2007 REVIEW OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
FISHERY MANAGEMENT PLAN FOR

ATLANTIC STRIPED BASS
(Morone saxatilis)

2006 FISHING YEAR

Prepared By
Nichola Meserve, ASMFC

Atlantic Striped Bass Plan Review Team
Nichola Meserve, ASMFC
Gary Shepherd, NMFS
Wilson Laney, USFWS
Doug Grout, NH FGD

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I. Status of the Fishery Management Plan

Date of FMP Approval:	Original FMP: October 1981
Amendments:	Amendment 6: February 2003 (active January 2004)
Management Unit:	Migratory stocks of Atlantic striped bass from Maine through North Carolina
States With Declared Interest:	Maine - North Carolina, including Pennsylvania
Additional Jurisdictions:	District of Columbia, Potomac River Fisheries Commission, National Marine Fisheries Service, United States Fish and Wildlife Service
Active Boards/Committees:	Atlantic Striped Bass Management Board, Advisory Panel, Technical Committee, Stock Assessment Subcommittee, Tagging Subcommittee, Plan Review Team, and Plan Development Team

Jurisdictions with a declared interest in striped bass are Maine through North Carolina, including Pennsylvania, the Potomac River Fisheries Commission, the District of Columbia, the National Marine Fisheries Service, and the United States Fish and Wildlife Service. Under the Atlantic Striped Bass Conservation Act (P.L. 98-613), implementation of the Fishery Management Plan (FMP) is mandatory. Compliance with the FMP is monitored by the Commission's Striped Bass Management Board (Board) and Striped Bass Plan Review Team (PRT). Amendment 6 to the FMP was approved in February 2003, fully implemented by January 1, 2004, and completely replaces all previous Commission plans for Atlantic striped bass.

Amendment 6 was developed to address five limitations within the previous management program: potential inability to prevent the Amendment 5 exploitation target from being exceeded; perceived decrease in availability or abundance of large striped bass in the coastal migratory population; a lack of management direction with respect to target and threshold biomass levels; inequitable effects of regulations on the recreational and commercial fisheries, and coastal and producer area sectors; and excessively frequent changes to the management program.

Amendment 6 established biological reference points (BRPs) to define overfished stock status and overfishing. Overfished status is defined by a threshold female spawning stock biomass (SSB) of 30.9 million pounds, with a target SSB of 38.6 million pounds. Overfishing is defined by a threshold fishing mortality rate (F) of 0.41, with a target F of 0.30. (The Chesapeake Bay and Albemarle-Roanoke stocks operate under a separate target F; see next paragraph.) The BRPs form the basis of a list of triggers, which if any were reached would require the Board to alter the management program to ensure that the Amendment 6 objectives are met. (The list includes a trigger using juvenile abundance indices; see Section VI.)

Recreational striped bass fisheries are managed with size and creel limits meant to achieve the target fishing mortality rate. Most recreational fisheries are constrained by a two fish creel limit,

28 inch minimum size limit, and 365-day fishing season except in spawning areas. Through Management Program Equivalency, Amendment 6 granted the responsible jurisdictions the ability to employ a smaller minimum size limit (18 inches) in the Chesapeake Bay and Albemarle Sound/Roanoke River with the penalty of a target F of 0.27.

Commercial striped bass fisheries are constrained by minimum size limits and state-by-state quotas. The same minimum size standards regulate the commercial fisheries as the recreational fisheries, except for a 20 inch size limit in the Delaware Bay spring gillnet fishery. Amendment 6 restored the coastal commercial quotas to the average reported landings from 1972-1979, except for Delaware's coastal commercial quota, which remains at the level allocated in 2002. The responsible jurisdictions set quotas for the Chesapeake Bay and Albemarle Sound/Roanoke River commercial fisheries based on the 0.27 target F.

States are permitted the flexibility to deviate from these standards by submitting proposals for review by the Striped Bass Technical Committee and Advisory Panel and contingent upon the approval of the Management Board. Alternative proposals must be "conservationally equivalent" to the management standards. This practice has resulted in a wide variety of regulations among states (see Tables 1 and 2).

The Exclusive Economic Zone (EEZ) has been closed to the harvest and possession of striped bass since 1990. A recommendation was made in Amendment 6, and submitted to the Secretary of Commerce, to re-open federal waters to commercial and recreational fisheries. Starting in July 2003 and continuing for several years, NOAA Fisheries took steps in the rulemaking process to consider the proposal, including publishing an Advance Notice of Proposed Action, a Notice of Intent to Prepare an Environmental Impact Statement, and an options paper for management strategies in the EEZ, and initiating several public comment periods. In September 2006, NOAA Fisheries concluded that it would be imprudent to open the EEZ to striped bass fishing and chose not to proceed further in its rulemaking.

II. Status of the Stocks

In February 2006, the Striped Bass Technical Committee submitted a request to the Board to defer the 2006 annual update stock assessment in favor of having more time to prepare new methods and better data for the 2007 benchmark stock assessment. The Board approved this request such that the most recent estimates on stock status are for 2004 (from the 2005 stock assessment report). The 2005 assessment determined that striped bass were not overfished and overfishing did not occur in 2004. The following paragraphs provide the basis for this determination.

Spawning stock biomass (SSB) and recruitment estimates were derived from catch-at-age based virtual population analyses (VPA). Female SSB for 2004 was estimated at 55 million pounds, well above the Amendment 6 threshold SSB (30.9 million pounds), as well as the target SSB (38.6 million pounds; Figure 1). Although above the target and threshold levels since 1996, SSB has declined by 9% since 2002 when it peaked at 60.6 million pounds. Recruitment of the 2004 cohort for all stocks was estimated as 12.7 million age-1 fish, which is close to the average age-1 recruitment observed since the stocks were declared recovered in 1995.

Fishing mortality rate (F) estimates are available from VPA (Figure 1) as well as tagging data analyses. Both methods show a general trend upwards since the fishing moratoria of the mid-

1980s, although they differ in their estimates. Based on VPA results, the average F for age 8-11 fish has increased annually since 2000, equaling 0.40 in 2004, which is above the Amendment 6 F target of 0.30, but below the overfishing threshold of 0.41. It was the consensus of the Technical Committee, however, that this was likely an overestimate due to a pattern of overestimating F in the last year of the model. The 2003 value of F from the 2005 VPA is 0.29, which is substantially lower than the terminal year F from the 2004 VPA run of 0.62. This is due not only to the addition of another year's worth of data, but to the modified suite of tuning indices used in the 2005 VPA and the inclusion of wave 1 (Jan./Feb.) estimates of recreational harvest mortality from North Carolina and Virginia for 1996-2004.

Two methods of using the tagging data, the constant-M approach and the catch-equation, provide stock-specific F estimates and coastwide average F estimates. The 2004 tag-based estimates of F using a constant M of 0.15 were as follows: for fish greater than 28 inches, the coast-wide average F equaled 0.29, and specific tagging program values ranged from 0.02 in the New York ocean haul survey to 0.31 in the Maryland tagging program; for fish greater than 18 inches, the coast-wide average F equaled 0.29, and specific tagging program values ranging from 0.06 in the Virginia spawning stock program to 0.68 in the New Jersey Delaware Bay program. The 2004 catch-equation based estimates of F are as follows: for fish greater than 28 inches, the coast-wide average F equaled 0.14, and specific tagging program values ranged from 0.09 in the Virginia spawning stock program to 0.26 in the Delaware and Pennsylvania tagging program; for fish greater than 18 inches, the coast-wide average F equaled 0.11, and specific tagging program values ranged from 0.05 in three different programs to 0.17 in the Maryland program.

