



## Scup Fishery Information Document

June 2015

This document provides a brief overview of the biology, stock condition, management system, and fishery performance for scup with an emphasis on 2014, the most recent complete fishing year.

### 1. Biology

Scup (*Stenotomus chrysops*) are a schooling, demersal (i.e., bottom-dwelling) species. They are found in a variety of habitats in the Mid-Atlantic. Essential Fish Habitat (EFH) for scup includes demersal waters, areas with sandy or muddy bottoms, mussel beds, and sea grass beds from the Gulf of Maine through Cape Hatteras, North Carolina. Scup undertake extensive seasonal migrations between coastal and offshore waters. Scup are found in estuaries and coastal waters during the spring and summer, and in the fall and winter they move offshore and to the south, to outer continental shelf waters south of New Jersey. Scup spawn once annually over weedy or sandy areas, mostly off of southern New England. Spawning takes place from May through August, peaking in June and July.<sup>1</sup>

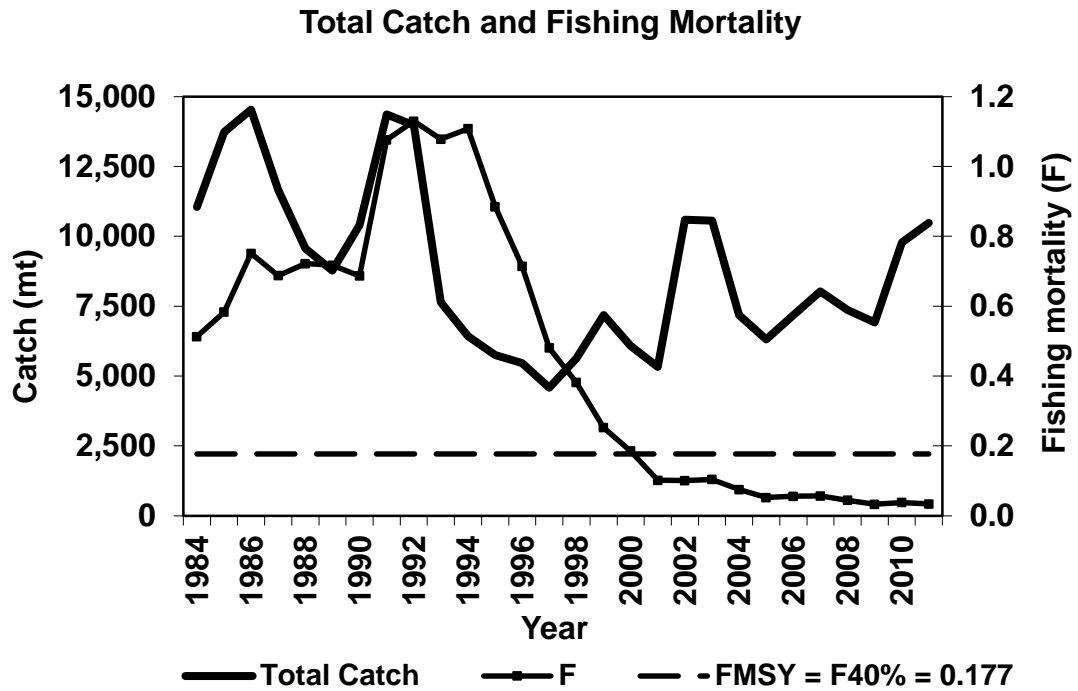
About 50% of scup are sexually mature at two years of age (at about 17 cm total length). Nearly all scup older than three years of age are sexually mature. Scup reach a maximum age of at least 14 years. They may live as long as 20 years; however few scup older than age 7 are caught in the mid-Atlantic.<sup>2, 3</sup>

Adult scup are benthic feeders. They consume a variety of prey, including small crustaceans (including zooplankton), polychaetes, mollusks, small squid, vegetable detritus, insect larvae, hydroids, sand dollars, and small fish. The Northeast Fisheries Science Center (NEFSC) food habits database lists several predators of scup, including several shark species, skates, silver hake, bluefish, summer flounder, black sea bass, weakfish, lizardfish, king mackerel, and goosefish.<sup>1</sup>

