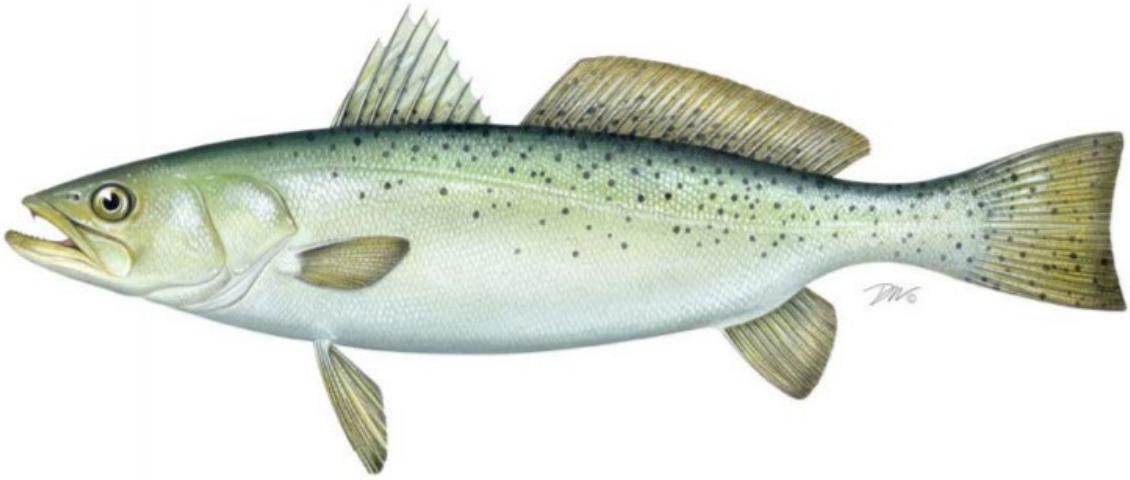
ATLANTIC STATES MARINE FISHERIES COMMISSION

REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN

FOR SPOTTED SEATROUT
(Cynoscion nebulosus)

2015 FISHING YEAR



Prepared by the Plan Review Team

Approved by the South Atlantic Management
Board October 2016

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I. Status of the Fishery Management Plan

Date of FMP Approval:	Original FMP – October 1984
Amendments:	Amendment 1 – November 1991 Omnibus Amendment to Spanish Mackerel, Spot, and Spotted Seatrout -- August 2011
Management Area:	The Atlantic coast distribution of the resource from Maryland through the east coast of Florida
Active Boards/Committees:	South Atlantic State/Federal Fisheries Management Board; Spotted Seatrout Plan Review Team; South Atlantic Species Advisory Panel

The Atlantic States Marine Fisheries Commission (ASMFC) adopted the Fishery Management Plan (FMP) for spotted seatrout in 1984. The ISFMP Policy Board approved Amendment 1 to the FMP in November 1991. In August 2011, the South Atlantic State/Federal Management Board approved the Omnibus Amendment to the Spanish Mackerel, Spot, and Spotted Seatrout FMPs, bringing the Spotted Seatrout FMP under the authority of the Atlantic Coastal Fisheries Cooperative Management Act (Act, 1993) and the ASMFC Interstate Fishery Management Plan Charter (1995). The states of Maryland through Florida have a declared interest in the species.

The goal of the management plan is "to perpetuate the spotted seatrout resource in fishable abundance throughout its range and generate the greatest possible economic and social benefits from its harvest and utilization over time." Plan objectives include:

1. Attain optimum yield over time.
2. Maintain a spawning potential ratio of at least 20% to minimize the possibility of recruitment failure.
3. Promote conservation of the stocks to reduce inter-annual variation in availability and to increase yield per recruit.
4. Promote collection of economic, social, and biological data required to effectively monitor and assess management efforts relative to the overall goal.
5. Promote research that improves understanding of the biology and fisheries of spotted seatrout.
6. Promote harmonious use of the resource among various components of the fishery through coordination of management efforts among the various political entities having jurisdiction over the spotted seatrout resource.
7. Promote determination and adoption of standards of environmental quality and provide habitat protection necessary for the maximum natural protection of spotted seatrout.

The Omnibus Amendment added the following objectives to support compliance under the Act:

1. Manage the spotted seatrout fishery by restricting catch to mature individuals.
2. Manage the spotted seatrout stock to maintain sufficiently high spawning stock biomass.
3. Develop research priorities that will further refine the spotted seatrout management program to maximize the biological, social, and economic benefits derived from the population.

