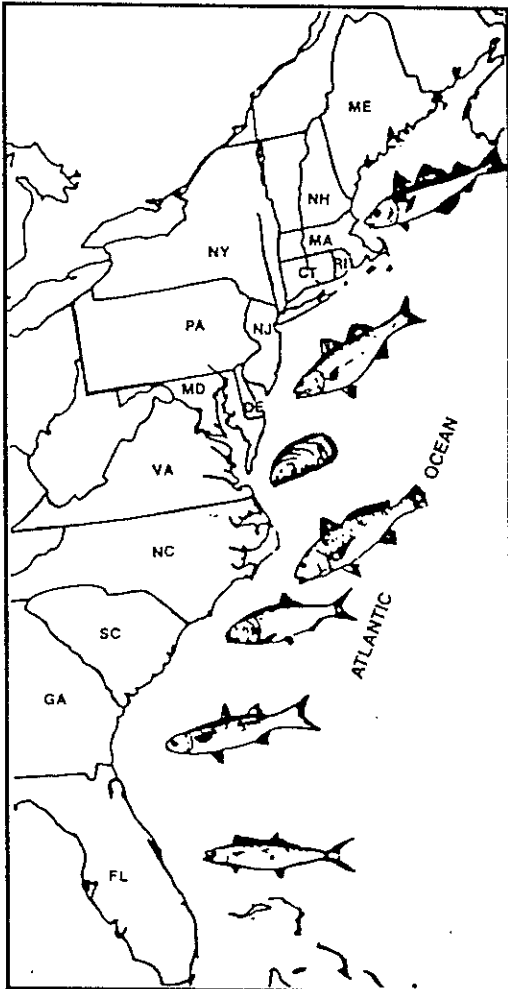


ASMFC  
FILE COPY  
DO NOT REMOVE

*Special Report No. 30*  
*of the*  
**ATLANTIC STATES MARINE  
FISHERIES COMMISSION**



PROCEEDINGS  
OF THE 1993  
STRIPED BASS  
(*Morone saxatilis*)  
STOCK ASSESSMENT  
WORKSHOP

December 1993



**Proceedings of the 1993  
Striped Bass Stock Assessment Workshop**

**Edited by  
Lisa L. Kline**

**Atlantic States Marine Fisheries Commission  
1776 Massachusetts Ave, NW, Suite 600  
Washington, DC 20036**



## Preface

Partial funding for this project was provided by a cooperative grant between the Atlantic States Marine Fisheries Commission and the U.S. Fish and Wildlife Service through the Federal Aid in Sport Fish Restoration Program (Grant No. 14-48-0009-1256). Sport Fish Restoration Program funds were utilized by the Commission to fund travel and meeting expenses of the Striped Bass Stock Assessment Committee to facilitate stock assessment of state and federal data on Atlantic coast striped bass stocks. Figures included in this report were provided by state participants of the stock assessment workshop. This stock assessment information was summarized by the ASMFC's Striped Bass Coordinator, funded through the ASMFC Striped Bass Monitoring and Research Coordination Project, to produce this report. We extend our appreciation to Alicon Morgan of the Atlantic States Marine Fisheries Commission for formatting and editing of data tables.



## Table of Contents

Preface . . . . .	i
Table of Contents . . . . .	ii
List of Tables . . . . .	iii
List of Figures . . . . .	iv
Status of Atlantic Coast Striped Bass . . . . .	1
APPENDIX I . . . . .	20
Estimated Striped Bass Harvest in Numbers and Pounds, 1990-1992 . . . . .	21
APPENDIX II . . . . .	29
Recreational Harvest Regulations - 1993 . . . . .	30
Commercial Harvest Regulations - 1993 . . . . .	31

## List of Tables

Table 1.	Fishing mortality (F) estimates on striped bass from the Hudson River, Maryland rivers, and from the coastal migratory stock (eastern Long Island and offshore North Carolina). . . . .	4
Table 2.	1990-1992 Estimated legal recreational and commercial striped bass harvest (in numbers). . . . .	22
Table 3.	1990-1992 Estimated recreational and commercial striped bass harvest (in pounds). . . . .	23
Table 4.	1992 Commercial and recreational quotas and actual harvest (estimated in pounds). . . . .	24
Table 5.	1992 Estimated striped bass harvest (in pounds). . . . .	25
Table 6.	1992 Estimated striped bass harvest (in numbers). . . . .	26
Table 7.	1991 Estimated striped bass harvest (in numbers). . . . .	27
Table 8.	1990 Estimated striped bass harvest (in numbers). . . . .	28

## List of Figures

Figure 1a.	Percentage of striped bass adults age 8 or greater in the Hudson River. . . .	5
Figure 1b.	Percentage of striped bass adults age 8 or greater in the Maryland Chesapeake Bay. . . . .	6
Figure 1c.	Maryland index of spawning potential for striped bass. . . . .	7
Figure 1d.	Striped bass egg production for the Pamunkey River, Virginia. . . . .	8
Figure 1e.	Striped bass spawning stock composition, Delaware River. . . . .	9
Figure 2a.	Striped bass young-of-the-year index, Hudson River. . . . .	10
Figure 2b.	Striped bass young-of-the-year index, Chesapeake-Maryland. . . . .	11
Figure 2c.	Striped bass young-of-the-year index, Chesapeake-Virginia. . . . .	12
Figure 2d.	Striped bass young-of-the-year index, Delaware River. . . . .	13
Figure 2e.	Striped bass young-of-the-year index, Albemarle-Roanoke. . . . .	14
Figure 3a.	Catch per unit effort of striped bass for the recreational fishery, Maine-North Carolina. . . . .	15
Figure 3b.	Catch estimates of striped bass for the recreational fishery, Maine-North Carolina. . . . .	16
Figure 3c.	Catch per unit effort of striped bass for the bycatch of the Hudson River shad gillnet fishery. . . . .	17
Figure 3d.	Catch per unit effort of striped bass for the recreational fishery, Connecticut. . . . .	18
Figure 3e.	Commercial landings for striped bass, Maine-North Carolina. . . . .	19



## Status of Atlantic Coast Striped Bass Stocks 1993

The status of Atlantic Coast Striped Bass stocks continues to improve. The Hudson stock retains the status of recovered, while the Chesapeake and Delaware stocks are recovering. Recent increases in the juvenile indices for the Roanoke stock point to improvement, but high mortality of spawning stock indicates that conservative management measures need to be continued if stocks are to increase overall.

The optimistic outlook for these striped bass stocks is supported by a number of indicators, the four most useful of which include 1) fishing mortality rate, 2) trends in spawning stock size, 3) juvenile production (young-of-the-year indices), and 4) trends in catch per unit effort (CPUE) of fisheries.

Fishing mortality (F) can be defined as the rate at which fish are removed from the population by fishing activities. The FMP requires that F for a transitional fishery be maintained at or below 0.25, so that spawning stock biomass is able to rebuild. Since it is difficult to determine the exact value of F occurring along the coast, values of F are calculated with a number of different methods. Calculated values of F from 1988-1992 (**Table 1**) indicate that it has remained within the guidelines specified in the FMP. A tagging study, currently in progress, indicates that the F value for the Chesapeake is well below the target 0.25.

Spawning stock size is defined as the size of the adult population. As with values of F, it is difficult to determine the exact size of the population. Thus, it is estimated using a number of different methods. For the Hudson River, the percentage of adults greater than 8 years old is used, and has increased steadily since 1988 (**Figure 1a**). In the Maryland portion of the Chesapeake Bay, the percentage of adults greater than 8 years old is also used (**Figure 1b**) as well as an index of spawning potential (ISP). The ISP is calculated based on the abundance of female striped bass on the spawning ground and the number of eggs produced by each fish. The index has generally shown an increasing trend since 1985 (**Figure 1c**). In the Pamunkey River of Virginia, estimates of egg production calculated with a method similar to that used for the ISP, have increased since 1984 (**Figure 1d**). A spawning stock survey for the Delaware stock has recently been instituted (**Figure 1e**).

Indices based on surveys of the YOY juveniles indicate recruitment success from spawning for the current year. Although the strength of these indices can be highly influenced by environmental conditions, they are very useful as indicators of potential abundance of the future stock. These indices can be misleading when used as sole source indicators of the abundance of the present spawning stock as they do not account for future fishing mortality and mortality that might result from changes in environmental and climatic conditions; they are more useful for fisheries management decisions when used in conjunction with other indicators such as the adult abundance indices presented in **Figure 1**. The trends of the YOY index for the Hudson, Chesapeake-Maryland, Chesapeake-Virginia, Delaware and Albemarle-Roanoke stocks are given in **Figures 2a-e**, respectively. The method used to calculate the Chesapeake-Maryland index has recently been changed from the arithmetic mean to the geometric mean, in order to increase the

precision of index estimates. Index values are calculated each way and included in **Figure 2b**. A bay-wide index is being developed for the Chesapeake which will combine the Maryland and Virginia indices (Austin et al, 1993). As expected, the indices for each stock show variable recruitment; however, each index shows a good year class over the last five years. The occurrence of good recruitment indices is consistent with the steady improvement of adult abundance indicated above. The 1993 YOY indices for Maryland and North Carolina are the highest on record, and preliminary information from the other indices indicate that the trend is coastwide.

CPUE is usually defined as the number (or weight) of fish caught in a specified period of time, which could be an hour, a day, or a 'fishing trip'. Rising CPUE suggests an increase in relative abundance of the species captured (**Figure 3a**). Data from the National Marine Fisheries Service's (NMFS) Marine Recreational Fishery Statistics Survey (MRFSS) from North Carolina north to Maine, show a sharp increase in CPUE for striped bass from 1989-1992 while harvest has declined since 1979 and has remained relatively low (**Figure 3b**) as a result of the moratoriums imposed in the mid 1980's and the conservative management measures imposed after the moratorium was lifted. CPUE for striped bass as bycatch in the Hudson River shad gillnet fishery rose steadily from 1985-1989, and remained relatively high for 1990 and 1991 (**Figure 3c**). The recreational fishery for striped bass in Connecticut has shown a fairly steady rise in CPUE since 1980 (**Figure 3d**). Commercial landings have been held to 20% of historical landings, except in Maryland, which have kept those numbers low (**Figure 3e**).

The current status of striped bass stocks is a result of current regulations and past moratorium. Regulations under Amendment 3 to the FMP were much more conservative than regulations under Amendment 4 which went into effect during the fall of 1989 and is presently in use. A new Amendment 5 will address a recovered fishery with a target F of 0.5, and will clarify the regulations under Amendment 4. All indicators, such as YOY indices, CPUE indices, and measured F values, imply that the fishery is well on its way to recovery. Expedient development of Amendment 5 will ensure that a management plan will be in place when the recovery occurs.