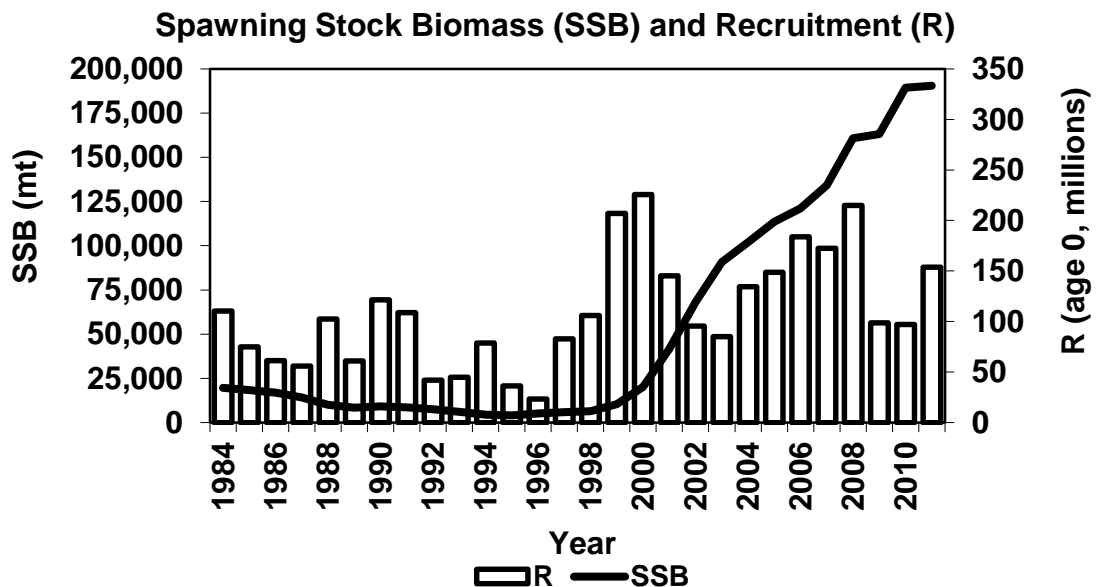
### 2. Status of the Stock

Scup was designated as overfished in 2005, triggering the establishment of a rebuilding plan (implemented in 2007 via Amendment 14 to the FMP). Scup was declared rebuilt ahead of schedule in 2009 after a benchmark stock assessment determined that the stock was no longer overfished and overfishing was not occurring.<sup>2</sup>

The most recent update to the scup stock assessment occurred in 2012 and indicated that scup was not overfished and overfishing was not occurring in 2011 (Figures 1 and 2).<sup>3</sup> As of June 2015, an updated benchmark stock assessment is undergoing peer review. The final assessment report is expected to be available in July 2015, at <http://www.nefsc.noaa.gov/saw/>.



**Figure 1:** Total fishery catch and fishing mortality rate (F) time series for scup based on the 2012 stock assessment update. The horizontal dashed line is the fishing mortality reference point. Overfishing is occurring when the fishing mortality rate exceeds this threshold.<sup>3</sup>



**Figure 2:** Spawning stock biomass (SSB) and Recruitment (R) time series for scup based on the 2012 stock assessment update.<sup>3</sup>

### **3. Management System and Overall Fishery Performance**

The Mid-Atlantic Fishery Management Council (MAFMC or Council) and the Atlantic States Marine Fisheries Commission (ASMFC or Commission) work cooperatively to develop fishery regulations for scup off the east coast of the United States. The Council and Commission work in conjunction with the National Marine Fisheries Service (NMFS), which serves as the federal implementation and enforcement entity. This cooperative management endeavor was developed because a significant portion of the catch is taken from both state waters (0-3 miles offshore) and federal waters (3-200 miles offshore, also known as the Exclusive Economic Zone or EEZ). The management unit for scup includes U.S. waters from Cape Hatteras, North Carolina to the U.S.-Canadian border.

The Fishery Management Plan (FMP) for scup has been in place since 1996, when it was incorporated into the Summer Flounder FMP through Amendment 8 to that plan. Amendment 8 also established measures to ensure effective management of scup fisheries, including gear restrictions, reporting requirements, commercial quotas, a moratorium on new commercial scup permits, recreational possession limits, and minimum size restrictions. The Council has made several adjustments to the FMP since 1996. The FMP and subsequent amendments and framework adjustments can be found at: [www.mafmc.org/sf-s-bsb/](http://www.mafmc.org/sf-s-bsb/).

Scup fisheries are currently managed through output controls (catch and landings limits), with 78% of the allowable catch allocated to the commercial fishery, and 22% of allowable catch allocated to the recreational fishery.

The Council's Scientific and Statistical Committee (SSC) recommends annual Acceptable Biological Catch (ABC) levels for scup, which are then approved by the Council and Commission and submitted to NMFS. The ABC is divided into commercial and recreational Annual Catch Limits (ACLs), based on the quota allocation percentages prescribed in the FMP. The Council first implemented recreational and commercial ACLs, with a system of overage accountability, in 2012. Both ABCs and ACLs are catch-based limits (i.e., they include both projected landings and discards). Projected discards are subtracted to determine the commercial quota and recreational harvest limit, which are landings-based limits. Scup catch and landings limits for the past ten years are shown in Table 1.

Scup support sizable commercial and recreational fisheries in the Mid-Atlantic region. Total scup landings (commercial and recreational) from Maine to North Carolina peaked in 1981 at over 27 million pounds, and reached a low of 5.1 million pounds in 1998. In 2014, about 20.05 million pounds of scup were landed in total by commercial and recreational fishermen (Figure 3).<sup>4,5</sup>

**Table 1:** Summary of catch limits, landings limits, and landings for commercial and recreational scup fisheries from 2005 through 2015.