Chesapeake Bay fishing mortality in 2004 was estimated as F=0.16 by the direct enumeration study. This F represents mortality during the June 2003 – June 2004 period, so it is not directly comparable to the average, weighted (by N) VPA calendar-year F on age 3-8 striped bass that is equal to 0.12.

Population estimates were calculated from both VPA and tag-based F estimates using the catch equation. The estimate of total abundance for January 1, 2005 from the VPA was 65.3 million age-1 and older fish. This estimate is about 1.2 million fish lower than for 2004, but 10% higher than the average stock size for the previous five years. From the tag-based F estimates using the catch equation, the 2004 population estimate for age 3+ fish was 48.5 million fish, which is roughly 8 million fish higher than the 2003 estimate. This tag-based estimate is higher than the VPA estimate of 39.2 million age 3+ fish at the beginning of 2004. This discrepancy in population estimates between the two approaches increased with older age classes. The VPA estimated the age 7+ population to number 9.4 million fish, whereas the tag-based approach estimated 17.1 million fish. The VPA-estimated abundance of older fish (age 13+) in the stock increased from 382,000 fish at the beginning of 2003 to 547,000 fish on January 1, 2005.

III. Status of the Fishery

Total striped bass harvest in 2006 is estimated at 3.81 million fish (36.47 million pounds; Tables 3, 4 and 6). The commercial fishery harvested 28.4% of the total by number of fish, or 19.0% by weight of fish, whereas the recreational fishery harvested 71.6% of the total by number of fish, or 81.0% by weight of fish. The total number of fish harvested increased by 14.8% from 2005 (3.32 million fish). This increase is largely attributable to growth in the recreational harvest, which increased from 2.34 million fish in 2005 to 2.71 million fish in 2006 (Table 5), rather than

the commercial fishery, which increased from 1.01 million fish in 2005 to 1.08 million fish in 2006 (Table 3). By weight, the commercial fishery decreased from 2005 to 2006 by nearly 1 million pounds (Table 4). Additionally, recreational dead discards (2.1 million fish; Table 3) increased by 36.8% by number of fish from 2005. The total number of recreational removals in 2006 increased by about 24% from 2005.

In 2006, the recreational fishery harvested an estimated 2.71 million fish (approximately 29.5 million pounds; Tables 5 and 6). Recreational releases totaled nearly 26.0 million fish (Table 7), for an estimated 2.1 million dead discarded fish (Table 3). Recreationally harvested fish and dead discards account for 56.6% and 43.4%, respectively, of the total 2006 recreational removals. The Maryland recreational fishery harvested 24.4% of the recreational landings in number of fish, followed by Virginia (19.5%), New Jersey (18.1%), Massachusetts (12.8%), and New York (11.5%). The remaining states each landed less than 4.0% of the 2006 recreational harvest by number of fish.

The commercial fishery landed an estimated 1.1 million fish in 2006 (6.9 million pounds; Tables 3 and 4). An estimate for 2006 commercial dead discards is not available to provide the percent contribution of commercial harvest and dead discards to total commercial mortality; however, in 2004, commercial harvest contributed 63.6% to the total commercial removals (0.91 million fish) and dead discards contributed 36.4% (0.52 million fish). The Chesapeake Bay jurisdictions dominated the 2006 commercial harvest; by pounds, Virginia landed 27.9%, Maryland landed 26.6%, and PRFC landed 6.8%. Elsewhere along the coast, Massachusetts landed 14.0% of the commercial harvest by pounds, North Carolina 10.8%, and New York 9.0%. Delaware and Rhode Island each landed less than 3.0% of the total commercial landings by pounds.

An estimate for commercial discards in 2006 is unavailable at the writing of this report. (An estimate will be available in 2008 as a product of this year's stock assessment.) Thus, the 2004 data are used to portray the proportion of the total catch attributable to recreational harvest, recreational dead discards, commercial harvest, and commercial dead discards (Figure 2).

IV. Status of Assessment Advice

The Atlantic striped bass coastwide stock assessment was peer reviewed by the 36th Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC) in 2002 (NEFSC 2003). In addition to reviewing the results of the stock assessment, the SARC was asked to comment specifically on the model configuration of the VPA and provide advice on the plus grouping, oldest true age for fishing mortality, and the use of all striped bass fishery independent surveys. As a result of the advice, the fully recruited F calculated in each assessment since 2002 is based on ages 8-11 to conform to the biological reference points in Amendment 6, and consequently, is not directly comparable with age 5-11 Fs used in previous assessments.

The Striped Bass Stock Assessment and Tagging subcommittees have completed annual updates to the assessment since the 36th SAW/SARC, except in 2006, when the Board permitted the subcommittees to skip an update to explore new approaches and improve available data for the next benchmark assessment in 2007. The 46th SAW/SARC will peer review this striped bass stock assessment in late November.

V. Status of Research and Monitoring

The management plan requires certain jurisdictions to implement fishery-dependent monitoring programs for striped bass. All jurisdictions with commercial fisheries (Massachusetts, Rhode Island, New York, Delaware, Maryland, Virginia, PRFC, and North Carolina) or significant recreational fisheries (Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Maryland, Virginia, and PRFC) are required to define the catch composition of these fisheries. Jurisdictions with significant commercial fisheries (Massachusetts, New York, Maryland, Virginia, and PRFC) and those agencies monitoring recreational fisheries (NOAA Fisheries, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Maryland, Virginia, and PRFC) are required to gather representative catch and effort data for these fisheries.

In addition to fishery dependent monitoring programs, the management plan requires certain states to monitor the striped bass population independent of the fishery. Juvenile abundance indices are required from Maine (Kennebec River), New York (Hudson River), New Jersey (Delaware River), Maryland (Chesapeake Bay tributaries), Virginia (Chesapeake Bay tributaries), and North Carolina (Albemarle Sound). Spawning stock sampling is mandatory for New York (Hudson River), Pennsylvania (Delaware River), Delaware (Delaware River), Maryland (Upper Chesapeake Bay and Potomac River), Virginia (Rappahannock River and James River), and North Carolina (Roanoke River and Albemarle Sound). Amendment 6 requires NOAA Fisheries, USFWS, Massachusetts, New York, New Jersey, Maryland, Virginia, and North Carolina to continue their tagging programs, which provide data used to determine survivorship and migration patterns.

VI. Status of Management Measures and Issues

Status of Amendment 6

Amendment 6 was fully implemented by January 1, 2004, and provided the regulatory measures for the 2006 fishing year. At present, Addendum I to Amendment 6 is under development. During the development of Amendment 6, the Management Board raised concerns over the effects of discard mortality on the overall population and agreed to develop a data collection program to collect the information necessary to evaluate the accuracy of the current discard and discard mortality estimates. Based on the guidance in Amendment 6, the Board is developing Addendum I to establish the data collection program. The draft addendum went to public comment in late summer to early fall of 2006. In October 2006, the Board postponed further consideration of the addendum until October 2007 to allow staff to further develop the addendum.

Presently, NOAA Fisheries maintains a ban on all striped bass fishing activity and possession of striped bass in the EEZ with the exception of a defined route to and from Block Island in Rhode Island.

Coastal Commercial Quota

Table 8 shows a history of coastal commercial quotas and harvests since the implementation of Amendment 6. In 2006, four states had coastal commercial quotas lower than their Amendment 6 allocation: Massachusetts and Rhode Island due to quota overages in 2005, and New York and Maryland due to conservation equivalencies related to their minimum size limits.