Management measures include a minimum size limit of 12 inches in total length (TL), with comparable mesh size regulations in directed fisheries, and data collection for stock assessments and monitoring of the fishery. All states with a declared interest in spotted seatrout (MD-FL) have implemented, at a minimum, the recommended minimum size limit. In addition, each state has either initiated spotted seatrout data collection programs or modified other programs to collect improved catch and effort data. Table 1 provides the states' recreational and commercial regulations for spotted seatrout through 2015.

II. Status of the Stock

A coastwide stock assessment of spotted seatrout has not been conducted, given the largely non-migratory nature of the species and the lack of data on migration where it does occur. Instead, state-specific age-structured analyses of local stocks have been performed by several states. These stock assessments provide estimates of static spawning potential ratio (SPR), a measure of the effect of fishing pressure on the relative spawning power of the female stock. The FMP recommends a goal of 20% SPR. North Carolina, South Carolina, and Georgia have adopted this goal while Florida has established a 35% SPR goal.

Spotted seatrout stock assessments have been conducted in individual states. Assessments in North Carolina, which included data from 1981-1997, and Georgia, which included data from 1986-1995, both indicated that female SPR was below the 20% goal in the terminal year (Zhao and Burns 2001, Zhao *et al.* 2001). A more recent assessment was performed in Georgia in 2002; however, it remains unpublished due to questionable results attributed to data deficiencies and changing methodologies.

North Carolina completed a peer reviewed stock assessment, which included data from 1991-2008 and included all spotted seatrout caught in North Carolina and Virginia (Jensen 2009). The assessment indicated that SPR has been below 20% in recent years. Jensen (2009) recommended management measures be implemented to account for recent increases of recreational fishing and discard mortality and to maintain a sufficiently large spotted seatrout population to buffer against future cold stun events. Based on this assessment, North Carolina approved a state FMP for spotted seatrout in April 2012.

A peer-reviewed stock assessment of spotted seatrout in Virginia and North Carolina waters was completed in 2014, incorporating data from 1991-2013 (NCDMF 2014). Results suggest

that the age structure of this stock expanded during the last decade; however, there was a sharp decline in recruitment after 2010. Similarly, spawning stock biomass (SSB) declined after a peak in 2007. These declines may be attributed to cold stun events. In 2012, SSB exceeded the currently defined threshold, suggesting the stock is not overfished. Additionally, fishing mortality is below the threshold, suggesting the stock is not experiencing overfishing. The 2014 assessment will be updated with data through 2016 in anticipation of the North Carolina Spotted Seatrout FMP Review slated to start in 2017.

The South Carolina Department of Natural Resources packaged several state-specific assessments into a report in 2001, though these were not peer reviewed. The initial assessment covering 1986-1992 indicated that female SPR was just above the 20% goal in the terminal year (Zhao and Wenner 2001), leading to a minimum size limit increase and a creel limit reduction. A more recent assessment was conducted for the period 1981-2004 (de Silva, Draft 2005). Two modeling approaches were used, and both models indicated that the current SSB is below the requirement to maintain 20% SPR.

Florida conducted separate stock assessments for the northern and southern populations on their Atlantic coast. Average transitional SPR estimates during 2007-2009 were 0.67 in the northern region and 0.45 in the southern region (Murphy et al. 2011), leading to some relaxation in Florida's management of the resource (Table 1). A new statewide assessment is currently underway; completion is scheduled for March. This assessment includes stock synthesis models constructed for each of Florida's four management regions (NW, SW, NE, and SE).

III. Status of the Fishery

Spotted seatrout is regularly caught both commercially and recreationally from Maryland through the east coast of Florida. In South Carolina, spotted seatrout has been declared a gamefish and can only be taken by recreational means. Landings from states north of Maryland are minimal and/or inconsistent from year to year. All catch estimates in this section include those in the management area only (MD-FL). Total recreational landings have surpassed total commercial landings every year since recreational landings were first recorded in 1981 (Figure 1). In 2009, recreational landings totaled more than five times commercial landings. A coastwide (VA, NC, and SC) winter mortality event in 2000/2001 likely contributed to the sudden decline in commercial and recreational landings in 2001 and 2002.

Commercial Fishery

The National Marine Fisheries Service (NMFS) compiles commercial spotted seatrout landings. The data are cooperatively collected by the NMFS and state fishery agencies from state mandated trip-tickets, landing weigh-out reports from seafood dealers, federal logbooks, shipboard and portside interviews, and biological sampling of catches (Table 2).