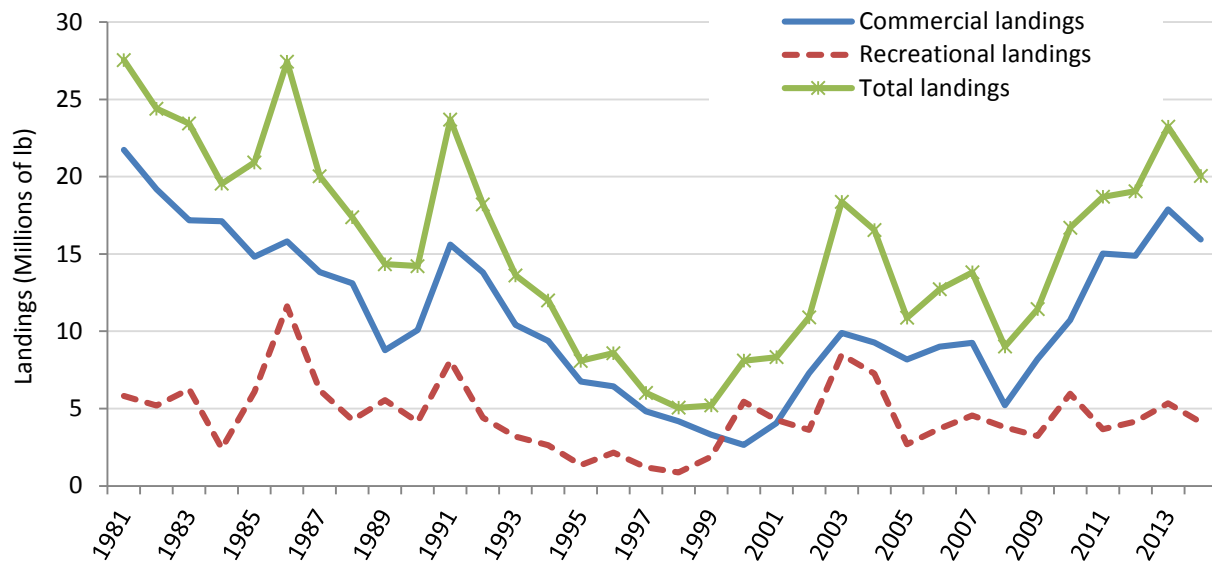
Measure	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
ABC (millions of lb) <sup>a</sup>	--	--	--	--	11.70	17.09	51.70	40.88	38.71	35.99	33.77
TAC (millions of lb) <sup>b</sup>	18.65	19.79	13.97	9.90	15.54	17.09	31.92	40.88	38.71	35.99	33.77
Commercial ACL (millions of lb) <sup>c</sup>	--	--	--	--	--	--	--	31.89	30.19	28.07	26.35
Commercial quota (millions of lb) <sup>d</sup>	12.23	11.93	8.90	5.24	8.37	10.68	20.36	27.91	23.53	21.95	21.23
Commercial landings (millions of lb)	8.18	9.00	9.24	5.22	8.20	10.73	15.03	14.88	17.87	15.93	--
% of commercial quota landed	67%	75%	104%	100%	98%	100%	74%	53%	76%	72%	--
Recreational ACL (millions of lb) <sup>c</sup>	--	--	--	--	--	--	--	8.99	8.52	7.92	7.43
Recreational harvest limit (millions of lb) <sup>d</sup>	3.96	4.15	2.74	1.83	2.59	3.01	5.74	8.45	7.55	7.03	6.80
Recreational landings (millions of lb)	2.69	3.72	4.56	3.79	3.23	5.97	3.67	4.17	5.11	4.12	--
% of recreational limit harvested	68%	90%	166%	207%	125%	198%	64%	49%	68%	59%	--

<sup>a</sup> The ABC is the Acceptable Biological Catch, recommended by the SSC and approved by the Council. The ABC is divided into commercial and recreational annual catch limits (ACLs), based on the allocation percentages prescribed in the FMP.

<sup>b</sup> Prior to the implementation of the 2011 Omnibus ACLs and AMs Amendment, the Council specified a Total Allowable Catch (TAC) instead of an ABC for scup. Both terms refer to the total catch limit in a given year, but the amounts occasionally differed during the transition years of 2009-2011. In 2009 this was due to NMFS specifying a revised catch limit after new scientific information became available. In 2011, the difference was due to the Council specifying a more conservative limit than recommended by the SSC.

<sup>c</sup> The ACLs (Annual Catch Limits) are annual sector-specific catch limits for the commercial and recreational fisheries. The ACLs include both landings and discards.

<sup>d</sup> For 2005-2014, commercial quotas and recreational harvest limits are adjusted for both Research Set Aside (RSA) and projected discards. Quotas and harvest limits for 2015 do not reflect an adjustment for RSA, as the program was suspended for 2015.



**Figure 3:** Commercial and recreational scup landings (millions of pounds), Maine through North Carolina, 1981-2014.<sup>4,5</sup>

#### 4. Commercial Fishery Regulations and Performance

Commercial landings for scup peaked in 1981 at 21.73 million pounds, and reached a low of 2.66 million pounds in 2000 (Figure 3). In 2014, commercial fishermen landed 15.93 million pounds of scup (73% of the commercial quota).<sup>4</sup>

A moratorium permit is required to fish commercially for scup. Moratorium permits became a requirement in the commercial scup fishery after Amendment 8 established a limited-entry system. In 2014, 702 vessels held federal commercial scup permits.<sup>6</sup>

The commercial scup fishery operates year-round, taking place mostly in federal waters during the winter months and mostly in state waters during the summer. A coast-wide commercial quota is allocated between three quota periods, known as Winter I, Summer, and Winter II (Table 2). The Council and Commission developed these seasonal quota periods ensure that both smaller day boats, which typically operate near shore in the summer months, and larger vessels, which typically operate offshore in the winter months, would have access to quota. The summer period quota is divided among states (Table 3). Once the quota for a given period is reached, the commercial fishery is closed for the remainder of that period. For years in which the full Winter I commercial scup quota is not harvested, unused quota from the Winter I period will be added to the quota for the Winter II period. Any quota overages during the Winter I and II periods are subtracted from the quota allocated to those periods in the following year. Quota overages during the summer period are subtracted from the following year's quota only in the states where the overages occurred.

The Winter I and Winter II periods have possession limits of 50,000 and 12,000 pounds, respectively. However, if the Winter I quota is not reached, the Winter II possession limit increases by 1,500 pounds for every 500,000 pounds not caught during Winter I.

**Table 2:** The dates, allocations, and possession limits associated with the three quota periods for the commercial scup fishery.

Quota Period	Dates	Percentage of commercial quota allocated	Possession limit
Winter I	January 1 – April 30	45.11%	50,000 pounds, until 80% of Winter I allocation is reached, then reduced to 1,000 pounds.
Summer	May 1 – October 31	38.95%	State-specific
Winter II	November 1 – December 31	15.94%	12,000 pounds. If Winter I quota is not reached, the Winter II possession limit increases by 1,500 pounds for every 500,000 pounds not caught during Winter I.

