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Herbert M. Austin

*Virginia Institute of Marine Science*

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**STATUS OF THE 1984 STRIPED BASS FISHERIES  
IN VIRGINIA  
AFTER IMPLEMENTATION OF THE 1984  
EMERGENCY REGULATIONS  
TO THE 1981 ASMFC INTERSTATE MANAGEMENT PLAN FOR STRIPED BASS**

by

Herbert M. Austin

Department of Fisheries Sciences  
Virginia Institute of Marine Science  
School of Marine Science  
College of William and Mary  
Gloucester Point, Virginia 23062

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Marine Resource Report No. 85-5

# STATUS OF THE 1984 STRIPED BASS FISHERIES

## IN VIRGINIA

### AFTER IMPLEMENTATION OF THE 1984

### EMERGENCY REGULATIONS

### TO THE 1981 ASMFC INTERSTATE MANAGEMENT PLAN FOR STRIPED BASS

#### Synopsis

This report was initially (1 May, 1985) prepared for analyses by the ASMFC Striped Bass Scientific and Statistics Committee 30 April-1 May, 1985 meeting in Windsor Locks, Conn. Its purpose was to examine how Virginia's striped bass fisheries had fared after implementation of the 1984 emergency regulations. The following includes subsequent comments and recommendations based on discussions at the meeting, and the rejection by the Committee of the Virginia 1984 Emergency Regulation XXIX as meeting the 55% reduction in fishing mortality as required by the Studts 1984 Striped Bass Law.

The Virginia Marine Resources Commission (VMRC) implemented the ASMFC Interstate Fisheries Management Plan in March 1983. This implementation included all provisions in the Interstate Plan. On 1 March, 1984 the Commission put into effect Emergency Regulation XXIX. This regulation extended the "closed spawning area" in the Rappahannock River an additional 22 miles down river, extended the closed spawning season from 10 April-21 May to 1 April-31 May, closed the ocean fishery 1 March-31 May, and established a recreational creel limit of 5 fish per day. It also eliminated the 4 fish tolerance for fish between 14 and 24". The Commission, in December 1984, abolished Emergency Regulation XXIX, and created Regulation XXIX which continued the stipulations in the Emergency Regulation and added the closure of Virginia's Potomac River tributaries concurrent with the Potomac River closure (1 January-15 February and 1 April-31 May). Regulation XXXII, developed in February, 1985 closed the Potomac Tributaries 1 January-31 May.

The Emergency Regulation was developed during January-February, 1984, before all Fall 1983 landing data were tabulated. It was targeted at the Spring commercial fisheries as they appeared, at that time, to be the most significant. Emergency Regulation XXIX, it was felt, would affect a 55% reduction by the added Spring reductions. When the Fall landing data were completed, and the recreational catch estimated (Austin, 1984, Table 1B) it appeared their magnitude, if the 1984 pattern followed 1983, would only result in a 36% reduction in mortality, not the desired 55%. In effect, Virginia would only reduce its total catch by 23,695, instead of 36,256 pounds.

As it turned out, The 1984 commercial catch was 15,351 pounds (Table 1 & 2), and the combined commercial/recreational catch 19,188 pounds. A 48,843 pound reduction of 71%. It was the consensus however, of the striped bass Scientific and Statistics Committee that only 41% of the 71% reduction was attributable to the above cited Emergency and subsequent regulations.

Virginia therefore, failed to meet the 55% reduction as called for in the 1984 Studds Striped Bass Bill, and may be subject to the moratorium stipulations.

#### The 1984 Fisheries

Late winter fisheries (January-February) in Virginia are generally central and upper Rappahannock gill net and ocean trawl fisheries. This pattern persisted in 1984, but at reduced levels. The fishery normally shifts geographically during spring (March-May) with most catches coming from the lower rivers, predominantly the Rappahannock, and western side of the mainstem Bay. Currently, this shift is in part due to the spawning area closure, and the down-river/Bay migration subsequent to spawning. Historically, these catches have been made with pound and staked gill nets. During 1984, however, anchor nets took more than the staked nets.

Summer fisheries (June-September) are quite reduced and striped bass are more a by-catch than a directed fishery. During the period June-August most catches are made in the main-stem Bay by pound net. These are generally small males.

The fall fisheries (October-December) are principally lower tributary pound and anchor gill nets. Loesch and Kriete (1984) report that the 1981 and 1982 year-classes made up most (84%) of the fall 1983 pound net catches, with males comprising 94% of the catch. The 1981 year class was the modal group. Severe icing terminated most riverine pound net efforts during the 1983-1984 winter season.

