REVIEW OF THE
INTERSTATE FISHERY MANAGEMENT PLAN FOR

SPOT
(Leiostomus xanthurus)

2006 FISHING YEAR

Prepared by
Nichola Meserve (ASMFC)

The Spot Plan Review Team
Joe Grist, Virginia Marine Resources Commission
Nichola Meserve, Atlantic States Marine Fisheries Commission, Chair
John Schoolfield, North Carolina Division of Marine Fisheries
Harley Speir, Maryland Department of Natural Resources

Board Approved: November 1, 2007

Table of Contents

I. Status of the Fishery Management Plan

Date of FMP Approval: October 1987

Management Areas: The Atlantic coast distribution of the resource from Florida through Delaware

Active Boards/Committees: South Atlantic State/Federal Fisheries Management Board; Spot Plan Development Team

The *Fishery Management Plan (FMP) for Spot* was adopted in 1987 and includes the states from Delaware through Florida (ASMFC 1987). In reviewing the early plans created under the Interstate Fisheries Management Plan process, the Spot FMP was seen by ASMFC as in need of review and possible revision. A Wallop-Breaux grant from the U.S. Fish and Wildlife Service was provided to conduct a comprehensive data collection workshop for spot. The October 1993 workshop at the Virginia Institute of Marine Science was attended by university and state agency representatives from six states. Presentations on fishery-dependent and fishery-independent data, population dynamics, and bycatch reduction devices were made and discussed. All state reports and a set of recommendations were included in the workshop report (ASMFC 1993).

Subsequent to the workshop and independent of it, the South Atlantic State/Federal Fisheries Management Board of ASMFC reviewed the status of several plans in order to define the compliance issues to be enforced under the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA). The Board found recommendations in the plan to be vague and perhaps no longer valid, and recommended that an amendment be prepared to the Spot FMP to define the management measures necessary to achieve the goals of the FMP. In their final schedule for compliance under the ACFCMA, the ISFMP Policy Board adopted the finding that the FMP does not contain any management measures that states are required to implement. To date, no amendment has been prepared.

II. Status of the Stock

No coastwide assessment has been performed for spot; however, spot are a target or component of several state surveys using trawl, gillnet, or seine net to sample. In addition to these surveys, commercial and recreational catch-per-unit effort (CPUE) data provide indices of relative spot abundance.

In 2007, the Spot Plan Review Team compiled fishery CPUE data and fishery-independent survey data from Maryland, Virginia, and North Carolina, the three states that harvest the majority of spot (Rickabaugh, 2007; Grist, 2007; Schoolfield, 2007). Since 1994, commercial CPUE has generally increased over time in Maryland, varied without trend in Virginia, and been relatively stable in North Carolina. Maryland recreational CPUE has generally decreased with a few spikes and a small amount of potential recovery in 2003-2005, while Virginia recreational CPUE has been variable around the time series average, exceeding it in 2005 and 2006, and North Carolina recreational CPUE has shown a general increase over time. Juvenile abundance

indices have generally declined with a few spikes in abundance in Maryland's portion of the Chesapeake Bay, shown a slight downward trend in abundance in other Maryland Bays, declined nearly consistently since 1992 in Virginia's portion of the Chesapeake Bay, and fluctuated without trend in North Carolina's Pamlico Sound and other estuaries. An adult abundance index in North Carolina shows little fluctuation for the five years that the survey has been conducted.

In addition, Delaware conducts two trawl surveys for juvenile fish in Delaware Estuary and the state's inland bays, both of which are highly variable, but below the time series averages in 2006. Florida evaluated the abundance of spot in the Indian River Lagoon in 1997 with commercial CPUE data and survey indices (McRae *et al.* 1997). Findings included variable commercial CPUE, stable juvenile abundance between 1990 and 1996, except for a very high 1993 index, and stable adult abundance during the same time series.

