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**2000 REVIEW OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
FISHERY MANAGEMENT PLAN FOR**

SUMMER FLOUNDER
(Paralichthys dentatus)

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I. Status of the Fishery Management Plan

The summer flounder (*Paralichthys dentatus*) fishery of the Atlantic Coast is managed jointly by the ASMFC and the Mid-Atlantic Fishery Management Council (MAFMC). The original ASMFC Fishery Management Plan recommended a 14 inch minimum size and was approved in 1982. The MAFMC Plan, prepared in 1988 and based on the ASMFC plan, established a 13" minimum size. Since then, ten amendments have been developed and approved, except Amendment 1 which would have required a 5-1/2" minimum mesh size in the codend of trawls and Amendment 11 which would have reallocated commercial quota shares. Amendment 13, which addresses conservation equivalency in the recreational fishery and Essential Fish Habitat, is currently out for public comment. The Management Board and MAFMC are planning on reviewing public comment and making a final decision regarding approval of the Amendment at a joint meeting in December, 2000.

Amendment Two (approved in August 1992) provided a strategy for reducing fishing mortality to F_{max}, balanced against reasonable impacts on the fishermen. Management measures included a federal (EEZ) moratorium on entry into the commercial fishery, vessel and dealer permitting and reporting requirements, an annual commercial quota, and minimum mesh requirements with an exemption program. Recreational fishery measures include size limits, possession limits, and seasonal closures.

The management system established under Amendment 2 has been modified by the following amendments. Amendment Three (approved in July 1993) revised the mesh requirement exemption program. Amendment Four (approved in September 1993) revised the state-specific shares of the coastwide quota allocation in response to a reporting issue in Connecticut. Amendment Five (approved in December 1993) allows states to transfer or combine their commercial quota shares. Amendment Six (approved in May 1994) allows properly stowed nets with a cod end mesh size less than that stipulated in the plan to be aboard vessels in the summer flounder fishery. Amendment 7 (approved May 1995) adjusted the stock rebuilding schedule and capped the 1996-1997 commercial quotas at 18.51 million pounds. There is no Amendment 8 or 9 to the ASMFC FMP. The MAFMC adopted Scup management measures as Amendment 8 and Black Sea Bass measures as amendment 9, while the ASMFC adopted separate Scup and Black Sea Bass Management Plans.

Amendment 10, approved by the ASMFC in May 1997, initially sought to examine the commercial quota management system. Its scope was expanded to address a number of federal and state issues in the fishery, including: 1) allow framework adjustments to the minimum mesh for any portion of the net; 2) require 5.5" diamond mesh between the wings and the codend of trawls; 3) continue the federal moratorium on entry; 4) remove the requirement that federally permitted vessels must land summer flounder every year; 5) modify the federal vessel replacement criteria; 6) implement state *de minimis* criteria; 7) prohibit transfer at sea; 8) require states to report summer flounder landings from state waters to the NMFS; and 9) allow states to implement a summer flounder filet at sea permit system. The amendment also proposed alternative commercial quota schemes, including 1) a trimester quota with state-by-state shares during summer, 2) a trimester coastwide quota of equal periods, and 3) a revision to

the allocation formula. Ultimately, the Board and Council decided to maintain the current state-by-state quota allocation system. Amendment 12, 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 objectives of the FMP have not changed and are to: 1) reduce fishing mortality of summer flounder to assure overfishing does not occur; 2) reduce fishing mortality on immature summer flounder to increase spawning stock biomass; 3) improve yield from the fishery; 4) promote compatible management regulations between State and Federal jurisdictions; 5) promote uniform and effective enforcement of regulations; and 6) minimize regulations to achieve the stated objectives.

The management unit includes summer flounder in US waters in the western Atlantic Ocean from the southern border of North Carolina northward to the US - Canadian border. States and jurisdictions with a declared interest in the summer flounder FMP include all those from North Carolina through Massachusetts except Pennsylvania and the District of Columbia, as well as NMFS and USFWS. An ASMFC plan review team, Technical Committee, and species board, and the MAFMC Demersal Species Committee are actively working on this plan. Annual framework adjustment advice is provided by a joint ASMFC-MAFMC Technical Monitoring Committee.