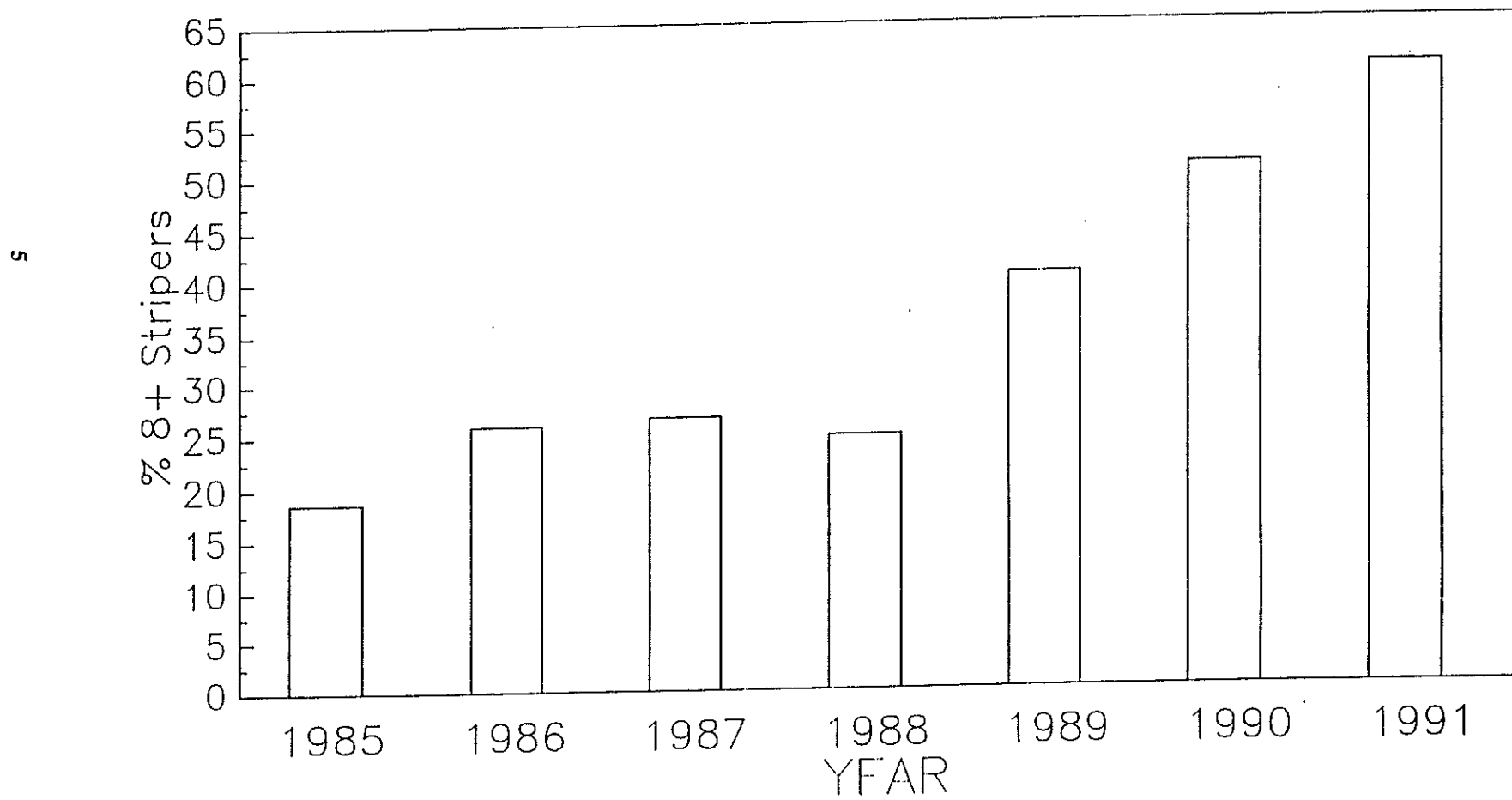
## References

- Austin, H.M., J. A. Colvocoresses and T.C. Mosca, III. 1993. Develop a Chesapeake Bay-wide Young-of-the-Year striped bass index. Final Report CBSAC-NA16FU0393-01, Gloucester, VA. 85 p.
- Crecco, V. A. 1992. The 1992 Status of Atlantic coast Striped Bass. Report to ASMFC, Washington, District of Columbia. 23 p.

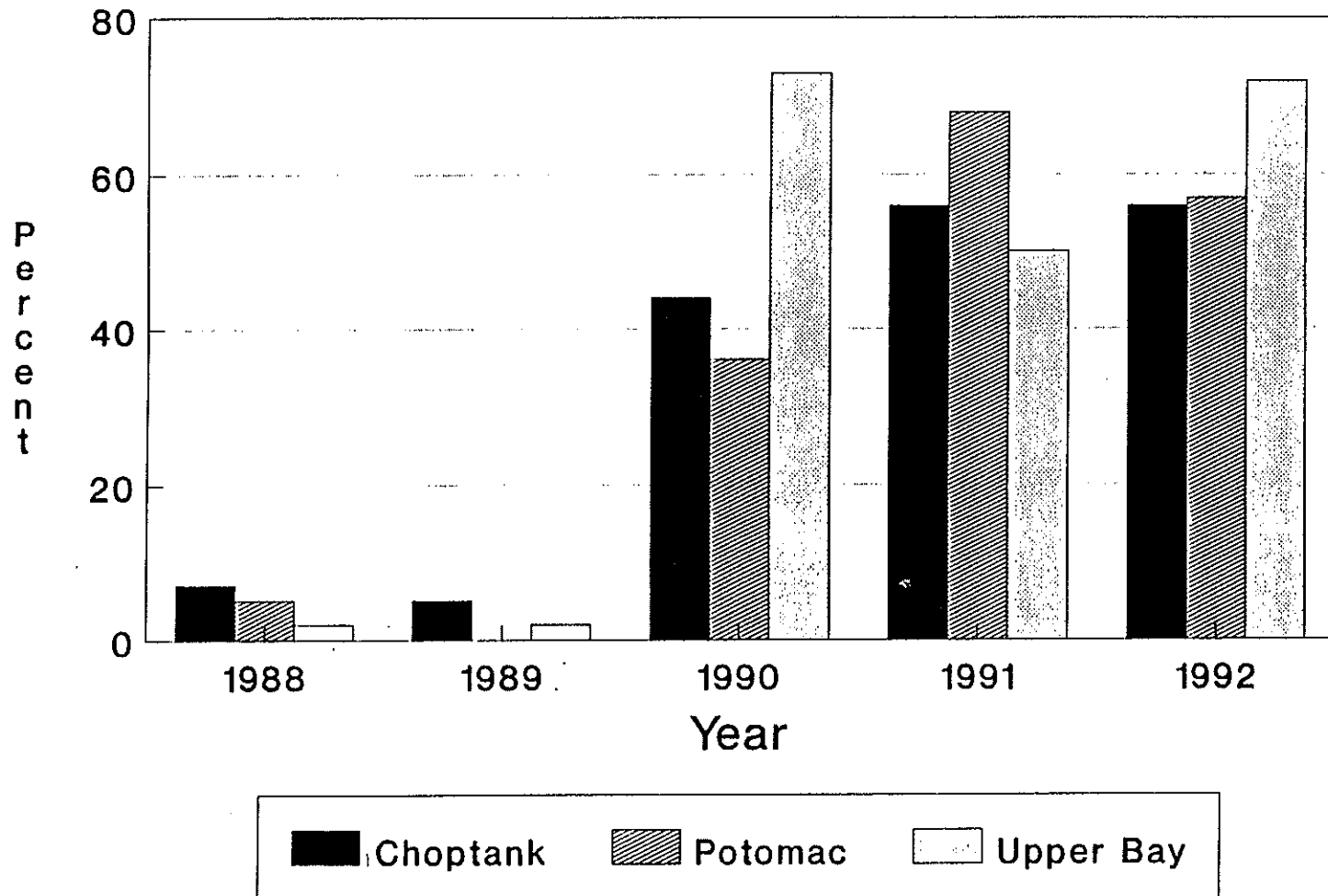
Table 1. Fishing mortality (F) estimates on striped bass from the Hudson River, Maryland Rivers and from the coastal migratory stock (eastern Long Island and offshore North Carolina). Adapted from Crecco, 1992, with preliminary material from the stock assessment workshop held in Providence, RI, July 1993.

<u>Method</u>	<u>Location</u>	<u>Year</u>			
		1988/89	1989/90	1990/91	1992
Tagging	Hudson River	<0.01	0.41	0.31	-----
	Maryland rivers	0.13	<0.01	0.19	0.175
	Eastern Long Island	0.03	<0.01	0.47	-----
	Offshore North Carolina	<0.01	0.48	0.18	-----
	<b>AVERAGE</b>	<b>&lt;0.01</b>	<b>0.19</b>	<b>0.29</b>	<b>0.175</b>
Catch Curve	Hudson River	0.28	0.19	0.05	0.22
	Long Island Haul				
	Seine	-----	-----	0.19	0.32
<b>GRAND AVERAGE</b>		<b>0.04</b>	<b>0.19</b>	<b>0.23</b>	<b>0.24</b>