In 2006, two states exceeded their coastal commercial quotas and should have their 2007 quotas lowered accordingly (Table 8). Massachusetts exceeded its coastal commercial quota by 171,687 pounds, resulting in an adjusted 2007 quota of 988,063 pounds. Virginia exceeded its coastal commercial quota by 10,081 pounds, for an adjusted 2007 quota of 174,772 pounds.

Chesapeake Bay Quota

Amendment 6 implements a separate management program for the Chesapeake Bay due to the size availability of striped bass in this area. Based on a target fishing mortality rate of F=0.27, a bay-wide quota for resident fish is established for the Chesapeake Bay and shares are allocated to Maryland, Virginia, and the Potomac River Fisheries Commission (PRFC). In 2006, the bay-wide quota of 9,476,867 pounds was allocated among the three jurisdictions. (Based on historical harvest, Maryland is allocated ~52%, PRFC ~15%, and Virginia ~33%). Each jurisdiction then allocates portions of the quota to its recreational and commercial fisheries (Table 9). In 2006, the bay-wide harvest was approximately 600,000 pounds less than the bay-wide quota.

Chesapeake Bay Spring Trophy Fishery

Recreational fishermen in the Chesapeake Bay are permitted to take adult migrant fish during a limited seasonal fishery, commonly referred to as the Spring Trophy Fishery. Staring in 1993, the fishery has been controlled by a Board-approved harvest cap, which started at 3,000 fish, and increased to 5,000 fish in 1994, 25,000 fish in 1995, and 30,000 fish in 1996. In December 2003, the Board approved a new methodology to establish the annual quota for the fishery. Each year, the Chesapeake Bay states would be required to submit a harvest report for the spring trophy fishery and propose a new quota for the subsequent year. This quota was to be a set proportion of the number of age 8+ striped bass in the population, as determined annually by the VPA output, minus any overage from the previous year's fishery.

In each of the last several years, the spring trophy fishery has taken more fish than the quota, which has resulted in an overage-adjusted quota for each subsequent year. Table 10 summarizes the quotas, harvests, overages, and adjusted quotas for 2003-2006. The 2006 spring trophy fishery exceeded its adjusted quota by 26,283 fish. In January 2007, Maryland proposed to eliminate the quota system for the spring trophy fishery. Instead, the Board approved a target harvest for 2007 of the VPA calculated quota minus the 2006 overage, to be no less than 30,000 fish. This method resulted in a 30,000 fish target for 2007.

Law Enforcement

The 2006 Law Enforcement Committee reports that the FMP for striped bass is enforceable as written. Striped bass enforcement is a high priority with all Atlantic states and a significant amount of effort has been expended to obtain overall compliance. Joint Enforcement Agreements (JEAs) between the NMFS/OLE, USCG, and the individual state exist in all states of the management unit, except North Carolina. The JEAs expanded enforcement efforts in the EEZ for the second year in a row in 2006, leading to several large confiscations of illegally harvested striped bass. In Virginia, over 60 arrests were made for striped bass fishing in the EEZ during winter 2006 and early 2007. New Hampshire has also seen an increase in apprehensions. Of note is that NMFS increased the fine structure for the illegal harvest and possession of recreationally-caught striped bass in the EEZ. Fines increased from $50 per fish to $100 per fish (up to 10 fish) for first time offenders. For second time offenders, agents and officers may place a $250 per fish fine (up to 10 fish) on the fishermen or refer the case for prosecution in the federal court system.

If more than 10 fish are found in any case, the matter should be forwarded to NOAA's General Counsel for Enforcement and Litigation for prosecution and stiffer penalties. Enforcement efforts, coupled with the higher fines, appear to be having a positive effect on compliance. Preliminary reports indicate increasing compliance in the EEZ by recreational anglers from the mid-Atlantic states.

Juvenile Abundance Indices

In response to the suite of management triggers introduced in Amendment 6, the PRT summarizes the results from the juvenile abundance indices (JAIs). The PRT would recommend action to the Board if any JAIs were to show recruitment failure for three consecutive years. Recruitment failure is defined as a JAI lower than 75% of all other values in the dataset. The geometric mean is the preferred index of YOY striped bass abundance to model stock status. The JAIs in Maine and Virginia indicate that the 2006 year class is above the time-series average. The New Jersey, Maryland, and North Carolina indices were below their time-series averages, but not low enough to be classify as showing recruitment failure. The Hudson River JAI was below its time-series average for the third year in a row; however, only in 2006 does the value qualify as showing recruitment failure. No management action is necessary based on the JAIs.

Albemarle/Roanoke Striped Bass FMP

The Interstate FMP for Atlantic Striped Bass requires North Carolina to inform the Commission of changes to striped bass management in the Albemarle Sound/Roanoke River (A/R) System. North Carolina must adhere to the compliance criteria in Amendment 6. After a Technical Committee review, the PRT previously determined that North Carolina's FMP complies with the mandatory components of Amendment 6.

The A/R System is managed jointly for striped bass by the North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries, which manages the Albemarle Sound Management Area (ASMA), and the North Carolina Wildlife Resources Commission, Division of Inland Fisheries, which manages the Roanoke River Management Area (RRMA). The 2003 FMP, which updated the 1994 FMP, explores harvest options and identifies management measures and research needs to promote recovery of striped bass stock in the central and southern areas of North Carolina (Tar-Pamlico, Neuse, and Cape Fear rivers). The FMP contains a target fishing mortality rate ($F_{target} = 0.22$) and threshold spawning stock biomass (400,000 pounds) for the A/R System. The annual total allowable catch (550,000 pounds in 2006) is allocated evenly between the recreational and commercial fisheries, with 25% for the RRMA recreational fishery, 25% for the ASMA recreational fishery, and 50% for the ASMA commercial fishery. The FMP implements overage penalties for future overages, addresses habitat and environmental issues, catch and release mortality in hook and release fisheries, discards in the multispecies gillnet fishery, enforcement of creel limits, and maintains the Albemarle Sound Management Area boundary line.

Total 2006 harvest in the A/R System is estimated as 276,822 pounds and total losses as 346,602 pounds. During the 2006 fishing year, one regulatory change occurred. In the fall ASMA recreational fishery, the creel limit was increased from two fish per day to three fish per day, due to low harvest in the spring fishery. This change is expected to continue in 2007. Additionally in 2007, the RRMA recreational fishery operated under one open season for the whole river from March 1 to April 30 (rather than two zones with individual open seasons).

VII. Annual State Compliance

Based on the annual state compliance reports, the Plan Review Team determined that each state/jurisdiction implemented a management program that was approved by the Striped Bass Management Board for the 2006 fishing year and was consistent with the requirements of Amendment 6. (See Tables 1 and 2 for state-by-state regulations.)

Several states indicated planned regulatory change(s) for the 2007 fishery. These include:

- Rhode Island: the 2007 possession limit during both sub-periods of the general category commercial fishery will increase from present limits to five fish per vessel per day. Rhode island has also submitted a proposal to lower the trap fishery's minimum size limit to 26 inches while decreasing its quota to 93,788 pounds. Board approval is required for the state to implement this proposed regulation.
- New York: indicated its intent to submit a proposal to increase the Hudson River recreational fishery minimum size limit to 28 inches. When submitted, the proposal will require Technical Committee review and Management Board approval.
- Chesapeake Bay Spring Trophy Fishery: the Board approved a 30,000 fish target for 2007. Maryland altered its regulations to comply: with a season of April 21-May 15, anglers were permitted to harvest one fish per day, measuring 28-35 inches or greater than 41 inches.
- North Carolina: implemented a mandatory Coastal Recreational Fishing License in 2007; continued a recreational angler requirement to report harvest from May through August from NC/VA line above Corolla, south to Oregon inlet; holding public hearings for a proposal to require coastal commercial fishermen to declare which one of the three gear types they will use for the next three years (to limit entry into the fisheries and reduce competition and conflict between user groups).