Their preliminary data for the Fall of 1984 show a strong contribution by the 1982 year-class (350-400mm) in the upper Rappahannock River pound net fishery (Figure 1). The poor representation of older fish in the fall and early winter fisheries, is due to their inclusion in the fall coastal migratory fisheries of northern states, and the location of the fall river pound net fishery, which is located at the lower fringe of the spawning grounds. Large fish are normally available here in Spring. The dramatic decline in catch during November is attributed to reduced effort in the rivers due to reduced prices paid to fishermen as a result of the high Potomac River catches. It is reported that as a result of these catches prices dropped from over \$2.00 to under \$0.60/pound. December, 1984 produced the largest ocean catch of the year, principally by trawl.

The Emergency Regulations reduced the recreational catch also. In the past, estimates ranging from 15 to 25% of the commercial catch have been used. The five fish creel limit has made it impossible to estimate the catch. A conservative approach was used here, and although probably too high, the catch was estimated at 25% (3,837 pounds).

#### The Baseline Data Base

The BASELINE data used here are from the VMRC commercial catch statistics. The data are tabulated by gear and water body for 1983 and 1984 (Table 1), and monthly for 1984 by major water body (Table 2). The Baseline data originally used to develop the 1984 regulations are found in Table la-lc in last year's report (Austin, 1984).

The James River Kepone closure, accounting for an estimated 2240 pounds annually, was part of the reduction calculation in 1984. It was not used in this report as the S and S committee reled it a "non-fisheries management" closure.

Virginia landings from the Potomac River are not included here as the Potomac is not in Virginia. Although Virginians land fish from the Potomac, they are reported seperately, just as would fish landed from North Carolina, Maryland, or the FCZ. The S and S committee agreed, at the 30 April-1 May meeng to consider the Potomace River as a seperate management entity.

#### Distribution of Fractional Reduction Across ages/sizes

Loesch and Kriete (1983) reported that the 1982 Virginia catch was composed of 1979 and 1978 (3+ and 4+) year-classes in the tributary gill and pound net fisheries. Their analyses of the early 1983 catch suggested a similar pattern, but with an increase in 1980 (3+) fish. The fall pound and gill net fisheries were principally comprised of 1981 and to a lesser degree 1982 year-classes, mostly males.

They found it difficult in Spring 1984 however, to get a good estimate due to the spawning ground closures. They did find a Spring decrease in 1982 (2+) females and 1983 (1+) males, a pattern they had noticed in past years, and attributed it to the inclusion of the females in the coastal migration as suggested by Merriman (1941) and Schaefer (1968). The 1981 (3+) year-class dominated the spring gill net catches. From the analyses of Loesch and Kriete, and VMRC reports, it appears that the closures have protected the larger spawning fish, and reduced mortality on all age groups in the rivers. The 1982 year-class is now entering the fishery, but preliminary analyses show that 400-500mm (16-20") fish are still the modal size, probably 1981-1980 year-classes.

#### Potential Problems/Management Alternative

The enacted Emergency Regulation XXIX in Virginia has affected, according to the striped bass Scientific and Statistics Committee, a reduction in the 1984 catch of 41%. Realizing, however, the need to protect the 1982 year-class, and to further reduce fishing mortality (F) by an additional 15% in order to be in compliance with the Studds Bill, additional reductions must be forthcoming in 1985-1986. VMRC is, at this time, developing a Virginia FMP for striped bass which will include additional harvest restriction alternatives. The following are management alternatives that wholly, or in combination, when added to the current reductions, would have accomplished the 1983 recommendations of the Statistical and Scientific Committee, a 55% reduction in fishing mortality. Some address the additional 1984 recommendations, protection of the 1982 year-class through spawning.

1. increase the minimum size limit to 16" (450mm) state-wide
2. close the main-stem Bay fishery during April-June and October-December,
3. increase the minimum size limit to 24" on fish taken in the main-stem Bay,

4. close all winter (December-February) ocean fisheries.
5. further reduce fishing effort in the lower tributaries during the period October-December.

While recommendation No. 1 is a dramatic step, it would, based upon the current size distribution of the commercial catch, (two and three year old fish) reduce the remaining catch (in numbers) by 30%. Since this would represent a 30% reduction in the number of fish landed, it would seem then, to represent an actual reduction in F or fishing mortality. According to Dr. John Boreman, NMFS this only translates into a 10% reduction in mortality, which must be considered over the life span of the fish. Undoubtedly the current 14" size limit is unrealistic in any account while stocks are depressed. Recommendation No. 1 would have a state-wide negative economic impact.

