Scup Advisory Panel Information Document[1]

August 2013

Management System

The Fishery Management Plan (FMP) for scup has been in place since 1996 when it was incorporated into the Summer Flounder FMP. The FMP established the management unit for scup (*Stenotomus chrysops*) as the U.S. waters in the western Atlantic Ocean from Cape Hatteras, North Carolina northward to the U.S.-Canadian border, and established measures to ensure effective management of the scup resource. There are two management entities that work cooperatively to develop fishery regulations for scup: the Atlantic States Marine Fisheries Commission (ASMFC) and the Mid-Atlantic Fishery Management Council (MAFMC), in conjunction with the National Marine Fisheries Service (NMFS) as the federal implementation and enforcement entity. The cooperative management endeavor was developed because a significant portion of the catch is taken from both state (0-3 miles offshore) and federal waters (3-200 miles offshore). The commercial and recreational fisheries are managed using catch and landings limits, commercial quotas, recreational harvest limits, minimum fish sizes, gear regulations, permit requirements, and other provisions as prescribed by the FMP. The scup stock was previously under a stock rebuilding strategy and was declared rebuilt in 2009. The FMP, including subsequent Amendments and Frameworks, is available on the Council website at: http://www.mafmc.org/sf-s-bsb/.

Basic Biology

Information on scup life history and habitat requirements can be found in the document titled, "Essential Fish Habitat Source Document: Scup, *Stenotomus chrysops*, Life History and Habitat Characteristics" (Steimle et al. 1999), and is summarized here. An electronic version is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

Scup is a schooling continental shelf species of the Northwest Atlantic which undertakes extensive migrations between coastal waters and offshore waters. Spawning occurs from May through August, peaking in June. Scup spawn once annually over weedy or sand-covered areas. Juvenile and adult scup are demersal, using inshore waters in the spring and moving offshore in the winter. Essential Fish Habitat (EFH) for scup includes demersal waters, sands, mud, mussel beds, and seagrass beds, from the Gulf of Maine through Cape Hatteras, North Carolina. About 50% of age-2 scup are sexually mature (at about 17 cm total length, or 7 inches), while nearly all scup of age 3 and older are mature (DPSWG 2009). Scup reach a maximum age of at least 14

[1] Data employed in the preparation of this document are from unpublished National Marine Fisheries Service (NMFS) Dealer, Vessel Trip Reports (VTRs), Permit, and Marine Recreational Statistics (MRFSS/MRIP) databases, as of August 2013, unless otherwise noted.

years, with a likely maximum of 20 years (DPSWG 2009). Adult scup are benthic feeders and forage on 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 shark species, skates, silver hake, bluefish, summer flounder, black sea bass, weakfish, lizardfish, king mackerel, and goosefish as predators of scup.

Status of the Stock

A statistical catch at age model (age-structured assessment program; ASAP) model was used in the most recent peer-reviewed and accepted scup assessment (DPSWG 2009; Data Poor Stock Working Group (DPSWG) Peer Review Panel). Reports on "Stock Status," including annual assessment and reference point update reports, Stock Assessment Workshop (SAW) reports, Stock Assessment Review Committee (SARC) panelist reports, and DPSWG reports and peer-review panelist reports are available online at the NEFSC website: http://www.nefsc.noaa.gov/saw.

Based on the July 2012 assessment update (Terceiro 2012), the scup stock was not overfished and overfishing was not occurring in 2011 relative to the biological reference points. The fishing mortality rate (F) was estimated to be 0.034 in 2011, below the fishing mortality threshold reference point (F_{MSY} = F40% = 0.177) (Figure 1). Spawning Stock Biomass (SSB) was estimated to be 190,424 metric tons (420 million lb) in 2011, above the biomass target reference point (SSB_{MSY} = $SSB_{40\%}$ = 92,044 mt, or 203 million lb). After below average recruitment in 2009 and 2010, the 2011 year class was estimated to be above average at 154 million age 0 fish (Figure 2).

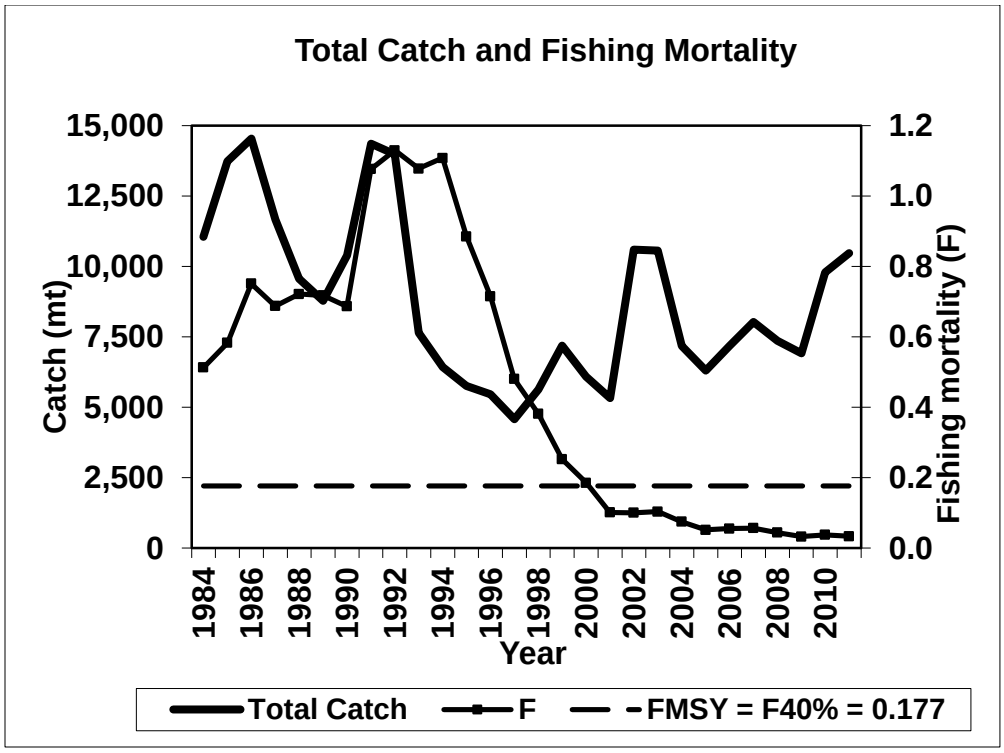

Figure 1: Total fishery catch and fishing mortality rate for scup. $F_{40\%}$ is the proxy for F_{MSY}. Source: Terceiro 2012.

