DRAFT

Chesapeake Bay Weakfish and Spotted Sea Trout Fishery Management Plan Review April 2013

Summary

The Maryland Weakfish and Spotted Seatrout Plan Review Team (PRT) reviewed the 1990 CBP Chesapeake Bay Weakfish and Spotted Seatrout Fishery Management Plan and the 2003 Chesapeake Bay Program Weakfish (*Cynoscion regalis*) Fishery Management Plan (FMP). The PRT considered the appropriateness of the goals, objectives, strategies and actions identified in the FMPs; the factors identified in the Fisheries Allocation Policy; the issues and concerns identified in the annual FMP updates; the ASMFC requirements and recommendations; and the status of the stocks. The PRT determined that the management frameworks set forth in the 1990 and 2003 FMPs are appropriate for managing the weakfish and spotted seatrout resources.

The PRT does not recommend any changes in allocation at this time. The PRT recommends collecting additional socioeconomic data to support further evaluation of the management framework for spotted seatrout. Currently, the recreational fishery harvests the majority of the catch. Although the PRT does not recommend an increase in the minimum size limit and a decrease in the daily creel limit, the PRT would consider these changes based on defined recreational fishing objectives developed by the recreational fishing sector. A commercial bycatch limit for spotted seatrout similar to the weakfish commercial harvest restriction could be considered. Establishing a bycatch limit similar to weakfish could serve as a conservation measure if the spotted seatrout resource rebounds in Maryland waters.

As part of the allocation review, the Department received comments from the Maryland Coastal Conservation Association (CCA). The FMPs do not explicitly define an allocation for spotted seatrout in terms of recreational and commercial percentages. Based on limited and sporadic historic landings data, the recreational sector in Maryland has caught approximately 77% of the total catch and the commercial sector has caught approximately 23% of the total catch (late 1980s - 2010).

Atlantic States Marine Fisheries Commission (ASMFC) Considerations

The ASMFC Weakfish Management Board adopted new spawning stock biomass (SSB) biological reference points (BRPs) in 2009 setting the spawning potential threshold at 20% and the spawning potential target at 30%.

Addendum IV of the ASMFC Interstate Weakfish Management Plan required management measures to reduce commercial and recreational exploitation. The Chesapeake Bay program jurisdictions implemented new harvest restrictions for weakfish in 2010: a 1 fish/person/day recreational limit; a 100 pound commercial trip limit, and a 100 pound bycatch limit during the closed season.

The ASMFC Omnibus Amendment to the Interstate Fishery Management Plans for Spanish Mackerel, Spot and Spotted Seatrout was approved in 2012. The objectives of the amendment are to restrict the catch of mature individuals, maintain a sufficiently high SSB, and develop research priorities that will refine management. The amendment requires a minimum coastwide size limit of 12" for spotted seatrout for both the recreational and commercial fisheries. The Chesapeake Bay jurisdictions require a 14" minimum size limit for the recreational spotted seatrout fishery with a 10 fish/person/day creel limit. Maryland requires a 13"minimum size limit for the commercial spotted seatrout fishery. Virginia and the Potomac River Fisheries Commission (PRFC) require a 14" size limit for their commercial fisheries.

Maryland submits an annual compliance report to the ASMFC for weakfish and will begin submitting a spotted seatrout compliance report starting in 2013 (in response to the new omnibus amendment).

Background - Weakfish and Spotted Seatrout Chesapeake Bay FMPs

The 1990 Chesapeake Bay Weakfish and Spotted Seatrout FMP was prepared under the 1987 Chesapeake Bay Agreement as a framework for the management of the two species. When the stock status of weakfish (*Cynoscion regalis*) changed from overfished to fully exploited, a 2003 Chesapeake Bay Program Weakfish FMP was prepared to address issues specific to weakfish. Spotted seatrout (*Cynoscion nebulosus*) continues to be managed under the 1990 FMP. Maryland prepares annual updates to the FMPs and they are available on the MDNR Fisheries Service website.

FMP Goals, Objectives, Strategies and Actions

The goal of the 1990 Chesapeake Bay Weakfish and Spotted Seatrout Fishery Management Plan (the FMP) is:

> *"Enhance and perpetuate weakfish and spotted seatrout stocks in the Chesapeake Bay and its tributaries, and throughout their Atlantic Coast range, so as to generate optimum long-term ecological, social and economic benefits from their commercial and recreational harvest and utilization over time."*

The objectives of the FMP are:

1) *Follow the guidelines established by the ASMFC for coastwide management of weakfish and spotted seatrout stocks and make Bay regulatory actions compatible where possible.*
2) *Promote protection of the resource by maintaining a clear distinction between conservation goals and allocation issues.*
3) *Maintain weakfish and spotted seatrout spawning stocks at a size which minimizes the possibility of recruitment failure and determine the effects of environmental factors on year-class strength.*
4) *Promote the cooperative interstate collection of economic, social and biological data required to effectively monitor and assess management efforts relative to the overall goal.*

5) *Improve collection of catch and standardized effort statistics in the weakfish and spotted seatrout fisheries.*
6) *Promote fair allocation of allowable harvest among various components of the fishery.*
7) *Continue to provide guidance for the development of water quality goals and habitat protection necessary to protect weakfish and spotted seatrout populations within the Bay and state coastal waters.*