Atlantic coast commercial landings of spotted seatrout (1960-2015) have ranged from 154,000 pounds to 1.38 million pounds (Figure 1). Historically, commercial landings primarily came from

North Carolina and Florida, with Virginia and Georgia accounting for a small portion of the total. From 1960 to 1976, annual commercial landings of spotted seatrout averaged 1.07 million pounds, followed by a decline due to increased regulation and possible declines in abundance. Significant changes to regulations include the 1987 designation of spotted seatrout as a gamefish in South Carolina, and the 1995 prohibition on the use of entangling nets in Florida's coastal waters. From 2006 to 2015, commercial landings averaged approximately 339 thousand pounds. North of Florida, variability in annual harvest was typical and paralleled the climatic conditions of the preceding winter and spring. In 2015, commercial landings totaled 175,844 pounds, representing an approximate 50% decrease from 2014. North Carolina and Florida accounted for 73% and 22% of the total commercial landings, respectively.

Recreational Fishery

Recreational catch statistics are collected by the NMFS recreational fisheries survey. Effort data are collected via telephone and mail surveys. Catch and effort data are collected through access-point angler intercept surveys, which produce catch per trip estimates for each species encountered, either observed or reported. These estimates are combined with effort estimates by sampling stratum to produce the catch and harvest estimates (Tables 3, 4, and 5).

Over the last 33 years, recreational catch of spotted seatrout (kept and released) has shown an upward trend, increasing from 1.1 million fish in 1981 to a peak of 8.8 million fish in 2012. In 2015, recreational catch declined to 5.7 million fish (Figure 2). Recreational harvest has remained relatively stable throughout the time series until 2015 with an average of 1.3 million fish. Recreational harvest in 2015 dropped sharply to 534 thousand fish, with Georgia (30%) and Florida (31%) responsible for the largest shares. Due in part to recreational size and creel limits and closed seasons, as well as the encouragement of catch and release practices, the percentage of caught fish being released increased to a 10-year average of 79.6% since 2005. In 2015, the release percentage reached its highest point at 90.6%. Rod and reel is the primary recreational gear, but some spotted seatrout are taken by recreational nets and by gigging, where these methods are permitted. Most recreational fishing is conducted from private boats and the majority of the catch is taken from nearshore waters.

IV. Status of Assessment Advice

A coastwide stock assessment of spotted seatrout has not been conducted and the Plan Review Team (PRT) does not recommend that one be completed due to the life history of the fish and the availability of data. Several states have performed age-structured analyses on local stocks, and recent stock assessments provide divergent trends on the status of the species. The 2005 stock assessment in South Carolina indicated an increasing population trend but a status level that is still below target spawning stock biomass levels (de Silva 2005). The 2014 North Carolina and Virginia stock assessment showed declines in recruitment since 2010. The PRT supports the continuation of state-specific assessments, yet recognizes the difficulty most states face to attain sufficient data of assessment quality and personnel who can perform the necessary modeling exercises.

The lack of biological and fisheries data for effective assessment and management of the resource was recognized in the 1984 FMP and continues to be a hindrance. Some states are increasing their collection of biological and fisheries data, which will provide insight on stock status over time.

V. Status of Research and Monitoring

In addition to the commercial and recreational fishery-dependent data collected and/or compiled through the NMFS Fisheries Statistics Division, some states have implemented fishery-independent or additional fishery-dependent monitoring programs.

Maryland

MD DNR samples commercial pound nets weekly in the Potomac River and Chesapeake Bay from May through September (2015 n=1, 487mm TL).

A few juvenile spotted seatrout are encountered in the coastal bays seine survey and the Chesapeake Bay blue crab trawl survey, indicating seatrout utilize these areas as nursery habitat (2015 seine n=0, trawl n=25).

Virginia

The VMRC Biological Sampling Program collects commercial and recreational fishery-dependent biological data. In 2015, the VMRC collected 958 commercial lengths and weights, determined the sex of 393 individuals, and aged 308 individuals (2015 average length: 24-25 in; average age: 1 and 4). Many of these samples were taken from illegally harvested seatrout which were confiscated.

In 2015, The VMRC collected lengths and sex of 6 recreationally caught seatrout. Virginia does not have independent monitoring for spotted seatrout.

North Carolina

Commercial fish houses are sampled monthly for fishery-dependent length, weight, and age data. Very little variation is seen throughout sampling years. Gill nets are responsible for 93% of the catch, with gigs accounting for 5.5%.

