - Dec. 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