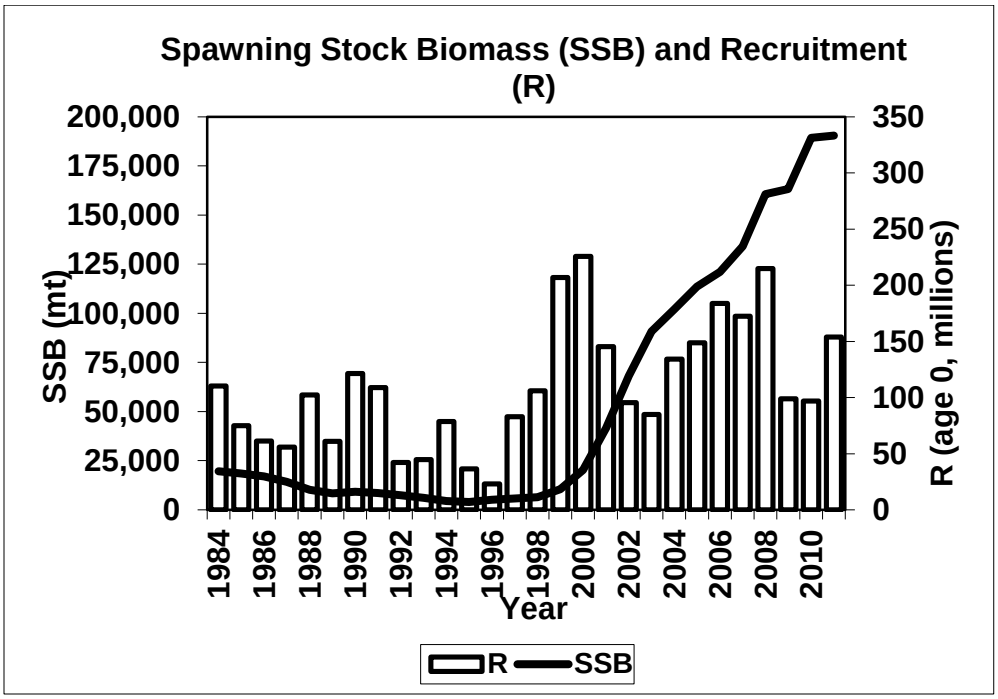

Figure 2: Spawning stock biomass (SSB) and Recruitment (R, age 0) by calendar year. Source: Terceiro 2012.

Fishery Performance

There are significant commercial and recreational fisheries for scup. Scup is managed primarily using output controls (catch and landings limits), with 78 percent of the landings being allocated to the commercial fishery as a commercial quota and 22 percent of landings allocated to the recreational fishery as a recreational harvest limit. The commercial quota is divided into three periods: Winter I (January-April; 45.11 percent), Summer (May-October; 38.95 percent), and Winter II (November-December; 15.94 percent).

Commercial Fishery

In Federal waters, commercial fishermen holding a moratorium permit may fish for scup. Permit data indicate that 725 vessels held commercial permits for scup in 2012. Total (commercial and recreational) landings peaked in 1981 at over 27 million lb, and in 2012 were about 19.9 million lb total (Figure 3).