III. Status of the Fishery

Total landings of spot in 2006 are estimated at 7.35 million pounds, the second lowest value since 1981 (see Tables 2 and 5). The commercial fishery harvested approximately 43 percent of this total by pounds of fish, and the recreational fishery about 57 percent. In all previous years since 1981, the commercial fishery has landed more pounds of spot than the recreational fishery (Figure 1).

Commercial spot landings have fluctuated between 3.2 and 14.5 million pounds from 1950-2006 (Figure 1). During this time series, landings have been over 10 million pounds thirteen times, four of those occurring during the peak of landings from 1972-75, and the last occurring in 1982. From 1983 to 2006, commercial landings have averaged 6.6 million pounds. Landings in 2006 are estimated at 3.2 million pounds, the lowest value in the time series, for an estimated value of $2.6 million (Table 2, Figure 1). Coastwide, the majority of spot are taken in gillnets (64.2% in 2006 by pounds of fish; Table 3). Small spot are also a major component of the bycatch in haul seine and pound net fisheries in the Chesapeake Bay and in North Carolina, as well as a part of the bycatch of the South Atlantic shrimp trawl fishery. Virginia landed nearly 53% of the commercial harvest (by pounds) in 2006, followed by North Carolina's 43% of the harvest.

Between 1981 and 2006, the recreational harvest of spot from along the Atlantic coast has varied between 3.6 and 20.1 million fish (1.7 to 5.0 million pounds; Tables 4 and 5). Recreational harvest had not exceeded 10.0 million fish since 1994, until 2006, when anglers harvested an estimated 11.1 million fish (4.2 million pounds). This value continues a gradual increase of recreational spot harvest since the low harvest of 1999 (Figure 2). The estimated number of spot released annually by recreational anglers from 1981 has remained relatively constant, ranging from 2.0 to 6.4 million fish with the exception of 1981 (11.1 million fish), 1990 (7.3 million fish), and 1991 (10.6 million fish) (Table 6). The number of fish released alive in 2006 is the forth highest in the time series at 6.4 million fish (Figure 2).

IV. Status of Assessment Advice

A formal stock assessment of spot has not been conducted. The 1987 FMP recognized the lack of biological and fisheries data necessary for stock assessment and effective management of the

resource. Spot life history information and fisheries data have generally been localized and conducted at different levels of population abundance. Commercial and recreational catch and effort data have only recently begun to be analyzed in hopes of determining the relationship between landings and abundance. An additional problem is the non-quantifiable incidental bycatch and discard mortality of small spot in non-directed fisheries.

Following its review of fishery-dependent and fishery-independent indices of abundance in 2007, the Spot Plan Review Team is now attempting to develop age-length and catch-at-age matrices. When complete, these analyses will provide more insight as to the health of the fishery, and will suggest whether state-specific or a coastwide assessment can be conducted.

V. Status of Research and Monitoring

Catch and effort data are collected by the commercial and recreational statistics programs conducted by the states and the National Marine Fisheries Service (NMFS). Recruitment indices are available from ongoing juvenile surveys in Delaware, Maryland, Virginia, North Carolina, and Florida. An adult index of abundance is available in North Carolina, although the time series is short. Efforts are now underway to develop a comprehensive abundance index utilizing fishery-dependent CPUE data and fishery-independent survey data from many states.

Age data are available from several states. North Carolina annually ages 400-500 spot across all fisheries. Virginia has aged more than 300 spot per year since 2001, except 2006 when 228 were aged. Maryland is beginning an ageing program in 2007. Age validation studies need to be conducted. In 2007, these three states are beginning efforts to produce age-length keys that can be applied to length-frequency data to develop catch-at-age matrices.

Fishery-independent spot data are collected in a number of other cooperative programs. The Southeast Area Monitoring and Assessment Program (SEAMAP) program collects spot data from Cape Hatteras to Cape Canaveral. Additionally, the Northeast Area Monitoring and Assessment Program (NEAMAP) is scheduled to begin spring and fall surveys between Martha's Vineyard and Cape Hatteras starting in the fall of 2007, following a pilot survey in the fall of 2006. The CHESMAP trawl survey, developed by Virginia Institute of Marine Science, and the CHESFIMS survey, conducted by the University of Maryland and Maryland DNR, provide data on spot in Chesapeake Bay including estimates of adult population size, distribution, length-frequency, age-structure, and diet composition.

