

2000 REVIEW OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
FISHERY MANAGEMENT PLAN FOR
TAUTOG
(Tautoga onitis)

Prepared by

Heather Stirratt (ASMFC)

Tautog Plan Review Team

Paul Caruso (MA)
David McCarron (MA)
David Simpson (CT)
Frank Steimle (NMFS)
Najih Lazar (ASMFC)

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ASMFC FISHERY MANAGEMENT PLAN FOR
TAUTOG (*Tautoga onitis*)**

I. Status of Fishery Management Plan Development

In May 1993 the ASMFC voted to develop a Fishery Management Plan for Tautog. The primary rationale was the vulnerability of tautog to overfishing. Additional concerns centered around localized overfishing and rising commercial fishing effort and landings. States declaring interest in tautog were: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, and Virginia. Plan development began in 1994 and the Tautog FMP was approved in March 1996. In May 1997 the Commission approved Addendum 1 to the Tautog FMP. Addendum 1 included *de minimus* specifications and adjustments to the compliance schedule. Required management measures began April 1, 1998. In November 1999 the Commission approved Addendum II to the Tautog FMP. Addendum II addressed adjustment of the compliance schedule and developed a list of issues to be reviewed and considered in a subsequent addendum or amendment.

II. Status of Stocks

Tautog is a long lived species, with individuals over age 30 reported from Rhode Island and Connecticut. Most females mature (80%) at age 3. Natural mortality (M) has been estimated at $M=0.15$ for males and $M=0.2$ for females.

An assessment was most recently prepared in 1999, using data from 1981 through 1998. A coastwide estimate of fishing mortality rates was derived with a VPA using fisheries dependent and independent data (independent data from Massachusetts through New Jersey only). Results indicate that fishing mortality rates have declined from a high of 0.71 in 1993, to 0.29 in 1998. Since the 1998 rate exceeds both the interim target fishing mortality rate of $F=0.24$ and the final plan target of $F=M=0.15$ tautog are considered overfished. Abundance indices through 1998 show a slight increase in biomass and recruitment in recent years.

For states south of NJ, a lack of data hampers efforts to estimate current fishing mortality rates and tautog abundance at a regional level of assessment. Most states are now collecting additional age and growth data with a goal of maintaining reliable F estimates. In June 2000 the Plan Review Team reviewed state compliance reports and compiled additional data that has been collected since the approval of the FMP. In accordance with Addendum II, the Technical Committee will be updating the stock assessment in the summer of 2001.

III. Status of Fishery

The tautog fishery is primarily recreational, extending from Maine to Virginia. Most landings occur in state waters between Cape Cod and the Chesapeake Bay. Tautog have historically ranked seventh in recreational species sought in both the North Atlantic and Mid-Atlantic sub-regions. Tautog are most frequently caught in the spring and fall months, although some Mid-Atlantic Region fishermen pursue them year-round and there is an active fishery off the Virginia Coast in Winter.

Recreational landings declined from 1987 to 1998 (figure 1), but rose again in 1999. Most recreationally landed tautog were caught in Massachusetts, New York, and New Jersey over the 1981 to 1999 time period, with those states accounting for 63 % of the recreational harvest by weight (table 1).

Although commercial landings averaged 8.7% of total landings from 1982-1991, they have increased in more recent years, reaching 15% of total landings in 1998. Commercial interest in tautog has increased in response to higher market prices, exceeding \$1.00/LB at times. As a result of the increase in both landings and market price, the ex-vessel value increased steadily from \$76,000 in 1982 to \$588,000 in 1991. Others factors contributing to the increase in commercial landings were the development of a live market for small fish, and increased regulation of other species such as striped bass, summer flounder, and winter flounder. Most commercial landings are taken by otter trawls, with gillnets, handlines, fish pots, and lobster traps all accounting for a share.

Commercial landings fluctuated without trend around the 200,000 pound mark from 1950 until 1980. Landings began to increase in the early 1980's and reached a high of 1,157,100 pounds in 1987 (figure 2). From 1986 through 1992 landings were sustained at around a million pounds. A steep decline in landings began in 1991 and continues to the present. Commercial landings were only 254,080 pounds in 1998. Table 2 shows commercial landings from 1981 - 1998.

Recent declines in landings of both user groups can be attributed to both stock conditions and more rigorous management measures.