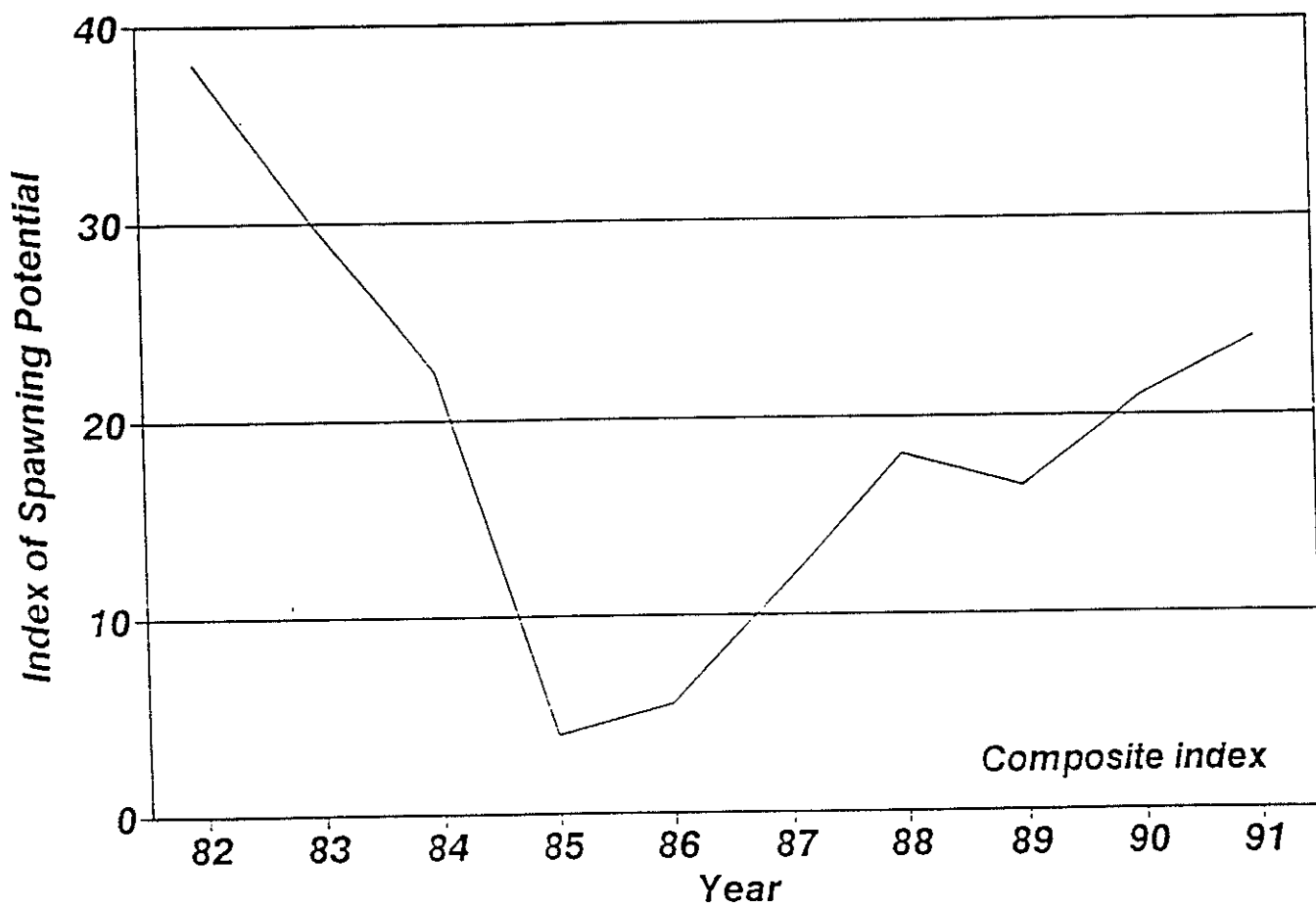
**Figure 1a.** Percentage of striped bass adults age 8 or greater in the Hudson River.



**Figure 1b.** Percentage of striped bass adults age 8 or greater in the Maryland Chesapeake Bay.



**Figure 1c.** Maryland index of spawning potential for striped bass.  
(Length-based estimates)



**Figure 1d.** Striped bass egg production for the Pamunkey River, Virginia.

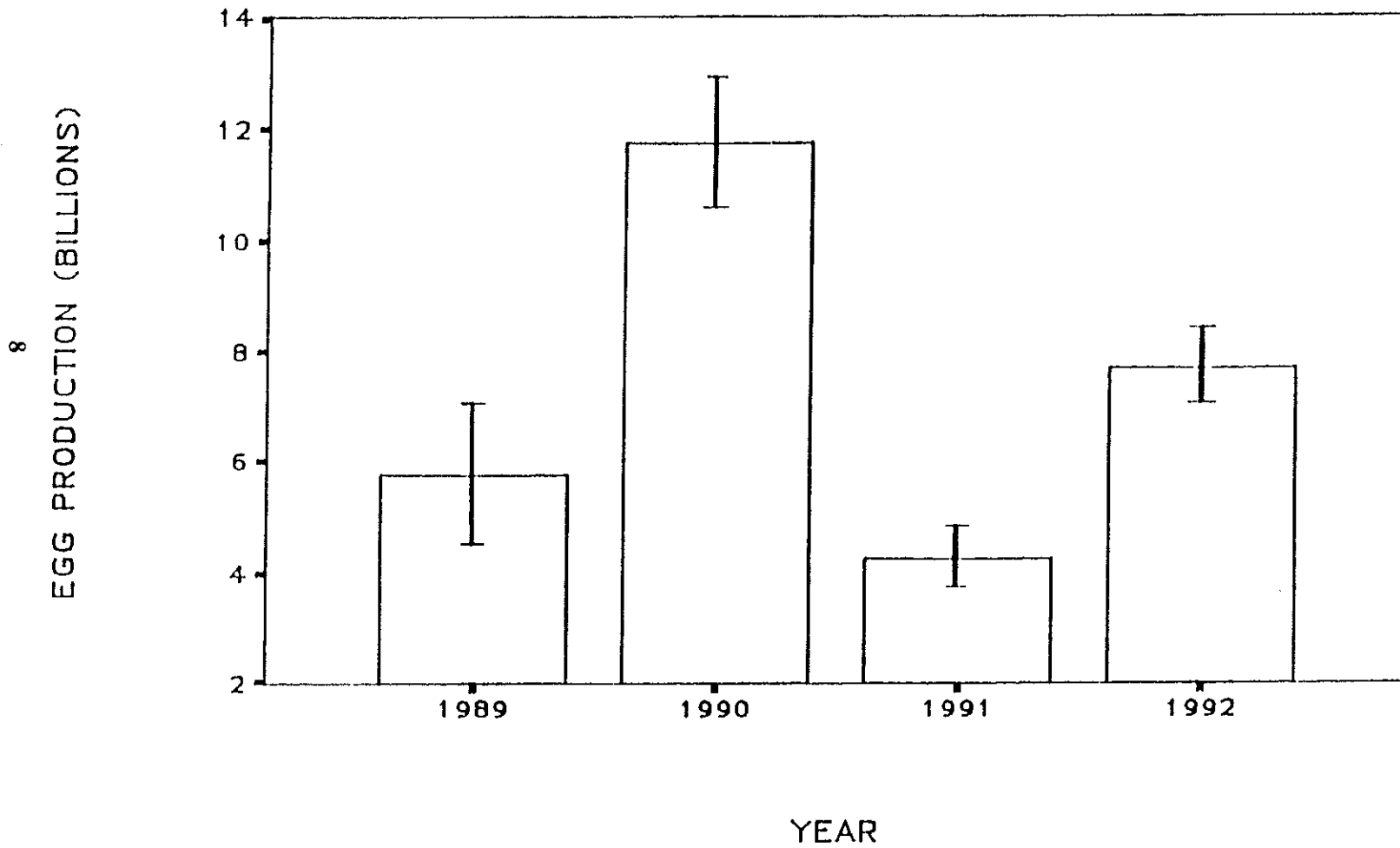
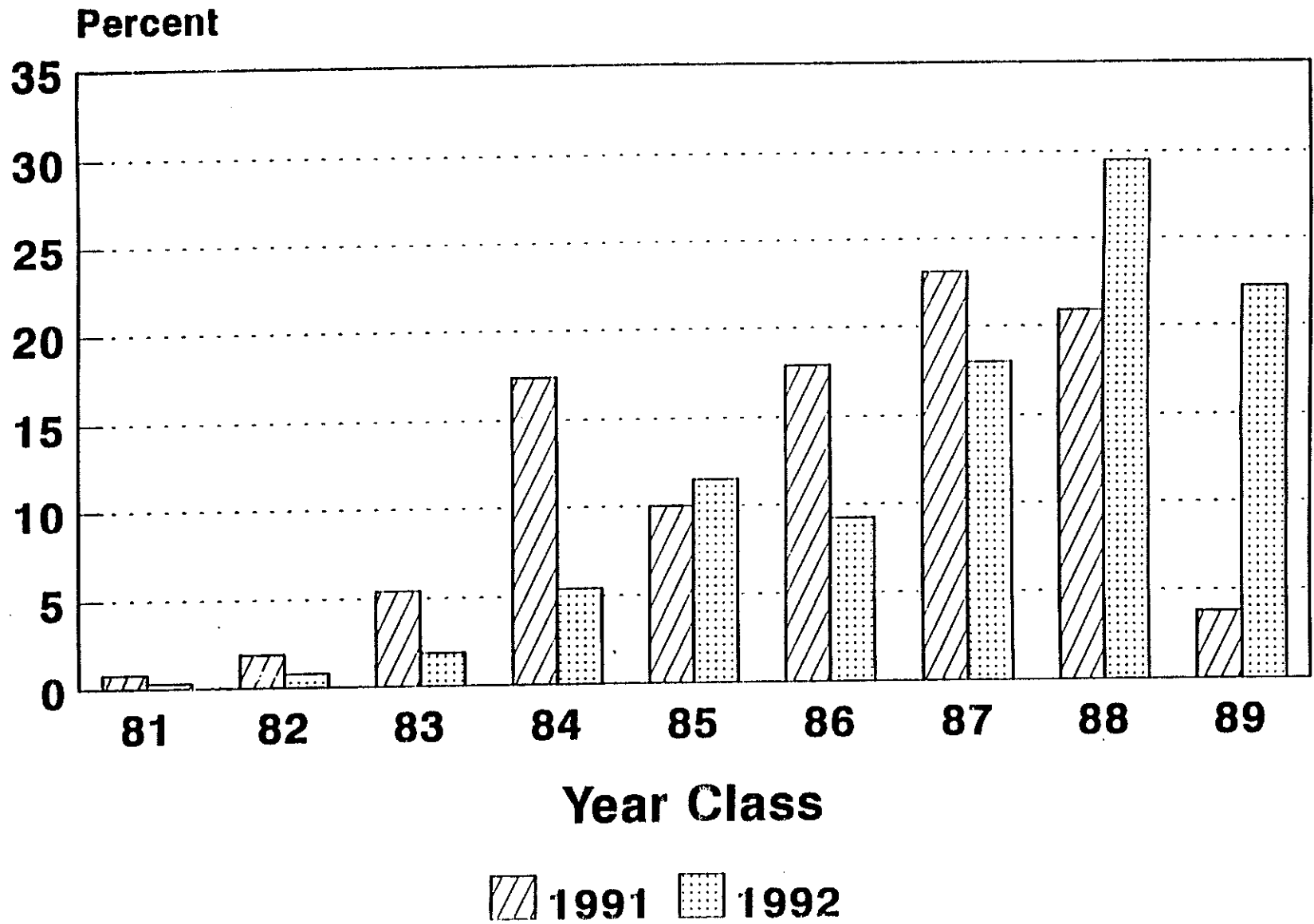