**Table 3:** The ASMFC state-by-state quotas for the commercial scup fishery summer quota period.

State	Share of summer quota
Maine	0.1210%
Massachusetts	21.5853%
Rhode Island	56.1894%
Connecticut	3.1537%
New York	15.8232%
New Jersey	2.9164%
Maryland	0.0119%
Virginia	0.1650%
North Carolina	0.0249%
Total	99.9908%

In 2012, the Winter I commercial possession limit rose from 30,000 pounds to 50,000 pounds of scup. Despite this change, it remains very rare for more than 40,000 pounds of scup to be landed in a single trip. In 2014, only 3 trips landed more than 40,000 pounds of scup and only 13 trips landed more than 30,000 pounds (Table 4). Ninety-five percent of commercial scup trips during the Winter I period in 2014 resulted in landings of less than 8,753 pounds. Ninety-five percent of commercial scup trips during the Winter II period in 2014 landed less than 3,501 pounds of scup (Table 5).<sup>4</sup>

**Table 4:** The total number of scup trips during Winter I period from 2011 through 2014, and the number of trips landing greater than 20,000, 30,000, 40,000, and 50,000 pounds of scup.<sup>4</sup>

Year	Total Winter I trips	Number of trips landing more than:			
		20,000 lb	30,000 lb	40,000 lb	50,000 lb
2011	3,342	17	0	0	0
2012	4,753	19	5	C	0
2013	3,749	36	11	C	0
2014	3,377	29	13	3	0

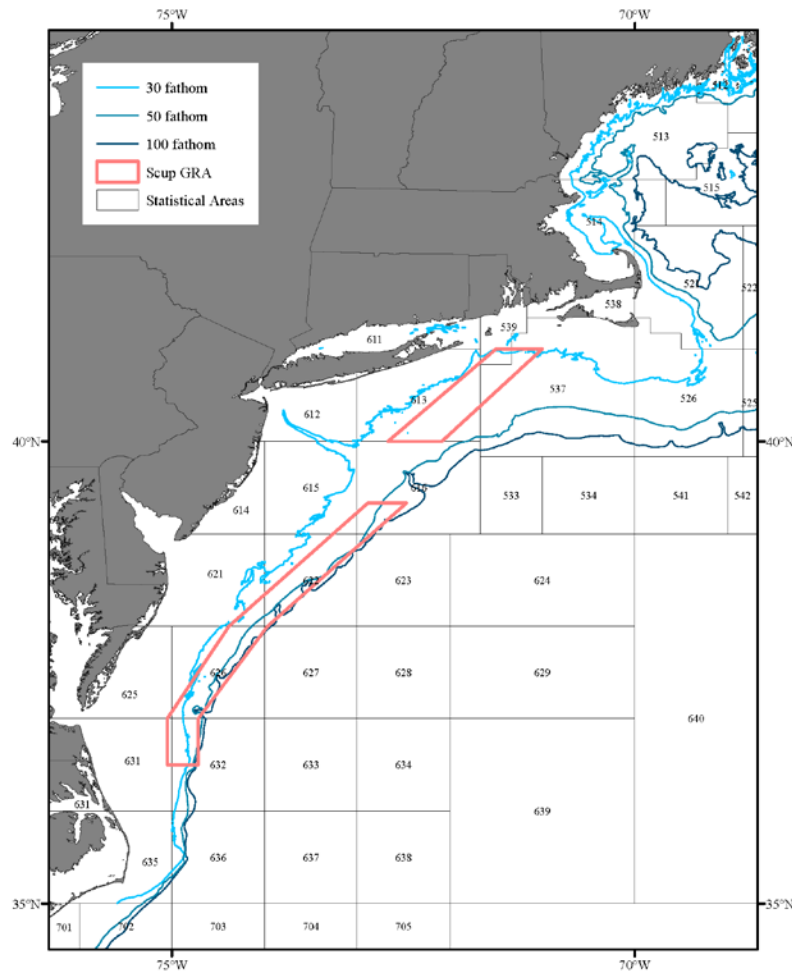
**Table 5:** The 95<sup>th</sup> percentile of landings per trip in the commercial scup fishery during Winter I and Winter II periods from 2011 through 2014 (meaning that 95% of scup trips caught less than the number of pounds listed below).<sup>4</sup>

Year	95 <sup>th</sup> percentile –landings (pounds) per trip	
	Winter I	Winter II
2011	8,075	3,742
2012	4,979	3,551
2013	8,872	3,280
2014	8,753	3,501

The commercial scup fishery in federal waters is predominantly a bottom otter trawl fishery. In 2014, about 96% of the scup caught (by weight) by federal commercial fishing permit holders were caught with bottom otter trawls. An additional 1.3% were caught with pots and traps. About 1% were caught with sink gill nets. Other gear types each accounted for less than 1% of the commercial scup catch in 2014.<sup>7</sup>

Trawl vessels with a scup moratorium permit may not possess 500 pounds or more of scup per trip from November 1 through April 30, or 200 pounds or more of scup per trip from May 1 through October 31, unless fishing with nets that have a minimum mesh size of 5-inch diamond mesh, applied throughout the codend for at least 75 continuous meshes forward of the terminus of the net. Pots and traps for scup are required to have degradable hinges and escape vents that are either circular with a 3.1 inch minimum diameter or square with a minimum length of 2.25 inches on the side.