IV. Status of Assessment Advice.

The Tautog assessment was reviewed through the NMFS 30th Northeast Regional Stock Assessment Workshop (SAW) in Fall 1999. The SARC accepted ADAPT VPA estimates of fishing mortality and stock size and secondary estimates from tagging studies. They concluded that Northern and Coastwide ASPIC runs were too subject to uncertainty to be reliable. After reviewing all accepted results, the SARC recommended that fishing mortality rates be reduced to meet both the interim fishing mortality ($F=0.24$) and final plan target ($F=0.15$) and to begin rebuilding the stock. The SARC also remarked that additional age and growth data is necessary to provide single year age/length keys for any future VPA. The Technical Committee and Stock Assessment Sub-Committee will update the stock assessment in Summer 2001.

IV. Status of Research and Monitoring

Length and abundance data are collected in trawl surveys in Massachusetts, Rhode Island, Connecticut, New York, New Jersey and Delaware. New York and New Jersey are collecting length and age data from party boats. Age/length information is also being collected in Massachusetts, Connecticut, Virginia, and Maryland. Rhode Island is tagging tautog to determine movements and to estimate mortality.

Connecticut conducted a hook and release mortality study in 1993 and 1995; Virginia conducted a study in 1995. Results indicate about a 2.5% discard mortality rate. This rate was used in the last assessment.

V. Status of Management Measures and Issues

The approved FMP includes commercial and recreational minimum sizes, and catch restrictions to reach the target fishing mortality. The interim fishing mortality target is $F=0.24$, which represents a partial reduction to the overfishing definition $F=M=0.15$. Recreational fisheries will be restrained by possession limits and seasonal closures, and commercial plans will be developed by each state. The existing size limits were phased-in over a two year period.

In 1998 the PRT expressed concern about Rhode Island's recreational fishery management program. In November 1999 the ASMFC found Rhode Island out of compliance with the Interstate Fishery Management Plan for Tautog in that the state had implemented a different bag limit for its for hire fisheries and was unable to demonstrate that the alternative management program achieved the fishing mortality reduction established by the FMP. On April 4, 2000 the ASMFC was notified that Rhode Island had implemented the regulations necessary to come into compliance with the FMP. As a result, the ASMFC withdrew determination of non-compliance on April 28, 2000.

The Tautog Plan Review Team reviewed the states' annual compliance reports during summer 2000. The Plan Review Team recommended that all of the states be found in compliance.

VI. Current State-by-State Implementation of FMP Compliance Requirements as of June 1, 2000.

States are expected to comply with the following provisions:

- | | |
|--|------------|
| 1. Restrictions to reach interim F target | 4/1/1998 |
| 2. Minimum size of 14" | 4/1/1998 |
| 3. Submission of plans to meet F=0.15 target | 10/01/2001 |
| 4. Implement regulations to meet F=0.15 target | 4/1/2002 |

VII. Prioritized Research Needs (As of June 1, 2000)

***Updated Annually (Fall of each year)**

1. Establish standardized state-by-state long-term surveys to monitor tautog abundance and length-frequency distributions, and to develop young-of-the-year indices. This is especially needed in the southern portion of the species range. Both fishery-dependent and fishery-independent information is needed.
2. Sample hard parts for annual ageing from the catches of recreational fishery and fishery-independent surveys throughout the range of the stock.
3. Initiate biological sampling of the commercial catch over the entire range of the stock.
4. Explore possible regional and local genetic differences (stock differentiation) and relate these to recruitment, growth, exploitation rates, and habitat differences. These differences can help support appropriate region-specific management strategies.
5. Define the status (condition and extent) of optimum or suitable juvenile habitats and trends in specific areas important to the species. It is critical to protect these habitats or to stimulate restoration or enhancement, if required.

Define the susceptibility of juveniles to coastal/anthropogenic contamination and resulting effects. This information can explain differences in local abundance, movements, growth, fecundity, and serve to support continued or increased regulation of the inputs of these contaminants and to assess potential damage.

6. Collect effort data for determining commercial and recreational CPUE.
7. Define the specific spawning and pre-spawning aggregating areas and wintering areas of juveniles and adults used by all major local populations, as well as the migration routes used by tautog to get to and from spawning and wintering areas and the criteria or times of use. This information is required to protect these areas from damage and overuse or excessive exploitation.

Define local and regional movement patterns and site fidelity in the southern part of the species range. This information may provide insights into questions of aggregation vs. recruitment to artificial reef locations.