The goal of the 2003 Chesapeake Bay Program Weakfish (*Cynoscion regalis*) Fishery Management Plan is:

> *"To sustain weakfish stocks in the Chesapeake Bay and its tributaries and throughout the Atlantic coast. Sustaining weakfish resources will result in protecting and maximizing long-term ecological, social and economic benefits."*

The objectives of the 2003 Weakfish FMP are:

1) *Follow the guidelines set forth by ASMFC for coastwide management of weakfish and insure conservation equivalency in CBP regulatory actions.*
2) *Establish biological reference points that will maintain weakfish spawning stock biomass (SSB) at a size which minimizes recruitment failure.*
3) *Manage fishing mortality (F) to allow the age structure of the stock to expand.*
4) *Promote the fair allocation of allowable harvest among various components of the fishery.*
5) *Improve the collection of catch data and standardize effort statistics in the weakfish fisheries.*
6) *Promote the cooperative interjurisdictional collection of economic, social and biological data to monitor and assess efforts to reach the primary goal of the CBP Weakfish FMP.*

The PRT concluded that the goal and objectives of the 1990 Weakfish/Spotted Seatrout FMP and the 2003 Weakfish FMP are appropriate for managing the resources. The PRT also recognized that the objectives require on-going efforts.

The 1990 Weakfish/Spotted Seatrout FMP and 2003 Weakfish FMP also identified problem areas, strategies to address the problems, and specific actions:

1990 FMP Problem 1 – Overfishing; 2003 FMP Stock Status & The Fishery
The 1990 FMP stated that fishing mortality was excessive for weakfish but spotted seatrout did not appear to be overfished. Actions specified in the 1990 FMP have reduced weakfish fishing mortality through increases in size limits and decreases in creel limits. All of the actions identified in the 1990 FMP to reduce fishing mortality have been implemented. The coastal BRPs for weakfish were revised to reduce fishing mortality. However, reductions in fishing mortality have not significantly increased the stock size. Natural mortality is high and has led to a coastal weakfish SSB of about 3% of an unfished stock; well below both the SSB target and threshold. Currently, there is no overfishing definition for spotted seatrout. The 2003 FMP recognized that BRPs may need to be adjusted over time. It also noted that regional differences and economic impacts would be considered during the management decision-making process.

Bycatch mortality in non-directed fisheries continues to be a concern. Juvenile mortality, largely off the coast of North Carolina, impacts the spawning stock. Maryland has addressed this source of mortality by implementing gill net mesh size restrictions. The issue of escape panels in pound nets, as well as other types of bycatch reduction devices (BRDs) requires further study.

1990 FMP Problem 2 – Stock Assessment & Research Needs; 2003 FMP Research &Monitoring
The 1990 FMP identified stock assessment needs for the coastal stock. Most of these needs continue for both weakfish and spotted seatrout. The 2003 FMP emphasized the importance of continuing fishery dependent and fishery independent monitoring. The Chesapeake Bay jurisdictions provide data for the coastal stock assessment. Maryland continues fishery dependent sampling of weakfish and spotted seatrout and collects biological characteristics of the populations, such as total length. Fishery-independent sampling is problematic because opportunities for sampling are limited.

ASMFC has listed management and research needs for spotted seatrout under the following categories: stock assessment and population dynamics; biological; social and economic; and habitat (ASMFC 2012). Maryland will address any applicable items in its spotted seatrout compliance report to ASMFC in 2013. Likewise, ASMFC identified high and medium priority research needs in the 2012 Weakfish Review.

1990 FMP Problem 3 – Habitat Loss and Degradation; 2003 FMP Habitat Issues
The 1990 FMP recognized the importance of estuarine areas for weakfish and spotted seatrout populations especially as nursery and feeding grounds. The Chesapeake Bay Program coordinates water quality and habitat efforts throughout the Bay that benefit fish and other aquatic organisms. The 2003 FMP recognized the need to monitor land-based activities that may negatively impact water quality and ultimately impact weakfish and other finfish species in the Bay. Multispecies interactions are also important to consider.

Strategies and actions needed to address habitat issues are ongoing. Specifically, nutrient reduction strategies, basinwide plans to reduce toxics, basinwide measures to reduce point source and non-point source sources of conventional pollutants, and wetland protection are all necessary.

1990 FMP Problem 4 – Recreational – Commercial Conflicts
The 1990 FMP recognized the high number of recreational fishermen and the possibility for conflicts with commercial fishery efforts. The strategy and actions to address the potential for user conflicts is to monitor the fisheries by jurisdictional managers and to address issues with existing advisory groups – such as the TFAC and SFAC in Maryland. The PRT was not aware of any existing conflicts between user groups but recognized the potential for such conflicts if gill net fisheries develop for these species.

The high abundance of spotted seatrout in 2012 provided a recreational fishing opportunity not usually available in Maryland. The reason for the increased abundance and availability is unknown. Increased coastal water temperatures could have contributed to a northward expansion in distribution. The PRT concluded that a one-year increase in abundance and availability of

spotted seatrout does not indicate a need to change management strategies. However, the PRT did agree that the increased abundance and availability should be monitored over the next few years. If the increasing trend continues for multiple years, it may require a re-examination of current management strategies and actions.