A fishery-independent Estuarine Trawl Survey is conducted to measure annual juvenile recruitment for many species (2015 CPUE= 0.62±0.15 age-0 spotted seatrout per tow). Juvenile abundance index has very little annual variance. A fishery-independent gill net survey is conducted to measure age composition and develop indices of age 1+ abundance for many species. Seatrout age 1+ abundance index varies very little annually, averaging 0.075±0.01 seatrout per set, but low CPUEs in 2011 and 2015 (0.05±0.01 seatrout per set) correspond to known cold stun mortality events. The NCDMF Age Lab ages otoliths collected in part from the North Carolina Carcass Collection Program (2015 n=401).

South Carolina

The State Finfish Survey collects fishery-dependent catch, effort, and length data from private boat anglers in January and February. In 2015, 11% of 46 interviewed parties primarily targeted spotted seatrout (2015 n=6, mean catch rate of 1.2 fish per targeted fishing hour). A mandatory trip reporting system for the charter boat fishery has been in place since 1993. In 2015, 894 (6%) interviewed trips targeted seatrout, making it the second most targeted species (2015 mean catch rate of 1.22 fish per targeted fishing hour). Lastly, the Freezer Drop-Off and the Fishing Tournament programs gather biological information (2015 n=76).

South Carolina conducts two fishery-independent data collection programs. The Trammel Net Survey covers 7 monthly and 2 quarterly strata. Spotted seatrout is consistently one of the top three most abundance species encountered (2015 observed a 58% positive catch rate per net deployment). The Electrofishing survey covers 5 monthly strata, and catches relatively low numbers of mostly YOY seatrout.

It should be noted that SCDNR stocks spotted seatrout in the Charleston Harbor system. A total of 1.49 million fish have been stocked since the program began in 2012, of which 0.32 million were stocked in 2015.

Georgia

A Marine Sportfish Carcass Recovery Program collects recreational fishery-dependent size and age data (2015 n=3,006 comprising 81%, average length of 360.4mm, 244-510mm range). The Marine Sportfish Population Health Study trammel net survey samples monthly from September to November since 2003 in the Wassaw and Altamaha Sounds to collect fishery-independent age- and sex-specific estimates of relative abundance (2015: Wassaw average length 339.5mm; Altamaha 339.3mm). Gillnet sampling also occurs through this study, often encountering seatrout (2015 Wassaw average length 324.4mm; Altamaha 313.1mm).

Florida

Fishery-dependent sampling includes commercial trip-ticket information and biostatistical sampling of commercial and recreational catch. A voluntary angler logbook program was implemented in 2002 to record lengths of spotted seatrout released alive by anglers. In 2011, this program changed to a ‘postcard’ program, enlisting anglers encountered during MRIP angler intercept interviews.

A juvenile finfish monitoring program is conducted in the northern Indian River Lagoon (since 1990) and in the estuarine St. Johns, St. Marys, and Nassau Rivers (since 2001). Florida also conducts a 183-m haul seine survey in the Indian River (since 1997) and northeast Florida (since 2001). YOY abundance declined after a strong recruitment year in 2011, though recent increases are seen. Recent relative adult abundance (>200 mm SL) has declined in the central and northern regions since 2011 and 2012, respectively (2015 lengths=357, adult otolith pairs= 222).

VI. Status of Management Measures and Issues

Changes to State Regulations
In 2015, Georgia implemented a minimum size increase from 13 inches TL to 14 inches TL, effective January 1, 2016.

De Minimis Requests
A state qualifies for *de minimis* status if its previous three-year average combined commercial and recreational catch is less than 1% of the previous three-year average coastwide combined commercial and recreational catch. Those states that qualify for *de minimis* are not required to implement any monitoring requirements, as none are included in the plan.

The states of New Jersey and Delaware request continuation of *de minimis* status. The PRT notes these states meet the requirements of *de minimis*.

VII. Implementation of FMP Compliance Requirements for 2015

The PRT notes that all states have met the compliance requirements.

VIII. Recommendations of Plan Review Team

Management and Regulatory Recommendations

- Increase observer coverage in states that have a commercial fishery for spotted seatrout.

Prioritized Research Recommendations

High Priority

- Conduct state-specific stock assessments to determine stock status relative to the plan objective of maintaining a spawning potential of at least 20%.
- Collect data on the size or age of spotted seatrout released alive by anglers and the size and age of commercial discards.
- Research release mortality and how this changes with season and depth.
- Continue work to examine the stock structure of spotted seatrout on a regional basis, with particular emphasis on advanced tagging techniques.
- Research effects of winter on the population.
- Utilize telemetry technology to better understand life history characteristics.
- Conduct additional research on the significance of age-specific fecundity changes (ie: environmental impacts on spawning output of population)
- Develop state-specific juvenile abundance indices.