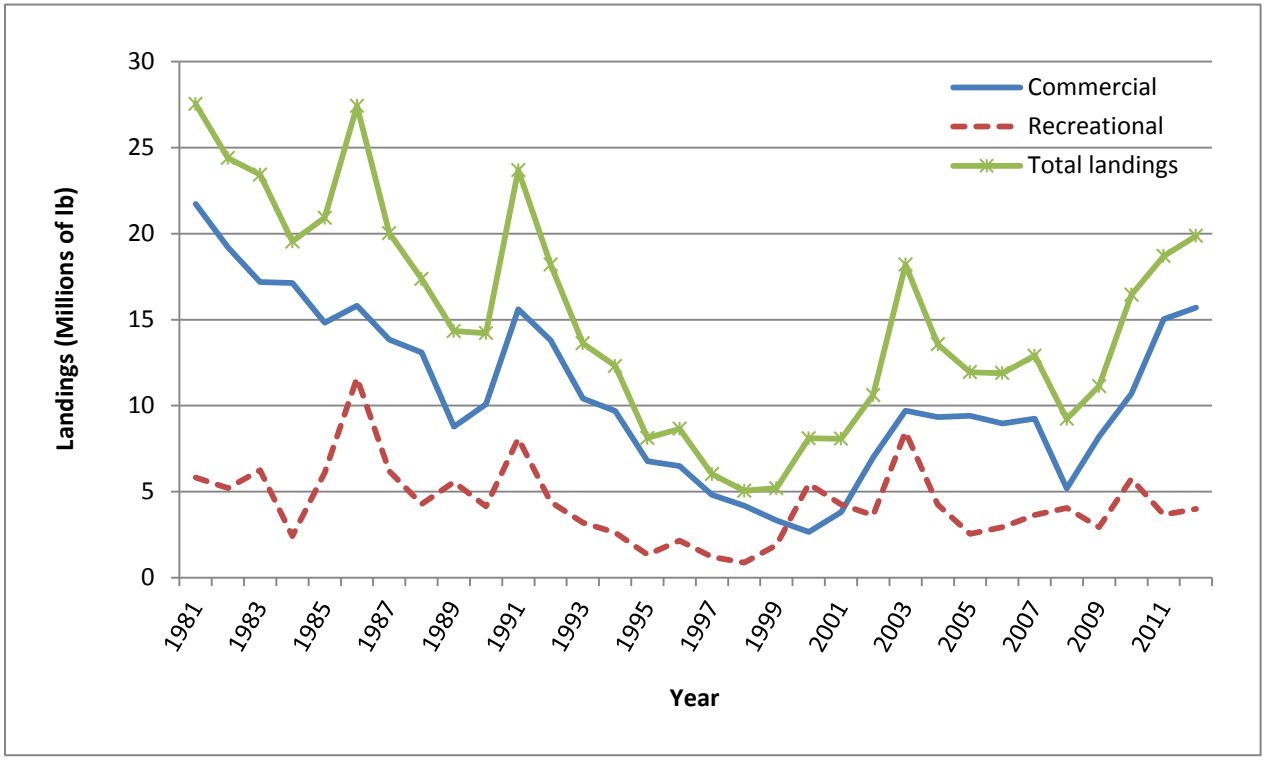

Figure 3: Commercial and Recreational U.S. Scup Landings (millions of pounds) from Maine to North Carolina, 1981-2012.

Table 1 summarizes the scup management measures for the 2004-2015 fishing years. Acceptable biological catch (ABC) levels have been identified for this stock since 2010, and recreational and commercial annual catch limits (ACLs), with a system of overage accountability for each ACL, were first implemented in 2012. It should be noted that catch limits include both projected landings and discards, whereas the commercial quotas and recreational harvest limits are landings based (i.e., harvest).

Table 1: Summary of scup management measures and landings for 2004 through 2015.

Management measures	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014[c]**	**2015[c]**
ABC (m lb)	NA	NA	NA	NA	NA	11.70	17.09	51.70	40.88	38.71	35.99	33.78
TAC (m lb)	18.65	18.65	19.79	13.97	9.90	15.54[b]	17.09	31.92	40.88	38.71	35.99	33.78
Commercial ACL	NA	NA	NA	NA	NA	NA	NA	NA	31.89	30.19	28.07	26.34
Com. quota–adjusted (m lb)[a]	12.34	12.23	11.93	8.90	5.24	8.37	10.68	20.36	27.91	23.53	21.95	20.60
Commercial landings	9.33	9.41	8.96	9.25	5.18	8.20	10.71	15.03	15.70	NA	NA	NA
Recreational ACL	NA	NA	NA	NA	NA	NA	NA	NA	8.99	8.52	7.92	7.43
Rec. harvest limit-adjusted (m lb)[a]	4.01	3.96	4.15	2.74	1.83	2.59	3.01	5.74	8.45	7.55	7.03	6.60
Recreational landings	4.24	2.54	2.93	3.65	4.04	2.94	5.74	3.66	4.17	NA	NA	NA
Com. fish size (in)	9	9	9	9	9	9	9	9	9	9	9	9
Com. min. mesh size (in, diamond)	4.5/5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Threshold (lb)	500/100	500/200	500/ 200	500/ 200	500/ 200	500/ 200	500/ 200	500/200	500/200	500/200	500/200	500/200
Recreational measures (minimum fish size (total length), possession limit, and open season)	10-in TL, 50 fish, 1/1-2/28 and 9/7 - 11/30	10-in TL, 50 fish, 1/1-2/28 and 9/18 - 1/30	10-in TL, 50 fish, 1/1-2/28 and 9/18-11/30	10-in TL, 50 fish, 1/1-2/28 and 9/18-11/30	10.5-in TL, 15 fish, 1/1-2/28 and 10/1-10/31	10.5-in TL, 15 fish, 1/1-2/28 and 10/1-10/31	10.5-in TL, 10 fish, 6/6 - 9/26	10.5-in TL, 10 fish, 6/6 - 9/26	10.5-in TL, 15 fish, 5/19-10/14 and 11/1-12/31	10-in TL, 30 fish, 1/1-12/31	NA	NA

[a]Adjusted for RSA and projected discards. [b]In 2009, the SSC recommend an ABC of 11.70 million lb. Based on the Data Poor Stocks Workgroup Panel Report, which was not available to the SSC at the time the recommendation was made, NMFS increased the TAC to 15.54 million lb. NA=Not applicable or not yet available. [c]These reflect the regulations currently set for scup in 2014 and 2015, however, the Council and ASFMC will review these catch limits and management measures in October 2013 and may revise as necessary.

NMFS statistical areas are shown in Figure 4. Vessel trip report (VTR) data suggest that statistical area 537 was responsible for the largest percentage of the catch in 2012, with statistical area 539 having the majority of trips that caught scup (Table 2).

Table 2: Statistical areas that accounted for at least 5 percent of the scup catch in 2012, as well as associated trips. Source: NMFS VTR data.

Statistical Area	Scup Catch (percent)	Scup Trips (N)
537	26.79	809
613	18.73	938
611	14.95	1555
539	13.02	1658
616	9.02	273

Based on VTR data for 2012, the bulk of scup landings were taken by bottom otter trawls (96 percent), followed by pots and traps (~1 percent), and hand lines (~1 percent). Other gear types each accounted for less than 1 percent of landings. Current commercial regulations for scup require a 9 inch-TL minimum fish size in the commercial fishery, and the following gear requirements for otter trawls: minimum mesh size of 5 inch for the first 75 meshes from the terminus of the net, and for codends constructed with fewer than 75 meshes, a minimum mesh size of 5 inch throughout the net. The threshold level used to trigger the minimum mesh requirements is 500 lbs of scup from November 1 through April 30 and 200 lb or more of scup from May 1 through October 31 (Table 1). In addition, the current regulations require a circular escape vent of 3.1 inch, a square escape vent of 2.25 inch, or a rectangular escape vent of an equivalent size.