The PRT concluded that the FMP strategies and actions provided by the 1990 and 2003 FMPs are appropriate frameworks for managing the species.

Fisheries Allocation Policy

The Department of Natural Resources Fisheries Allocation Policy went into effect on September 1, 2012. The policy provides guidelines for reviewing allocation; provides the basis/background for allocation; and outlines procedures for review and stakeholder input.

The overarching factors in allocation decisions are linked to the FMP goals and objectives. The overarching factors include:

- Conservation;
- Management goal for the species;
- Social and cultural importance of maintaining fisheries and dependent industries;
- Environmental impact;
- Economic value of dependent fisheries;
- Economic viability of activity supported by the fisheries;
- Management resources;
- Historical trends and values; and
- Potential for new fisheries to develop.

Among the Allocation Policy procedures are triggers for allocation review. In accordance with policy, a pre-assessment of triggers for spotted seatrout has been conducted internally by DNR FS and will be shared with the SFAC and TFAC. Triggers listed by the policy and the pre-assessment summary are as follows:

- Initial development or revision of a FMP;

Pre-assessment: The PRT has concluded that the existing FMPs continue to serve as acceptable frameworks to manage both the weakfish and spotted seatrout resources. No revision is recommended.

- Significant shift in fisheries harvest;

Pre-assessment: While commercial harvest data can be obtained from finfish harvest reports, recreational harvest is estimated by the Marine Recreational Information Program (MRIP). The MRIP estimates for spotted seatrout have a high proportional standard error (PSE). Estimates with PSEs over 25 should be viewed with increasing caution. Estimates with PSEs over 50 indicate high variability with low precision and these estimates should be viewed "very cautiously." The MRIP estimates for spotted seatrout from 1986-2012 should all be considered with caution and over half should be considered "very cautiously." (Table x.). There have not

been any significant shifts in fisheries harvest based on the limited and sporadic recreational and commercial fishery statistics..

- Population shifts of target or non-target species;

Pre-assessment: Spotted seatrout are not resident fish in Maryland waters and are considered migratory in Chesapeake Bay. Temperature and salinity influence distribution in other estuarine systems (eg. South Carolina and Gulf of Mexico). Spotted seatrout are considered "sub-tropical" and are subject to "cold kills." Maryland is part of their northern-most range and they are a rare migrant in Delaware Bay. Species distributions are predicted to shift northward with climate change and increasing temperatures. While spotted seatrout were abundant in 2012 in Maryland waters, the reasons for their abundance are unknown. The PRT suggested that FS should track the abundance of spotted seatrout over the next three to five years to determine whether or not there is a trend in expanding distribution. If spotted seatrout continue to be available and abundant in Maryland waters, FS should consider re-evaluating the current management framework.

- Threatened and endangered species issues;

Shortnose sturgeon have been listed as endangered species in Maryland. Sturgeon and spotted seatrout interactions have not been evaluated. Sturgeon are susceptible to being caught in gill nets but there do not appear to be any gear interactions between the two species. Spotted seatrout are mainly caught by pound nets and hook and line.

- Changing social patterns & values;

There is the potential for social patterns and value to change with increased abundance and availability of spotted seatrout. Although market demand is currently low, the commercial market has the potential to increase because spotted seatrout are a desirable fish. Recreational fishermen find spotted seatrout a highly desirable fish to catch.

- Ecosystem needs;

Adult spotted seatrout are a migratory species to Chesapeake Bay and are most abundant in the lower Bay from late April through November. Spawning occurs from late May through July at the bay mouth and in coastal waters. Adult spotted seatrout feed on mysids and a variety of fish species. They utilize a variety of estuarine habitats within the Bay.

- Market dynamics;

There is limited data on market dynamics. Information from one seafood dealer indicated that spotted seatrout constituted a minimal market (2012) at approximately 1,000 lbs.at an average price of $3/lb. The seafood dealer indicated the potential of an increased market if the fish were more available.

- Management resources;

Fisheries Service has a limited amount of resources for collecting monitoring data; socioeconomic data; and fishery statistics. There are 19 fishery management plans for 23 species. Given the amount of resources available, prioritization is required. Spotted seatrout has not been on the list of the top ten species for Maryland.

- New data:

There is limited data on the abundance of spotted seatrout and there is a need for socioeconomic data.

Stakeholder Comments[1] and FS Response

- Maryland should manage spotted seatrout as a predominantly recreational fishery, with conservative reference points to maintain abundance and allow the recreational harvest to adjust accordingly.

PRT Response: The spotted seatrout is not a resident species in Maryland's portion of the Chesapeake Bay. The species is an occasional visitor to Maryland waters. It is unknown why spotted seatrout have "good years" such as 2012, in Maryland waters, but water temperature, prey abundance, and year class strength are important factors. The species is characterized by high natural mortality. Coastal cold shock events are common and have been described from North Carolina since 1709. Overfishing has been a factor in other states. Abundance is largely determined by environmental factors. Coast-wide, the recreational harvest has averaged 1.75 million pounds while the commercial harvest has averaged 350,000 pounds (half of what was harvested the preceding decade) (ASMFC data). Recreational estimates and reported commercial harvests from Maryland have been variable.