Medium Priority

- Identify essential habitat requirements.
- Initiate collection of social and economic aspects of the spotted seatrout fishery.

IX. References

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X. Figures

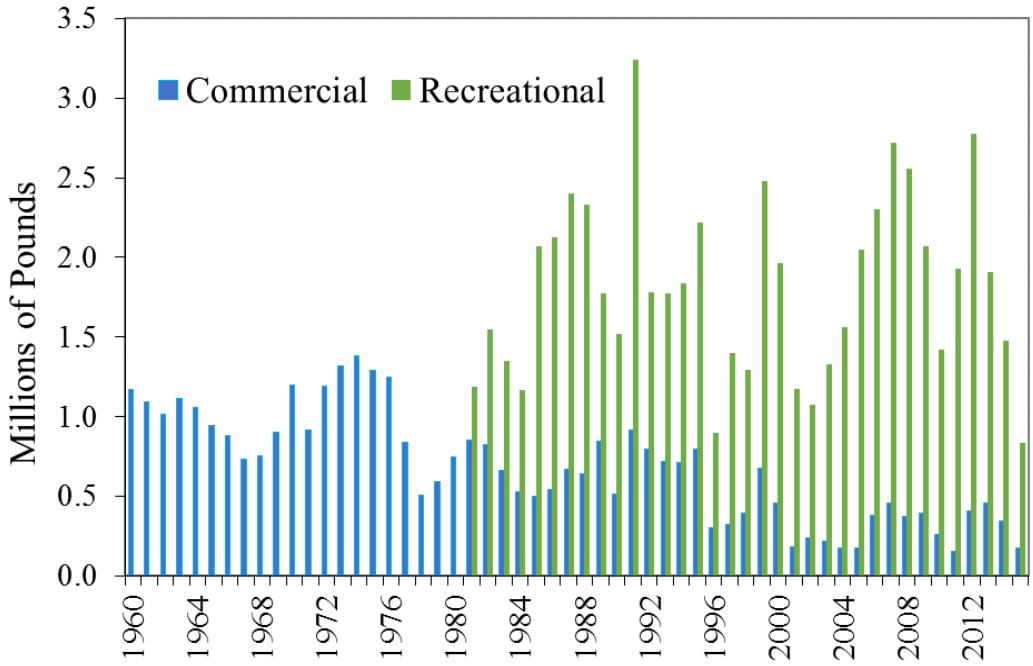

Figure 1. Commercial landings (1960-2015) and recreational landings (1981-2015), in pounds, from Maryland to Florida (See Tables 2 and 4 for values and sources).

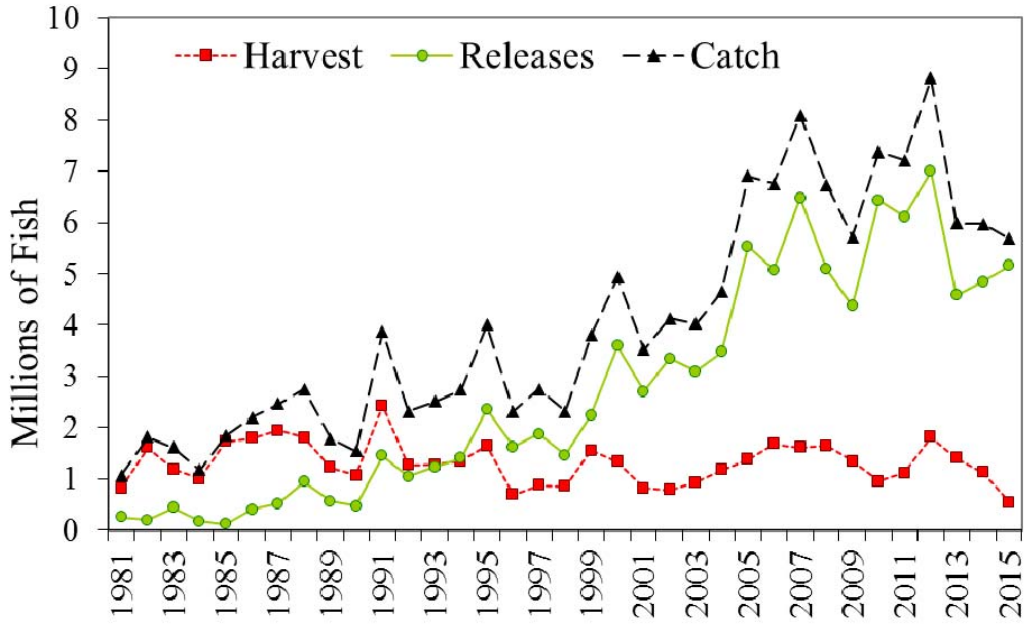

Figure 2. Recreational catch, harvest, and releases (numbers), 1981-2015, from Maryland to Florida (See Tables 3 and 5 for values and sources).