Two gear-restricted areas (GRAs) were first implemented in 2000 with the goal of reducing scup discards in small mesh fisheries. Commercial fishermen are prohibited from targeting longfin squid, black sea bass, or silver hake using mesh smaller than 5 inches in the Northern GRA from January 1 through March 1, and in the Southern GRA from November 1 through December 1 (Figure 4). Since the implementation of the GRAs, scup discards as a proportion of the total commercial catch have decreased, averaging about 35%.<sup>2</sup> The GRAs are thought to have contributed to the recovery of the scup population in the mid- to late-2000s.<sup>8</sup>



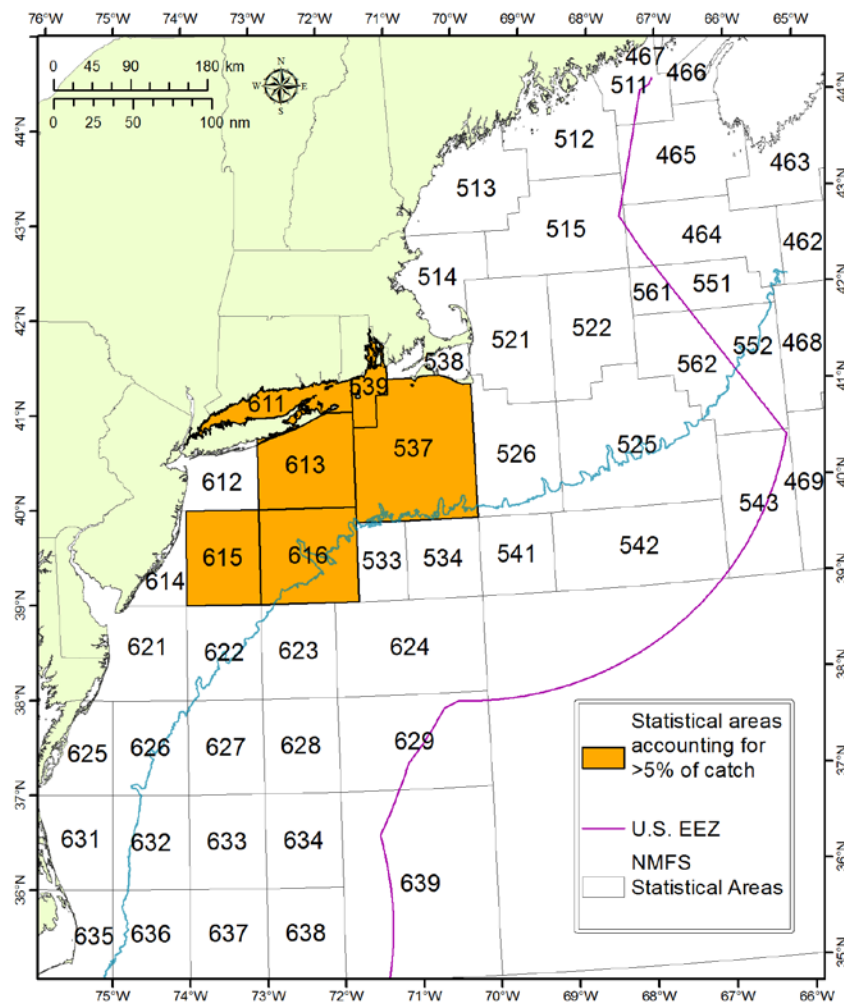
**Figure 4:** The Northern and Southern scup Gear Restricted Areas (GRAs), as currently configured.



Vessel Trip Report (VTR) data suggest that NMFS statistical areas 616 and 537 were responsible for the largest percentage of the commercial scup catch in 2014. Most of the commercial fishing trips that caught scup in 2014 occurred in statistical area 539, off of Rhode Island (Table 6, Figure 5).<sup>7</sup>

**Table 6:** Statistical areas that each accounted for at least 5% of the total commercial scup catch in 2014, with associated number of trips.<sup>7</sup>

Statistical Area	Percent of 2014 Commercial Scup Catch	Number of Trips
616	25%	401
537	22%	967
539	13%	1559
611	11%	1371
613	9%	801
615	6%	91