II. Status of the Stock

According to the Advisory Report of the 31st Northeast Regional Stock Assessment Workshop (31st SAW), the biomass of summer flounder has increased substantially since 1991 and has been stable since 1994, however, the stock is overfished and overfishing is occurring relative to the FMP overfishing definition. There is an 80% chance the 1999 fishing mortality was between 0.28 and 0.38 which exceeds the overfishing target of $F_{max}=0.26$. After declining 67% from 1983 to 1989, total stock biomass has increased from a record low in 1989 of 16,000 mt to over 41,400 mt in 1999, the second highest level since 1989. The 1996-1998 year classes, ranging between 32 and 38 million fish, are estimated to be about average. The 1999 year-class, at 19.2 million fish, is estimated to be below average.

III. Status of the Fishery

During the late 1980's landings declined dramatically, reaching a low of 9.3 million pounds in the commercial fishery in 1990 and 3.2 million pounds in the recreational fishery in 1989. Following these record lows, the commercial landings showed an increasing trend through 1995, while the recreational landings increased consistently through 1998. Reported commercial landings for 1999 are 10.690 million pounds, and the recreational landings of 8.365 million pounds exceed the 1999 recreational harvest limit by about 1 million pounds. (Tables 1 and 2).

IV. Status of Assessment Advice

A quantitative assessment (VPA) of commercial and recreational total catch at age (landings plus discards) was conducted in 2000. This assessment was externally reviewed by the 31st SAW. The uncertainty associated with the estimates of fishing mortality and spawning stock biomass in 1999 were evaluated with respect to research survey variability.

V. Status of Research and Monitoring

Several states and NMFS conduct seasonal sampling cruises using an otter trawl to assess the condition of summer flounder populations inshore and in the Exclusive Economic Zone (EEZ). New York conducts a survey of anglers on open boats on Great South Bay to collect data on age and size composition from which mortality rates are calculated. New Jersey collects data from the commercial trawl fishery and conducts an ocean trawl survey from which data on summer flounder are collected and catch-per-unit-of-effort and distribution information are generated for juveniles and adults. Maryland constructs a juvenile index from trawl data collected in the ocean side bays and is also compiling data on population age, sex, and size from summer flounder taken in pound nets, and Delaware conducts a trawl survey which collects information on the summer flounder resources. North Carolina conducts two otter trawl surveys for juvenile fluke, conducts tagging programs to determine migrations and to assess mortality, and collects information on age and growth and catch-per-unit-of-effort for the winter trawl fishery. Virginia prepares a young-of-the-year index from data collected from beach seine and trawl surveys.

VI. Status of Management Measures and Issues

Management measures imposed upon harvesters of summer flounder include an annual commercial quota and recreational harvest limit, minimum sizes, minimum mesh requirements for trawls, permits and administrative fees for dealers and vessels, a moratorium on entry into the fishery, mandated use of sea samplers, monitoring of sea turtles in the southern part of the management unit, and collection of data and record keeping by dealers and processors. Fishing mortality has been controlled by a Total Allowable Landings (TAL) since 1983, allocated into a commercial quota (60% of the TAL) and a recreational harvest limit (40% of the TAL). The commercial quota is allocated to each state based on landings during a baseline period (Table 3), and any overages are subtracted from a state's quota for the following year.

Summer Flounder Compliance Criteria

COMMERCIAL FISHERY

The following measures may change annually. The 2000 measures are indicated. PLEASE NOTE: the 2001 management measures have been recommended by the ASMFC Summer Flounder, Scup, and Black Sea Bass Management Board and the Mid-Atlantic Fishery Management Council. The recommendations must be approved by NMFS prior to becoming the final regulations for 2001.

Minimum size: 14"

Minimum mesh and threshold: 5.5 diamond, 6" square

Regulation of mesh beyond the codend: 5.5" throughout the mesh

2000 Commercial quota: 10.883 million pounds*

* The 2000 commercial quota is reduced due to overages in the 1999 commercial fishery.

In 1998 the Summer Flounder, Scup, and Black Sea Bass Management Board recommended that 15% of each state allocation must be set aside to mitigate discards after closure of the directed summer flounder commercial fishery. To be eligible to land this 15%, the state must adopt appropriate trip limits sufficiently restrictive to allow bycatch landings for the entire year without exceeding the state quota. Additionally, either the state or the fishermen must participate in collection of additional discard data.

The Commission and the Council are not recommending any changes to the commercial minimum size limit or the minimum mesh size for 2001.

The following measures are not subject to annual adjustment.