- The commercial fishery should be allowed to continue with more conservative gear restrictions, creel limits, size requirements, and season regulations with allowances for harvest adjustments due to abundance.

PRT Response: Spotted seatrout are commercially harvested in low numbers. Establishing a bycatch limit similar to weakfish could serve as a conservation measure if the spotted seatrout resource rebounds.

- Regulations do not need to be set to insure maximum harvest levels. Instead, there should be a conservative threshold with a cautious target to increase abundance.

PRT Response: Regulations are adopted to meet and/or exceed ASMFC requirements and recommendations. Currently, there is no overfishing definition or defined maximum harvest level. Maryland qualifies for *De minimus* status, but has no plan to request this status. There isn't enough fishery independent monitoring data to develop a conservative harvest target or threshold. The recreational fishing estimates and reported commercial landings are highly variable but could provide some limited harvest guidelines.

- There should be new regulations to conserve the stock that are fair and equitable across all sectors while taking into account the cultural significance of spotted sea trout to the lower Eastern Shore.

PRT Response: Spotted Seatrout are part of the South Atlantic coastal stock. More conservative management measures than those required by ASMFC or by other states would have minimal impact on abundance in Maryland since abundance is influenced by several other factors than harvest. The natural variation in abundance and availability limits both the commercial and recreational harvest of spotted seatrout. Allocation of the resource already supports a predominately recreational harvest when fish are available.

- Regulations should be adjusted to a 16-inch minimum with a 4 fish per day creel for recreational and a 100-pound-per-day bycatch limit for commercial fishermen.

PRT Response: Spotted seatrout males are 100% mature by age 2 (8-9 inches). Females mature at an older age and larger size. Sixty-five percent of females are mature by age 3 (13-14 inches); another 25% at 15-16 inches and less than 1% at 16-18 inches (Austin 1987). The 12 inch minimum size limit currently required by the ASMFC effectively protects the spotted seatrout population from recruitment overfishing. An increase in the recreational size limit, combined with a decrease in the creel limit would not significantly conserve or protect the spawning stock since it would provide protection to less than an additional 1% of the mature stock. Nearly all female spotted seatrout have spawned twice by 14 inches. However, the increased minimum size limit may enhance the recreational fishing experience.

A 100 pound daily commercial bycatch limit will essentially maintain the existing allocation. Only one commercial harvest report in 2012 indicated a harvest of more than 100 pounds per day: a year of relatively high abundance. A 100 pound bycatch limit could prevent a directed fishery from developing in a year of high abundance. The "potential for a new fishery to develop" is one of the overarching factors in allocation. A directed spotted seatrout fishery could shift the current allocation. A new regulation would be necessary to manage the commercial spotted seatrout fishery on a bycatch basis.

[1]Complete text of CCA comments are Appendix 1.

Appendix #1 Stakeholder Comments

Coastal Conservation Association Maryland comments on
Maryland Department of Natural Resources
Spotted Sea Trout Fishery Management Plan

Coastal Conservation Association of Maryland thanks Maryland Department of Natural Resources for reviewing the fisheries management plan (FMP) for spotted sea trout. CCA Maryland requests that the regulations focus on conservation of the species. Historically, the spotted sea trout fishery once flourished in Maryland. In fact, the Maryland state record from 1977 stands at 16.6 pounds, only one pound and one ounce off the all time world record.

Unfortunately, most anglers don't remember those days and most have forgotten the world class fishery that existed in Maryland waters. The most recent peak harvest for commercial fisheries was 36,000 pounds in 1999. Since 2003, the commercial catch has exceeded 1000 pounds in only two years with 2007 data showing only 32 pounds reported. In 2011, less than five individuals from the commercial industry participated in the spotted sea trout fishery.

Non-Confidential Landings by Year
Years: **1997-2011**
Species: **Spotted Seatrout**
State Landed: **Maryland**

Year	Landings (live lbs)
1997	15,688
1998	19,794
1999	36,365
2000	20,270
2001	24,754
2002	11,771
2003	902
2004	342
2005	2,410
2006	245
2007	32
2008	290
2009	220
2010	1,037
2011	606
Grand Total:	134,726

Atlantic Coastal Cooperative Statistics Program. Commercial Landings (Dealer Reports) – Non-Confidential; generated by Janelle Mueller; using ACCSP Data Warehouse [online application], Arlington, VA: Available at http://www.accsp.org --> Data Center --> Data Warehouse --> Login; accessed August 27, 2012.

NON-CONFIDENTIAL DATA NOTE: These data are non-confidential and may not reflect true totals as confidential data has been removed.

Despite this alarming data, the FMP for spotted sea trout has remained unchanged. Currently there are no gear restrictions, seasons, or daily creel limits and a 12-inch minimum for commercial anglers. Recreational anglers have a very liberal limit of ten fish per person with a 14-inch minimum.

Spotted sea trout reappeared in the Maryland portion of the Chesapeake Bay in 2011 and 2012. Following a major cold spell in North Carolina in 2010, the trout population was found to be overfished and overfishing was occurring. With this alarming data, North Carolina acted conservatively to increase the minimum legal size of trout that both recreational and commercial anglers could keep from 12- to 14-inches. The number of trout recreationals could take per day dropped from 10 to 4, and the legal commercial limit was reduced to 75 fish at no less than 14-inches per trip.