VI. Status of Management Measures and Issues

The FMP for Spot identified two management measures for implementation: 1) promote the development and use of bycatch reduction devices through demonstration and application in trawl fisheries, and 2) promote increases in yield per recruit through delaying entry to spot fisheries to age one and older.

Considerable progress has been made on developing bycatch reduction devices (BRDs) and evaluating their effectiveness. Proceedings from a 1993 spot and croaker workshop summarized much of the experimental work on bycatch reduction, and many states have conducted

subsequent testing. For example, North Carolina Division of Marine Fisheries (NCDMF) conducted research on the four main gear types (shrimp trawl, flynet, long haul seine, and pound net) responsible for the bulk of the scrap fish landings in order to reduce the catch of small fish. State testing of shrimp trawl BRDs achieved finfish reductions of 50-70% with little loss of shrimp. The Virginia Marine Resources Commission investigated the use of culling panels in pound nets and long haul seines to release small croaker, spot, and weakfish. The Potomac River Fisheries Commission (PRFC) also investigated the use of culling panels in pound nets, finding that the panels allowed the release of 28% of captured spot less than six inches in length. A target reduction in bycatch of spot may be a suitable objective in a plan amendment.

Following favorable testing, devices have been made mandatory or recommended in several states' fisheries. The use of BRDs is required in all penaeid shrimp trawl fisheries in the South Atlantic. The PRFC recommends the use of culling panels in pound nets and allows those nets with panels to keep one bushel of bycatch of flounder and weakfish. In North Carolina, escapement panels have been required in the bunt nets of long haul seines in an area south and west of Bluff Shoals in the Pamlico Sound since April 1999. However, evaluation of the beneficial effects of BRDs to spot stocks continues to need further study.

General gear restrictions, such as minimum mesh sizes or trawling bans, have helped protect some age classes of spot. However, only Georgia has implemented a minimum size limit aimed at protecting immature spot.

VII. Implementation of FMP Compliance Requirements for 2006

- There are no compliance requirements for this FMP.

VIII. Recommendations of the Plan Review Team

Management and Regulatory Recommendations

- Continue to support the Plan Review Team's work to develop age-length keys and catch-at-age matrices.

Research and Monitoring Recommendations

High Priority

- State monitoring and reporting on the extent of unutilized bycatch and fishing mortality on fish less than age-1 in fisheries that take significant numbers of spot.
- Evaluate the effects of mandated bycatch reduction devices on spot catch in those states with significant commercial harvests.
- Develop fishery-dependent and fishery-independent size and sex specific relative abundance estimates.
- Cooperative coastwide spot juvenile indices should be developed to clarify stock status.
- Monitor long term changes in spot abundance, growth rates, and age structure.
- Continue monitoring of juvenile spot populations in major nursery areas.

- Improve spot catch and effort statistics from the commercial and recreational fisheries, along with size and age structure of the catch, in order to develop production models.
- Conduct age validation studies.
- Investigate the degree of mixing between state stocks during the annual fall migration.
- Cooperatively develop criteria for aging spot otoliths and scales.
- Develop age-length key(s)
- Develop catch-at-age matrices

Medium Priority

- Develop stock assessment analyses appropriate to current data.
- Cooperatively develop a yield-per-recruit analysis.
- Develop stock identification methods.
- Determine migratory patterns through tagging studies.
- Determine the onshore vs. offshore components of the spot fishery.

IX. References

ASMFC (Atlantic States Marine Fisheries Commission). 1987. Fishery Management Plan for Spot. ASMFC Fisheries Management Report No. 11, Washington, DC.