8. Define the source of offshore eggs and larvae (in situ or washed out coastal spawning). Confirm that tautog, like cunner, hibernate in the winter, and in what areas and temperature thresholds, for how long, and are there special habitat requirements during these times that should be protected or conserved from damage or disturbance. This information will aid in understanding behavior variability and harvest availability.
9. Define the role of prey type and availability in local juvenile/adult population dynamics over the species range. This information can explain differences in local abundance, movements, growth, fecundity, etc.
10. Determine pot and trap escape vent dimensions needed to release tautog over a range of sizes.
11. Define larval diets and prey availability requirements. This information can be used as determinants of recruitment success and habitat function status. Information can also be used to support aquaculture ventures with this species.

Table 1. Tautog recreational harvest (A + B1) in weight (lbs.) of fish, 1981-1997 by state. Data from MRFSS.

Year	CT	DE	MD	MA	NJ	NY	RI	VA	Total
1981	242,339	6,585	10,295	790,611	161,423	1,496,039	664,568	742,653	4,116,494
1982	610,608	428,036	90,644	3,226,869	1,241,155	1,674,949	777,931	271,920	8,324,094
1983	458,581	4,438	6,550	1,837,263	414,956	1,124,844	615,592	1,267,164	5,731,371
1984	733,711	95,739	79,110	733,876	717,260	541,805	1,809,822	669,870	5,383,177
1985	471,185	144,858	1,107	328,042	741,656	2,034,903	277,385	298,796	4,299,917
1986	838,345	264,744	10,049	7,862,585	2,132,571	2,833,206	2,042,584	918,139	16,904,209
1987	1,106,606	387,075	266,093	1,751,372	2,130,955	2,288,075	507,424	442,750	8,882,337
1988	610,172	249,803	446,947	2,255,930	1,331,832	2,380,285	612,123	1,410,003	9,299,083
1989	1,038,217	743,338	78,391	1,076,365	1,289,186	1,018,016	296,889	806,337	6,348,728
1990	199,999	142,627	59,720	895,326	1,256,488	1,980,289	389,579	229,442	5,155,460
1991	648,633	354,497	106,222	798,890	2,189,144	2,352,646	1,007,548	619,215	8,078,786
1992	1,048,638	183,855	159,730	1,668,485	2,485,693	1,199,558	656,713	255,996	7,660,660
1993	531,024	217,881	105,232	752,598	1,361,612	1,800,794	389,734	758,409	5,919,277
1994	417,439	152,034	177,358	373,188	330,551	585,037	328,668	1,101,129	3,467,398
1995	402,617	793,339	115,993	309,224	1,722,714	369,643	237,094	613,348	4,565,967
1996	245,817	158,751	26,484	397,284	1,123,173	193,046	248,840	778,314	3,173,705
1997	84,297	204,419	182,995	166,042	483,639	331,530	301,109	319,257	2,075,285
1998	231,622	257,347	27,648	96,694	41,431	208,743	316,338	273,516	1,455,337
1999	61,209	358,830	37,469	402,154	512,759	761,469	216,020	204,468	2,556,377
Mean	499,053	257,409.8	99,401.9	1,286,139.9	1,083,409.9	1,258,743.9	584,798.1	599,036	5,669,883.1

Table 2. Tautog commercial landings in thousands of pounds, 1981-1997 by state. Data from NMFS commercial statistics homepage.

Year	CT	DE	MD	MA	NJ	NY	RI	VA	Total
1981	20,500	1,000	1,200	103,000	54,400	81,400	69,800	700	332,000
1982	21,200	800	100	69,300	148,200	90,400	86,300	2,600	418,900
1983	33,500	800	-	57,600	100,600	88,400	142,600	1,700	425,200
1984	32,700	1,400	2,600	68,100	129,700	102,500	334,700	1,200	672,900
1985	49,900	3,200	2,400	63,200	125,500	84,500	403,200	1,639	733,539
1986	103,900	300	2,600	165,800	100,700	201,300	363,100	1,800	939,500
1987	159,200	500	3,800	250,000	95,200	225,200	420,500	2,700	1,157,100
1988	112,100	600	6,100	277,100	88,000	255,000	328,900	2,800	1,070,600
1989	99,706	-	3,978	352,507	51,842	285,422	214,928	7,387	1,015,770
1990	82,008	500	4,599	289,074	99,112	181,543	211,084	5,151	873,071
1991	54,000	1,300	3,164	354,346	93,022	226,413	371,597	5,058	1,108,900
1992	65,700	200	4,058	292,291	116,332	169,011	359,767	4,389	1,011,748
1993	44,000	300	1,432	160,336	153,474	89,467	201,593	2,660	653,262
1994	43,000	400	1,718	37,399	162,641	71,375	130,719	10,315	457,567
1995	20,466	600	4,416	35,298	116,123	72,879	95,019	27,701	372,502
1996	33,327	1,599	3,622	32,579	89,435	105,466	64,876	26,137	357,041
1997	14,519	841	7,663	64,275	49,726	101,001	45,880	25,078	308,983
1998	6,905	1,544	5,682	91,424	42,426	69,004	20,327	14,770	254,080
Mean	52,454.3	728.4	3,614.5	145,454.2	95,601.7	131,593.7	203,415.3	7,567.6	640,140.2