CCA Maryland believes these conservation measures coupled with an abundance of bait such as croaker and anchovy contributes to an increase in the number of spotted sea trout that are able to spawn and move between North Carolina and the Chesapeake Bay. Further, we support fair and equitable conservation measures in our area that will further contribute to the return of a robust spotted sea trout fishery within the state. We believe that spotted sea trout have a potential to develop into the viable fishery we had in the 1980's. We also respect the cultural significance that spotted sea trout have in Crisfield, Maryland and the lower Eastern Shore. A restored spotted sea trout fishery would offer small boat fishermen increased access and opportunity to this highly prized species. This would result in favorable economic impact to the area as well as DNR. As The Department found a few years ago with yellow perch, a healthy fishery means healthy license sales.

Spotted sea trout could once again be a fish that is not only a favorite breakfast dish for our friends in Crisfield, but also a species that fishermen respect and preserve for generations to come.

With these factors in mind, CCA advocates the following points for the spotted sea trout fishery:

- CCA believes the spotted sea trout fishery in Maryland should be managed as a predominantly recreational fishery, with conservative reference markers that seek to maintain abundance and allow the recreational harvest to adjust accordingly.

- The commercial fishery should be allowed to continue with more conservative gear restrictions, creel limits, size requirements, and season regulations with allowances for harvest adjustments due to abundance.

- We do not see the need for managers to set regulations that insure maximum harvest levels. Instead, there should be a conservative threshold with a cautious target that seeks to increase abundance.

- We call for new regulations to conserve the stock that are fair and equitable across all sectors while taking into account the cultural significance of spotted sea trout to the lower Eastern Shore.

- We ask that the regulations be adjusted to a 16-inch minimum with a 4 fish per day creel for recreational and a 100-pound-per-day bycatch limit for commercial fishermen.

CCA Maryland believes the management measures listed above fit current data collection methods provided by the allocation policy. We believe they will provide for an abundant, healthy spotted sea trout fishery. We again thank the Department of Natural Resources for reviewing the fishery management plan for spotted sea trout and we are hopeful that Maryland fishermen can again experience this once vibrant fishery.

Recreational estimates of spotted seatrout harvest (lbs) from the Marine Recreational Information Program (MRIP)

Estimate Status	Year	Common Name	Harvest (A+B1) Total Weight (lb)	PSE	Landings (no.) without Size Information
FINAL	1986	SPOTTED SEATROUT	4,960	61.5	0
FINAL	1987	SPOTTED SEATROUT	22,512	31.3	0
FINAL	1988	SPOTTED SEATROUT	36,630	100.0	0
FINAL	1989	SPOTTED SEATROUT	184,318	20.5	0
FINAL	1990	SPOTTED SEATROUT	39,059	36.0	0
FINAL	1991	SPOTTED SEATROUT	34,753	39.6	0
FINAL	1992	SPOTTED SEATROUT	7,802	40.5	0
FINAL	1993	SPOTTED SEATROUT	12,801	78.5	0
FINAL	1994	SPOTTED SEATROUT	26,763	54.9	0
FINAL	1995	SPOTTED SEATROUT	31,464	73.9	0
FINAL	1996	SPOTTED SEATROUT	0	.	35,765
FINAL	1997	SPOTTED SEATROUT	32,963	36.4	0
FINAL	1998	SPOTTED SEATROUT	37,189	57.1	0
FINAL	1999	SPOTTED SEATROUT	0	.	2,112
FINAL	2000	SPOTTED SEATROUT	2,972	99.8	0
FINAL	2003	SPOTTED SEATROUT	3,495	70.8	0
FINAL	2004	SPOTTED SEATROUT	0	.	0
FINAL	2005	SPOTTED SEATROUT	5,491	100.0	0
FINAL	2006	SPOTTED SEATROUT	10,674	67.2	0
FINAL	2007	SPOTTED SEATROUT	0	.	0
FINAL	2009	SPOTTED SEATROUT	9,006	99.8	0
FINAL	2010	SPOTTED SEATROUT	6,724	73.0	0
FINAL	2011	SPOTTED SEATROUT	4,664	84.7	0
PRELIMINARY	2012	SPOTTED SEATROUT	10,044	70.3	0

A PSE value greater than 50 indicates a very imprecise estimate.
Weight estimates are minimums and may not reflect the actual total weight landed or harvested
Personal communication from the National Marine Fisheries Service, Fisheries Statistics Division April 21, 2013 .

MRIP Recreational Spotted Seatrout Catch Estimate (Numbers of fish), Released Number Estimate and Proportional Standard Error (PSE) for Virginia and Maryland, 1986-2012.