Quota management provisions: States are required to adopt appropriate measures to manage their quota shares. States may transfer or combine their quota shares as specified in Amendment 5. States must document through a vessel and dealer reporting system all landings that are not otherwise included in the federal monitoring of permit holders. States are required to forward all landings information to the NMFS for inclusion in quota reporting.

Transfer at Sea: States must prohibit permitted summer flounder vessels from transferring summer flounder from one vessel to another at sea. (As specified in Amendment 10)

De minimis status: States having commercial landings less than 0.1% of the coastwide total will be eligible for *de minimis* status. (As specified in Amendment 10)

RECREATIONAL FISHERY

The following measures are the coastwide alternative that the states could have selected to manage their recreational summer flounder fisheries. Many of the states selected conservation equivalency to achieve the required restriction on their fishery:

Minimum size of possession: 15.5", Subject to reconsideration, December 2000.

Possession limit: 8, Subject to reconsideration, December 2000.

Seasonal closure: January 1, 2000 – May 9, 2000 and October 3, 2000 – December 31, 2000, Subject to reconsideration, December 2000.

OTHER MEASURES

Filet at sea permit: Party or charter vessels in state waters will be allowed to filet at sea if they obtain a state issued permit allowing such activity. (As specified in Amendment 10)

Reporting:

1. States must submit a commercial fishery management proposal by October 1 of each year. The proposal must detail the specific management measures that the state intends to use to manage their commercial quota allocation. The proposal must be reviewed and approved by the Management Board.
2. States must submit an annual compliance report to the Chairman of the Summer Flounder Plan Review Team by April 1 of each year. The report must detail the state's management program for the current year and establish proof of compliance with all mandatory management measures and all framework changes specified for the current year. It should include landings information from the previous year, and the results of any monitoring or research program.

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 Summer Flounder FMP and Amendments thereto. Also please note that the management measures that change annually may be altered if Amendment 13 is approved.

2000 Management Measures Summary

The TAL was set at 18.52 million pounds for 2000, resulting in an initial commercial quota of 11.11 million pounds and a recreational harvest limit of 7.41 million pounds. After adjusting for overages from 1999, the commercial quota dropped to 10.88 million pounds. To meet the recreational harvest limit in 2000, states had the option of Summer Flounder 2000 FMP Review

selecting either: (1) the coastwide alternative with a minimum size limit of 15.5 inches, an eight fish possession limit, and an open season from May 10 through October 2, or (2) a conservation equivalent program that achieves a 40 percent reduction in landings relative to 1998.

Developing Issues

Alternative Management Schemes

Despite failed efforts to change the quota management system in Amendment 10 and the reallocation proposed for Amendment 11, few are satisfied with the current state of summer flounder management. The Summer Flounder Advisory Panel continues to demand that a more equitable system be enacted to manage this resource. The Summer Flounder, Scup, and Black Sea Bass Technical Committee developed a list of alternatives to the state-by-state quota management system in July 1998. Pursuing alternatives to the state-by-state quota management scheme will likely occupy much of the Management Board's attention during 2001.

Amendment 13

The Mid-Atlantic Fisheries Management Council and the Management Board are currently receiving public comment on Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP. The Amendment establishes procedures for implementing conservation equivalency in the recreational fishery, and addresses some outstanding Essential Fish Habitat issues that were not resolved in Amendment 12. The Council and Commission will review public comment and vote on final approval of the Amendment in December 2000.

VII. Current State by State Implementation of FMP Requirements

1997 - 2000 Summer Flounder FMP Compliance Schedule

COMMERCIAL:

14" minimum size	3/1/97
5.5" codend mesh	1/1/98
Ability to regulate mesh in any portion of the net	1/1/98
5.5" mesh, body	6/3/98
Prohibition of transfer at sea	1/1/98
Mandatory reporting to NMFS of landings from state waters	1/1/98

RECREATIONAL

15." minimum size	1/1/00
8 fish possession limit	1/1/00
Open season from May 10 through October 2	1/1/00
Or Conservation Equivalency to achieve a 40% reduction	1/1/00
2001 management measures (possession and seasons TBD)	1/1/01

GENERAL

Submission of annual commercial management plan	10/1/97, annually thereafter
Submission of annual landings and compliance report	6/1/98, annually thereafter

SARC Research Recommendations

Expand the NEFSC sea sampling program collection of data for summer flounder, with special emphasis on a) comprehensive areal and temporal coverage, b) adequate length and age sampling, c) continued sampling after commercial fishery areal and seasonal quotas are reached and fisheries are limited or closed, and d) estimation of discard in the scallop dredge fishery. Maintaining adequate sea sampling will be especially important in order to monitor a) the effects of implementation of gear and closed/exempted area regulations, both in terms of the response

of the stock and the fishermen, b) potential continuing changes in “directivity” in the summer flounder fishery, as a result of changes in stock levels and regulations, and c) discards of summer flounder in the commercial fishery once quota levels have been attained and the summer flounder fishery is closed or restricted by trip limits.