Amendment 6 has several compliance requirements as part of the interstate striped bass management program, including both monitoring and regulatory requirements, which are enforceable through the Atlantic Striped Bass Conservation Act. The monitoring requirements for each jurisdiction are summarized in *Section V* of this report. Compliance with these requirements is summarized in Table 11. The PRT found all states carried out the required monitoring programs and implemented the mandatory regulatory requirements in the 2006 fishing year.

Amendment 6 also requires states to submit annual law enforcement activity reports. These reports, in a standardized format, detail the effort and success involved in enforcing striped bass regulations in each jurisdiction. For the 2006 fishing year, the states submitted their law enforcement reports to the Commission's Law Enforcement Coordinator and one Law Enforcement Report was submitted on behalf of all the states in the striped bass management unit. The striped bass law enforcement report is summarized in *Section VI* of this report.

VIII. Recommendations

Regulatory Recommendations

- The 2007 coastal commercial quotas for Massachusetts and Virginia should be lowered by the amounts the states harvested in excess of their 2006 allocations (Table 8).

Management Recommendations

- Some disagreement has been voiced as to the meaning of Section 4.1 of Amendment 6. This section describes a new planning horizon for striped bass management, stating: "beginning in the third year after the implementation of Amendment 6, any management measures established by the Management Board will be maintained by the states for three years, unless a target or threshold is violated." This section can be taken to mean that from 2006 to 2008, no new state proposals to alter regulations should be submitted, or it could be taken to mean that no new amendments or addenda should be implemented by the Board (other than Addendum I which Amendment 6 requires). The PRT recommends that the Board discuss and clarify the intent of Section 4.1 to Amendment 6.

Research Recommendations

STOCK ASSESSMENT AND POPULATION DYNAMICS

High Priority

- Develop method to integrate VPA and tagging models to produce a single estimate of F and stock status (ongoing, G. Nelson)
- Evaluate alternative catch at age models for striped bass (ongoing, G. Nelson, L. Lee).
- Examine reporting rates by commercial and recreational fishermen using high reward tags (ongoing, J. Hoenig)
- Develop studies to provide information on gear-specific discard morality rates and to determine the magnitude of bycatch mortality, including factors that influence their magnitude and means of reducing or eliminating this source of mortality. Additionally, increase sea sampling of commercial fisheries to better estimate levels of discards (ongoing, G. Nelson).
- Review relationship between tag-based survival estimates and VPA estimate of mortality in a management framework.
- Develop maturity ogive applicable to coastal migratory stock.
- Develop methods for combining tag results from programs releasing fish from different areas on different dates.
- Examine potential biases associated with the number of tagged individuals, such as gear-specific mortality (associated with trawls, pound nets, gill nets, and electrofishing), tag-induced mortality, and tag loss.
- Estimate striped bass harvest removals in coastal areas during wave 1 and in inland waters of all jurisdictions year-round.

Medium Priority

- Improve methods for determining population sex ratio for use in estimates of spawning stock biomass and biological reference points.
- Develop refined and cost-efficient fisheries-independent coastal population index for striped bass stocks.
- Quota calculation methods should be refined which allow better estimates among various components of the fishery.

- Examine methods to estimate annual variation in natural mortality (ongoing, Striped Bass Tagging Subcommittee).
- Examine causes of different tag-based survival estimates among programs estimating similar segments of the population.
- Evaluate truncated matrices and covariate-based tagging models.
- Develop reliable estimates of poaching loss from striped bass fisheries.

Low Priority

- Evaluate the overfishing definition relative to uncertainty in biological parameters.
- Develop simulation models to look at the implications of overfishing definitions relative to development of a striped bass population that will provide "quality" fishing. Quality fishing must first be defined.
- Examine issues with time saturated tagging models for the ≥ 18 inch length group.

RESEARCH AND DATA NEEDS

High Priority

- Continue in-depth analysis of migrations, stock compositions, etc. using mark-recapture data (ongoing, e.g., Cooperative Winter Tagging Cruise 20 Year Report, W. Laney)
- Continue evaluation of striped bass dietary needs and relation to health condition (ongoing, R. Latour, A. Overton).

Medium Priority

- Continue to conduct research to determine limiting factors affecting recruitment and possible density implications.
- Evaluate the percentage of fishermen using circle hooks.
- Conduct study to calculate the emigration rates from producer areas now that population levels are high and conduct multi-year study to determine inter-annual variation in emigration rates.

Low Priority

- Determine inherent viability of eggs and larvae.
- Conduct additional research to determine the pathogenicity of the IPN virus isolated from striped bass to other warm water marine species, such as flounder, menhaden, shad, largemouth bass, and catfish.

IX. Figures

Figure 1. VPA-based average fishing mortality (F) for age 8-11 fish and spawning stock biomass (SSB), 1982-2004. The VPA-based F for 2004 (0.40) is not shown because the Technical Committee concluded that it was not reliable due to the observed restrospective pattern. Target and threshold levels for F (plain lines) and SSB (dotted lines) are also shown (Source: ASMFC 2005)