Gear restricted areas (GRAs) were implemented by NMFS in 2000 to reduce discards of scup in small mesh fisheries, and became effective on November 1, 2000 for the northern area with an exemption for the herring fishery. The GRAs were modified in size in December 2000 to include areas farther south that were identified as areas of potential scup and *Loligo* interactions. Mackerel and herring small mesh fisheries were exempt from the regulations. In 2005, based on recommendations from the Monitoring Committee, the boundary of the southern GRA was moved 3 longitudinal minutes to the west.

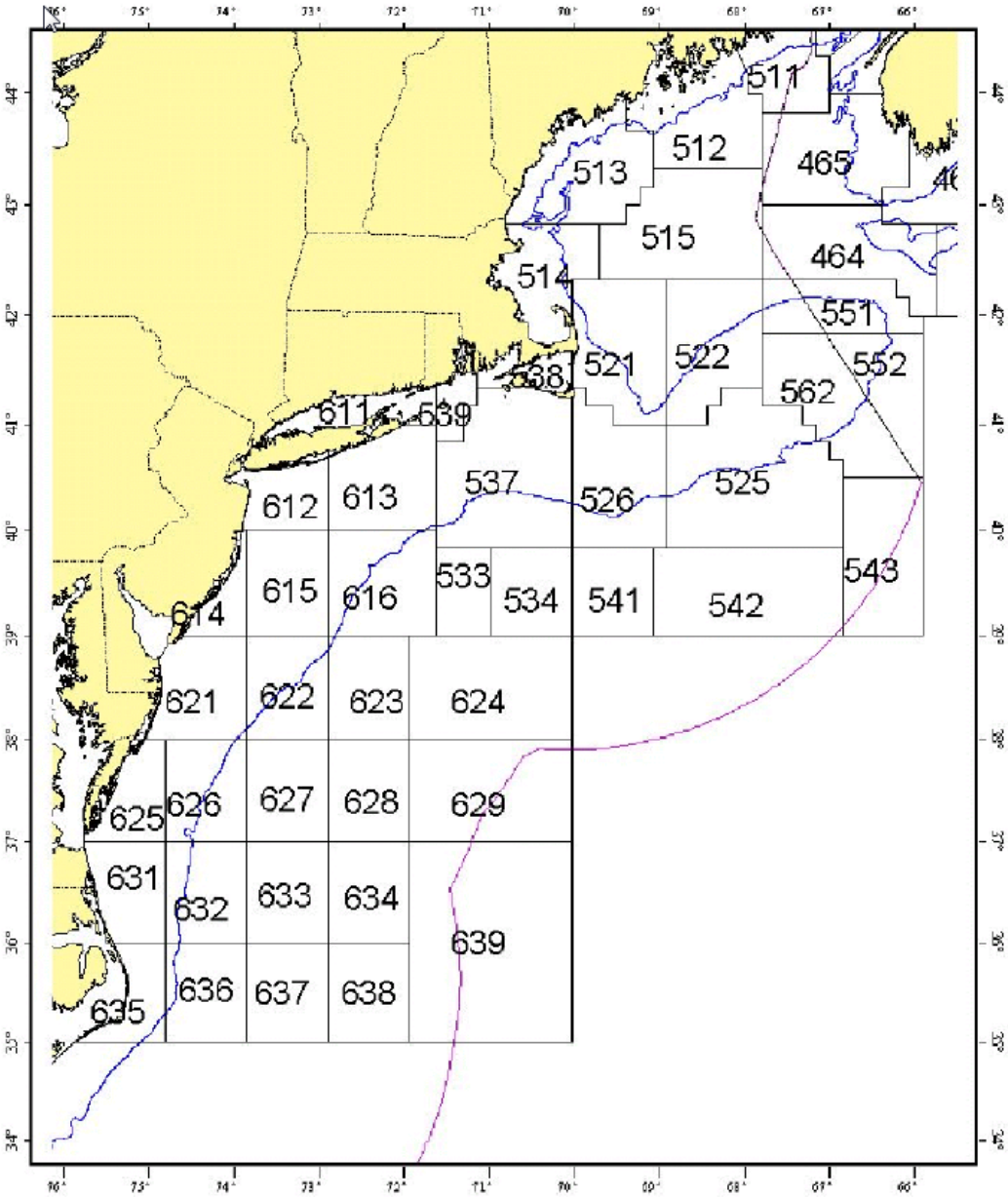

Figure 4: National Marine Fisheries Service Statistical Areas.

The Winter I possession limit for 2013 is 50,000 lb, until 80 percent of the landings are reached, at which point the possession limit drops to 1,000 lb. A possession limit of 2,000 lb is used in Winter II, unless a transfer of quota occurs between Winter I and Winter II. In that case, the Winter II possession limit should increase at 1,500 lb intervals for every 500,000 lb of scup transferred, i.e., if 1.0 million lb is transferred then the limit would be increased by 3,000 lb to result in a 5,000 lb possession limit. The possession limits were chosen as an appropriate balance between the economic concerns of the industry (i.e., landing enough scup to make the trip economically viable) and the need to ensure the equitable distribution of the quota over the period.

The 50,000 lb possession limit for Winter I was first put in place in 2012, representing an increase from the 2011 Winter I possession limit of 30,000 lb. A threshold analysis was conducted to examine how the change in possession limit may change the landings patterns for the winter periods (Table 3). These data indicate that the overall number of trips taken in Winter I increased from 2011 to 2012, but decreased from 2012 to 2013. However, from 2012 to 2013, there was an overall increase in the percentage of trips landing more than 5,000 lb of scup.