Conduct research to determine the discard mortality rate of commercial fishery summer flounder discards, currently assumed to be 80% based on advice from the commercial fishing industry. Update the American Littoral Society (ALS) tag return mortality estimates for the 1997-1998 and 1998-1999 recreational fishing seasons. Develop a program to annually sample the length and age frequency of recreational fishery summer flounder discards. Utilize data from the ALS, BOAT/US, and Virginia Gamefish Tagging Programs to supplement the current data and analyses used to characterize the length frequency of the recreational fishery discard. Further explore the maturity ogive for summer flounder to determine if recent information can be applied over the full VPA time series. Commercial fishery landings sampling intensity and coverage improved significantly during 1997, 1998, and 1999, and at least this level of coverage should be continued in the future. Rhode Island Department of Fish and Wildlife monthly fixed station survey length frequencies are currently converted to age by using length cut off points. Investigate the utility of applying the appropriate NEFSC and Massachusetts Division of Marine Fisheries age-length keys to these data. Investigate the use of NEFSC survey mean weights at age as stock weights at age in yield per recruit, VPA, and projection analyses. Continue to review the use of alternative methods for the estimation of reference points for summer flounder, including biomass dynamics and parametric and non-parametric stock-recruit models.

Table 1. Summer flounder commercial landings in pounds by state, 1988-1999

State	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
ME	4,800	9,200	3,035	167	164	6,023	4,857	5,318	8,226	2,835	5,626	5,778
NH	0	0	20	87	14	0	0	0	0	0	0	0
MA	2,420,600	1,877,900	628,988	1,121,811	1,383,283	902,786	1,048,901	1,127,995	800,704	745,171	709,387	812,540
RI	4,718,800	3,082,900	1,408,347	1,672,565	2,531,506	1,942,451	2,570,819	2,365,465	1,766,482	1,557,867	1,716,463	1,636,528
CT	740,900	513,100	343,223	420,800	494,600	224,620	370,413	306,404	278,776	247,258	262,732	245,219
NY	3,438,700	1,463,700	405,031	731,484	1,239,488	849,376	1,270,012	1,248,078	940,313	815,741	823,093	803,903
NJ	6,006,400	2,864,900	1,458,281	2,340,745	2,870,945	2,466,452	2,413,761	2,298,303	2,369,134	1,319,446	1,862,800	1,917,973
DE	6,600	2,900	2,000	4,100	11,900	6,403	3,635	3,072	7,917	5,187	11,205	7,917
MD	513,900	204,100	138,594	233,678	318,944	254,081	160,380	136,167	264,886	214,948	250,786	193,624
VA	7,756,300	3,688,900	2,144,894	3,712,559	5,171,856	3,052,136	3,100,801	3,355,838	2,274,457	2,305,985	2,615,750	2,195,832
NC	6,770,000	4,206,000	2,728,000	3,516,000	2,576,000	2,894,835	3,571,188	4,566,766	4,227,052	1,673,345	2,987,996	2,870,234
TOTAL	32,377,000	17,913,600	9,260,413	13,753,996	16,598,700	12,599,163	14,514,767	15,413,406	12,937,947	8,887,783	11,245,838	10,689,548

Table 2. Summer flounder recreational landings in pounds by state ('000 lbs), 1983-1999

