

2000 REVIEW OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
FISHERY MANAGEMENT PLAN
SCUP (*Stenotomus chrysops*)

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2000 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 F_{max} , 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 F_{max} serving as a proxy for F_{msy} . Under current stock conditions F_{max} 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 two Emergency Rules to address the quota management during the summer quota period during 1999 and 2000.

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 Commissions 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 31st Northeast Regional Stock Assessment Workshop (31st SAW) in July 2000. The consensus summary of the Stock Assessment Review Committee (SARC) indicates that scup are currently over-exploited and at a low biomass level. The SARC concluded that reliable quantitative estimates of fishing mortality for scup are currently not available. The truncated age structure of fishery catches and historical low biomass indices from surveys indicates that the stock has been subject to prolonged high fishing mortality. The 1998-2000 three-year average index of spawning stock biomass from the NEFSC Spring survey is less than 5% of the biomass threshold that was established in Amendment 12. In 1997 the index of age 0 abundance was the highest level since 1994, followed by a moderate to strong year class on 1999. The SARC recommends that fishing mortality be reduced substantially and immediately. Reduction in fishing mortality from discards will have the most impact on the stock, particularly considering the importance of the 1999 year class and all future good recruitment to rebuilding the stock.

An analytical assessment based on a virtual population analysis (VPA) was not considered by the working group because there were considerable uncertainty associated with the catch data. The SARC agreed with the working group and concluded that a VPA analysis would be inappropriate at this time. An analysis using a biomass dynamic model was rejected by the SARC as a basis for management decisions also due to catch data uncertainties.

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. The total 1999 landings increased slightly to about 5.2 million pounds. The 1997 commercial landings of 3.3 million pounds are only about 7% of the over 48.5 million pound peak observed in 1960 and are the lowest observed in the 1930-1999 series. 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 20 to 50% of total annual catches from 1985–1999. Recreational fishermen caught 1.8 million pounds of scup in 1999, more than two time the landings of 1998. Most recreational landings come from state waters. By state, anglers in Massachusetts

catch the greatest proportion of scup and anglers from Massachusetts and New York accounted for about 60% of the recreational landings in 1999.

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. Management advice from the SAW was based on the truncated age structure and low abundance indices.

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. The only length frequency information for the recreational fishery is that collected by the New York party/charterboat survey. 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 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.]

Scup FMP Rebuilding Schedule:

<u>Year</u>	<u>FMP Year</u>	<u>Exploitation Target</u>
1996	1	none
1997	2	47%
1998	3	47%
1999	4	47%
2000	5	33%
2001	6	33%
2002	7	19%

Scup FMP Compliance Criteria:

COMMERCIAL FISHERY

The following management measures may change annually. 2000 requirements are indicated

Minimum size of possession: 9"

Minimum mesh and threshold: 4.5" after 200 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: 3.164 based on the Commission's Emergency Rule, 2.534 million pounds for Federal Permit holders

Winter I and II landing limits I = 10,000 pounds, 1,000 @ 85%
II = 500 pounds, 200 @50% by ASMFC Emergency Rule
[The federal landing limit for Winter II is 4000 pounds]

The Summer Flounder, Scup, and Black Sea Bass Management Board and the Mid-Atlantic Fishery Management Council are recommending a commercial total allowable landings (TAL) of 3.03 million pounds and a recreational harvest limits of 3.15 million pounds. Mesh thresholds of 500 pounds from November to April and 100 pounds from May to October. Landing limits of 10,000 pounds for winter 1, dropping to 1,000 pounds at 75% of the quota, and 2,000 pounds for winter 2. No change in minimum fish size (9"TL) or minimum mesh size (4.5").

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

The following measures may change annually:

Minimum size of possession: 7" (May be reconsidered in December, 2000)

Possession limit: 50 (May be reconsidered in December, 2000)

Seasonal closure: none (May be reconsidered in December, 20001)

Recreational Harvest Limit: 1.238 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. Also please note that the management measures that change annually may be altered if Amendment 12 is approved.

Developing Issues

There are two important developing issues that will 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) the implementation of gear restricted areas (GRA) to reduce the levels of scup discards in small mesh fisheries. The Summer Flounder, Scup, and Black Sea Bass Management Board and the Mid-Atlantic Council will spend considerable amounts of time determining the most fair and equitable solution to these problems.