Table 3: The total number of vessels, trips, and associated pounds for a given threshold (pounds) of scup for 2011-2013. Note: 2013 data are preliminary. C = Confidential.

Time Period	Threshold	Vessels	%	Trips	%	Pounds	%
	>=1	207	100%	3,342	100%	5,807,280	100%
2011	>=500	128	62%	1,573	47%	5,590,146	96%
Winter	>=5000	82	40%	337	10%	3,198,149	55%
I	>=10000	54	26%	115	3%	1,665,417	29%
(Jan-Apr)	>=15000	30	14%	38	1%	750,052	13%
	>=20000	14	7%	17	1%	391,898	7%
	>=25000	4	2%	4	0%	106,350	2%
	>=30000	0	0%	0	0%	0	0%
Time Period	**Threshold**	**Vessels**	**%**	**Trips**	**%**	**Pounds**	**%**
	>=1	215	100%	5,170	100%	5,922,130	100%
2012	>=500	111	52%	2,028	39%	5,556,630	94%
Winter	>=5000	58	27%	256	5%	2,558,588	43%
I	>=10000	35	16%	77	1%	1,342,352	23%
(Jan-Apr)	>=15000	19	9%	41	1%	915,408	15%
	>=20000	11	5%	19	0%	536,305	9%
	>=25000	8	4%	10	0%	331,895	6%
	>=30000	4	2%	5	0%	195,540	3%
	>=50000	0	0%	0	0%	0	0%
Time Period	**Threshold**	**Vessels**	**%**	**Trips**	**%**	**Pounds**	**%**
	>=1	213	100%	3,738	100%	7,427,555	100%
2013	>=500	135	63%	1,924	51%	7,212,590	97%
Winter	>=5000	77	36%	424	11%	4,402,159	59%
I	>=10000	46	22%	151	4%	2,501,705	34%
(Jan-Apr)	>=15000	26	12%	63	2%	1,437,985	19%
	>=20000	19	9%	36	1%	969,098	13%
	>=25000	12	6%	17	0%	548,563	7%
	>=30000	8	4%	11	0%	387,270	5%
	>=50000	0	0%	0	0%	0	0%

Table 3, Continued:

Period	Threshold	Vessels	%	Trips	%	Pounds	%
	>=1	181	100%	3,259	100%	2,638,811	100%
2011	>=500	91	50%	1,183	36%	2,416,371	92%
Winter	>=5000	39	21%	91	3%	614,747	23%
II	>=10000	c	c	c	c	c	c
(Nov-Dec)	>=15000	c	c	c	c	c	c
	>=20000	0	0%	0	0%	0	0%
	>=25000	0	0%	0	0%	0	0%
	>=30000	0	0%	0	0%	0	0%
Period	**Threshold**	**Vessels**	**%**	**Trips**	**%**	**Pounds**	**%**
	>=1	176	100%	3,000	100%	2,810,628	100%
2012	>=500	117	66%	1,239	41%	2,572,357	92%
Winter	>=5000	36	20%	63	2%	467,486	17%
II	>=10000	c	c	c	c	c	c
(Nov-Dec)	>=15000	c	c	c	c	c	c
	>=20000	0	0%	0	0%	0	0%
	>=25000	0	0%	0	0%	0	0%
	>=30000	0	0%	0	0%	0	0%

Scup ex-vessel revenues based on dealer data have ranged from $3.3 to $11.00 million for the 1994 through 2012 period. The mean price for scup (unadjusted) has ranged from a low of $0.55/lb in 2011 to a high of $1.46/lb in 1998 (Figure 5), with a strong price-volume relationship exhibited in the time series. In 2012, 15.70 million pounds of scup were landed generating $11.00 million in revenues.