XI. Tables

Table 1. Summary of state regulations for spotted seatrout in 2015.

State	Recreational	Commercial
New Jersey	13" TL; 1 fish	Gill net, trawl, and pound net: 13"; 100 lb/vessel/day possession and bycatch limit; seasonal closures; monthly reporting. Trawl and gill net mesh size restrictions. Hook & line fishermen must follow rec limits.
Delaware	12" TL	12" TL
Maryland	14" TL; 4 fish	14" TL. 150 lb limit per day or trip (whichever is longer). Trawl and gill net mesh size restrictions.
PRFC	14" TL; 10 fish	14" TL
Virginia	14-24" TL; 1 fish >24" allowed; 5 fish; closed season March-July.	14" TL; pound nets/seines allowed 5% by weight less than 14". Hook & line fishermen must follow rec limits. Quota: 51,104 lbs (Sept-Aug). After 80% reached, 100 lb/vessel/day possession and bycatch limit.
North Carolina	14" TL; 4 fish	14" TL; 75 fish limit. Unlawful to possess or sell Friday 12:00am-Sunday 12:00am.
South Carolina	14" TL; 10 fish. Gig March-Nov.	Gamefish status since 1987; native caught fish may not be sold.
Georgia	13" TL; 15 fish	13" TL; 15 fish. BRD requirement for trawl; gear mesh regulations.
Florida	15-20" TL slot; 1 fish >20" allowed; northeast 6 fish; northwest 5 fish; south 4 fish; hook & line/cast net only.	15-24" TL; Season varies by region; 75 fish limit or 150 fish limit with two or more licensed fishermen on board; hook & line/cast net only.

Note: A commercial fishing license is required to possess spotted seatrout for sale in all states with a fishery.

Table 2. Commercial landings (pounds) of spotted seatrout by state, 1981-2015 (Source: State Compliance Reports, 2015). Starred boxes represent confidential data.

Year	MD	VA	NC	SC	GA	FL	Total
1981	0	4,000	113,304		629	736,026	853,959
1982	0	3,400	83,847	1,944	4,994	732,278	826,463
1983	0	4,400	165,360	4,479	5,795	481,535	661,569
1984	0	3,000	152,934	2,374	4,348	367,541	530,197
1985	0	8,302	109,048	1,770	7,149	369,756	496,025
1986	0	18,500	191,514	12,214	8,691	307,261	538,180
1987	0	13,300	315,380	11,941	10,739	317,044	668,404
1988	0	15,500	296,538	486	9,110	315,947	637,581
1989	0	18,500	451,909	33	10,565	361,973	842,980
1990	0	21,435	250,634	1,095	5,942	236,453	515,559
1991	98	21,200	660,662	0	7,380	225,812	915,152
1992	0	10,395	526,271	0	11,310	247,189	795,165
1993	868	38,033	449,886	0	8,550	223,931	721,268
1994	690	44,636	412,458	0	5,112	247,666	710,562
1995	668	28,722	574,410	0	8,482	184,269	796,551
1996	12,742	3,897	226,668	0	7,501	48,254	299,062
1997	15,199	11,639	232,583	0	7,621	57,316	324,358
1998	16,993	21,235	307,777	0	2,845	41,556	390,346
1999	29,419	35,055	546,775	0	3,244	61,802	676,295
2000	18,419	15,463	376,657	0	1,997	45,392	457,928
2001	25,161	19,039	105,797	0		30,234	180,231
2002	*	8,792	175,643	*	*	44,640	240,357
2003	*	5,299	181,529	*	*	27,075	214,719
2004	*	10,705	130,961	*	*	29,605	172,487
2005	*	7,341	129,601	*	*	36,762	176,043
2006	*	30,218	312,620	*	*	36,687	379,820
2007	*	34,166	374,722	*	*	46,838	455,740
2008	*	44,275	304,430	*	*	20,887	369,861
2009	*	23,880	320,247	*	*	46,297	390,600
2010	*	17,271	200,822	*	*	39,374	258,492
2011	*	14,728	75,239	*	*	63,592	154,144
2012	*	76,963	265,017	*	*	61,664	405,534
2013	*	28,223	367,412	*	*	58,221	456,284
2014	*	66,504	241,995	*	*	37,710	346,587
2015	*	7,815	128,761	*	*	39,231	175,844

Table 3. Recreational harvest (numbers of fish) of spotted seatrout by state, 1981-2015 (Source: NMFS Fisheries Statistics Division).