ASMFC. 1993. Proceedings of a Workshop on Spot (*Leiostomus xanthurus*) and Atlantic Croaker (*Micropogonias undulatus*). ASMFC Special Report #25, Washington, DC.

Grist, J. 2007. Spot Harvest and Index Report for Virginia: A Report to the Atlantic States Marine Fisheries commission. Unpublished, Virginia Marine Resources Commission, Fisheries management Division, 9 pp.

McRae, G., R.G. Muller, and R. Paperno. 1997. 1997 Update on Florida's spot Fishery. Florida Marine Research Institute Report to the Marine Fisheries Commission, St. Petersburg, FL.

Rickabaugh, H. 2007. Development and Evaluation of Maryland Commercial and Recreational CPUE and Juvenile Indices for Spot. Unpublished, Maryland DNR Fisheries Service, 22 pp.

Schoolfield, J. 2007. Spot Harvest and Index Report for North Carolina: A Report to the Atlantic States Marine Fisheries Commission. Unpublished, North Carolina Division of Marine Fisheries, 9 pp.

X. Figures

Figure 1. Spot commercial and recreational landings (pounds), 1950-2006
(Recreational landings available from 1981-present; see Tables 2 and 5 for values and sources)

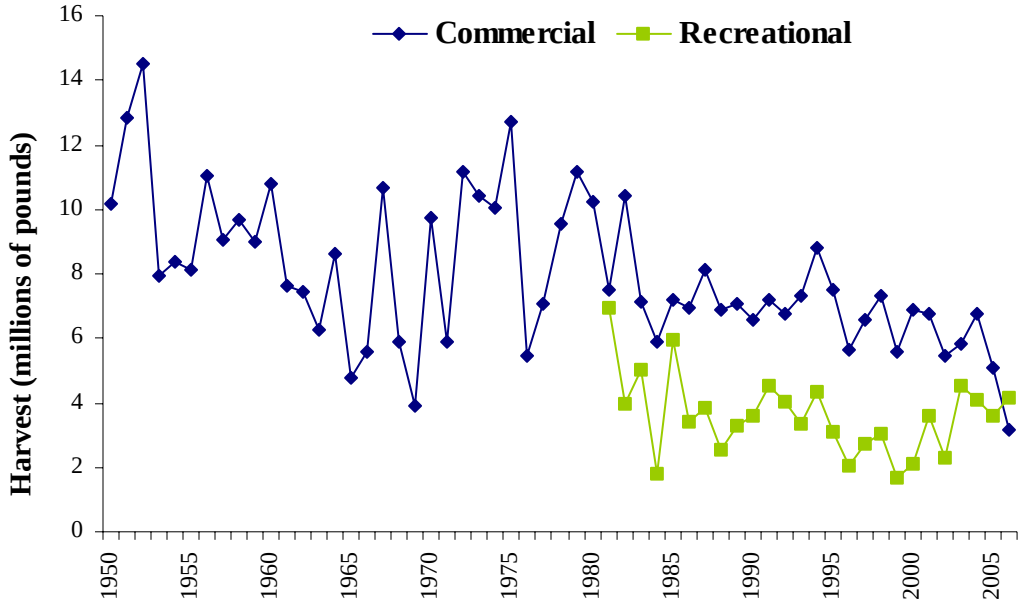
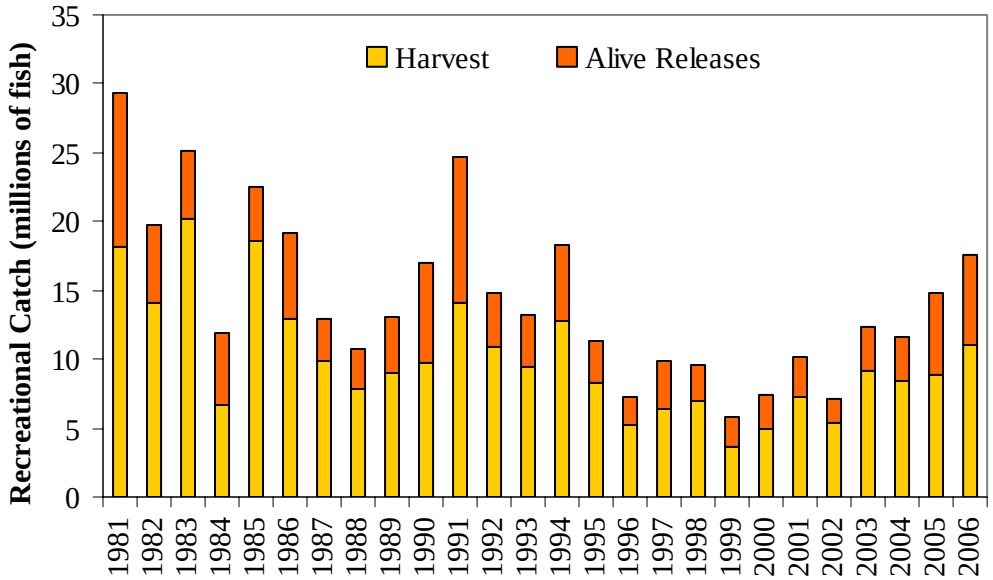