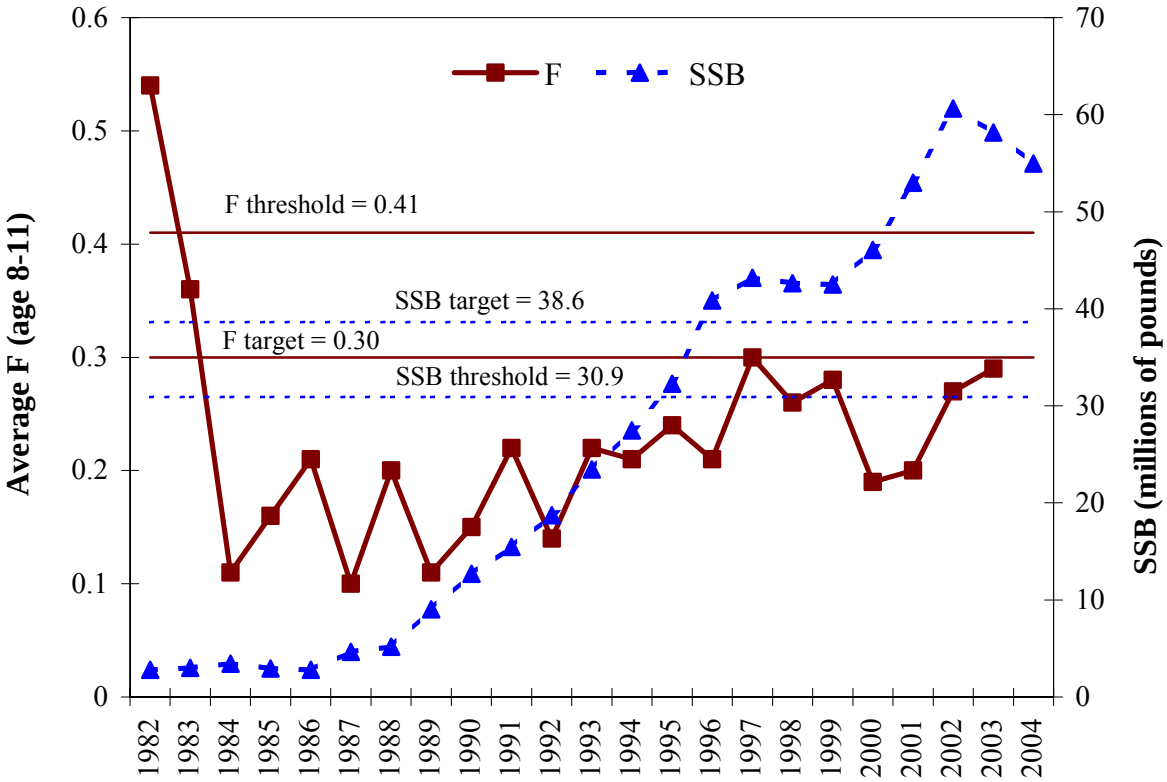
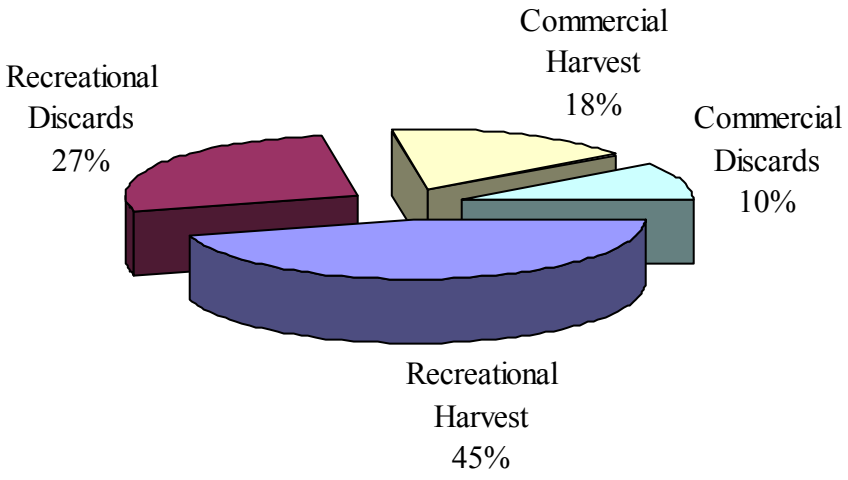


Figure 2. 2004 Striped Bass Total Catch (5.2 million fish)
(Source: ASMFC 2005)



X. Tables

Table 1. Atlantic Striped Bass Commercial Fishery Regulations for 2006

STATE	SIZE LIMITS	QUOTA	OPEN SEASON
Maine	No Fishery		
New Hampshire	No Fishery		
Massachusetts	34" min.	Hook & line: 1,149,975 lb.	7.12 – 8.24 5 fish on Sun, 30 fish/day Tues-Thurs
Rhode Island	Trap: 28" min. General Category: 34" min.	Trap: 97,340 lb. General Category: 146,010 lb.	**Trap**: 1.1 – 8.26, 90% of quota 8.27 – 12.31 10% of quota **General**: 6.1-8.31, 4 fish, 75% of quota 9.1 – 12.31, 3 fish, 25% of quota
Connecticut	No Fishery		
New York	24" –36"	828,293 lb.	7.1 – 12.15
New Jersey	No Fishery		
Pennsylvania	No Fishery		
Delaware	28" minimum except spring gillnet in DE Bay/River & Nanticoke River (20")	193,447 lb.	**Gillnet** 2.15 – 5.31 & 11.15 – 12.30 **Hook and Line** 4.1 – 12.31 **Spawning Grounds** 1.1 – 3.31 & 6.1 – 12.31
Maryland	**Bay and Rivers** 18" – 36" **Ocean** 24"	**Bay Pound Net & Haul Seine** 533,529 lb. **Bay Hook and Line** 736, 269 lb. **Bay Drift Gill Net** 864,316 lb. **Ocean** 126,396 lb.	**Bay Pound Net & Haul Seine** 6.1 – 11.30 **Bay Hook and Line** 6.14 – 11.30 (Mon – Thurs) **Bay Drift Gill Net** 1.2 – 2.28, 12.4 – 12.29 **Ocean** 1.1 – 4.30, 11.1 – 12.31
Potomac River Fisheries Commission	18" min all year 36" max 1.10 – 3.25	791,195 lb.	**Hook & line**: 2.15 – 3.25, 6.1 – 12.31 **Pound Net**: 2.15 – 3.25, 6.1 – 12.15 **Gill Net**: 1.10 – 3.25 **Other**: 2.15 – 3.25, 6.1 – 12.15
District of Columbia	No Fishery		
Virginia	**Bay and Rivers** 18" min all year 28" max 3. 26 – 6.15 **Ocean** 28" minimum	**Bay and Rivers** 1,554,302 lb. **Ocean** 184,853 lb.	**Bay and Rivers** 2.1 – 12.31 **Ocean** 2.1 – 12.31
North Carolina	**Albemarle Sound** 18" **Atlantic Ocean** 28"	**Albemarle Sound** 275,000 lb. **Atlantic Ocean** 480,480 lb.	**Albemarle Sound** 1.1–3.14 & 4.15-4.30: 5 fish 3.15–4.14 & 10.1-11.30: 10 fish **Atlantic Ocean** Season & trip limit based on gear

Table 2. Summary of Atlantic Striped Bass Recreational Regulations for 2006

STATE	SIZE LIMITS	BAG LIMIT	QUOTA	OPEN SEASON
Maine	20 – 26” >40”	1 fish	None	All year except spawning areas: 5.1 – 6.30 catch & release; 7.1 – 11.30 open
New Hampshire	1 fish 28 – 40” 1 fish 28” min.	2 fish	None	All year
Massachusetts	28” minimum	2 fish	None	All year
Rhode Island	28” minimum	2 fish	None	All year
Connecticut	28” minimum	2 fish	None	All year
New York	**Hudson River** 18” minimum **Ocean** 1 fish 28 – 40” 1 fish > 40” **Charter/DE River** 28” minimum	**Hudson River** 1fish **Ocean** 2 fish **Charter/ DE River** 2 fish	None	**Hudson River** 3.15 – 11.30 **Ocean** 4.15 – 12.15 **Charter/Delaware River** All year
New Jersey	28” minimum **Bonus Program** 28” minimum	2 fish **Bonus Program** 1 fish/day additional	None **Bonus program** from commercial cap: 321,750 lb.	All year, except DE River spawning area: 3.31–3.31 & 6.1–12.31 Other Rivers: 3.1–12.31
Pennsylvania	28” minimum	2 fish	None	3.1 – 3.31, 6.1 – 12.31
Delaware	28” minimum	2 fish	None	All year, except DE River spawning area: 1.1–3.31, 6.1–12.31
Maryland	**Spring Trophy** 33” minimum **Summer/Fall** 1 fish 18” min. 1 fish 18”-28” **Ocean** 28” minimum	**Spring Trophy** 1 fish **Summer/Fall** 2 fish **Ocean** 2 fish	**Spring Trophy** Bay-wide: 41,488 fish **Summer/Fall** 2,795,611 lb. **Ocean** None	**Spring Trophy** 4.15 – 5.15 **Summer/Fall** Bay: 5.16 – 12.15 Potomac tribs: 6.1–12.15 **Ocean** All year
Potomac River Fisheries Commission	**Spring Trophy** 33”minimum **Summer/Fall** 1 fish 18” min. 1 fish 18 - 28”	**Spring Trophy** 1 fish **Summer/Fall** 2 fish	**Spring Trophy** Bay-wide: 41,488 fish **Summer/Fall** 647,341 1b.	**Spring** 4.15 – 5.15 **Summer/Fall** 5.16 – 12.31
DC	18" – 36”	2 fish	None	5.1 – 11.19
Virginia	**Spring Trophy** 32” min (Potomac tributaries: 28” min) **Spring** 18–28”, 1 fish >32” **Fall** 18–28”; 1 fish >34” **Ocean:** 28”	**Spring Trophy** 1 fish **Spring** 2 fish **Fall** 2 fish **Ocean:** 2 fish	**Spring Trophy** Bay-wide: 41,488 fish **Spring/Fall** Bay: 1,554,302 lb. **Ocean:** None	**Spring Trophy** 5.1–5.15 (tribs open 4.15) **Spring** 5.16 – 6.15 **Fall** Bay: 10.4–12.31 Tribs: 5.16 – 12.31 **Ocean:** 1.1–3.31, 5.16–12.31
North Carolina	**Roanoke River** 18” min, no fish 22–27”, 1 fish >27” **Albemarle Sound** 18” minimum **Atlantic Ocean** 28” minimum	**Roanoke River** 2 fish **Albemarle Sound** spring 2, fall 3 fish **Atlantic Ocean** 2 fish	**Roanoke River** 137,500 lb. **Albemarle Sound** 137,500 lb. **Atlantic Ocean** None	**Roanoke River** Zone 1: 3.15 – 4.30 Zone 2: 3.1 – 4.22 **Albemarle Sound** 1.1-4.30; 10.1-12.31 **Atlantic Ocean** All year