Recommendation No. 2 would have had, in 1984, further reduced the commercial catch by 1,400 pounds, or an additional 3%, and while not significant in 1984 will probably be important in 1985-1986 in providing protection for the 1982 year class as it migrates in and out of the Bay.

Recommendation No. 3 will also protect 1982 year class fish until 1986-1987, however, it is not possible to quantify its impact. Both Recommendation 2 and 3 are sought by Maryland to support their moratorium.

Recommendation 4 will protect the migrating year-classes, and those over-wintering along the coast. North Carolina has closed their fisheries in the ocean and a similar action on the part of Virginia would enhance their efforts. This action would have produced a 6% reduction in mortality in 1984.

Recommendation 5 will place a burden on the already impacted riverine fisheries; however, if additional reductions are needed they could be affected here. A Fall 1984 closure would have provided an additional 6% reduction.

It is necessary to reduce the total mortality on the stock by an additional 15% in order to come into compliance. It is also desirable to balance the biological needs with the socio-economic considerations of the fishery.

#### Recommendations

A State-wide minimum size increase to 16", a main-stem Bay increase to 24", in 2"/6mo. steps, coupled with a winter ocean closure is recommended. This will affect an additional reduction of effort by some 15-20%, spread the impact over all harvesters, and will protect the 1982 year class and subsequent year classes toward sexual maturity.

An increase in the minimum size limit to 16" should, in addition to the existing Regulation XXIX be sufficient to affect a 55% reduction in fishing effort/mortality. It is important however, to enhance protection of the migrating 1982 year class, and subsequent year classes through sexual maturity, in order to rebuild the stocks. A gradual (2"/mo.) size increase in the main-stem Bay, while of benefit to the harvester, may be difficult to enforce. As such, a direct increase to 24" may be desirable. The current

winter fishery probably takes larger spawning age females that over winter off the coast. These too need to be protected.

Following a stock recovery only the 16" size limit and possibly the spawning ground closure should remain in effect.

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Figure 1  
(From Loesch and Kriete 1984)