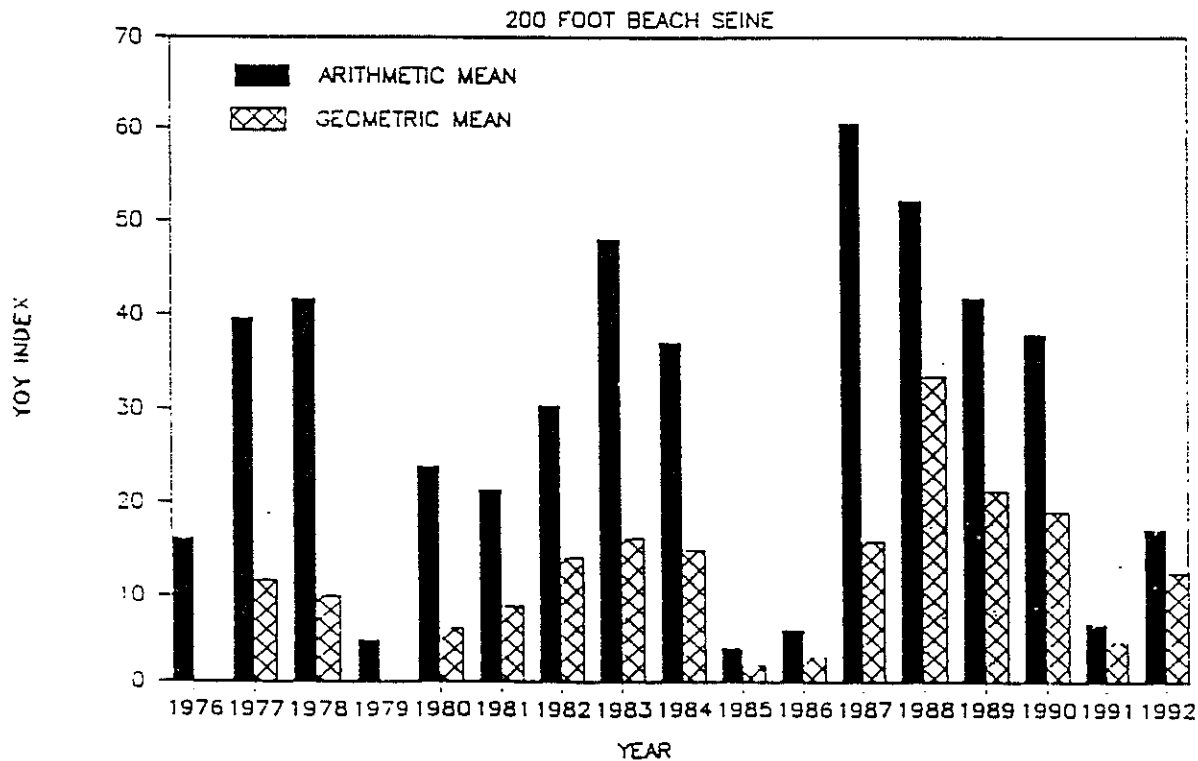


Figure 1e. Striped bass spawning stock composition, Delaware River.



6

**Figure 2a.** Striped bass young-of-the-year index, Hudson River.



**Figure 2b.** Striped bass young-of-the-year index, Chesapeake-Maryland

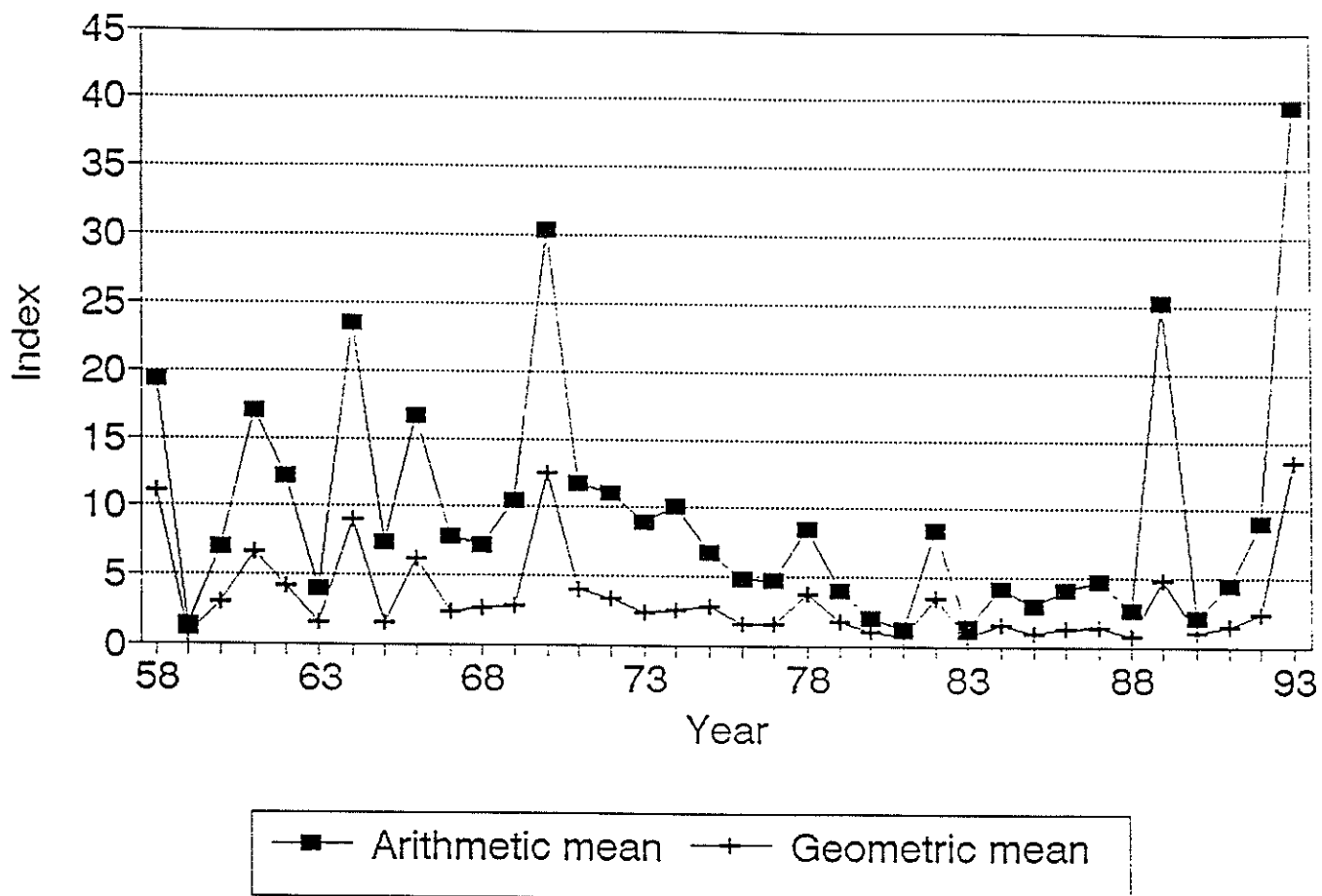
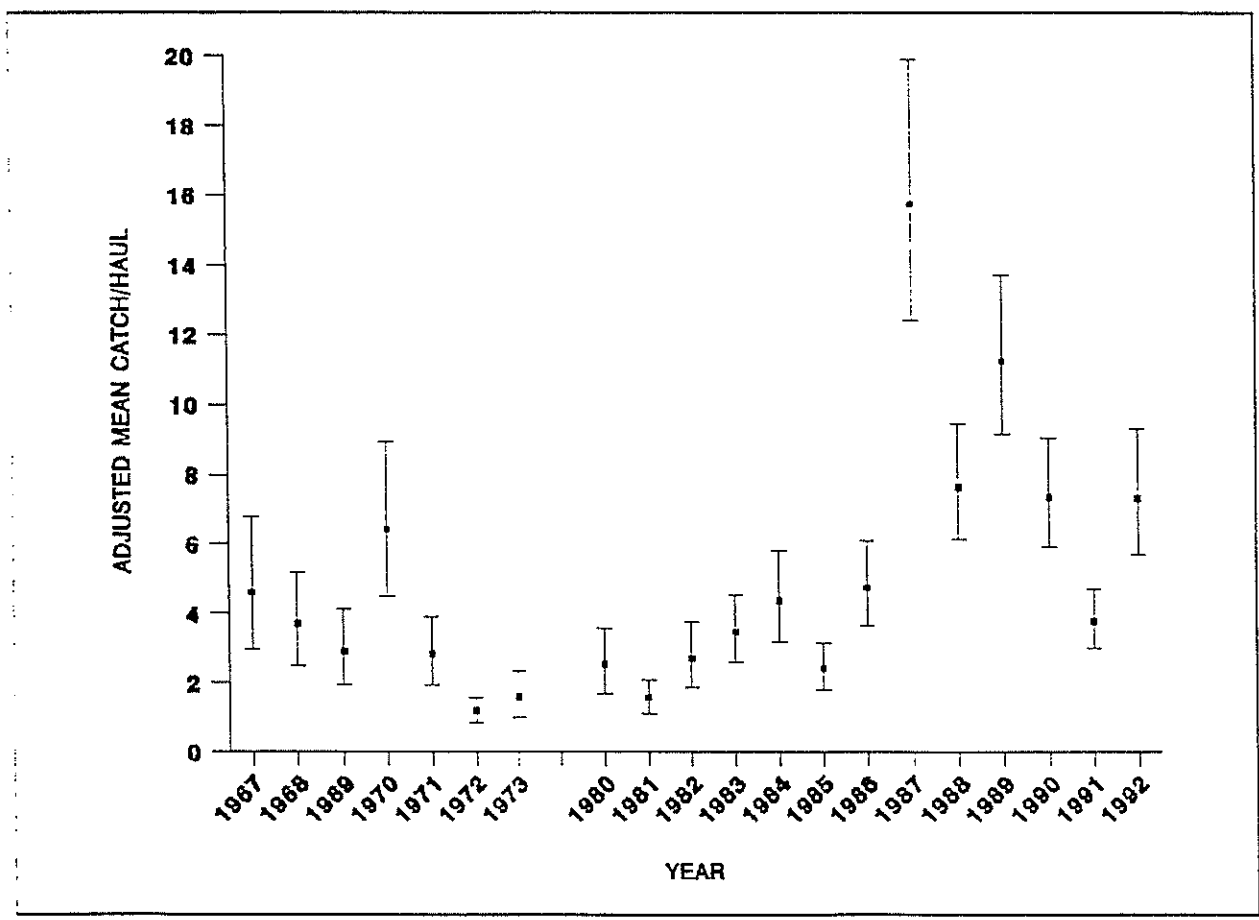
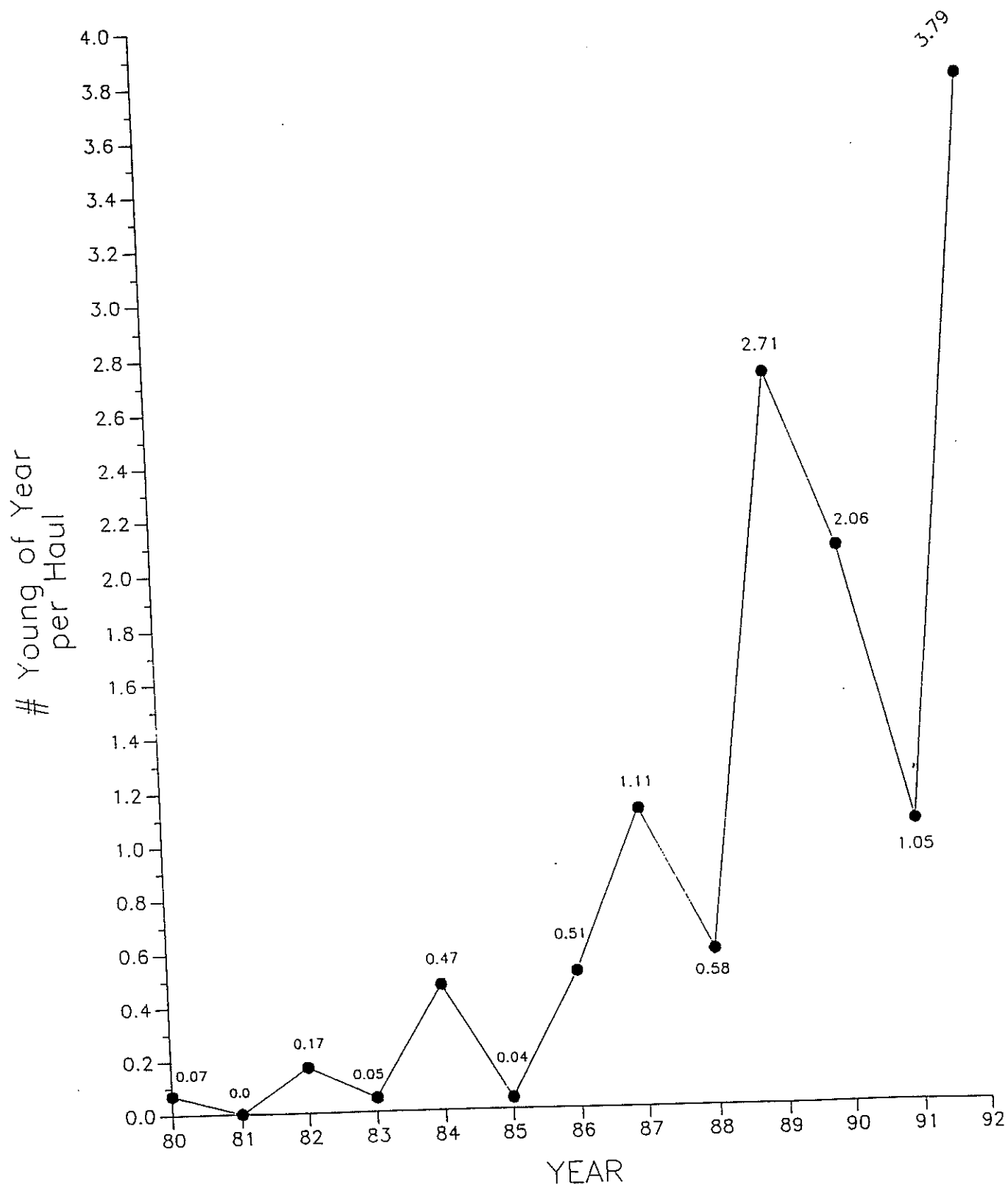