Figure 2. Spot recreational harvest and releases (numbers of fish), 1981-2006
(See Tables 4 and 6 for values and sources)



XI. Tables

Table 1. Summary of state regulations for spot, 2006

State	Recreational	Commercial
New York	None	License Required
New Jersey	None	License Required. Trawling prohibition 0-2mi.
Delaware	None	License Required
Maryland	Sport fishing license is required in Chesapeake Bay.	License Required. Trawling restrictions in Chesapeake Bay.
PRFC	Sport fishing license	License Required. Recommended pound net BRD.
Virginia	Sport fishing license	License Required. No trawling in state waters.
North Carolina	None	License Required. Trawl TED/BRD requirement.
South Carolina	Sport fishing license	License Required. Trawl TED/BRD, culling panel and various mesh size requirements.
Georgia	8" TL; 25 fish limit and Sport fishing license	License Required. 8" TL; 25 fish limit. Trawl TED/BRD requirement. No trawling in sounds; trawl closures.
Florida	Sport fishing license	License required if landing more than 100 lbs. or 2 fish/person/day. Trawl TED/BRD requirement. Net ban in state waters. Max shrimp trawl size.

Table 2. Commercial landings (pounds) and estimated value (ex-vessel) of spot, 1981-2006
(Source: NMFS Fisheries Statistics Division, queried 8/27/07)