Over exploitation and excessive discarding continue to be the important and difficult issues surrounding the scup FMP. Scup is a component of the Mid-Atlantic mixed species trawl fishery which relies principally on summer flounder, scup, and black sea bass, but also harvests *Loligo* squid and winter, witch, and yellowtail flounder. Management measures designed for a directed scup fishery will not be successful if they lead to increased discards by non-directed fisheries. Framework measures enacted through this FMP could be used to manage the mixed trawl fishery as a strategy for addressing its' problems is developed.

The SARC clearly indicates that a lack of adequate data threatens future assessment and quota setting capabilities. An analytical assessment that can produce reliable fishing mortality and stock abundance estimates is essential to successful management through annual quotas and harvest limits.

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 - 2000 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	appropriate time

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
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GENERAL

States submit annual monitoring and compliance report	6/1 annually
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2000 Annual Specifications

Commercial

Winter I Landing Limits	1/1/00
Winter II Landing Limits	11/1/00

Recreational

Possession Limit	1/1/00
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VIII. Recommendations

SARC Data Needs

Explore alternative methodologies for analyzing the available sea sampling data. Explore sensitivity of the yield per recruit reference points to change in input parameters. Investigate factors affecting size-specific availability to research surveys.

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 study to develop optimum sampling levels to estimate discards should be implemented. This would quantify the advantages to obtaining sea samples from freezer trawlers and other small mesh fleets from which few samples have been collected, and would provide an opportunity for joint industry research programs.

Expanded age sampling of scup from commercial and recreational catches is required, with special emphasis on the acquisition of large specimens.

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

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

Explore other assessment approaches including Bayesian and bootstrap techniques that incorporate uncertainty in catch estimates. Explore models that incorporate within-year survey data.

A comprehensive database should be maintained that includes all available data from the scup commercial and recreational fishery, research surveys, and sea and port sampling programs, with timely updates from participating agencies.

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

State	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
CT	55	109	71	90	147	664	791	196	364	633	426	326	313	197	219	110	98	96
DE	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
ME	0	0	0	0	0	10	20	70	9	34	0	0	0	0	0	0	0	0
MD	4	28	12	37	30	0	3	2	9	34	37	23	22	2	45	2	12	1
MA	1,201	1,481	1,192	854	1,364	1,165	707	686	976	749	878	653	246	282	388	1,492	960	662
NH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NJ	3,848	5,592	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
NY	3,249	2,431	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
NC	2,297	1,473	1,556	852	460	322	218	55	241	206	342	177	307	24	64	2	15	1
RI	7,061	5,694	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
VA	2,297	1,183	1,485	164	601	513	281	99	165	123	161	167	203	45	158	4	9	28
Total	20,013	17,991	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

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

STATE	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
MA	4,035.9	1,946.1	1,865.5	822.3	2,515.4	586	1,468.5	892.5	481.4	675.5	579.5	277.4	584.5
RI	241.8	367.0	750.9	517.6	1,072.2	529.3	467.6	439.0	430.7	563.5	183.6	167.4	392.0
CT	575.8	1,070.3	947.8	405.8	1,415.7	1,184.9	338.5	210.9	101.3	378.8	46.4	142.7	199.3
NY	1,237.7	588.7	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
NJ	94.8	290.2	186.7	82.0	282.6	231.5	33.5	499.9	248.5	102.9	13.4	4.7	133.5
DE	0.00	0.3	1.8	17.0	139.8	6.0	1.6	11.7	0.3	0.3	1.5	1.5	0.3
MD	0.00	0.00	1.4	15.8	7.7	0.9	0.0	0.1	0.0	0.0	0.0	0.0	1.1
VA	10.5	4.0	17.6	76.6	35.4	8.9	9.9	6.5	6.7	1.8	0.0	0.7	0.0
NC	1.9	9.7	2.6	9.4	0.9	0.2	0.0	0.0	0.0	0.0	4.4	1.3	0.0
Total	6,198.4	4,276.3	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

Table 3. Summary of Scup management measures and landings in millions of pounds, 1997-2001.

	1997	1998	1999	2000	2001*
TAC	9.1	7.275	5.922	5.922	7.85
Commercial TAL	6.0	5.675	4.619	3.164 (2.534 ^A)	6.17
Commercial Catch, actual	4.834	4.157	3.323	?	?
Recreational Harvest Limit	1.997	1.601	1.303	1.238	1.76
Recreational Harvest, actual	1.198	0.875	1.886	?	?

^A Federal Quota

* The 2001 commercial TAC and recreational harvest limit have been recommended by the MAFMC and ASMFC, NMFS must approve these limits prior to becoming the final regulations.