Figure 2c. Striped bass young-of-the-year index, Chesapeake-Virginia.

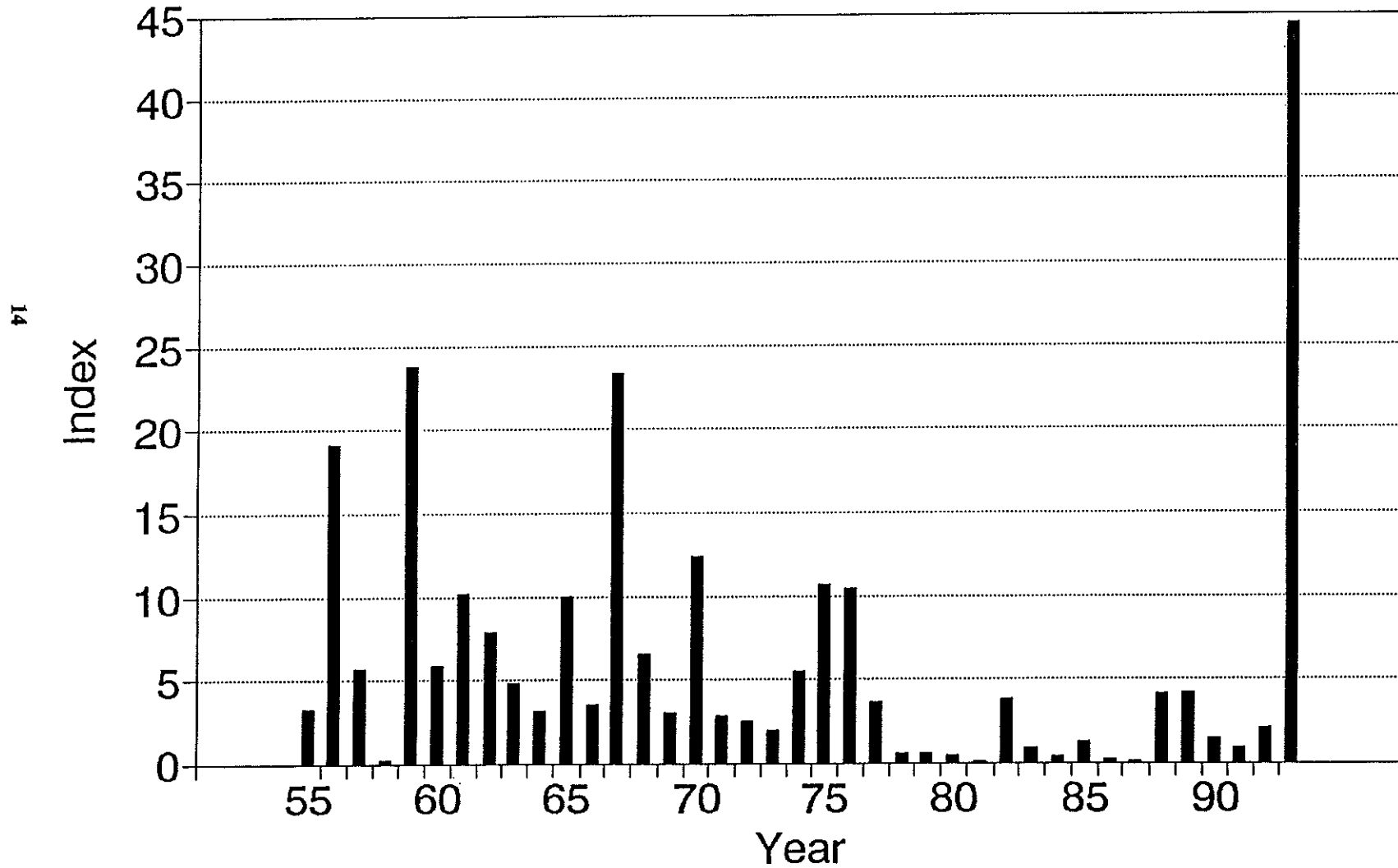


Annual Virginia striped bass adjusted mean catch per seine haul. Vertical bars are 95% confidence intervals as estimated  $\pm 2$  standard errors of the mean.

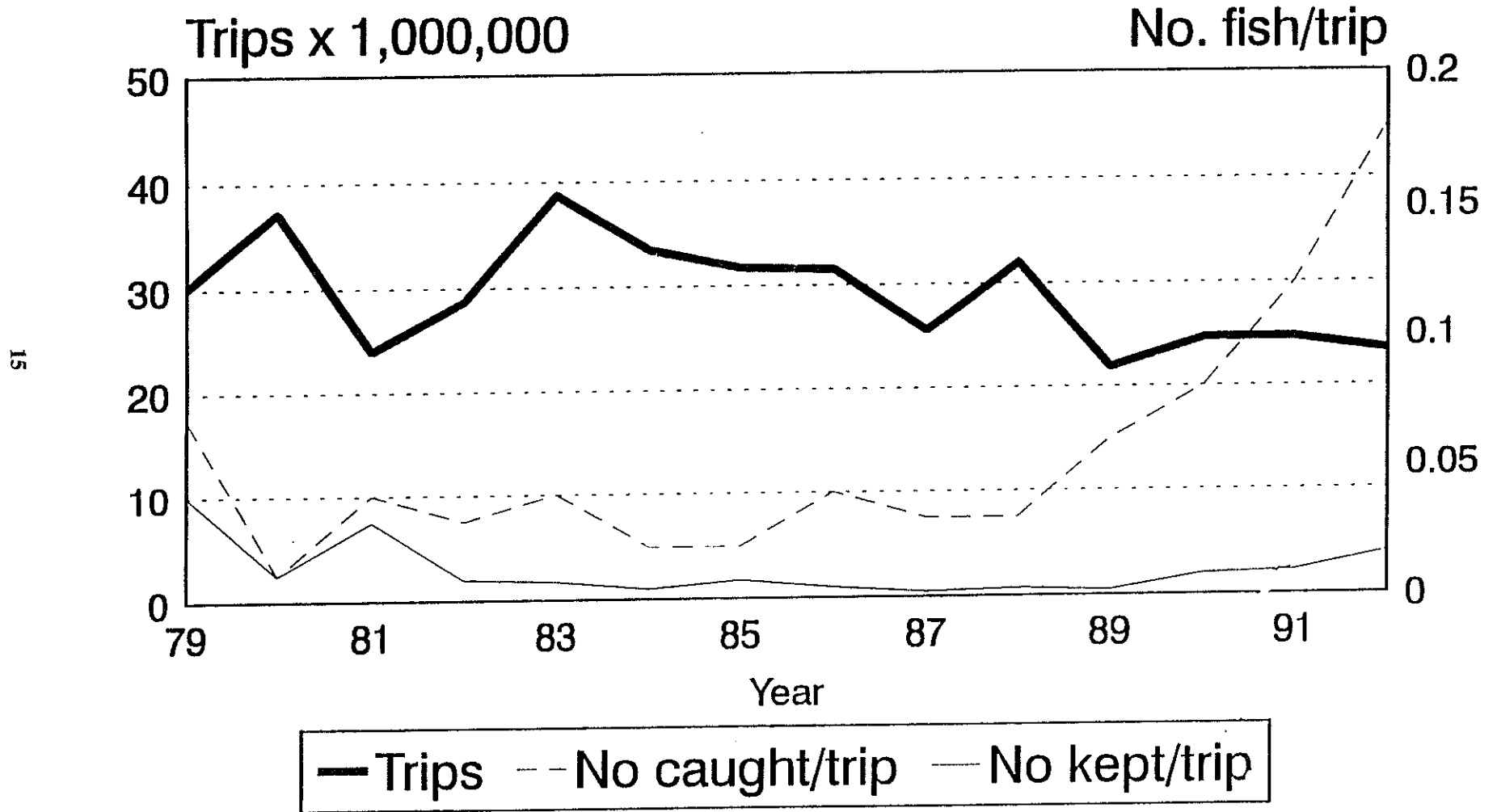
**Figure 2d.** Striped bass young-of-the-year index, Delaware River.