Year	NY	NJ	DE	MD	VA	NC	SC	GA	FL	Total	Value
1981		6,000	11,100	14,200	1,025,800	3,511,574	127,384	7,721	2,798,881	7,502,660	$1,949,238
1982		1,800	2,500	6,200	1,017,100	4,918,763	62,562	292	4,431,239	10,440,456	$2,629,992
1983		800		129,400	1,567,900	2,952,295	240,096		2,266,296	7,156,787	$2,034,211
1984		100		43,200	735,200	3,481,920	130,265		1,508,552	5,899,237	$1,709,041
1985		2,400	17,200	7,700	1,561,739	4,043,843	142,755		1,399,819	7,175,456	$2,059,771
1986		6,600	86,400	104,400	1,839,500	3,354,191	655,378	124	918,875	6,965,468	$2,008,712
1987		15,900	140,100	251,800	3,721,100	2,806,041	220,553	1,528	943,713	8,100,735	$2,288,900
1988		1,600	38,700	58,000	1,985,500	3,080,258	376,221	644	1,344,276	6,885,199	$2,103,710
1989		8,200	29,000	115,800	2,468,100	3,254,473	31,472	361	1,144,639	7,052,045	$2,447,602
1990		9,039	24,900	127,882	1,630,735	3,455,460	39,957	43	1,275,729	6,563,745	$2,280,712
1991		54,433	236,200	216,035	2,539,340	3,047,305	31,787		1,051,532	7,176,632	$2,341,850
1992		102,213	95,000	331,837	2,497,622	2,826,138	171,959	261	740,048	6,765,078	$1,903,514
1993	63	10,900	22,000	182,198	3,349,399	2,672,164	251,225	1,276	826,312	7,315,537	$2,902,373
1994		31,408	100,400	166,246	4,269,402	2,937,355	288,241		1,002,887	8,795,939	$3,326,892
1995	22	30,151	62,000		3,622,954	3,006,885	209,132	247	558,087	7,489,478	$2,572,195
1996	318	1,149		256,711	2,982,083	2,290,040	60,574		56,423	5,647,298	$2,237,567
1997	189	6,175	35,686	120,331	3,465,507	2,627,977	87,170		227,097	6,570,132	$2,810,144
1998	579	27,582	140,363	225,937	4,277,256	2,397,025	63,912		161,205	7,293,859	$2,838,921
1999		7,822	51,534	223,463	2,961,890	2,262,213	9,393		72,898	5,589,213	$2,204,565
2000	939	13,852	32,290	176,946	3,764,679	2,829,818	8,519		57,946	6,884,989	$3,562,693
2001	160	20,034	78,272	283,488	3,248,212	3,093,921	12,950		33,056	6,770,093	$2,835,318
2002	5,737	1,326	13,780	138,640	3,062,211	2,184,076	23,151		20,586	5,449,507	$2,297,333
2003	35	6,003	77,031	184,437	3,471,484	2,043,421	17,181		9,337	5,808,929	$2,747,351
2004	98	1,652	58,502	43,729	4,338,082	2,317,215	1,876		12,792	6,773,946	$3,350,476
2005	435	769	157,563	114,987	3,102,816	1,713,935	3,385		21,156	5,115,046	$3,307,678
2006	2,959	3,646	62,934	35,082	1,695,985	1,364,637	1,876		22,500	3,189,619	$2,614,136

Table 3. Commercial landings of spot in 2006 by gear
(Source: NMFS Fisheries Statistics Division, queried 8/27/07)

Gear	Landings (lbs)	% of total
Gill Nets	2,047,482	64.22%
Haul Seine	968,238	30.37%
Pound Net	120,525	3.78%
Trawl	19672	0.62%
Other	32,363	1.02%
Total	3,188,280	

Table 4. Recreational harvest (number of A + B1 fish) of spot by state, 1981-2006
(Source: NMFS Fisheries Statistics Division, queried 8/27/07)