Table 3. Summary of the 2006 recreational and commercial striped bass fisheries (in numbers of fish), as reported to the Commission in the 2007 state compliance reports

State	Recreational					Commercial	Total Harvest	Total* Removals
	Catch	Harvest	Discards	Dead Discards	Total Rec. Removal	Harvest		
ME	4,100,175	73,540	4,026,635	317,867	391,407	0	73,540	391,407
NH	582,681	14,760	567,921	45,434	60,194	0	14,760	60,194
MA	9,007,876	345,105	8,662,771	693,022	1,038,127	69,986	415,091	1,108,113
RI	1,432,363	75,279	1,357,084	108,567	183,846	15,429	90,708	199,275
CT	1,767,018	83,776	1,683,242	134,659	218,435	0	83,776	218,435
NY	1,888,514	310,441	1,578,073	133,593	444,034	73,528	383,969	517,562
NJ	2,590,062	489,501	2,100,560	168,045	657,546	1,127	490,628	658,673
PA	no estimate					0	NA	NA
DE	256,128	17,804	238,324	19,065	36,869	30,212	48,016	67,081
MD	4,565,674	660,462	3,905,212	312,417	972,879	655,951	1,316,413	1,628,830
PRFC	no estimate					92,288	92,288	92,288
VA	2,224,261	528,298	1,695,963	135,677	663,975	109,395	637,693	773,370
NC	235,925	127,016	108,909	7,513	134,529	35,943	162,959	170,472
Total	**28,650,677**	**2,725,982**	**25,924,694**	**2,075,859**	**4,801,841**	**1,083,859**	**3,809,841**	**5,885,700**

Notes

* Total Removals are incomplete without commercial dead discards. An estimate of commercial dead discards will not be available until the 2007 Striped Bass Stock Assessment is complete.

New York recreational discards include recreational discards in Hudson River.

New Jersey commercial harvest is that taken through the striped bass bonus program.

Pennsylvania reported that no work was done in 2006 to characterize recreational harvest.

Maryland estimates are coastal and bay combined estimates.

Recreational harvest in the Potomac River is included in Maryland and Virginia recreational harvest estimates.

Virginia estimates are coastal and bay combined estimates.

North Carolina estimates include inland harvest.

Table 4. Commercial harvest (pounds) of striped bass by state, 1981-2006

Sources: 1981-2005 data from NMFS Fisheries Statistics Division (Query date: 6.11.07); 2006 data from 2007 State Compliance Reports

Year	ME	NH	MA	RI	CT	NY	NJ	DE	MD	PRFC	VA	NC	Total
1981	1,400		708,200	234,900	4,900	822,400	13,900	23,100	1,505,697	466,523	63,380	417,324	4,261,724
1982			643,400	270,300	6,000	470,900	10,400	25,700	479,130	136,053	49,917	315,946	2,407,746
1983			223,600	196,400	2,200	309,500	19,600	6,800	380,905	164,245	51,950	354,509	1,709,709
1984			107,200	54,500	2,000	595,300	8,900	37,000	815,611	783,140	17,849	508,190	2,929,690
1985	1,400		118,800	61,200	5,500	469,040	12,100		1,385	222,196	60,327	279,940	1,231,888
1986			97,300	11,100		1,100	10,000		0	29,370	2,067	176,921	327,721
1987			78,600	500			400		25,867	57,945	1,988	259,493	424,793
1988			79,553						19,661	115,251	70,565	115,915	400,945
1989			119,900			300	200		0		0	100,830	221,230
1990		37	159,729	3,951		81,584			0	169,060	277,769	113,939	798,795
1991			235,238	31,263		105,262		15,100	26,057	216,755	140,982	120,418	891,075
1992			237,059	36,788		226,613		25,200	495,196	127,398	217,080	161,009	1,526,343
1993			266,573	52,435		109,362		15,600	789,973	142,742	212,431	262,447	1,851,563
1994			200,000	44,633		169,811		33,900	911,989	149,891	198,983	261,903	1,971,110
1995			751,477	113,461	1,838	500,980	179	38,100	1,225,606	198,478	552,823	446,796	3,829,738
1996			695,935	122,562		500,697			1,434,790	346,834	1,421,466	181,580	4,703,864
1997			784,892	96,519		460,451		165,998	2,185,719	731,114	1,142,550	587,799	6,155,042
1998			810,112	94,663		484,513		163,176	2,549,011	726,179	1,463,225	422,885	6,713,764
1999		33	766,237	119,679		489,720		176,307	2,151,664	653,266	1,484,804	588,324	6,430,034
2000			796,159	111,812		543,216		145,111	2,417,315	666,001	1,830,814	407,515	6,917,943
2001			815,384	129,654	943	633,093		198,618	1,778,235	658,676	1,661,867	626,607	6,503,077
2002			924,885	129,172		518,573		146,157	1,865,027	521,048	1,539,786	701,471	6,346,119
2003			1,055,496	190,220		784,602		191,194	1,829,272	676,574	1,791,290	565,931	7,084,579
2004	308	203	1,214,209	232,283		746,580		176,454	490,574	772,333	1,761,427	911,484	6,305,855
2005			1,102,233	215,628		710,785		173,968	2,095,521	533,456	2,194,058	849,870	7,875,519
***2006**			1,312,168	238,797		688,446		179,463	2,207,350	673,508	1,413,518	219,772	6,933,022

* Preliminary data from state reports

Maryland and Virginia harvests include Chesapeake Bay harvest; North Carolina harvest includes Albemarle Sound harvest. Virginia and Maryland harvest (except 2006) are NMFS reported minus the PRFC estimate of fish caught in the Potomac River and landed in Maryland or Virginia.

All harvests are based on the calendar year.