	VA Rec. Catch	PSE	VA Released	PSE	MD Rec. Catch	PSE	MD Released	PSE
1986	111,277	20.5	28,606	27.9	21,145	50.3	13,639	70.6
1987	47,485	62.8	30,070	97.5	29,295	31.5		
1988	437,640	19.2	148,934	38.0	47,768	71.3	26,999	100.0
1989	78,010	15.3	11,977	28.3	204,844	20.4	52,859	50.4
1990	91,375	28.6	23,435	42.7	25,290	29.7	4,874	78.3
1991	109,582	18.5	40,550	33.7	39,806	33.6	21,811	53.0
1992	49,946	21.8	19,855	40.4	3,936	34.8	701	100.0
1993	168,736	16.4	65,605	24.5	7,038	77.7		
1994	358,488	12.3	243,463	17.1	65,977	27.9	32,466	40.6
1995	418,481	14.8	327,643	18.3	176,728	54.7	157,530	60.6
1996	211,267	17.1	165,169	20.8	87,360	48.1	51,594	54.6
1997	261,689	15.7	168,964	21.3	24,777	34.3	4,826	72.3
1998	109,192	15.2	74,569	19.1	63,080	69.9	49,460	88.2
1999	290,612	15.7	152,120	19.8	9,194	48.6	7,082	55.6
2000	354,685	16.6	264,550	20.7	6,439	50.8	4,805	59.0
2001	123,756	23.2	110,308	25.6				
2002	152,569	22.1	136,265	24.5				
2003	309,754	18.2	207,270	24.9	2,091	71.7		
2004	326,404	36.2	257,996	45.0	10,493	70.9	10,493	70.9
2005	214,153	33.4	192,091	36.6	4,556	71.8	2,603	100.8
2006	126,465	28.4	82,935	37.2	29,813	83.9	24,953	99.5
2007	522,053	17.2	362,809	21.9	2,331	101.6	2,331	101.6
2008	470,446	23.9	366,566	28.6				
2009	193,663	23.4	171,028	26.2	38,314	77.1	30,381	93.6
2010	567,534	26.6	550,118	27.4	110,163	63.7	107,017	65.5
2011	1,462,356	25.8	1,214,620	30.1	10,743	38.7	7,685	47.3
2012	554,167	22.8	428,540	28.4	61,215	67.9	55,183	74.9

PSE, proportional standard error, expresses the standard error of an estimate as a percentage of the estimates and is a measure of precision. A PSE value greater than 50 indicates a very imprecise estimate. (Personal communication from the National Marine Fisheries Service, Statistics Division May 5, 2013)

Commercial Landings (pounds) of Spotted Seatrout from Virginia and Maryland, 1950-2011 (NMFS data).

	Virginia landings	Maryland landings
1950	93,700	
1951	65,500	1200
1952	72,300	
1953	85,300	
1954	103,700	
1955	102,600	
1956	196,600	
1957	119,900	
1958	60,400	
1959	140,000	
1960	54,900	
1961	73,800	
1962	28,400	
1963	25,700	
1964	23,400	
1965	40,400	
1966	11,800	
1967	3,700	
1968	5,800	
1969	19,400	
1970	65,900	
1971	44,400	
1972	12,800	
1973	9,500	
1974	26,200	
1975	72,500	
1976	39,000	
1977	3,800	
1978	6,100	
1979	3,500	
1980	1,000	
1981	4,000	
1982	3,400	
1983	4,400	
1984	3,000	
1985	8,302	
1986	18,500	
1987	13,300	
1988	15,500	
1989	18,500	
1990	21,435	
1991	21,200	98
1992	10,395	364
1993	38,033	24

	Virginia Landings	Maryland Landings
1994	44,636	30
1995	28,722	182
1996	4,476	14961
1997	11,711	15688
1998	21,774	19794
1999	38,513	36365
2000	19,918	20270
2001	3,773	24754
2002	9,308	11771
2003	5,310	902
2004	17,290	342
2005	21,448	2410
2006	28,529	245
2007	40,677	14
2008	43,512	290
2009	26,361	199
2010	20,875	1025
2011	17,107	557

2003 Chesapeake Bay Program Weakfish Fishery Management Plan Implementation (updated 1/13)			
Section	**Action**	**Implementation**	**Comments**
Stock Status Management Strategy: CBP jurisdictions will adopt biological reference points (BRPs) that reflect the most current status of the weakfish stock. As data becomes available on multi-species interactions and ecological considerations such as species interactions, food webs, bycatch, biodiversity and habitat, the BRPs should be modified accordingly.	Action 1.1 MD, PRFC (Potomac River Fisheries Commission) and VA will adopt the Atlantic States Marine Fisheries Commission's (ASMFC) recommendations for the coast wide management of weakfish	Annually reviewed and adjusted if necessary	The 2009 assessment results indicated that the weakfish stock is depleted, with SSB estimated at 3% of an unfished stock well below the BRPs adopted in Addendum IV. The biomass decline is the result of increasing natural mortality while F remains low. Size and age structure of the stock has decreased. The ASMFC review team (2010) recommended the development of additional methods to analyze the stock in the next assessment.
	Action 1.2 In order to achieve the fishing target rates defined by the adopted BRPs, CBP jurisdictions will utilize a combination of size limits and possession limits, and/or seasons or areas to manage the commercial and recreational fishery in state waters.	Annually	Addendum IV to Amendment 4 of the weakfish FMP requires that the recreational creel does not exceed 1 fish in the management unit including CBP jurisdictions. Commercial landings must be limited to 100 pounds and bycatch must be limited to 100 pounds per vessel, per day or trip. The finfish trawl fishery allowance for undersized fish must be reduced to 100 fish. The CBP jurisdictions complied with these requirements in 2010; all met the recreational harvest restrictions and met or exceeded the commercial harvest restrictions. The same requirements were in effect during 2011.