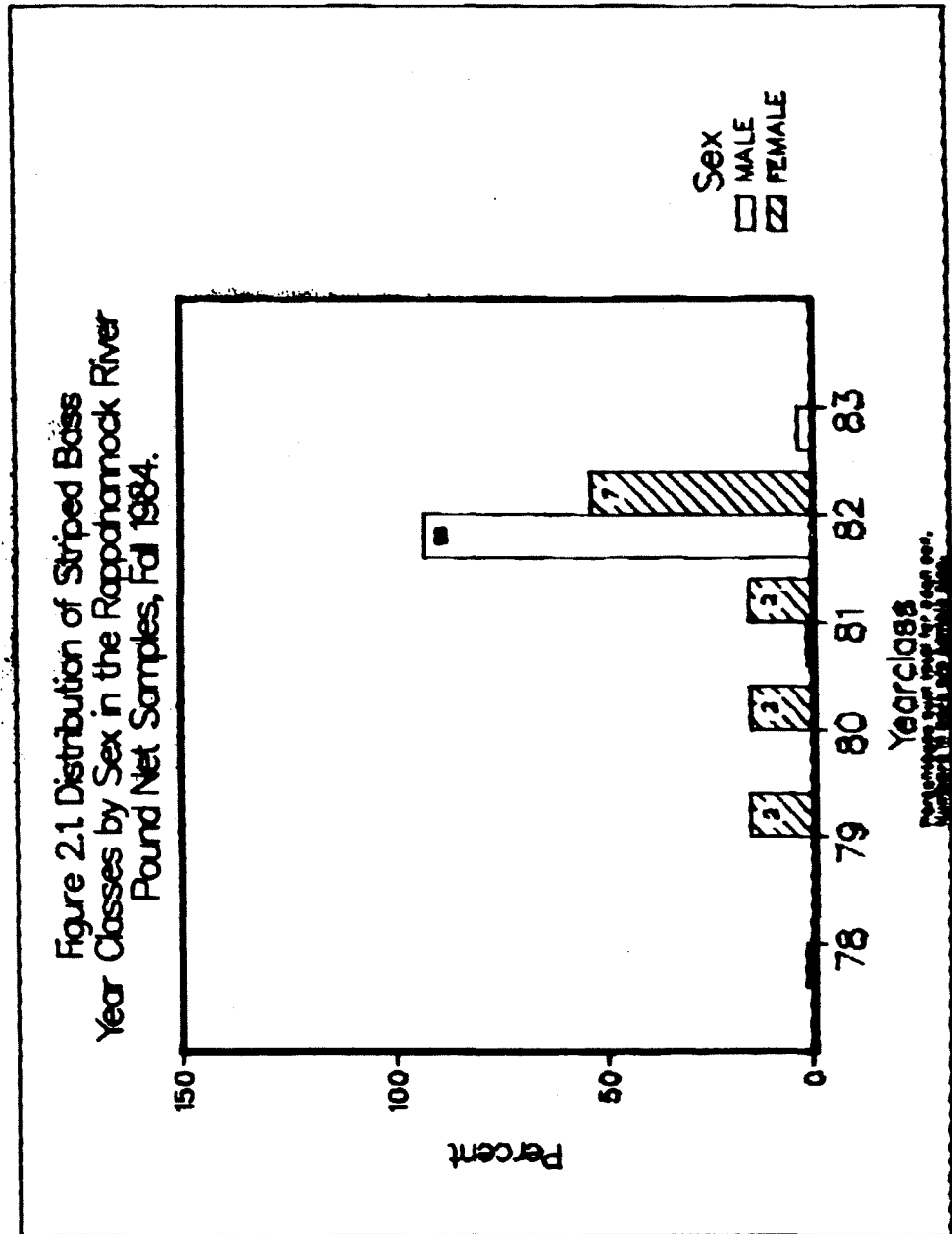


Table 1

Virginia Commercial and Recreational Fishery Landings

<u>Water Body</u> (numbers refer to Fig. 1)	1983-1984		1984	
	1983		<u>Pounds</u>	<u>Percent</u>
	<u>Pounds</u>	<u>Percent</u>		
Upper Tributaries (377, 049, 067,)	30,175	46	3,858	25
Lower Tributaries (195, 295, 395, 177, 277)	11,313	17	5,243	34
Potomac Tributaries (085, 050, 059, etc.)	1,510	02	456	02
Main Stem Bay (011, 111, 211, 311, 411)	7,841	12	2,890	18
Ocean (600's)	3,586	05	2,904	18
Recreational (Estimated @ .25)	<u>13,606</u>	<u>25</u>	<u>3,837</u>	<u>25</u>
TOTAL	68,031	100	19,188	100

<u>Gear Type</u>	1983		1984	
	<u>Pounds</u>	<u>Percent</u>	<u>Pounds</u>	<u>Percent</u>
Otter trawl	290	<01	2,484	16
Pound Net	24,503	45	4,590	29
Staked Gill Net	19,807	36	3,846	25
Drift or Anchor Gill Net	9,638	17	4,332	28
Hook and Line	<u>187</u>	<u>&lt;01</u>	<u>99</u>	<u>&lt;01</u>
TOTAL	54,425	100	15,351	100*

\* 02 percent lost  
rounding off

**Table 2**

Virginia Commercial Catch

1984

<u>MONTH</u>	<u>UPPER TRIBUTARIES</u>		<u>LOWER TRIBUTARIES</u>		<u>BAY</u>		<u>OCEAN</u>		<u>TOTALS</u>	
	<u>LANDINGS</u>	<u>FRACTION</u>	<u>LANDINGS</u>	<u>FRACTION</u>	<u>LANDINGS</u>	<u>FRACTION</u>	<u>LANDINGS</u>	<u>FRACTION</u>	<u>LANDINGS</u>	<u>FRACTION</u>
Jan	228	0.01	656	0.03	16	<0.01	40	<0.01	940	0.04
Feb	966	0.05	1,474	0.07	0	0.00	423	0.02	2,863	0.14
Mar	302	0.01	610	0.03	968	0.05	767	0.03	2,647	0.13
Apr	229	0.01	214	0.01	392	0.02	117	<0.01	952	0.04
May	0	0.00	306	0.01	809	0.04	109	<0.01	1,224	0.06
Jun	0	0.00	36	<0.01	224	0.01	0	0.00	260	0.01
Jul	81	<0.01	95	<0.01	263	0.01	0	0.00	439	0.01
Aug	0	0.00	0	0.00	47	<0.01	0	0.00	47	<0.01
Sep	0	0.00	683	0.03	160	0.01	0	0.00	843	0.04
Oct	113	<0.01	1,005	0.05	3	<0.01	30	<0.01	1,151	0.06
Nov	0	0.00	767	0.03	25	<0.01	70	<0.01	862	0.04
Dec	0	0.00	1,720	0.08	0	0.00	1,403	0.07	3,123	0.16
	<u>1,919</u>	<u>0.10</u>	<u>7,566</u>	<u>0.39</u>	<u>2,878</u>	<u>0.15</u>	<u>2,959</u>	<u>0.15</u>	<u>15,351</u>	<u>0.73*</u>