Table 5. Recreational harvest (numbers of A + B1 fish) of striped bass by state, 1981- 2006

Source: NMFS Fisheries Statistics Division (MRFSS Query Date: 6.27.07)

Year	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC	Total
1981	11,746	682	21,232	3,755	11,146	23,397	19,306		127,167		553,723	772,154
1982	929		83,933	1,757	50,081	21,278	58,294		984			217,256
1983	7,212	4,576	39,316	1,990	42,826	43,731	127,912	135	31,746	0	7,690	307,134
1984	0		3,481	1,230	5,678	57,089	13,625	16,571	16,789	0	3,530	117,993
1985	11,862	0	66,019	670	15,350	23,107	13,145	0	2,965	404	5,972	139,494
1986	0		29,434	3,291	1,760	27,477	36,999		14,077	1,585	953	115,576
1987	0	90	10,807	2,399	522	14,191	9,279	0	4,025	2,442		43,755
1988	0	647	21,050	5,226	2,672	20,230	12,141	0	133	24,259	6,141	92,499
1989	738	0	13,044	4,303	5,777	12,388	1,312	0	0	0	512	38,074
1990	2,912	617	20,515	4,677	6,082	24,799	44,878	2,009	736	56,017		163,242
1991	3,265	274	20,799	17,193	4,907	54,502	38,300	2,741	77,873	42,224	391	262,469
1992	6,357	2,213	57,084	14,945	9,154	45,162	41,426	2,400	99,354	21,118	1,317	300,530
1993	612	1,540	58,511	17,826	19,253	78,560	64,935	4,055	104,682	78,481	264	428,719
1994	3,771	3,023	74,538	5,915	16,929	87,225	34,877	4,140	199,378	127,945	7,930	565,671
1995	2,189	3,902	73,806	29,997	38,261	155,821	254,055	15,361	355,237	149,103	30,821	1,108,553
1996	1,893	6,461	68,300	60,074	62,840	225,428	127,952	22,867	337,415	244,746	34,394	1,192,370
1997	35,259	13,546	199,373	62,162	64,639	236,902	67,800	19,706	334,068	434,690	84,910	1,553,055
1998	38,094	5,929	207,952	44,890	64,215	166,868	88,973	18,758	391,824	294,008	69,727	1,391,238
1999	21,102	4,641	126,755	56,320	55,805	195,261	237,010	8,772	263,191	304,139	91,698	1,364,694
2000	62,186	4,262	181,295	95,496	53,191	270,798	402,302	39,543	506,462	335,259	40,640	1,991,434
2001	59,947	15,291	288,032	80,125	54,165	189,714	560,208	41,195	382,557	301,153	65,641	2,038,028
2002	71,907	12,857	308,749	78,190	51,060	202,075	416,455	29,149	282,429	321,470	60,293	1,834,634
2003	57,765	24,878	407,100	115,471	95,983	313,761	391,842	29,522	525,191	401,945	138,414	2,501,872
2004	36,886	10,359	400,252	84,814	75,244	242,623	448,524	25,178	380,461	477,402	351,934	2,533,677
2005	68,638	26,026	368,422	112,918	114,965	298,387	327,016	19,955	490,275	367,801	144,983	2,339,386
2006	73,385	14,760	345,105	75,279	83,776	310,441	489,501	18,679	660,462	528,190	107,966	2,707,544

North Carolina estimate includes harvest in the Albemarle Sound and Roanoke River Management Areas.

Table 6. Recreational harvest (pounds of A + B1 fish) of striped bass by state, 1981- 2006

Source: NMFS Fisheries Statistics Division (MRFSS Query Date: 6.27.07)

Year	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC	Total
1981	37,752	10,706	85,492	45,915	34,795	169,280	85,362		676,530		807,439	1,953,271
1982	2,663		2,003,948	16,012	110,964	61,438	327,024					2,522,049
1983	13,031	7,061	248,917	16,340	310,798	275,033	1,662,403	29	149,351		15,258	2,698,221
1984			33,697	12,879	91,705	896,770	58,616	139,626	44,262		4,669	1,282,224
1985	140,951		224,788		41,144	210,815	190,555		8,825	3,585	8,558	829,221
1986			298,816	97,961	21,537	33,115	644,394		3,104	5,362	1,596	1,105,885
1987		2,987	269,459	69,793	13,307	278,578	159,556		40,818	19,976		854,474
1988		13,549	421,317	108,182	47,536	348,920	136,374		1,058	178,626	18,214	1,273,776
1989	15,221		295,227	59,346	100,688	236,730	25,520				8,472	741,204
1990	60,483	11,363	319,092	73,349	193,011	505,440	588,974	18,115	12,967	443,751		2,226,545
1991	58,177	6,731	440,605	496,723	125,309	1,053,589	643,571	25,501	456,954	333,743	3,882	3,644,785
1992	107,693	44,612	972,116	203,108	196,278	921,201	746,343	25,677	613,174	187,852	16,786	4,034,840
1993	11,953	28,115	1,113,446	292,429	400,067	1,575,938	874,296	52,540	794,853	505,742	3,029	5,652,408
1994	66,451	66,017	1,686,049	109,818	355,829	1,974,759	438,080	63,832	1,096,409	870,140	71,195	6,798,579
1995	45,933	67,992	1,504,390	436,061	671,647	3,296,025	3,141,222	175,347	2,057,450	955,822	235,603	12,587,492
1996	44,802	102,271	1,291,706	950,978	915,418	4,809,381	1,736,508	281,481	1,560,389	1,340,414	285,072	13,318,420
1997	185,178	206,904	2,891,970	927,921	920,465	4,449,564	821,784	232,186	1,962,947	2,813,471	763,592	16,175,982
1998	178,584	114,342	2,973,456	671,847	989,923	2,318,291	1,333,329	236,926	1,908,344	1,581,560	592,014	12,898,616
1999	98,623	84,255	1,822,818	886,668	824,031	3,171,344	3,342,372	100,541	1,137,940	1,741,857	758,468	13,968,917
2000	269,325	71,370	2,618,216	1,160,305	515,962	4,050,569	4,286,040	369,030	2,100,854	2,005,721	325,846	17,773,238
2001	290,233	223,072	3,644,561	1,138,978	628,044	2,996,805	5,341,867	382,498	2,072,943	2,140,713	720,335	19,580,049
2002	383,270	152,342	4,304,883	1,192,296	600,482	2,813,596	4,133,678	266,920	1,423,515	2,648,115	712,024	18,631,121
2003	253,910	281,549	4,889,036	1,502,455	1,251,538	3,409,573	4,258,557	292,167	2,808,923	2,789,745	1,205,037	22,942,490
2004	171,741	121,566	5,466,059	1,169,587	921,737	2,388,825	5,458,534	311,025	2,333,042	3,101,870	5,923,269	27,367,255
2005	322,996	291,662	5,093,748	1,590,072	1,643,946	3,936,227	3,793,471	254,018	3,533,652	2,655,119	2,434,959	25,549,870
2006	389,096	212,184	4,996,675	916,104	1,393,495	4,768,272	6,621,657	201,267	3,606,719	4,156,745	2,273,077	29,535,291

North Carolina estimate includes harvest in the Albemarle Sound and Roanoke River Management Areas.