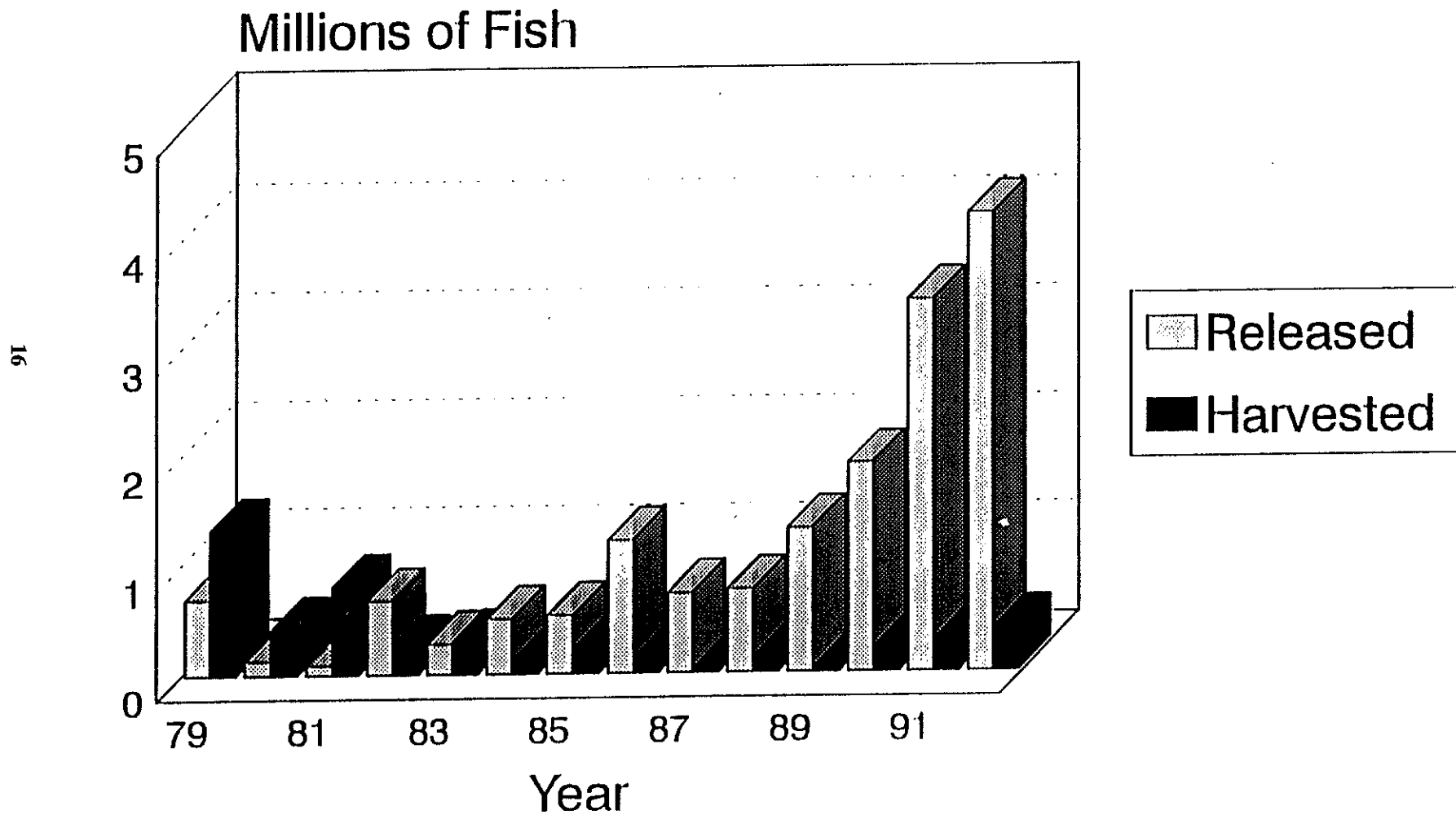
**Figure 2e** Striped bass young-of-the-year index, Albemarle-Roanoke.



**Figure 3a.** Catch per unit effort of striped bass for the recreational fishery, Maine-North Carolina.



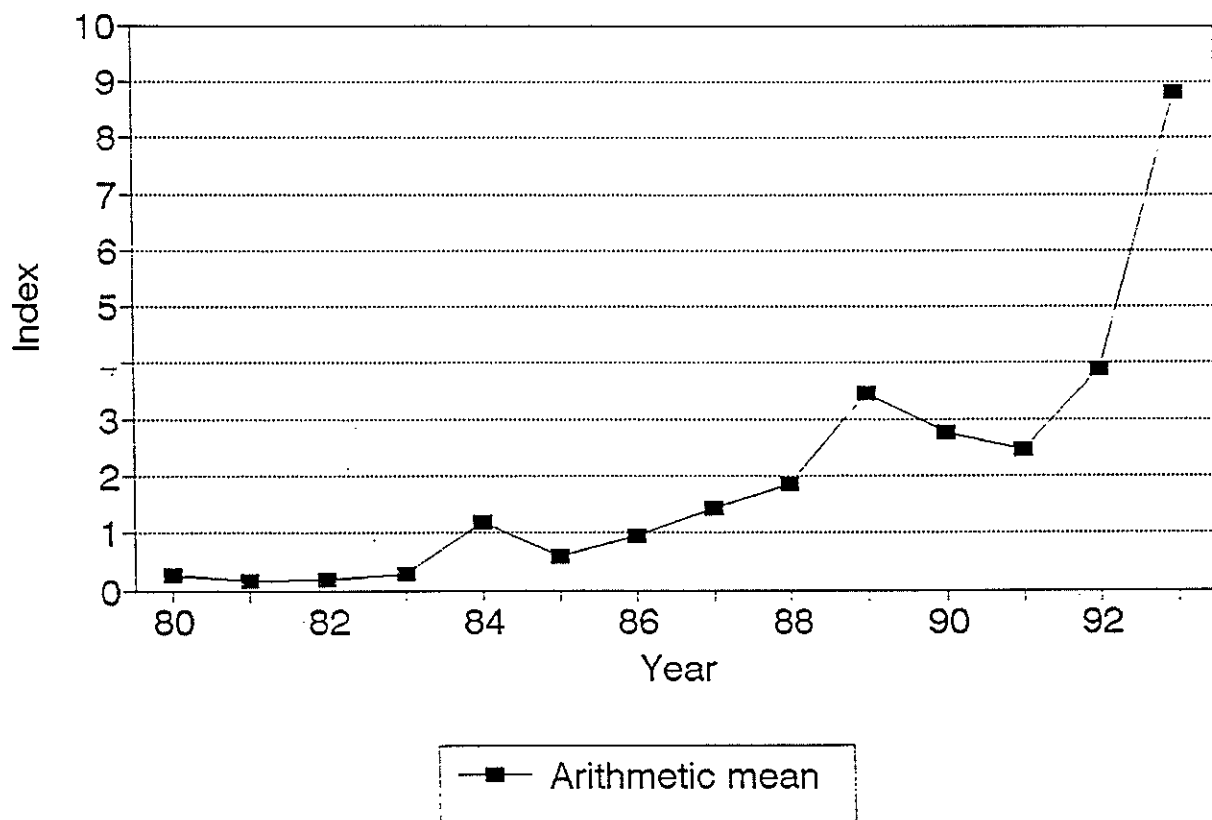
**Figure 3b.** Catch estimates of striped bass for the recreational fishery, Maine-North Carolina.