Figure 1. Tautog recreational harvest (A + B1) in weight (lbs.) of fish, 1981-1999.

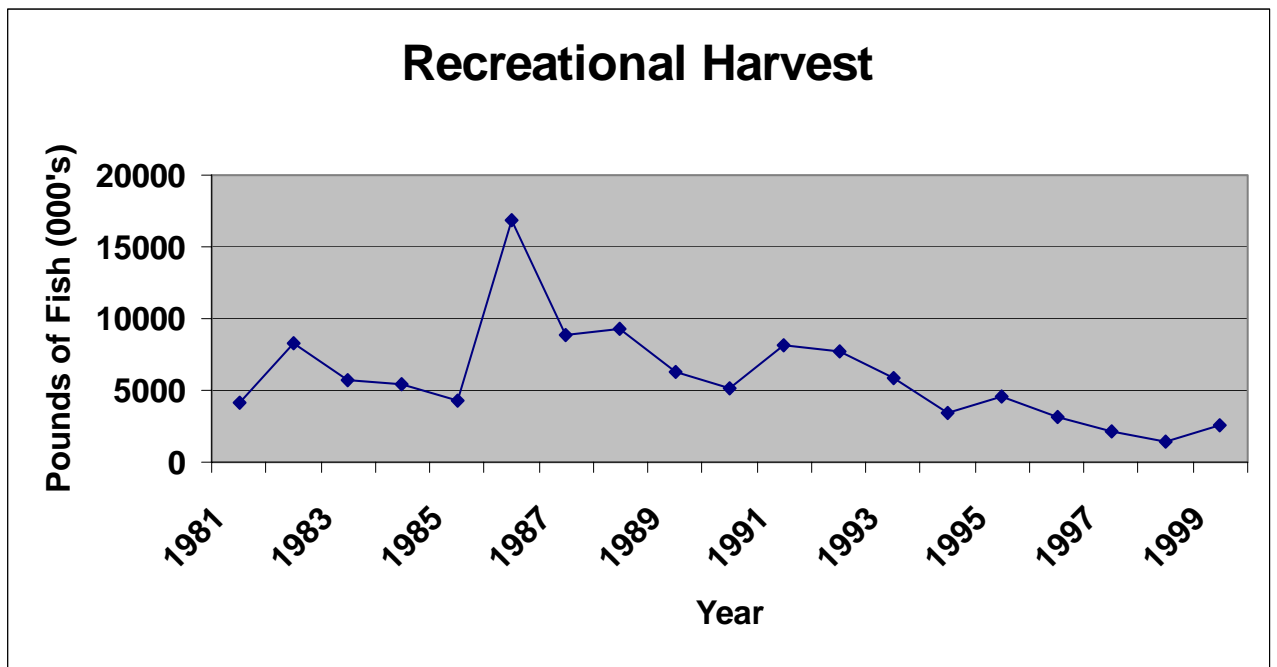
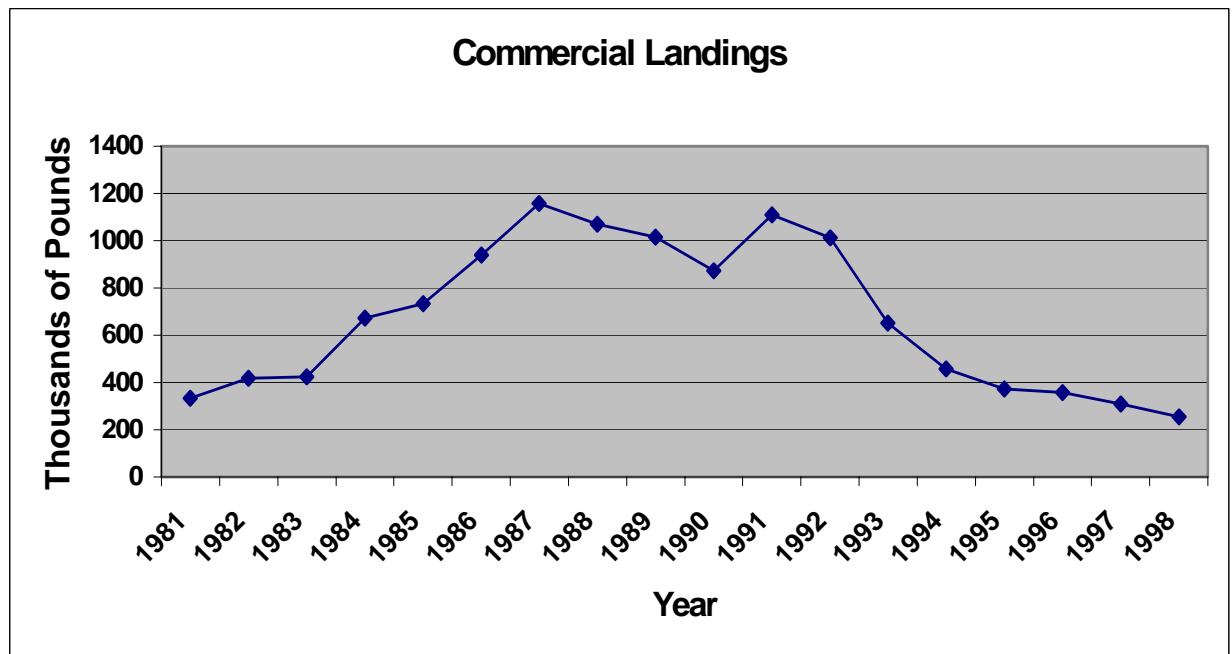