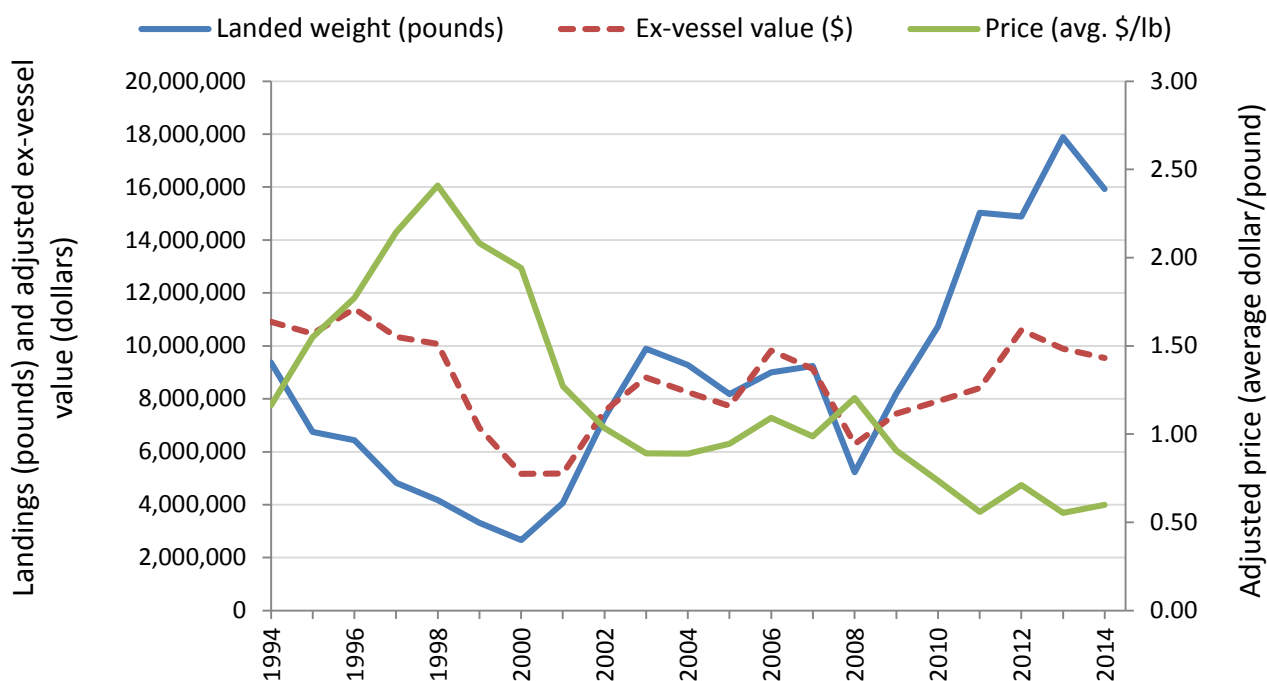


**Figure 5:** NMFS Statistical Areas, highlighting those that each accounted for more than 5% of the commercial scup catch in 2014.<sup>7</sup>

Over the past two decades, total scup ex-vessel revenue has ranged from a low of \$5.16 million in 2000 to a high of \$11.41 million in 1996 (adjusted to real 2014 dollars to account for inflation).<sup>4</sup>

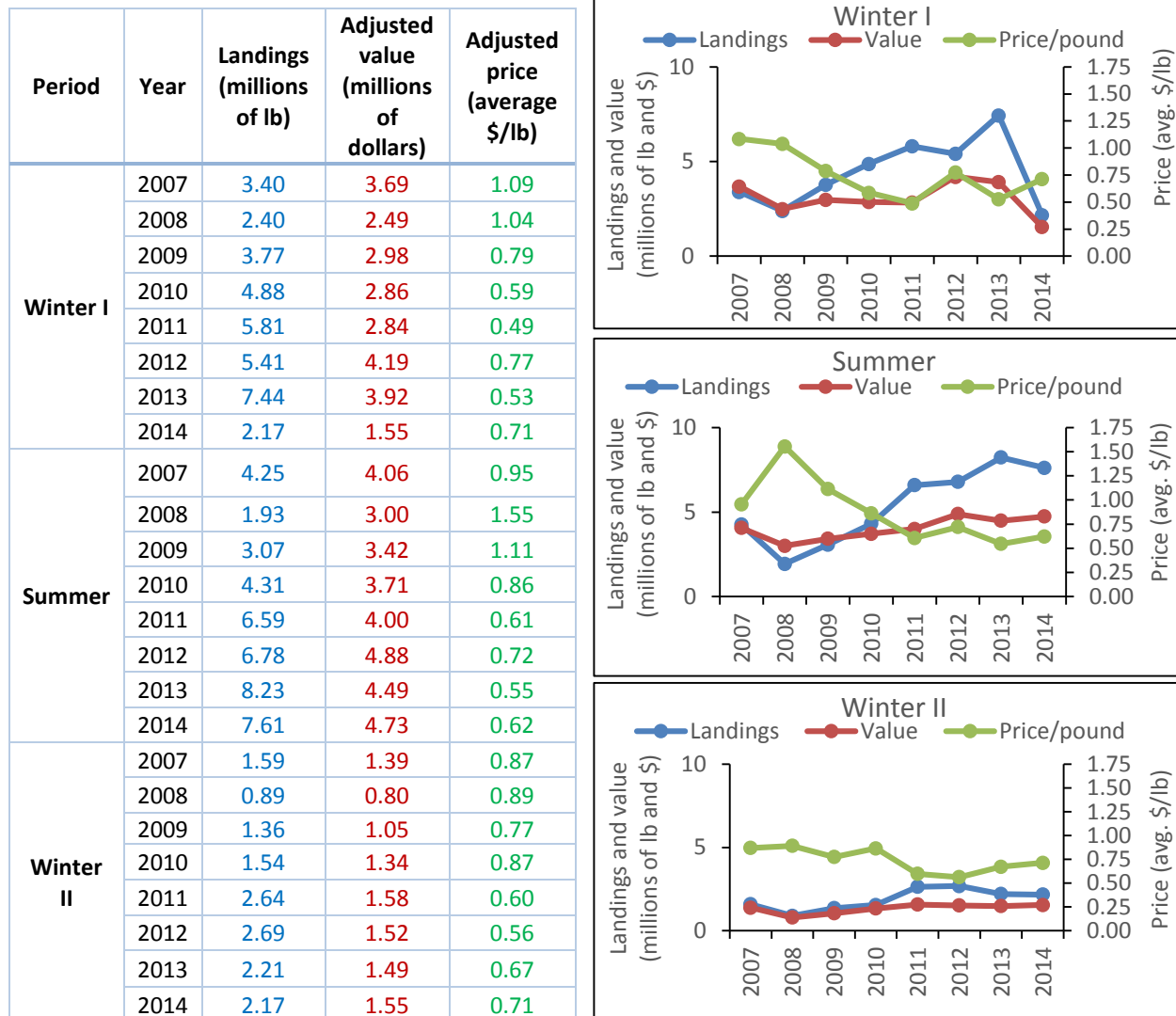
In 2014, 15.93 million pounds of scup were landed by commercial fishermen from Maine to North Carolina. The average price per pound in 2014 was \$0.60, which resulted in a total ex-vessel value of \$9.54 million.<sup>4</sup>

There is a strong relationship between the amount of scup landed in a given year and the average price per pound. As landings increase, price generally decreases (Figure 6). The highest average price per pound over the past two decades was \$1.46 (\$2.41 in 2014 dollars) and occurred in 1998. The lowest mean price per pound was \$0.55 and occurred in 2013.<sup>4</sup>



**Figure 6:** Landings, ex-vessel value, and price for scup from Maine through North Carolina, 1994-2014. Ex-vessel value and price are adjusted to real 2014 dollars.<sup>4</sup>

Landings and total value tend to be lower during Winter II compared to the Winter I and Summer periods (note that Winter II is also the shortest quota period). Price per pound is variable, but on average has been slightly higher during the Summer period compared to Winter I and Winter II in recent years (Figure 7).<sup>4</sup>



**Figure 7:** Commercial scup landings, ex-vessel value, and price by quota period, 2007-2014.<sup>4</sup> Value and price are adjusted for inflation to show equivalent real 2014 dollars.