3/30/93



**Figure 3c.** Catch per unit effort of striped bass for the bycatch of the Hudson River shad gillnet fishery.



**Figure 3d.** Catch per unit effort of striped bass for the recreational fishery, Connecticut.

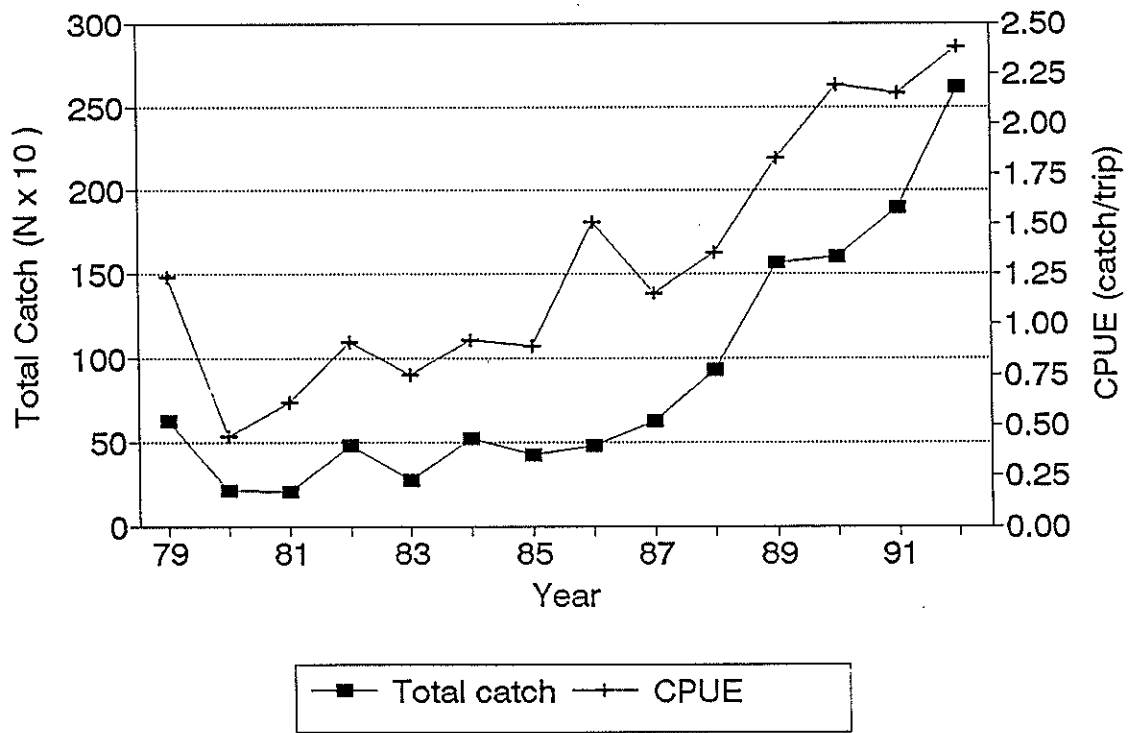
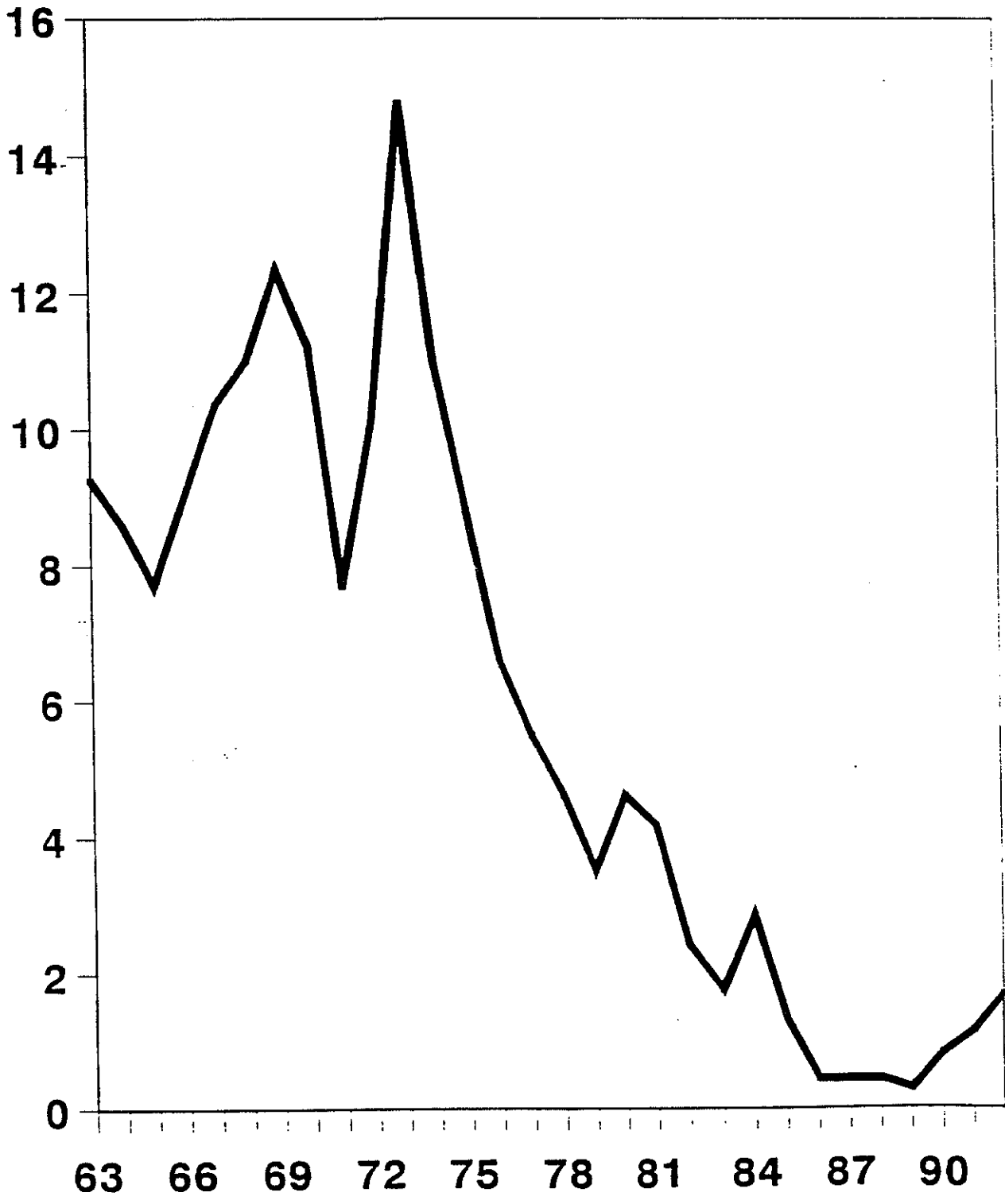


Figure 3e. Commercial landings for striped bass, Maine-North Carolina.



**APPENDIX I**

**1990-1992 Estimated Striped Bass  
Harvest in Numbers and Pounds**

Prepared  
by  
Constance H. Young-Dubovsky  
Interstate Fisheries Management Program  
Atlantic States Marine Fisheries Commission

## **Estimated Striped Bass Harvest in Numbers and Pounds, 1990-1992**

Historically, fish landings have been reported by weight rather than by number. As a result, a record exists of harvest by weight, but not by body count. Striped bass fisheries vary by state as a result of migration and spawning patterns. Large mature fish summer off of New England, while smaller pre-migrants are found in the producer areas. The New England states catch a lot of the smaller sized fish.

The following tables were developed to document harvest by numbers of fish as well as by weight of the fish. The numbers were compiled from annual state reports submitted to the Atlantic States Marine Fisheries Commission (ASMFC) for the fishing years 1990-1992, as well as from data from the National Marine Fisheries Service's (NMFS) Marine Recreational Fishery Statistics Survey (MRFSS). The ASMFC staff plans to update the harvest report annually, and hopes that it will be useful to state and federal fisheries managers as well as the various user groups.

**Please direct any questions or comments to:**

Striped Bass Coordinator  
Atlantic States Marine Fisheries Commission  
1776 Massachusetts Ave, NW, Suite 600  
Washington, DC 20036

Table 2. 1990-1992 Estimated legal recreational and commercial striped bass harvest (in numbers).

STATES	1990	1990%	1991	1991%	1992	1992%
Maine	2,939	0.77%	2,673	0.53%	11,820	1.58%
New Hampshire	626	0.16%	300	0.06%	2,158	0.29%
Massachusetts	22,700	5.98%	39,402	7.84%	85,025	11.39%
Rhode Island	5,321	1.40%	16,343	3.25%	25,840	3.46%
Connecticut	4,305	1.13%	8,911	1.77%	8,503	1.14%
New York	38,537	10.15%	57,860	11.51%	63,836	8.55%
New Jersey	64,556	17.00%	42,980	8.55%	43,627	5.84%
Delaware	2,536	0.67%	5,488	1.09%	5,830	0.78%
Maryland	97,080	25.57%	168,471	33.50%	351,809	47.11%
DC		0.00%	23	0.00%	140	0.02%
PRFC	54,313	14.31%	68,215	13.57%	63,027	8.44%
Virginia	85,373	22.49%	91,742	18.24%	81,195	10.87%
North Carolina	1,383	0.36%	456	0.09%	3,895	0.52%
<b>SUBTOTAL</b>	<b>379,669</b>	<b>100.00%</b>	<b>502,864</b>	<b>100.00%</b>	<b>746,705</b>	<b>100.00%</b>
Coastwide bycatch	21,299		101,013		112,457	
Coastwide H&L, poach, etc.	128,944		207,371		527,365	
<b>TOTAL</b>	<b>529,912</b>		<b>811,248</b>		<b>1,386,527</b>	

Table 3. 1990-1992 Estimated recreational and commercial striped bass harvest (in pounds).

STATES	1990	1990%	1991	1991%	1992	1992%
Maine	73,000	1.94%	47,060	0.94%	63,913	0.95%
New Hampshire	16,000	0.42%	5,000	0.10%	43,459	0.64%
Massachusetts	551,800	14.65%	802,330	16.10%	1,525,231	22.61%
Rhode Island	83,484	2.22%	382,368	7.67%	311,380	4.61%
Connecticut	143,100	3.80%	251,300	5.04%	173,554	2.57%
New York	689,140	18.30%	1,008,810	20.25%	1,100,973	16.32%
New Jersey	837,675	22.24%	648,000	13.01%	762,646	11.30%
Delaware	25,546	0.68%	42,188	0.85%	48,714	0.72%
Maryland	650,705	17.28%	969,497	19.46%	1,906,046	28.25%
DC		0.00%	58	0.00%	420	0.01%
PRFC	249,841	6.63%	340,905	6.84%	349,514	5.18%
Virginia	436,363	11.59%	478,909	9.61%	430,011	6.37%
North Carolina	9,797	0.26%	6,186	0.12%	31,328	0.46%
<b>SUBTOTAL</b>	<b>3,766,451</b>	<b>100.00%</b>	<b>4,982,611</b>	<b>100.00%</b>	<b>6,747,189</b>	<b>100.00%</b>
Coastwide bycatch					252,384	
Coastwide H&L, poach, etc.					2,549,566	
<b>TOTAL</b>	<b>3,766,451</b>		<b>4,982,611</b>		<b>9,549,139</b>	

Table 4. 1992 Commercial and recreational quotas and actual harvest (estimated in pounds).

STATES	QUOTA (lbs)	ACTUAL HARVEST (lbs)	DIFFERENCE	STATUS
Maine	N/A			
New Hampshire	N/A			
Massachusetts	238,000	239,100	1,100	OVER
Rhode Island	40,400	39,033	-1,367	UNDER
Connecticut	N/A			
New York	189,639	226,611	36,972	OVER
New Jersey	63,800	2,168	-61,632	UNDER
Delaware	23,000	17,795	-5,205	UNDER
Maryland (BAY)				
Recreational	695,300	844,973	149,673	OVER
Charter	245,400	229,259	-16,141	UNDER
Commercial	695,300	791,210	95,910	OVER
BAY TOTAL	1,636,000	1,865,442	229,442	OVER
Maryland (COAST)	25,000	17,770	-7,230	UNDER
DC	N/A			
PRFC				
Charter	22,860	28,378	5,518	OVER
Commercial	155,000	127,398	-27,602	UNDER
PRFC TOTAL	177,860	155,776	-22,084	UNDER
Virginia	211,000	205,192	-5,808	UNDER
North Carolina	96,000	27,702	-68,298	UNDER
<b>TOTAL</b>	<b>2,700,699</b>	<b>2,796,589</b>	<b>95,890</b>	
<b>Total (Commercial)</b>	<b>1,673,339</b>	<b>1,691,811</b>		



Table 5. 1992 Estimated striped bass harvest (in pounds).