2003 Chesapeake Bay Program Weakfish Fishery Management Plan Implementation (updated 1/13)			
Section	**Action**	**Implementation**	**Comments**
The FisheryManagement Strategy: The CBP jurisdictions will regulate the commercial and recreational fishery based on the most recent status of the stock and the established fishing targets.	Action 2.1 The CBP jurisdictions will consider regional differences when determining state allocation issues and regulations.	As necessary	The Maryland Sport Fish Advisory Commission recommended a weakfish moratorium. Fishing mortality has been decreased over the years but there remains a significant amount of non-fishing mortality
	Action 2.2 The CBP jurisdictions will consider the economic impacts of management measures on the fishery and promote the utilization of economic data in the management decision process.	Dependent on the availability of economic data	Collection of economic data for the commercial fishery should include dockside values, the number of commercial vessels, the number of commercial fishermen and the economic returns from the commercial fishery. Data collection for the recreational fishery should include the number of anglers, the number of directed trips and angler expenditures. Detailed data collection will enable the development of bio-economic models that can estimate costs or benefits to consumers resulting from fishery regulations.
	Action 2.3 The CBP jurisdictions continue to support the use of BRDs in non-directed fisheries and the appropriate mesh sizes in directed fisheries, to reduce the fishing mortality on small weakfish.	Annually	ASMFC Addendum III to Amendment 4 of the weakfish FMP aligns BRD certification requirements between state and federal waters along with the SAFMC shrimp bycatch reduction device requirements.

2003 Chesapeake Bay Program Weakfish Fishery Management Plan Implementation (updated 1/13)			
Section	**Action**	**Implementation**	**Comments**
The Fishery Research and Monitoring: The CBP jurisdictions will continue to monitor the biological characteristics of the weakfish stock in the Chesapeake Bay and coordinate monitoring activities within the Bay and the Atlantic coast.	Action 3.1 The CBP jurisdictions will continue fishery dependent sampling and improve catch data. Economic information from the recreational and commercial fisheries will also be reviewed.	Continue	Monitoring data provides information on abundance; age structure and Y-O-Y recruitment. Total commercial landings in MD fell to a low of 423 pounds in 2011, the lowest harvest in the 1929-2011 time series (Fig.2) and continuing the trend of declining harvests. Commercial landings in VA are higher than those in MD, but are also at the lowest level in at least the past 30 years, with 65 thousand pounds in 2009 and 61 thousand in 2010. The MD 2011 recreational harvest estimate was only 237 weakfish. More weakfish were caught by VA recreational fishermen, but the 4 thousand caught in 2010 and 2011 are also the fewest in at least 30 years. Only 26 weakfish were sampled in MD Chesapeake Bay pound nets in 2010 and the mean length declined for the third consecutive year.
	Action 3.2 The CBP jurisdictions will conduct fishery independent sampling and collect data on abundance, age structure and recruitment.	Continue	Amendment 4 to ASMFC's Weakfish FMP stipulates that states, which harvest 150,000 lbs. or more of weakfish, must submit otoliths and fish lengths as data for the coastal stock assessment. The extent of otolith and length data required was revised in ASMFC Addendum 1 to Amendment 4. Otoliths were removed from 25 of 26 MD pound net samples. Of the 25, three were found to be age two and 22 were age one. Fishery independent sampling produced a slight decrease in the calculated mean juvenile index in coastal bays in 2011 with a catch of 1.90 juveniles per hectare, down from 2.16 in 2010. The Chesapeake Bay juvenile geometric mean per tow continued a small increase over the past three years to 2.04 juveniles per tow for 2011, which is still below the time series mean of 3.2 juveniles/tow.

2003 Chesapeake Bay Program Weakfish Fishery Management Plan Implementation (updated 1/13)			
Section	**Action**	**Implementation**	**Comments**
	Action 3.3 CBP jurisdictions will continue to coordinate state activities with the Atlantic Coast Cooperative Statistics Program (ACCSP).	Continue	The ACCSP Coordinating Council approved the Atlantic States Fisheries Data Collection Standards document in May, 2012. This document will be used to direct partner data collection.
	Action 3.4 The CBP jurisdictions will begin to collect and examine stomach contents data and examine the effects of environmental variables upon weakfish growth rates.	On-going	Data from the ChesMMAP Survey, CHESFIMS project and the MD Winter Trawl Survey may be used to consider species interactions and relationships. Results and trends can then be incorporated into CBP fishery management plans. ASMFC weakfish stock assessment (2006) incorporated a striped bass predator function allowing weakfish stock decline to be modeled.
Habitat Management Strategy: CBP jurisdictions will monitor and regulate activities which may be harmful to weakfish habitat.	Activities, which contribute to the degradation and or loss of habitat types that weakfish utilize throughout their life history stages will be monitored and regulated by CBP jurisdictions.	On-going	CBP jurisdictions support the commitments of the Chesapeake Bay 2000 Agreement. These activities include reducing the discharge of toxic pollutants or excessive nutrients into the Chesapeake Bay and its tributaries, interruption or changes in water discharge patterns, deposition of solid waste, sewage sludge or industrial waste into Bay (which may lead to anoxic conditions), rapid coastal development, unregulated agricultural practices, net coastal wetland loss or the dredging of contaminated sub-aqueous soils.
	Action 4.1 The CBP jurisdictions will monitor and regulate land-based activities and water-based activities that may negatively impact Chesapeake Bay water quality and weakfish spawning, rearing and foraging areas.	Continue	The MD DNR water quality protection database focuses on watershed lands that are most important for improving water quality.