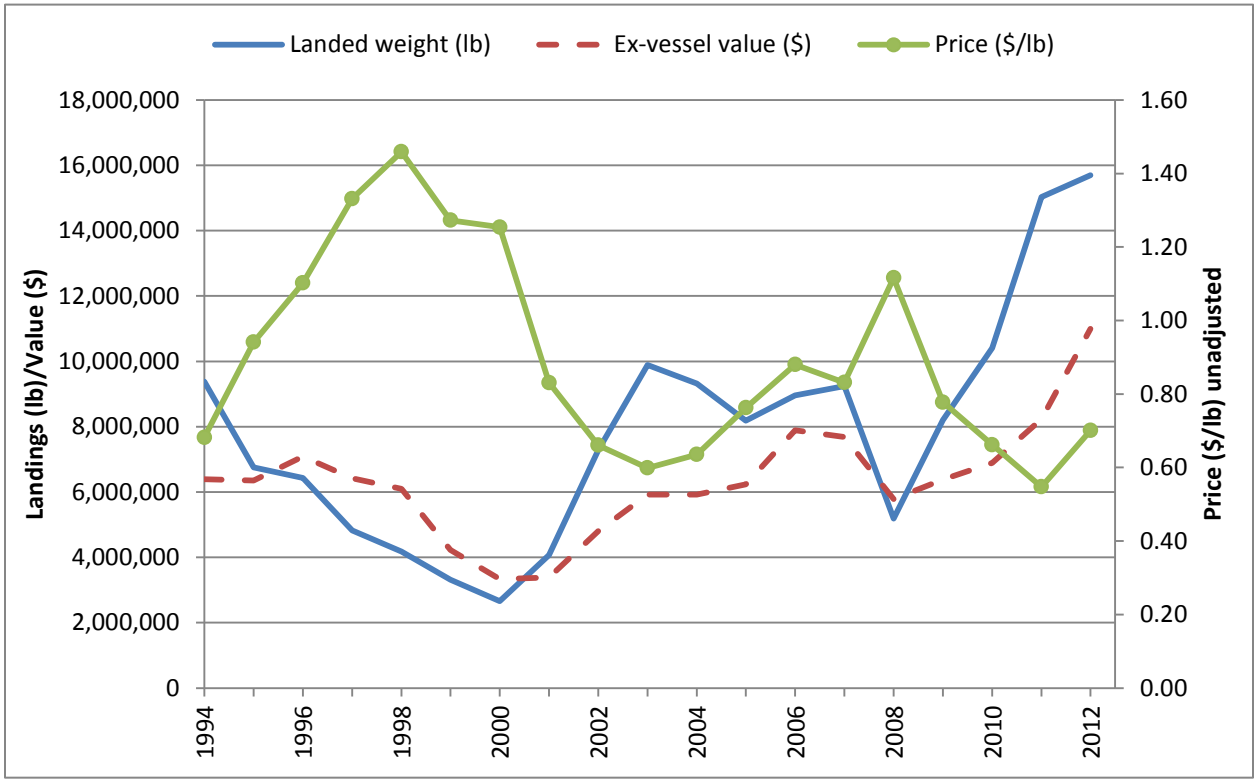

Figure 5: Landings, ex-vessel value, and price (unadjusted) for scup, Maine through North Carolina, 1994-2012.

When examining the landings and prices by period for 2006-2012, summer period prices are generally higher than winter period prices (Table 4). As landings have increased, price has generally decreased.

The ports and communities that are dependent on scup are fully described in Amendment 13 to the FMP. Additional information on "Community Profiles for the Northeast US Fisheries" can be found at: http://www.nefsc.noaa.gov/read/socialsci/community_profiles/.

Table 4: Commercial scup landings, ex-vessel value, and nominal price, by period, 2006-2012.

				Nominal
		Landings	Nominal	Price
Year	Period	(lbs)	Value ($)	Mean ($/lb)
2006	Winter I	3,219,929	2,865,174	0.89
	Summer	3,626,215	3,772,330	1.04
	Winter II	2,115,323	1,250,146	0.59
	Total	8,961,467	7,887,650	0.88
2007	Winter I	4,254,987	3,096,496	0.73
	Summer	3,400,934	3,427,949	1.01
	Winter II	1,590,747	1,164,801	0.73
	Total	9,246,668	7,689,246	0.83
2008	Winter I	1,933,253	2,259,335	1.17
	Summer	2,359,240	2,792,505	1.18
	Winter II	894,139	736,977	0.82
	Total	5,186,632	5,788,817	1.12
2009	Winter I	3,072,652	2,561,821	0.83
	Summer	3,774,583	2,932,300	0.78
	Winter II	1,356,962	887,852	0.65
	Total	8,204,197	6,381,973	0.78
2010	Winter I	4,175,268	2,485,122	0.60
	Summer	4,748,711	3,239,256	0.68
	Winter II	1,482,874	1,166,938	0.79
	Total	10,406,853	6,891,316	0.66
2011	Winter I	5,807,280	2,775,813	0.48
	Summer	6,586,069	3,911,748	0.59
	Winter II	2,638,811	1,543,157	0.58
	Total	15,032,160	8,230,718	0.55
2012	Winter I	5,411,976	4,019,283	0.74
	Summer	6,747,578	4,704,339	0.70
	Winter II	2,557,370	1,220,120	0.48
	Total	15,702,015	11,000,353	0.70

2012 NMFS dealer data were used to examine recent landings patterns among ports. The top commercial landings ports for scup by pounds landed are shown in Table 5. A "top port" is defined as any port that landed at least 100,000 lb of scup. Related data for the recreational fisheries are shown in subsequent sections. However, due to the nature of the recreational database, it is inappropriate to desegregate to less than state levels.

Table 5: Top ports of landing (in lb) for scup (SCP), based on NMFS 2012 dealer data. Since this table includes only the "top ports," it may not include all of the landings for the year. Note: C = Confidential

Port	Landings of Scup (lb)	# of Scup Vessels
PT. JUDITH, RI	5,398,830	118
MONTAUK, NY	2,852,359	94
NEW BEDFORD, MA	1,227,978	57
NEW LONDON, CT	818,946	11
PT. PLEASANT, NJ	614,788	25
STONINGTON, CT	536,666	21
HAMPTON BAY, NY	493,447	31
MATTITUCK, NY	389,878	4
NEWPORT, RI	244,623	18
LITTLE COMPTON, RI	219,032	18
BELFORD, NJ	191,840	18
FALL RIVER, MA	C	C
HAMPTON, VA	181,654	22
PT. LOOKOUT, NY	171,958	8
TIVERTON, RI	168,726	4
CAPE MAY, NJ	146,545	25
AMAGANSETT, NY	142,148	3
EAST LYME, CT	138,092	3
MATTAPOISET, MA	123,226	3
OTHER CONNECTICUT	C	C
NEWPORT NEWS, VA	100,542	18

Among the states from Maine through North Carolina, New York had the highest number of Federally permitted dealers (46) who bought scup in 2012 (Table 6). All dealers bought approximately $11.00 million of scup in 2012.

Table 6: Dealers reporting buying scup, by state in 2012. Note: C = Confidential.

Number of Dealers	MA	RI	CT	NY	NJ	DE	MD	VA	NC
	37	40	10	46	15	C	C	8	7

Recreational Fishery

There is a significant recreational fishery for scup in state waters, which occurs seasonally when the fish migrate inshore during the warm summer months. In Federal waters, the recreational scup fishery is managed on a coastwide basis. However, the ASMFC applies a regional management approach, where the four northern states (New York through Massachusetts) developed regulations intended to land 97 percent of the allocation. The 2013 recreational fishing measures in Federal waters are given in Table 1, and the 2012 state-specific measures are given in Table 7.