STATES	Commercial	% Commer.	Recreational	Charterboat	Trophy	% Rec.	TOTAL
Maine	N/A	0.00%	63,913			1.26%	63,913
New Hampshire	N/A	0.00%	43,459			0.86%	43,459
Massachusetts	239,100	14.13%	1,286,131			25.44%	1,525,231
Rhode Island	39,033	2.31%	272,347			5.39%	311,380
Connecticut	N/A	0.00%	173,554			3.43%	173,554
New York	226,611	13.39%	874,362			17.30%	1,100,973
New Jersey	N/A	0.00%	760,478		2,168	15.09%	762,646
Delaware	17,795	1.05%	30,919			0.61%	48,714
Maryland	808,980	47.82%	844,973	229,259	22,834	21.70%	1,906,046
DC	N/A	0.00%	420			0.01%	420
PRFC	127,398	7.53%	193,738	28,378		4.39%	349,514
Virginia	205,192	12.13%	214,455	10,364		4.45%	430,011
North Carolina	27,702	1.64%	3,626			0.07%	31,328
<b>SUBTOTAL</b>	<b>1,691,811</b>	<b>100.00%</b>	<b>4,762,375</b>	<b>268,001</b>	<b>25,002</b>	<b>100.00%</b>	<b>6,747,189</b>
Coastwide bycatch losses							252,384
Coastwide H&L, poach, sci losses							2,549,566
<b>TOTAL</b>							<b>9,549,139</b>

Table 6. 1992 Estimated striped bass harvest (in numbers).

STATES	Commercial	% Commer.	Recreational	Charterboat	Trophy	% Rec.	TOTAL
Maine	N/A	0.00%	11,820			2.62%	11,820
New Hampshire	N/A	0.00%	2,158			0.48%	2,158
Massachusetts	11,268	3.82%	73,757			16.34%	85,025
Rhode Island	5,971	2.02%	19,869			4.40%	25,840
Connecticut	N/A	0.00%	8,503			1.88%	8,503
New York	20,353	6.90%	43,483			9.63%	63,836
New Jersey	N/A	0.00%	43,536		91	9.66%	43,627
Delaware	2,704	0.92%	3,126			0.69%	5,830
Maryland	183,659	62.22%	128,450	38,686	1,013	37.24%	351,809
DC	N/A	0.00%	140			0.03%	140
PRFC	23,290	7.89%	33,919	5,818		8.80%	63,027
Virginia	44,039	14.92%	35,443	1,713		8.23%	81,195
North Carolina	3,886	1.32%	9*			0.00%	3,895
<b>SUBTOTAL</b>	<b>295,170</b>	<b>100.00%</b>	<b>404,213</b>	<b>46,217</b>	<b>1,104</b>	<b>100.00%</b>	<b>746,705</b>
Coastwide bycatch losses							112,457
Coastwide H&L, poach, sci losses							527,365
<b>TOTAL</b>							<b>1,386,527</b>

\* Estimated to be less than 10

Table 7. 1991 Estimated striped bass harvest (in numbers).

STATES	Commercial	% Commer.	Recreational	Charterboat	Trophy	% Rec.	TOTAL
Maine	N/A	0.00%	2673			0.84%	2,673
New Hampshire	N/A	0.00%	300			0.09%	300
Massachusetts	10,379	5.63%	29023			9.11%	39,402
Rhode Island	2,827	1.53%	13516			4.24%	16,343
Connecticut	N/A	0.00%	8911			2.80%	8,911
New York	15,064	8.17%	42796		70	13.44%	57,860
New Jersey	N/A	0.00%	42910			13.50%	42,980
Delaware	3,091	1.68%	2397			0.75%	5,488
Maryland	63,148	34.24%	75059	29,928	336	33.08%	168,471
DC	N/A	0.00%	23			0.01%	23
PRFC	44,522	24.14%	20984	2,709		7.44%	68,215
Virginia	44,970	24.38%	45155	1,617		14.69%	91,742
North Carolina	447	0.24%	9*			0.00%	456
<b>SUBTOTAL</b>	<b>184,448</b>	<b>100.00%</b>	<b>283756</b>	<b>34,254</b>	<b>406</b>	<b>100.00%</b>	<b>502,864</b>
Coastwide bycatch losses							101,013
Coastwide H&L, poach, sci losses							207,371
<b>TOTAL</b>							<b>811,248</b>

\* - Estimated to be less than 10

TABLE 8. 1990 Estimated striped bass harvest (in numbers).

STATES	Commercial	% Commer.	Recreational	Charterboat	Trophy	% Rec.	TOTAL
Maine	N/A	0.00%	2,939			1.21%	2,939
New Hampshire	N/A	0.00%	626			0.26%	626
Massachusetts	6,300	4.60%	16,400			6.75%	22,700
Rhode Island	252	0.18%	5,069			2.09%	5,321
Connecticut	N/A	0.00%	4,305			1.77%	4,305
New York**	11,785	8.61%	26,752			11.02%	38,537
New Jersey	N/A	0.00%	64,556			26.59%	64,556
Delaware	612	0.45%	1,924			0.79%	2,536
Maryland	22,951	16.77%	59,930	14,199		30.53%	97,080
DC	N/A	0.00%				0.00%	0
PRFC	36,752	26.86%	13,604	3,957		7.23%	54,313
Virginia	56,827	41.52%	27,145	1,401		11.76%	85,373
North Carolina	1,374	1.00%	9*			0.00%	1,383
<b>SUBTOTAL</b>	<b>136,853</b>	<b>100.00%</b>	<b>223,259</b>	<b>19,557</b>	<b>0</b>	<b>100.00%</b>	<b>379,669</b>
							21,299
Coastwide bycatch losses							128,944
Coastwide H&L, poach, sci losses							529,912
<b>TOTAL</b>							

\* - Estimated to be less than 10

\*\*Hudson River not included in H&L mortality or poaching

**APPENDIX II**

**1993 Atlantic Coast Striped Bass  
Recreational and Commercial  
Harvest Regulations**

Prepared  
by  
Constance H. Young-Dubovsky  
Interstate Fisheries Management Program  
Atlantic States Marine Fisheries Commission

# RECREATIONAL HARVEST REGULATIONS

## Atlantic Coast Striped Bass 1993

STATE	SIZE LIMITS	DAILY BAG LIMITS	SEASONAL QUOTA (LBS)	SEASON
ME	36" min	1	none	Bay and Rivers: 01 June 93 - 30 Apr94 (Catch & release only)
NH	36" min	1	none	none
MA	36" min	1	none	none
RI	28" min	1	none	none
CT	36" min	1	none	01 Apr - 14 Dec
NY	Hudson River: 18" min Ocean: 36" min	1	none	Hudson River: 15 Mar - 30 Nov Ocean: 08 May - 15 Dec
NJ	Delaware Bay and River: 36" min  Other Rivers: 26" min Ocean: 28" min 38" min trophy program	1 Trophy: 1/day in addition to regular fishery	(trophy fishery from commercial cap of 63,800 lbs)	Delaware Bay and River: 01 Mar - 31 Mar 01 Apr 31 May (C&C canal to ocean only) 01 Jun - 31 Dec Other Rivers: 01 Mar - 31 Dec Ocean: none
PA	36" min	1	none	Delaware River: 01 - 31 Mar 01 Jun - 31 Dec.
DE	28" min	1	none	spawning area closure: 01 Apr - 31 May
MD	Bay & River: 18" min  Trophy: 36" min  Ocean: 28" min	Bay & River: 1 - rec 2 - charter  Trophy: 1/season  Ocean: 1	Bay & River: 892,500(rec) 315,000 (charter)  Trophy: none  Ocean: none	Bay & River: 01 Oct - 21 Nov (rec) 01 Oct - 21 Nov (charter)  Trophy: 01 - 31 May  Ocean: 15 Jul - 30 Nov
PRFC	36" min	1	none	spawning area closure: 01 Apr - 31 May
DC	18" min 36" max	1	none	07 June - 30 Nov
VA	Bay & River: 18" min 36" max Ocean: 28" min 36" max	2  1 fish allowed to be greater than 48"	none Ocean:	Bay & River: 28 Oct - 16 Dec (Th - Su only) Ocean: Same as Bay & River
NC	Sounds & Rivers: 18" min  Roanoke: no fish between 22" - 27"  Ocean: 28" min	Albemarle Sound & Roanoke: 3 (Jt waters) 3 (inland Roanoke  Ocean: 1	Albemarle Sound & Roanoke:  67,000 lbs (all waters) Ocean: none	Albemarle Sound: 01 Jan - 31 Mar (Jt waters) 01 Apr - 31 May or 29,000lbs (inland Roanoke) Ocean: 01 Jan - 31 Mar 01 Dec - 31 Dec

# COMMERCIAL HARVEST REGULATIONS

## Atlantic Coast Striped Bass 1993

STATE	SIZE LIMITS	CAP (in lbs.)	SEASON
ME	no fishery		
NH	no fishery		
MA	36" min	238,000	01 July - 30 Sept
RI	40" min (H & L) 18" min 28" max (trap net)	40,400	01 Jan - 06 July
CT	no fishery		
NY	24" min 36" max	184,684	01 July - 15 Dec
NJ	no fishery	(63,800 allocated to rec fishery)	
PA	no fishery		
DE	18" min 28" max	33,867	01 Mar - 30 Apr (closed Apr to 31 May on spawning grounds)
MD	Bay & River: 18" min  Ocean: 28" min	Bay: 892,500  Ocean: 25,000	Bay: 15 Sep - 12 Nov (pound nets, haul seines) 15 Nov - 07 Dec (hook and line) 01 Dec - 22 December and 03 Jan '94 to 28 Feb '94 (gillnet and trawls) Ocean: 01 Dec - 22 Dec 03 Jan '94 - 28 Feb '94
PRFC	18" min 28" max	177,860	Various days between 04 Aug - 16 Dec Tagging requirements same as in 1992
DC	no fishery		
VA	Bay & River: 18" min 36" max Ocean: 28" min 36" max	211,000	15 Sept - 31 Dec
NC	Albemarle  Roanoke: no fish between 22" - 27"  Ocean: 28" min	Albemarle Sound: 98,000 (3 fish/day in Winter)  Ocean: 96,000	Albemarle Sound: 01 Jan - 05 Apr  Ocean: 01 Jan - 31 Mar and 01 Dec - 31 Dec