Table 7. Recreational releases (number of B2 fish) of striped bass by state, 1981-2006

Source: NMFS Fisheries Statistics Division (MRFSS Query Date: 6.27.07)

Year	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC	Total
1981	296	0	0	1,626	16,637	17,746	24,894		31,881		3,744	96,824
1982	687		6,441	2,551	643,187	12,297	87,648		30,376			783,187
1983	0	0	34,018	5,444	0	1,469	117,807	0	213,487	11,997	0	384,222
1984	1,887		98,405	85,135	31,176	40,469	52,930	0	104,095	8,775	3,530	426,402
1985	81,153	93	12,360	40,567	26,946	57,540	5,524	702	147,103	2,598	0	374,586
1986	4,379		442,298	2,014	10,494	123,842	0		390,063	7,528	12,032	992,650
1987	18,106	435	93,660	63,849	78,434	253,986	56,697	16,988	118,395	7,611		708,161
1988	4,528	6,699	209,632	23,347	25,532	92,611	486,306	2,455	132,250	5,631	12,877	1,001,868
1989	16,028	4,822	193,067	38,007	125,370	365,712	265,958	4,807	114,269	72,766	0	1,200,806
1990	12,542	15,518	339,511	67,509	89,490	265,099	254,384	14,411	420,084	175,046		1,653,594
1991	67,490	6,559	448,735	30,975	301,476	756,663	166,198	38,334	1,036,011	208,350	481	3,061,272
1992	31,177	27,613	779,814	120,410	292,259	799,149	413,506	36,932	749,959	115,899	1,342	3,368,060
1993	373,064	14,979	833,566	100,993	271,318	694,107	308,253	89,543	1,556,848	100,374	2,161	4,345,206
1994	363,703	43,501	2,102,514	138,989	489,967	1,132,707	568,047	103,992	2,785,392	197,022	9,120	7,934,954
1995	505,758	285,486	3,280,882	356,324	507,124	1,209,585	694,889	115,363	2,401,277	370,949	31,306	9,758,943
1996	1,626,705	292,820	3,269,746	314,336	1,051,612	1,436,091	776,165	99,372	2,545,238	759,916	262,555	12,434,556
1997	1,417,976	279,298	5,417,751	606,746	722,708	1,018,892	736,734	130,073	4,019,987	1,232,323	302,320	15,884,808
1998	691,378	243,301	7,184,358	613,421	1,026,192	884,626	488,319	185,016	2,641,680	796,372	421,273	15,175,936
1999	649,816	145,730	4,576,208	360,121	704,025	1,228,628	1,152,682	105,696	2,387,615	940,755	521,410	12,772,686
2000	942,593	209,606	7,382,031	541,516	926,367	1,373,069	885,289	151,838	3,244,731	1,022,040	252,440	16,931,520
2001	870,522	164,336	5,410,899	377,474	1,107,707	824,278	965,650	162,677	2,890,054	620,947	118,664	13,513,208
2002	1,392,200	238,003	5,718,984	530,402	696,976	588,155	715,099	114,650	2,928,589	706,729	154,705	13,784,492
2003	846,708	260,167	4,361,710	448,707	843,037	1,083,808	925,885	169,012	4,652,800	970,554	284,754	14,847,142
2004	748,388	196,806	5,891,661	669,975	1,079,304	1,492,703	1,323,535	151,179	3,738,523	1,767,596	398,499	17,458,169
2005	3,024,291	512,771	4,839,752	741,022	1,713,541	1,348,377	1,197,440	224,841	3,753,328	1,484,540	130,458	18,970,361
2006	4,070,305	567,921	8,662,771	1,357,084	1,683,242	1,578,073	2,100,560	245,304	3,905,212	1,695,963	82,973	25,949,408

North Carolina estimate includes releases in the Albemarle Sound and Roanoke River Management Areas.

Table 8. Coastal Commercial Quotas and Harvests (pounds, based on compliance reports)

	Am 6 Quota	2003 Quota	2003 Harvest	2003 Overage	2004 Quota	2004 Harvest	2004 Overage
MA	1,159,750	1,036,880*	1,055,439	18,559	1,141,191*	1,206,305	65,114
RI	243,625	242,159*	238,025	0	243,625	245,204	1,579
NY	1,061,060	828,293^	753,261	0	828,293^	741,668	0
NJ+	321,750	321,750	121,410	0	321,750	81,870	0
DE	193,447	193,447	188,419	0	193,447	181,974	0
MD	131,560	126,936^	98,149	0	126,936^	115,453	0
VA	184,853	184,853	159,786	0	184,853	160,301	0
NC~	480,480	480,480	482,123	1,643	478,837*	424,184	0

	2005 Quota	2005 Harvest	2005 Overage	2006 Quota	2006 Harvest	2006 Overage	2007 Quota
MA	1,094,636*	1,113,905	19,269	1,140,481*	1,312,168	171,687	988,063*
RI	242,046*	242,303	257	243,368*	238,797	0	243,625
NY	828,293^	689,821	0	828,293^	688,446	0	828,293^
NJ+	321,750	29,797	0	321,750	23,656	0	321,750
DE	193,447	173,815	0	193,447	179,463	0	193,447
MD	126,936^	46,871	0	126,396^	91,093	0	126,396^
VA	184,853	184,734	0	184,853	194,934	10,081	174,772*
NC~	480,480	440,889	0	480,480	348,227	0	480,480

^ Quota reduced due to conservation equivalency
* Quota reduced due to overage in the previous year
+ NJ quota applied to recreational bonus fish program
~ NC harvest year is December 1 to November 30

Table 9. Chesapeake Bay Quotas and Harvests (pounds), 2006

Year: 2006	Jurisdiction	Quota	Harvest
Commercial Fisheries	Maryland	2,134,116	2,116,257
	PRFC	791,195	673,508
	Virginia	1,554,302	1,218,584
	Commercial Subtotal	**4,479,613**	**4,008,349**
Recreational Fisheries	Maryland	2,795,611	2,350,192
	PRFC	647,341	*
	Virginia	1,554,302	2,509,401
	Recreational Subtotal	**4,997,254**	**4,859,593**
Chesapeake Bay Total		**9,476,867**	**8,867,942**

* Recreational harvest in the Potomac River is included in Maryland and Virginia harvest estimates

Table 10. Chesapeake Bay Spring Trophy Fishery Quotas and Harvests (numbers of fish)

	2003	2004	2005	2006	2007
Baseline quota	30,000	40,624	40,624^	55,208	50,030
Previous year overage	0	13,900	4,680	13,720*	26,283
Adjusted quota	30,000	26,724	35,944	41,488	30,000▽
Harvest	43,900	31,404	65,664	67,771	
Overage	13,900	4,680	29,720	26,283	

^ The Board approved the same baseline quota for 2005 as used in 2004.

* The 2005 overage of 29,720 fish was adjusted to a direct payback of 13,720 fish under an increased minimum size limit and future additional Maryland effort controls.

▽ The Board approved a target for the 2007 season of the VPA calculated quota minus the 2006 overage, to be no less than 30,000 fish.

Table 11. Status of compliance with monitoring and reporting requirements
(Y = compliance standards met, N = compliance standards not met, N/A = not applicable)

State	Fishery-independent monitoring	Fishery-dependent monitoring	Annual reporting
ME	Y	N/A	Y
NH	N/A	N/A	Y
MA	Y	Y	Y
RI	N/A	Y	Y
CT	N/A	Y	Y
NY	Y	Y	Y
NJ	Y	Y	Y
PA	Y	N/A	Y
DE	Y	Y	Y
MD	Y	Y	Y
PRFC	N/A	Y	Y
DC	N/A	N/A	Y
VA	Y	Y	Y
NC	Y	Y	Y
NMSF	Y	Y	N/A
USFWS	Y	N/A	N/A