Recreational Catch  
( @ .25 of 15,351)

TOTAL 1984 VA LANDINGS 19,188 0.98\*

\* 0.02 MISSING DUE  
ROUNDING-OFF

**Table 3**Summary Table for Virginia Commercial Catch Reductions: 1983 to 1984

MONTH	UPPER TRIBUTARIES		LOWER TRIBUTARIES		BAY		OCEAN		TOTALS		
	83 BASELINE	84 CATCH	83 BASELINE	84 CATCH	83 BASELINE	84 CATCH	83 BASELINE	84 CATCH	83 BASELINE	84 CATCH	DIFFERENCE
Jan									2,266	940	-1,326
Feb									1,013	2,863	+1,850
Mar	1,355	302	1,026	610	109	968	2,560	767	5,248	2,647	-2,403
Apr	10,011	229	2,808	214	1,868	392	620	117	15,318	952	-14,355
May	4,946	0	716	306	1,273	809	196	109	7,207	1,224	-5,907
Jun									2,964	260	-2,657
Jul									97	439	+285
Aug									226	47	-179
Sep									5,398	843	-4,555
Oct									2,300	1,151	-1,149
Nov									9,598	862	-8,652
Dec									2,790	3,123	+339
									<u>54,425</u>	<u>15,351</u>	<u>-39,074</u>
									<u>13,606</u>	<u>3,837</u>	<u>- 9,769</u>
									<u>68,031</u>	<u>19,188</u>	<u>-48,843</u>