Year	NY	NJ	DE	MD	VA	NC	SC	GA	FL	Total
1981	44,278	28,006	17,508	948,931	11,662,684	4,023,934	562,750	124,057	799,226	18,211,374
1982		387,582	82,094	2,864,603	4,526,847	4,124,465	1,230,253	84,153	735,398	14,035,395
1983			14,464	1,600,362	12,059,247	4,880,268	970,747	112,123	488,029	20,125,240
1984		8,501	15,553	904,793	1,489,795	2,758,366	724,925	363,841	396,402	6,662,176
1985	15,494	12,692		1,028,391	5,491,918	8,789,391	2,355,044	62,338	861,700	18,616,968
1986	3,824	9,587	12,178	3,789,796	4,229,191	2,646,049	2,007,386	137,782	96,803	12,932,596
1987				3,180,704	3,864,151	2,129,146	599,807	79,487	73,833	9,927,128
1988		348,593	2,360	277,964	2,028,768	2,558,322	1,951,157	57,786	663,681	7,888,631
1989	602	1,128	45,853	1,154,314	3,714,855	2,924,299	1,078,570	34,977	67,506	9,022,104
1990		25,927	44,362	2,120,655	5,354,294	1,986,601	142,271	17,730	7,252	9,699,092
1991		88,393	138,113	1,841,555	8,820,075	2,317,095	598,290	10,281	269,628	14,083,430
1992		20,443	90,053	1,671,897	6,317,539	1,271,416	1,190,757	25,788	357,678	10,945,571
1993	1,168	7,788	3,263	1,880,043	2,836,534	2,057,440	1,437,809	228,606	946,757	9,399,408
1994	19,275	144,589	92,352	1,761,701	3,395,503	5,929,269	1,329,997	9,587	137,067	12,819,340
1995		2,949	51,695	1,099,658	2,731,242	3,329,981	875,189	27,842	140,231	8,258,787
1996		23,954	955	591,300	1,109,237	2,007,071	1,423,352	14,131	64,337	5,234,337
1997		20,148	126,089	713,657	3,328,144	1,440,661	680,842	5,471	31,987	6,346,999
1998			96,389	1,327,259	2,023,756	2,865,190	489,068	6,788	120,389	6,928,839
1999			19,911	655,289	569,250	1,308,167	801,785	5,578	264,233	3,624,213
2000	498,470	281,481	65,952	1,389,505	527,259	1,924,107	246,291	2,950	40,908	4,976,923
2001			51,096	1,088,997	1,056,365	3,650,711	735,551	3,681	652,975	7,239,376
2002			22,013	690,515	1,601,837	2,586,313	393,597	6,987	25,907	5,327,169
2003			30,165	3,300,594	1,441,002	3,796,557	524,513	11,524	84,685	9,189,040
2004			26,831	1,375,285	2,323,007	4,058,426	656,920	2,320	10,826	8,453,615
2005		41,324	202,657	2,006,925	2,993,635	3,125,897	464,510	2,999	41,671	8,879,618
2006		42,143	149,783	2,654,033	3,510,253	2,770,151	1,957,703	2,823	17,306	11,104,195

Table 5. Recreational harvest (pounds of A + B1 fish) of spot by state, 1981-2006
(Source: NMFS Fisheries Statistics Division, queried 8/27/07)

Year	NY	NJ	DE	MD	VA	NC	SC	GA	FL	Total
1981	20,348	6,175	8,047	554,986	4,625,985	1,193,537	144,600	50,734	311,406	6,915,818
1982		85,446	19,281	656,245	1,563,396	1,093,047	313,177	20,199	236,027	3,986,818
1983			4,017	354,788	2,520,125	1,630,882	293,161	28,023	167,294	4,998,290
1984		3,768	5,714	361,850	404,533	650,386	169,346	81,758	122,585	1,799,940
1985	3,415	4,255		193,266	1,955,039	3,120,532	441,808	13,071	213,042	5,944,428
1986	1,327	2,114	3,836	1,139,871	1,205,158	536,443	455,836	23,369	25,360	3,393,314
1987				1,545,691	1,336,387	690,653	226,701	14,601	32,835	3,846,868
1988		84,941	1,876	80,547	720,609	802,320	632,868	14,645	184,602	2,522,408
1989	132	606	10,368	633,150	1,400,728	929,188	288,591	7,798	23,254	3,293,815
1990		5,644	11,821	791,264	2,103,751	613,904	50,525	6,259	1,737	3,584,905
1991		19,528	48,100	634,894	2,729,698	727,463	245,661	1,786	107,256	4,514,386
1992		8,788	36,799	724,279	2,278,309	403,775	397,677	6,978	167,845	4,024,450
1993	315	2,264	844	636,032	951,766	812,810	461,447	109,317	396,632	3,371,427
1994	7,198	20,364	34,795	676,687	1,217,036	1,842,360	469,518	2,687	57,234	4,327,879
1995		1,186	22,919	485,682	1,067,637	1,247,995	242,973	7,701	42,851	3,118,944
1996		10,966	789	294,404	492,982	710,086	494,448	5,445	26,953	2,036,073
1997		8,609	50,781	401,275	1,263,447	722,868	254,794	2,072	13,962	2,717,808
1998			36,658	631,422	866,619	1,249,543	228,502	2,088	47,196	3,062,028
1999			10,886	272,292	244,499	646,662	391,402	2,275	84,511	1,652,527
2000	130,649	46,244	32,968	600,302	252,885	893,835	128,669	1,402	14,129	2,101,083
2001			20,110	629,861	523,202	1,773,671	346,878	1,720	284,706	3,580,148
2002			10,871	336,660	829,972	984,898	140,164	2,857	7,840	2,313,262
2003			14,385	1,690,503	875,729	1,714,158	227,821	5,710	26,504	4,554,810
2004			10,756	549,091	1,447,697	1,846,688	245,991	721	3,338	4,104,282
2005		19,610	90,863	756,392	1,434,965	1,103,830	158,407	917	12,751	3,577,735
2006		15,086	54,831	897,173	1,463,056	978,181	745,772	1,166	6,067	4,161,332