Figure 2. Tautog commercial landings in thousands of pounds, 1981-1998.



2000 Commercial Tautog Regulations

STATE	SIZE LIMIT	POSSESSION LIMITS	SEASONS	QUOTA	GEAR RESTRICTIONS
Massachusetts	16"	40	April 15-May 15 July 11-October 31		Yes
Rhode Island	16"	20	April 15-May 31	Yes	Yes
	16"	20	August 1-September 15		
	16"	20	October 15-December 31		
Connecticut	14"	a	January 1-April 30 June 15-Dec 31		Yes
New York	14"	b	some gears		Yes
New Jersey	14"		April 1-June 15 October 13-December 31	Yes	Yes
Delaware	14"/15"	See recreational	See Recreational		
Maryland	14"	5			Yes
Virginia	14"		Jan 1- April 30 Sept 1- Dec 31		Yes

2000 Recreational Tautog Regulations

STATE	SIZE LIMIT	POSSESSION LIMITS	SEASONS
Massachusetts	16"	6	-
Rhode Island	16"	3	May 1-October 14
	16"	10	October 15-December 31
Connecticut	14"	4 (daily)	Jan 1-Apr 30, June 15- Dec 31
New York	14"	c	-
New Jersey	14"	d	d
Delaware	14"	10 ¹	Jul 1 - Mar 31
	15"	3	Apr 1 - Jun 30
Maryland	14"	5	-
Virginia	14"	7	Open

- a The trawl fishery has a possession limit of 75 fish, the commercial hook, fish pot, trap net, fyke net, and gill net fisheries the possession limit is 25 fish, and in the lobster pot fishery the possession limit is 10 fish. Holders of Connecticut Marine Pound Net Registration may possess up to twelve fish year round except that during the May 1 through June 14 closed season all female tautog must be released without avoidable injury. All possession limits are daily limits.
- b New York has a 25 fish vessel trip limit for commercially caught tautog, except only 10 per vessel are allowed when lobster pot gear and more than six lobsters are in possession.
- c New York has a one fish bag limit in effect for recreational catches from June 1 through October 6 and a 10 fish bag limit in effect from October 7 through May 31.
- d New Jersey has a possession limit of 10 tautog from October 10 through May 31. The possession limit from June 1 through October 9 is 1 tautog.
- 1 Delaware has an 11 day closure from September 8 through September 18.