At least 100,000 pounds of scup were landed by commercial fishermen at each of 20 ports in seven states in 2014. These 20 ports accounted for approximately 92% of all 2014 commercial scup landings. Point Judith, Rhode Island was the leading port in 2014, both in terms of pounds of scup landed and number of vessels landing scup (Table 7).<sup>4</sup> The ports and communities that are dependent on scup are described in Amendment 13 to the FMP (available at <http://www.mafmc.org/sf-s-bsb/>). Detailed community profiles developed by the Northeast Fisheries Science Center's Social Science Branch can be found at [www.mafmc.org/communities/](http://www.mafmc.org/communities/).

**Table 7:** Ports reporting at least 100,000 pounds of scup landings in 2014, based on NMFS dealer data. C = Confidential.<sup>4</sup>

Port	Scup Landings (lb)	% of total commercial scup landings <sup>a</sup>	Number of vessels
Point Judith, RI	5,872,354	36.9%	131
Montauk, NY	2,160,084	13.6%	85
Point Pleasant, NJ	1,144,608	7.2%	32
Cape May, NJ	1,021,392	6.4%	28
New Bedford, MA	826,025	5.2%	59
Ocean City, MD	530,761	3.3%	5
Chincoteague, VA	370,087	2.3%	21
Little Compton, CT	361,070	2.3%	13
New London, CT	344,898	2.2%	8
Stonington, CT	342,791	2.2%	20
Hampton Bay, NY	313,103	2.0%	30
Mattituck, NY	259,046	1.6%	4
Hampton, VA	218,108	1.4%	28
Newport, RI	199,349	1.3%	11
Belford, NJ	175,671	1.1%	16
Newport News, VA	166,023	1.0%	14
Ammagansett, NY	C	C	C
Point Lookout, NY	122,825	0.8%	5
Bristol, RI	113,599	0.7%	4
Providence, RI	C	C	C

Over 180 federally-permitted dealers from Maine through North Carolina bought scup in 2014. More dealers bought scup in New York than in any other state (Table 8). All dealers purchased approximately \$9.54 million worth of scup in 2014.<sup>4</sup>

**Table 8:** Dealers reporting buying scup, by state in 2014. C = Confidential.<sup>4</sup>

State	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of Dealers	C	32	34	16	46	23	C	3	12	14

## 5. Recreational Fishery Regulations and Performance

In federal waters, the recreational scup fishery is managed on a coast-wide basis. Federal regulations include a minimum size of 9 inches total length, a year-round open season, and a possession limit of 50 scup (an increase from a 30-scup possession limit in 2014; Table 9). The Commission applies a regional management approach to recreational scup fisheries in state waters, where the four northern states (New York through Massachusetts) develop regulations intended to land 97 percent of the scup recreational harvest limit. The minimum size, possession limit, and open season for recreational scup fisheries in state waters vary by state (Table 10).

**Table 9:** Federal recreational measures for scup, 2005 through 2015.

Regulation	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Minimum size (inches, total length)	10	10	10	10.5	10.5	10.5	10.5	10.5	10	9	9
Possession limit	50	50	50	15	15	10	10	15	30	30	50
Open season	1/1– 2/28 and 9/18– 11/30	1/1– 2/28 and 9/18– 11/30	1/1– 2/28 and 9/18– 11/30	1/1– 2/28 and 9/18– 11/30	1/1– 2/28 and 10/1– 10/31	6/6– 9/26	6/6– 9/26	5/19– 10/14 and 11/1– 12/31	1/1– 12/31	1/1– 12/31	1/1– 12/31

**Table 10:** Scup recreational fishing measures in state waters for 2015.

State	Minimum Size (in)	Possession Limit	Open Season
Massachusetts	10	30 fish	May 1- December 31
Massachusetts (For-Hire)	10	45 fish	May 1 - June 30
		30 fish	July 1 - December 31
Rhode Island	10	30 fish	May 1- December 31
RI Shore Program (7 designated sites)	9		
Rhode Island (For-Hire)	10	30 fish	May 1- August 31 and November 1-December 31
		45 fish	September 1-October 31
Connecticut	10	30 fish	May 1- December 31
Connecticut shore program (46 designated shore sites)	9		
CT (For-Hire)	10	30 fish	May 1-August 31 and November 1-December 31
		45 fish	September 1-October 31
New York	10	30 fish	May 1- December 31
New York (For-Hire)	10	30 fish	May 1- August 31 and November 1-December 31
		45 fish	September 1- October 31
New Jersey	9	50 fish	Jan 1-Feb 28 and July 1 – December 31
Delaware	8	50 fish	All Year
Maryland	8	50 fish	All Year
Virginia	8	50 fish	All Year
North Carolina	8	50 fish	All Year

Scup are popular among recreational fishermen in the Mid-Atlantic and southern New England. Recreational data for years 2004 and later are available from the Marine Recreational Information Program (MRIP). For years prior to 2004, recreational data were generated by the Marine Recreational Fishery Statistics Survey (MRFSS). Recreational catch and landings of scup peaked in 1986, when an estimated 30.87 million scup were caught and 24.8 million scup were landed by recreational fishermen from Maine to North Carolina. Recreational scup catch was lowest in 1998 when an estimated 2.67 million fish were caught (1.21 million fish landed; Table 11).<sup>5</sup>