Recreational data have been available through the Marine Recreational Information Program (MRIP) since 2004, and prior to 2004 were available through the Marine Recreational Fishery Statistics Survey (MRFSS). Recreational catch and landings of scup peaked in 1986 with landings in numbers and weight at the lowest levels in 1998 (Table 8). When anglers are intercepted through the surveys conducted for the recreational statistics programs, they are asked about where the majority of their fish were caught (i.e., inland, state waters (<=3 miles), exclusive economic zone (EEZ; > 3 miles)). While these data are somewhat imprecise, they do provide a general indication of where the majority of scup are landed recreationally (Table 9).

Table 7: Scup recreational fishing measures in state waters for 2013, by state.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts For Hire	10	45 fish from May 1- June 30; 30 fish from July 1- Dec 31	July 1- December 31
Private Angler	10	30 fish; private vessels with 6 or more persons aboard are prohibited from possessing more than 150 scup per day	May 1- December 31
Rhode Island For Hire	10	30 fish from May 1-Aug 31 and Nov 1-Dec 31; 45 fish from Sept 1-Oct 31	May 1- December 31
Private Angler	10"; and 9" or greater for shore mode at 3 designated sites	30 fish	May 1- December 31
Connecticut For Hire	11	20 fish from May 1-Aug 31 and Nov 1-Dec 31; 45 fish from Sept 1-Oct 31	May 1- December 31
Private Angler	10.5; and 9" for shore mode at 46 designated sites	20 fish	May 1- December 31
New York For Hire	10	30 fish from May 1-Aug 31 and Nov 1-Dec 31; 45 fish from Sept 1-Oct 31	May 1- December 31
Private Angler	10	30 fish	May 1- December 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

Table 8: Recreational scup landings data from the NMFS recreational statistics databases, 1981-2012.

Year	Catch ('000 of fish)	Landings ('000 of fish)	Landings ('000 lb)
1981	10,376	9,084	5,812
1982	7,181	6,454	5,205
1983	10,155	8,837	6,252
1984	7,775	6,057	2,416
1985	13,861	10,810	6,093
1986	30,872	24,823	11,605
1987	12,377	9,916	6,197
1988	7,539	6,062	4,267
1989	11,394	9,176	5,557
1990	10,172	8,043	4,140
1991	16,852	13,279	8,087
1992	10,077	7,764	4,412
1993	7,076	5,663	3,197
1994	5,650	4,270	2,628
1995	3,767	2,419	1,344
1996	4,676	2,972	2,156
1997	3,070	1,916	1,198
1998	2,670	1,211	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	7,227
2005	7,038	2,589	2,678
2006	9,615	3,434	3,696
2007	10,051	4,748	4,593
2008	10,706	3,487	3,763
2009	8,704	3,134	3,221
2010	11,147	5,148	5,980
2011	6,473	3,056	3,663
2012	8,829	3,668	4,166

Table 9: Percentage of scup recreational landings (MRIP Type A+B1 in number of fish) by year and area, Maine through North Carolina, 2003-2012. Area information is self-reported based on the area where the majority of fishing activity occurred per angler trip.

Year	State <= 3 mi	EEZ > 3 mi
2003	95.2	4.8
2004	94.8	5.2
2005	98.2	1.8
2006	93.6	6.4
2007	98.3	1.7
2008	96.2	3.8
2009	98.1	1.9
2010	95.8	4.2
2011	96.4	3.6
2012	99.5	0.5
Avg. 2003-2012	96.6	3.4
Avg. 2010- 2012	97.2	2.8

Table 10: State contribution (as a percentage) to total recreational landings of scup (MRIP Type A+B1 in number of fish) from Maine through North Carolina, 2011 and 2012.

State	2011	2012
Maine	0.0	0.0
New Hampshire	0.0	0.0
Massachusetts	25.7	43.3
Rhode Island	18.6	13.6
Connecticut	30.5	23.7
New York	23.4	16.1
New Jersey	1.5	3.3
Delaware	0.0	0.0
Maryland	0.0	0.0
Virginia	0.3	0.0
North Carolina	0.0	0.0
Total	**100%**	**100%**