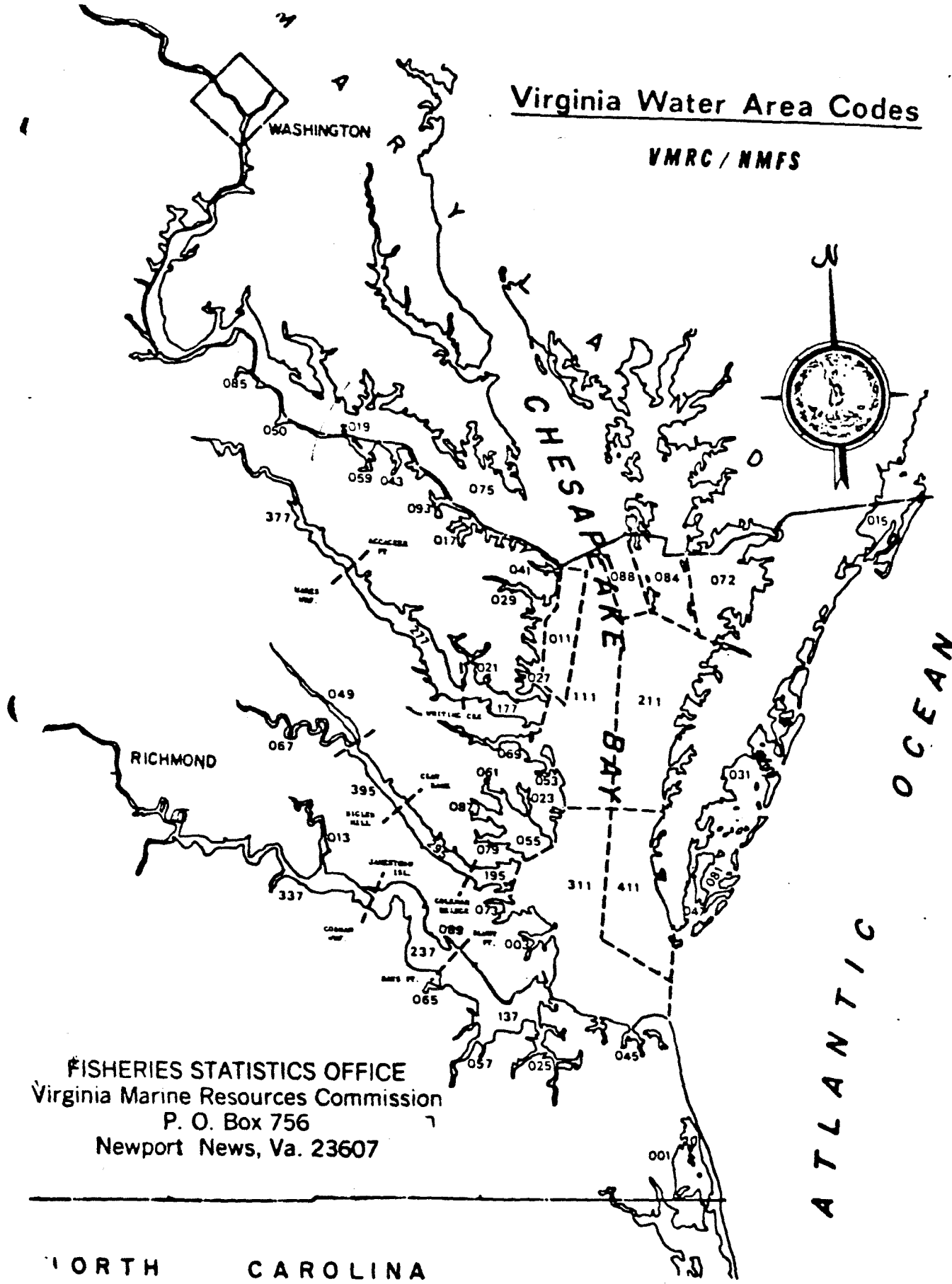
Recreational Catch @ .25

TOTAL VA REDUCTION

VA REDUCTION 83 TO 84: 71%

# Virginia Water Area Codes

VMRC / NMFS



FISHERIES STATISTICS OFFICE  
Virginia Marine Resources Commission  
P. O. Box 756  
Newport News, Va. 23607

NORTH CAROLINA

VIRGINIA WATER AREA CODES  
(Alphabetical Listing)

<u>CODE</u>	<u>BODY OF WATER</u>	<u>CODE</u>	<u>BODY OF WATER</u>
001	Back Bay	059	Nomini Bay
003	Back River	061	North River
005	Bogue Bay	063	Outlet Bay
007	Bradford Bay	064	Oyster Bay (Seaside Eastern Shore)
009	Burton's Bay	065	Pagan River
011	Chesapeake Bay (Western Mgt Area)	067	Pamunkey River
111	Chesapeake Bay (Upper Western Section)	069	Piankatank River
211	Chesapeake Bay (Upper Eastern Section)	070	Pocomoke River
311	Chesapeake Bay (Lower Western Section)	072	Pocomoke Sound
411	Chesapeake Bay (Lower Eastern Section)	073	Poquoson River
013	Chickahominy River	074	Potomac Creek (Potomac Rv. Trib.)
015	Chincoteague Bay	175	Potomac River (Lower Section)
017	Coan River	275	Potomac River (Lower Central Section)
018	Cobb Bay (Seaside Eastern Shore)	375	Potomac River (Upper Central Section)
019	Currioman Bay	475	Potomac River (Upper Section)
021	Corrotoman River	076	Potomac River Trib. (Unclassified)
023	East River	177	Rappahannock River (Lower Section)
025	Elizabeth River	277	Rappahannock River (Central Section)
027	Fleets Bay	377	Rappahannock River (Upper Section)
028	Gargathy Bay (Seaside Eastern Shore)	078	Rosier Creek (Potomac Rv. Trib.)
029	Great Wicomico River	079	Severn River
031	Hog Island Bay	081	South Bay
033	Horn Harbor	083	Swash Bay
137	James River (Lower Section)	084	Tangier Sound
237	James River (Central Section)	088	West Tangier Management Area
337	James River (Upper Section)	085	Upper Machodoc Creek
038	Kegotank Bay (Seaside Eastern Shore)	086	Upshur Bay (Seaside Eastern Shore)
039	Lafayette River	087	Ware River
041	Little Wicomico River	089	Warwick River
043	Lower Machodoc Creek	090	Watts Bay (Seaside Eastern Shore)
045	Lynnhaven Bay	091	Willoughby Bay
047	Magothy Bay	092	Winter Harbor (Chesapeake Bay Tributary)
049	Mattaponi River	093	Yeocomico River
050	Mattox Creek (Potomac Rv. Trib.)	195	York River (Lower Section)
051	Metomkin Bay	295	York River (Central Section)
053	Milford Haven	395	York River (Upper Section)
055	Mobjack Bay	097	Unclassified Seaside Bays and Rivers
057	Nansemond River	099	Unclassified Tributaries of Chesapeake

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