State	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
ME	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NH	0	0	0	2	2	8	16	48	3	0	0	0	0	0	0	0	0
MA	663	350	88	2,500	583	281	36	64	79	118	203	243	227	213	277	776	509
RI	160	131	317	2,604	320	253	167	91	132	121	220	263	236	578	419	786	830
CT	499	419	339	775	434	170	97	31	141	192	129	475	395	432	362	448	389
NY	6,387	4,027	1,880	2,300	2,436	3,003	689	1,458	1,502	989	1,735	2,645	1,068	1,316	2,207	2,348	1,715
NJ	10,387	8,531	7,936	7,632	5,880	6,723	796	1,805	3,759	3,891	4,269	3,843	1,895	5,058	6,057	4,790	3,075
DE	936	1,307	230	162	188	752	208	167	205	401	524	338	193	721	332	387	293
MD	873	656	95	202	730	958	309	222	358	374	336	117	216	191	87	299	445
VA	7,517	2,038	742	522	1,400	1,866	557	724	1,547	804	949	943	1,022	1,448	1,758	2,161	827
NC	548	1,305	863	1,164	196	610	283	533	234	258	466	461	251	362	357	481	282
Total	27,969	18,765	12,490	17,861	12,167	14,624	3,158	5,143	7,961	7,148	8,831	9,327	5,503	10,319	11,856	12,476	8,365

Table 3. Summer flounder commercial quota shares, initial quota allocations 1994-2000, and adjusted 2000 quota as of November 2000.

State	%	1994 initial	1995 initial	1996 initial	1997 initial	1998 initial	1999 initial	2000 initial	2000 as of 11/00
ME	0.04756	7,612	6,987	5,284	5,284	5,284	5,284	5,284	3,956
NH	0.00046	74	67	51	51	51	51	51	51
MA	6.82046	1,091,653	1,001,953	757,841	757,841	757,841	757,841	757,841	710,493
RI	15.68298	2,510,149	2,303,894	1,742,583	1,742,583	1,742,583	1,742,583	1,742,583	1,742,566
CT	2.25708	361,258	331,574	250,791	250,791	250,791	250,791	250,791	244,085
NY	7.64699	1,223,943	1,123,374	849,680	849,680	849,680	849,680	849,680	849,672
NJ	16.72499	2,676,928	2,456,969	1,858,363	1,858,363	1,858,363	1,858,363	1,858,363	1,794,540
DE	0.01779	2,847	2,614	1,977	1,977	1,977	1,977	1,977	1,977
MD	2.0391	326,369	299,551	226,570	226,570	226,570	226,570	226,570	194,564
VA	21.31676	3,411,867	3,131,519	2,368,569	2,368,569	2,368,569	2,368,569	2,368,569	2,293,410
NC	27.44584	4,392,860	4,031,905	3,049,589	3,049,589	3,049,589	3,049,589	3,049,589	3,049,560
Total	100.0	16,005,560	14,690,407	11,111,298	11,111,298	11,111,298	11,111,298	11,111,298	10,884,874

Table 4. Summary of summer flounder management measures and landings in millions of pounds, 1993-2000.

	1993	1994	1995	1996	1997	1998	1999	2000
TAL	20.73	26.68	19.40	18.52	18.52	18.52	18.52	18.52
Commercial Quota	12.35	15.60*	14.61*	10.80*	8.38*	10.56*	10.73	10.88
Commercial Landings	12.54	14.51	15.41	12.94	8.98	11.25	10.69	?
Recreational Harvest Limit	8.38	10.67	7.76	7.04	7.41	7.41	7.41	7.41
Recreational Landings	8.83	9.32	5.50	10.32	11.86	12.48	8.37	?

* Corrected for prior year overages. 1995 also includes 3.05 m lb. added by court order.

Table 5. State compliance with required commercial management measures as of August 1998.

COMMERCIAL		
State	14" size	5 1/2" Mesh
ME	Y	Y
NH	Y	NA
MA	Y	Y
RI	Y	Y
CT	Y	Y
NY	Y	Y
NJ	Y	Y
DE	Y	Y
MD	Y	Y
VA	Y	Y
PRFC	Y	Y
NC	Y	Y

Table 6. 2000 recreational management measures for summer flounder by state.

STATE	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	15.5	8 fish	May 10 – October 2
Rhode Island	15.5	8 fish	May 10 – October 2
Connecticut	15.5	8 fish	May 10 – October 2
New York	15.5	8 fish	May 10 – October 2
New Jersey	15.5	8 fish	May 10 – October 2
Delaware	15.5	8 fish	May 10 – October 2
Maryland	Bay: 15 Coastal: 15.5	Bay: 8 fish Coastal: 8 fish	Bay: May 15 – December 31 Coastal: April 15 – Dec. 11
PRFC	15	8 fish	May 15 – December 31
Virginia	15.5	8 fish	March 29 – July 24, August 1—December 31
North Carolina	15	8 fish	All Year