Year	MD	VA	NC	SC	GA	FL	Total
1981			30,037	20,934	189,080	576,847	816,898
1982			112,023	849,634	226,758	426,378	1,614,793
1983			91,956	121,940	325,655	645,120	1,184,671
1984			90,262	95,281	114,403	700,876	1,000,822
1985			263,878	347,851	251,764	866,162	1,729,655
1986	7,507	82,671	270,867	477,136	401,490	550,591	1,790,262
1987	29,295	17,415	320,977	392,329	439,782	744,330	1,944,128
1988	20,769	288,705	420,115	355,547	389,276	331,709	1,806,121
1989	151,986	66,033	181,149	174,011	448,767	198,617	1,220,563
1990	20,416	67,939	251,088	113,160	368,787	249,824	1,071,214
1991	17,995	69,032	316,895	438,502	1,204,116	385,817	2,432,357
1992	3,235	30,091	333,990	200,030	338,175	363,238	1,268,759
1993	7,038	103,131	206,523	222,144	463,702	274,118	1,276,656
1994	33,511	115,025	457,636	139,551	337,965	255,216	1,338,904
1995	19,198	90,838	325,927	223,751	607,095	381,884	1,648,693
1996	35,765	46,098	151,380	137,530	171,676	148,571	691,020
1997	19,951	92,725	256,719	111,576	167,287	228,096	876,354
1998	13,620	34,623	294,501	125,038	197,293	189,621	854,696
1999	2,112	138,492	410,321	101,260	655,407	241,096	1,548,688
2000	1,634	90,135	250,450	219,740	486,673	288,443	1,337,075
2001	0	13,447	182,124	63,452	309,487	250,987	819,497
2002	0	16,303	197,484	84,777	271,357	206,310	776,231
2003	2,091	102,484	106,415	123,027	425,993	169,587	929,597
2004	0	68,409	316,894	247,156	336,254	199,523	1,168,236
2005	1,954	22,062	512,262	268,467	231,429	337,744	1,373,918
2006	4,860	43,530	577,537	294,096	453,394	299,337	1,672,754
2007	0	159,244	525,156	122,419	499,709	302,625	1,609,153
2008		103,880	584,024	175,975	623,619	160,455	1,647,953
2009	7,933	22,635	509,416	147,266	478,895	182,752	1,348,897
2010	3,146	17,417	195,065	101,053	384,077	251,455	952,213
2011	3,058	247,736	215,922	66,207	289,950	286,501	1,109,374
2012	6,032	125,627	500,522	234,921	526,604	427,469	1,821,175
2013	0	55,151	649,158	126,351	237,551	335,547	1,403,758
2014	4,755	46,524	433,978	77,669	256,068	308,133	1,127,127
2015	4,870	8,697	87,396	106,216	162,772	164,248	534,199

Table 4. Recreational harvest (pounds of fish) of spotted seatrout by state, 1981-2015 (Source: NMFS Fisheries Statistics Division).