2003 Chesapeake Bay Program Weakfish Fishery Management Plan Implementation (updated 1/13)			
Section	**Action**	**Implementation**	**Comments**
Ecosystem Interactions Management Strategy:	Action 4.2 The CBP jurisdictions will monitor important weakfish forage species to insure that activities, such as directed fisheries or incidental bycatch in non-directed fisheries, do not adversely affect abundance. These managed species, which serve as forage for weakfish include Atlantic croaker, spot, Atlantic menhaden, and blue crab. If fishing activities are contributing to higher F's on forage species, additional management measures may be necessary.	Continue	Data from the ChesMMAP, CHESFIMS, and the MD Winter Trawl Surveys will provide data on important forage species for weakfish. The CHESFIMS survey was discontinued after 2005 due to lack of funding.
	Action 4.3 The CBP jurisdictions will monitor the abundance of weakfish forage species that are not managed under CBP FMPs, such as bay anchovies, and Atlantic silversides, using on-going monitoring and surveys.	Continue	The MD Juvenile Striped Bass Survey and VIMS Juvenile Abundance Monitoring Surveys (formerly known as the VIMS Trawl Survey and the VIMS Juvenile Seine Survey) will continue to monitor the abundance of important, non-managed forage species in the Chesapeake Bay.
	Action 4.4 The CBP jurisdictions will continue to identify predator/prey interactions, both inter- and intraspecies competition and other interactions that might affect the management of weakfish. As multispecies interactions are evaluated and quantified, biological reference points and management strategies may be adjusted.	On-going	Data from the ChesMMAP, CHESFIMS and the MD Winter Trawl Survey will be collected and analyzed by CBP jurisdictions to identify possible inter-and intra-species relationships. ASMFC weakfish TC has incorporated a striped bass predator function into the 2006 weakfish stock assessment to model the weakfish stock decline since 1998.

Acronyms:

ASMFC = Atlantic States Marine Fisheries Commission
CHESFIMS = Chesapeake Bay Fishery Independent Multispecies Fisheries Survey Program
F = mortality due to fishing
PRFC = Potomac River Fisheries Commission
SSB = spawning stock biomass
VIMS = Virginia Institute of Marine Science
BRPs = biological reference points
ChesMMAP = Chesapeake Bay Multispecies Monitoring and Assessment
CBP = Chesapeake Bay Program
FMP = fishery management plan
SAFMC = South Atlantic Fishery Management Council
TC = technical committee
Y-O-Y = young of the year fish

Spotted Seatrout Notes:

The ASFMC adopted the spotted seatrout FMP in 1984 for states from Maryland to Florida. The spotted seatrout was included in the original Bay Program Chesapeake Bay *Weakfish and Spotted Seatrout Fishery Management Plan* in 1990. The management plan was revised in 2003 to include only weakfish. Since 1990, there has been no new management plan for spotted seatrout but updates have been completed on a regular basis. A Public Information Document (PID) was issued in November, 2009 by the ASMFC for an amendment to the interstate FMP for Spanish mackerel, spot, and spotted seatrout. The ASFMC approved the omnibus amendment for the Interstate Management Plans for Spanish Mackerel, Spot, and Spotted Seatrout, August 4, 2011, and a corrected version with Technical Addendum 1 on February 9, 2012 [3]. The omnibus amendment includes recommended measures to protect the spotted seatrout spawning stock and requires a coastal minimum length limit.

Stock Status:
A coast-wide stock assessment of spotted seatrout has not been done because this species is considered to be largely non-migratory. Where assessments have been completed (NC, SC, GA, FL) on local stocks, there have been data limitations. Stock status varies by state. The estimated MD recreational harvest has been approximately 10,000 pounds or less for the past 10 years. The 2011 MD estimated harvest of 3,058 fish is the time series low. The VA recreational fishery harvested an estimated 247,736 weakfish in 2011, the most since 288,705 were harvested in 1988. The commercial harvest mirrors this pattern, as MD harvests have been approximately 10% of VA commercial harvests. VA commercial harvest of spotted seatrout has varied from a low of 3,773 pounds in 2001 to 84,903 pounds in 2008. The most recent commercial reports from 2010 indicate that only 1,025 pounds were harvested from MD while 21,000 were harvested from VA.

Management Objectives and Measures:
The ASFMC FMP includes maintaining a spawning potential ratio of 20% or greater to reduce the opportunities for recruitment failures. A size limit of 12" minimum total length is required and all states have complied with this minimum. Net mesh sizes corresponding to this size limit for directed fisheries, data collection, and state stock assessments were also recommended. MD and VA have 14" recreational size limits with 10 fish creels. The MD commercial size limit is 12" with minimum trawl and gill net meshes. The VA commercial H&L limit is 14" with a 10 fish limit and overall quota of 51,100.