Vessels carrying passengers for hire in federal waters must obtain a federal party/charter permit. In 2014, 710 party and charter vessels held scup federal party/charter permits. Many of these vessels also hold recreational for-hire permits for summer flounder and black sea bass.<sup>6</sup>

**Table 11:** Estimated recreational catch and landings of scup from Maine through North Carolina from 1981 through 2014.<sup>5</sup>

Year	Recreational catch (thousands of fish)	Recreational landings (thousands of fish)	Recreational landings (thousands of pounds)
1981	10,378	9,086	5,812
1982	7,185	6,456	5,205
1983	10,156	8,837	6,252
1984	7,775	6,057	2,416
1985	13,868	10,814	6,093
1986	30,874	24,825	11,605
1987	12,377	9,916	6,197
1988	7,540	6,063	4,267
1989	11,395	9,178	5,557
1990	10,172	8,043	4,140
1991	16,855	13,283	8,087
1992	10,078	7,765	4,412
1993	7,077	5,664	3,197
1994	5,662	4,282	2,628
1995	3,767	2,419	1,344
1996	4,676	2,972	2,156
1997	3,077	1,923	1,198
1998	2,671	1,212	875
1999	4,636	3,251	1,886
2000	11,284	7,244	5,443
2001	9,925	5,099	4,262
2002	7,580	3,647	3,624
2003	14,661	9,452	8,484
2004	13,426	7,154	7,277
2005	7,041	2,591	2,692
2006	9,615	3,434	3,716
2007	10,053	4,749	4,564
2008	10,706	3,487	3,788
2009	8,704	3,134	3,230
2010	11,147	5,148	5,969
2011	6,473	3,056	3,665
2012	8,829	3,669	4,172
2013	9,545	4,716	5,113
2014	8,623	3,822	4,122

Most recreational scup catch takes place in state waters during the warm summer months when the fish migrate inshore. Between 2005 and 2014, about 97% of recreational scup harvest occurred in state waters and about 3% occurred in federal waters (Table 12). Four states, Massachusetts, New York, Connecticut, and Rhode Island, accounted for 98.8% of recreational scup harvest in 2014 (Table 13).<sup>5</sup>

**Table 12:** Estimated percentages of scup caught by recreational fishermen in state and federal waters from Maine through North Carolina, 2005 through 2014.<sup>5</sup>

Year	State waters	Federal waters
2005	98.25%	1.75%
2006	93.63%	6.37%
2007	98.28%	1.72%
2008	96.24%	3.76%
2009	98.14%	1.86%
2010	95.83%	4.17%
2011	96.39%	3.61%
2012	99.51%	0.49%
2013	95.05%	4.95%
2014	95.55%	4.45%
<b>2005-2014 average</b>	<b>96.69%</b>	<b>3.31%</b>
<b>2012-2014 average</b>	<b>96.70%</b>	<b>3.30%</b>

**Table 13:** State contribution (as a percentage) to total recreational landings of scup, Maine through North Carolina, in 2013 and 2014.<sup>5</sup>

State	2013	2014
Maine	0.0%	0.0%
New Hampshire	0.0%	0.0%
Massachusetts	39.2%	30.5%
Rhode Island	17.3%	25.5%
Connecticut	19.5%	14.8%
New York	20.7%	28.0%
New Jersey	3.1%	1.2%
Delaware	0.0%	0.0%
Maryland	0.0%	0.0%
Virginia	0.0%	0.0%
North Carolina	0.0%	0.0%
<b>Total</b>	<b>100%</b>	<b>100%</b>



About 69% of recreational scup landings in 2014 came from anglers who fished on private or rental boats. About 18% of recreational scup landings came from anglers fishing on party or charter boats, and about 13% came from anglers fishing from shore (Table 14).<sup>5</sup>

**Table 14:** The number of scup landed by recreational fishing mode, from Maine through North Carolina, 1981 through 2014.<sup>5</sup>

Year	Shore (thousands of fish)	Party/charter (thousands of fish)	Private/rental (thousands of fish)	Total (thousands of fish)
1981	772	1,055	7,257	9,084
1982	833	1,394	4,227	6,454
1983	2,227	2,997	3,613	8,837
1984	1,300	228	4,530	6,057
1985	1,122	326	9,363	10,810
1986	1,899	3,228	19,696	24,823
1987	522	584	8,810	9,916
1988	698	1,138	4,226	6,062
1989	883	1,033	7,261	9,176
1990	435	1,303	6,305	8,043
1991	1,625	2,250	9,404	13,279
1992	1,004	1,017	5,743	7,764
1993	285	1,762	3,616	5,663
1994	230	918	3,122	4,270
1995	222	837	1,359	2,419
1996	121	452	2,400	2,972
1997	141	453	1,322	1,916
1998	117	165	929	1,211
1999	198	822	2,231	3,251
2000	551	1,140	5,553	7,244
2001	766	769	3,564	5,099
2002	505	1,309	1,833	3,647
2003	859	1,330	7,264	9,452
2004	777	1,509	4,868	7,154
2005	395	166	2,029	2,589
2006	321	606	2,507	3,434
2007	353	516	3,879	4,748
2008	386	869	2,233	3,487
2009	210	1,122	1,802	3,134
2010	383	1,280	3,485	5,148
2011	302	471	2,284	3,056
2012	266	1,147	2,255	3,668
2013	915	1,394	2,408	4,716
2014	480	683	2,657	3,820

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