Year	MD	VA	NC	SC	GA	FL	Total
1981			63,036	14,808	138,720	967,921	1,184,485
1982			120,045	588,999	177,847	660,295	1,547,186
1983			96,359	138,442	323,889	784,531	1,343,221
1984			39,861	116,118	141,306	866,077	1,163,362
1985			288,088	509,551	234,704	1,032,344	2,064,687
1986	4,960	64,394	328,439	587,570	440,774	695,168	2,121,305
1987	22,511	38,495	366,442	592,612	491,317	883,707	2,395,084
1988	36,629	460,378	390,836	448,473	536,959	453,063	2,326,338
1989	184,318	112,344	259,726	277,489	608,009	328,338	1,770,224
1990	39,059	121,136	282,872	174,845	423,815	475,045	1,516,772
1991	34,753	121,604	472,397	628,011	1,449,853	534,371	3,240,989
1992	7,802	56,685	508,760	227,210	430,946	543,491	1,774,894
1993	12,800	201,562	307,151	268,055	586,426	392,827	1,768,821
1994	26,764	175,184	679,996	183,343	412,392	357,441	1,835,120
1995	31,464	148,544	478,674	247,987	667,379	642,670	2,216,718
1996		77,269	197,261	171,727	196,487	249,898	892,642
1997	32,963	261,911	311,891	163,771	242,506	380,276	1,393,318
1998	37,189	61,888	444,441	151,718	262,896	329,793	1,287,925
1999		290,694	690,606	146,277	916,860	428,061	2,472,498
2000	2,972	195,544	385,190	267,297	565,903	545,202	1,962,108
2001		26,733	213,438	58,885	369,083	502,254	1,170,393
2002		28,882	274,100	111,954	302,559	353,693	1,071,188
2003	3,494	218,061	145,936	140,276	502,278	316,279	1,326,324
2004		138,841	386,918	168,468	383,237	482,853	1,560,317
2005	5,491	55,901	721,914	326,501	273,204	665,467	2,048,478
2006	10,674	107,770	794,372	369,165	444,228	574,081	2,300,290
2007	0	380,281	927,942	278,529	615,694	512,885	2,715,331
2008	0	239,743	936,652	242,405	777,690	354,409	2,550,899
2009	9,006	44,761	940,769	172,848	596,182	303,281	2,066,847
2010	6,724	30,176	404,438	138,514	425,854	411,495	1,417,201
2011	4,664	550,157	435,954	116,979	353,472	464,863	1,926,089
2012	10,257	226,556	810,589	388,105	518,189	819,009	2,772,705
2013		126,291	626,628	228,014	282,362	637,881	1,901,176
2014	10,633	84,838	433,978	111,194	283,282	546,335	1,470,260
2015	10,972	13,924	148,926	161,394	179,911	314,993	830,120

Table 5. Recreational releases (number of fish) of spotted seatrout by state, 1981-2015 (Source: NMFS Fisheries Statistics Division).

Year	MD	VA	NC	SC	GA	FL	Total
1981				5,522	36,853	209,059	251,434
1982				8,007	17,645	171,093	196,745
1983			16,579	32,860	12,038	367,881	429,358
1984			30,173	44,436	16,174	76,346	167,129
1985			16,578	6,409	22,917	66,960	112,864
1986	13,639	28,606	19,792	115,315	189,798	35,646	402,796
1987		30,070	136,104	130,253	176,415	41,391	514,233
1988	26,999	148,934	74,818	78,568	182,628	431,665	943,612
1989	52,859	11,977	82,909	54,279	167,025	187,406	556,455
1990	4,874	23,435	84,235	35,223	114,624	203,439	465,830
1991	21,811	40,550	169,921	51,415	369,972	789,779	1,443,448
1992	701	19,855	139,616	97,813	192,261	597,254	1,047,500
1993		65,605	149,744	92,101	146,665	780,573	1,234,688
1994	32,466	243,463	207,262	220,941	125,421	574,629	1,404,182
1995	157,530	327,643	277,896	194,996	327,835	1,074,703	2,360,603
1996	51,594	165,169	153,051	107,691	63,585	1,081,893	1,622,983
1997	4,826	168,964	98,377	89,147	61,148	1,449,278	1,871,740
1998	49,460	74,569	73,024	151,935	100,059	1,005,443	1,454,490
1999	7,082	152,120	253,442	92,792	160,801	1,577,378	2,243,615
2000	4,805	264,550	90,070	368,332	547,765	2,310,491	3,586,013
2001		110,308	194,982	38,709	365,140	1,995,635	2,704,774
2002		136,265	385,162	147,962	357,953	2,326,420	3,353,762
2003		207,270	131,619	314,642	737,730	1,707,957	3,099,218
2004	9,430	257,996	300,025	333,537	608,193	1,969,884	3,479,065
2005	4,612	192,091	817,036	395,483	678,057	3,446,336	5,533,615
2006	9,721	82,935	559,786	666,865	872,395	2,889,495	5,081,197
2007	2,231	362,809	973,516	560,272	957,682	3,623,247	6,479,757
2008		366,566	1,005,298	850,006	719,622	2,140,752	5,082,244
2009	30,381	171,028	1,213,526	398,971	915,301	1,641,702	4,370,909
2010	107,017	550,118	1,684,872	407,228	742,215	2,937,411	6,428,861
2011	7,685	1,214,620	1,916,249	279,969	552,123	2,141,212	6,111,858
2012	55,183	428,540	1,646,512	817,017	1,029,479	3,025,556	7,002,287
2013	0	291,070	1,427,410	600,607	321,461	1,939,475	4,580,023
2014	26,438	291,070	960,570	389,153	773,940	2,399,792	4,840,963
2015	73,379	478,687	1,813,052	392,765	398,418	1,997,168	5,153,469