Table 6. Recreational releases (number of B2 fish) of spot by state, 1981-2006
(Source: NMFS Fisheries Statistics Division, queried 8/27/07)

Year	NY	NJ	DE	MD	VA	NC	SC	GA	FL	Total
1981		25,740	1,502	1,331,316	8,905,412	735,408	82,035	5,975	64,344	11,151,732
1982		974,847	5,061	1,677,415	1,618,065	806,851	366,650	44,091	205,387	5,698,367
1983		57,556		1,114,795	2,715,522	634,107	192,240	39,798	186,615	4,940,633
1984			13,260	1,150,599	2,607,693	952,816	346,003	17,897	130,493	5,218,761
1985	22,220	2,979		735,873	2,051,793	429,914	515,106	17,316	170,060	3,945,261
1986		79,712		2,720,343	2,250,794	816,204	331,290	20,863	10,351	6,229,557
1987			1,104	248,973	1,736,228	593,937	304,127	28,434	57,437	2,970,240
1988		110,698	4,501	716,258	762,504	995,806	110,498	16,951	110,003	2,827,219
1989		4,503	40,193	730,580	2,519,034	524,897	138,834	1,630	22,425	3,982,096
1990		14,504	10,120	1,811,434	4,441,195	921,849	13,709	4,079	30,937	7,247,827
1991		91,991	59,770	2,123,582	7,041,156	946,564	100,666	14,629	168,284	10,546,642
1992		1,324	12,553	493,597	2,091,001	841,163	279,044	16,791	64,738	3,800,211
1993			35,987	1,573,486	1,374,950	528,449	130,055	47,667	185,226	3,875,820
1994	8,140	160,380	53,078	1,037,498	2,142,198	1,363,884	320,921	22,434	335,647	5,444,180
1995		22,162	14,195	253,827	1,166,428	1,035,361	331,781	9,799	268,765	3,102,318
1996	7,178	39,448	1,128	208,897	577,847	924,204	212,920	5,329	65,083	2,042,034
1997		21,512	88,751	1,316,341	1,365,809	450,663	245,349	990	18,102	3,507,517
1998		12,542	75,985	633,914	900,352	650,157	307,480	12,286	58,264	2,650,980
1999			15,789	618,742	339,988	633,112	86,894	10,675	530,849	2,236,049
2000	157,991	16,633	30,522	1,080,310	502,923	481,995	115,682	17,376	54,388	2,457,820
2001		2,040	13,139	577,417	968,976	1,143,695	154,077	11,714	74,232	2,945,290
2002	2,127	3,331	27,220	501,111	481,765	671,669	103,914	20,038	44,584	1,855,759
2003		39,049	13,273	670,382	933,842	1,132,992	231,612	31,055	106,918	3,159,123
2004			38,330	577,223	975,455	1,237,386	252,384	12,545	20,167	3,113,490
2005		6,755	170,723	2,185,865	1,799,399	1,539,531	127,820	8,604	52,048	5,890,745
2006		42,558	156,141	1,470,847	921,131	3,147,752	645,379	7,233	51,929	6,442,970