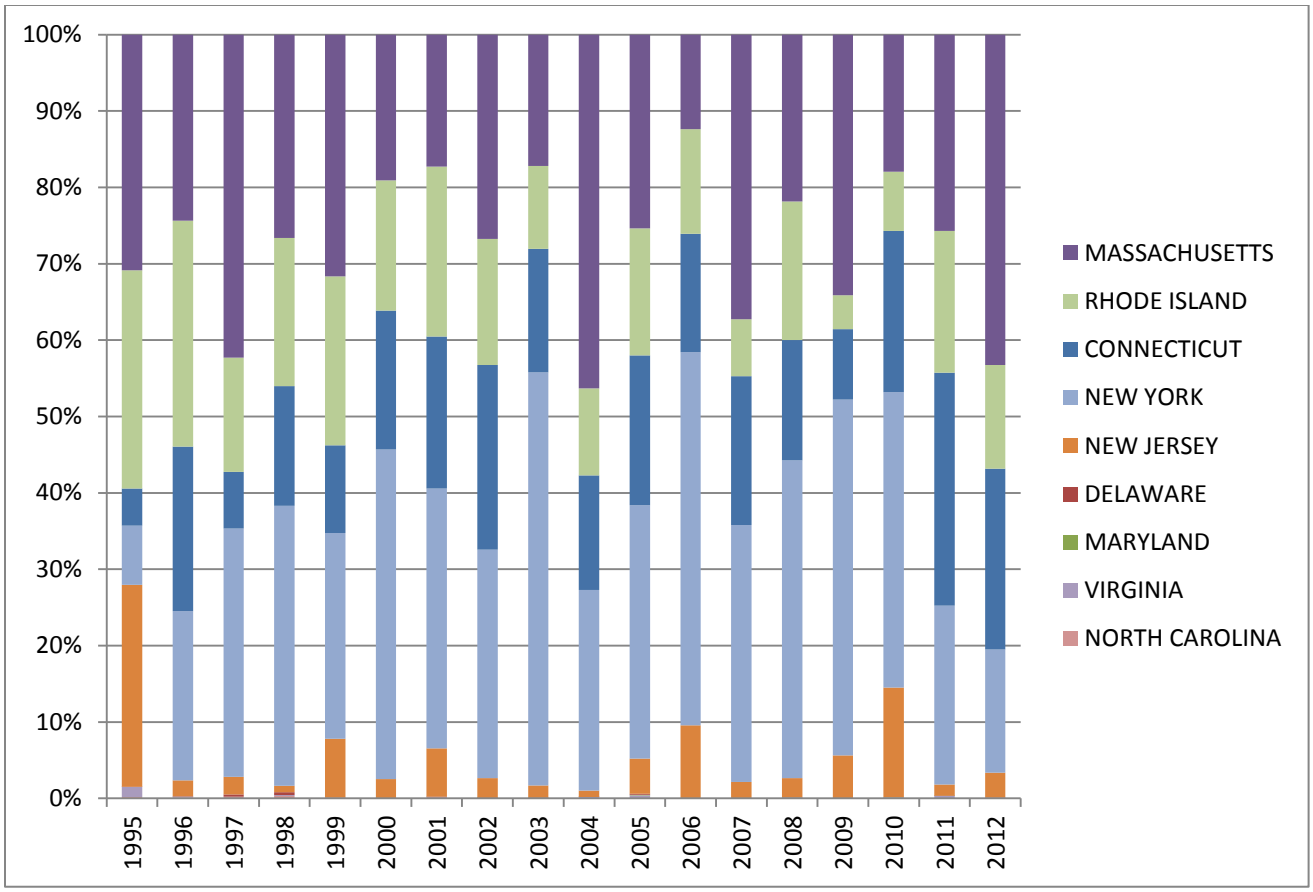

Figure 6: State contribution (as a percentage) of total recreational landings of scup (MRIP Type A + B1 in number of fish), from Massachusetts through North Carolina, 1995-2012.

The states of New York, Connecticut, and Massachusetts land the majority of fish (Table 10; Figure 6). The more southern states of Delaware through North Carolina land very few scup. Since the mid-1990s, the state contributions of landings (in numbers of fish) have fluctuated from year to year but few consistent trends are evident (Figure 6).

In 2012, there were 750 recreational vessels (i.e., party and charter vessels) that held scup Federal recreational permits. Many of these vessels also hold recreational permits for summer flounder and black sea bass. Landings by mode indicate that private/rental fishermen are responsible for the majority of scup landings (Table 11).

Table 11: The number of scup landed from Maine through North Carolina by mode, 1981-2012.

Year	Shore	Party/Charter	Private/Rental
1981	772,162	1,054,555	7,256,991
1982	833,427	1,393,723	4,226,957
1983	2,227,113	2,996,660	3,612,789
1984	1,299,566	227,735	4,530,009
1985	1,121,593	325,846	9,362,607
1986	1,898,860	3,228,151	19,696,033
1987	522,310	583,977	8,809,697
1988	698,339	1,137,625	4,226,347
1989	882,602	1,033,319	7,260,510
1990	434,743	1,302,791	6,305,463
1991	1,625,127	2,250,041	9,403,917
1992	1,003,648	1,017,369	5,743,163
1993	284,525	1,762,459	3,616,035
1994	229,924	918,217	3,122,100
1995	222,397	837,390	1,359,239
1996	120,597	451,615	2,399,995
1997	141,367	453,067	1,322,002
1998	117,056	164,931	929,147
1999	197,876	821,995	2,230,778
2000	550,951	1,140,132	5,552,865
2001	766,084	768,894	3,563,840
2002	505,079	1,309,169	1,832,593
2003	858,699	1,329,585	7,264,027
2004	776,634	1,508,921	4,867,979
2005	394,888	165,760	2,028,784
2006	321,081	605,951	2,507,108
2007	352,618	516,174	3,879,035
2008	385,583	868,771	2,232,589
2009	209,882	1,122,189	1,801,987
2010	383,464	1,280,211	3,484,602
2011	302,056	470,572	2,283,583
2012	266,228	1,146,896	2,255,366
% of Total, 1981-2012	10%	17%	73%
% of Total, 2008-2012	8%	26%	65%

The NMFS angler expenditure survey summarizes a variety of costs associated with recreational fishing in the Northeast (Table 12). In addition, Steinback et al., 2009 summarized the reasons for fishing, with a majority of anglers (about 85 percent) fishing either mostly or fully for recreational purposes (Table 13).

Table 12: Average daily trip expenditures ($ unadjusted) by recreational fishermen in the Northeast region by mode, in 2006. Source: Genter and Steinback (2008)

Expenditures	$		
	Party/Charter	Private/Rental	Shore
Private transportation	13.88	11.03	12.94
Public transportation	0.26	0.07	0.40
Auto rental	0.27	0.02	0.10
Food from grocery stores	7.40	4.92	7.33
Food from restaurants	8.70	3.42	9.28
Lodging	10.0	2.64	14.90
Boat fuel	0	9.54	0
Boat or equipment rental	0.05	0.19	0.03
Charter fees	57.76	0	0
Charter crew tips	3.0	0	0
Catch processing	0.02	0	0
Access and parking	0.44	1.11	1.32
Bait	0.31	3.42	3.25
Ice	0.39	0.59	0.39
Tackle used on trip	1.87	2.04	3.98
Tournament fees	1.10	0.04	0.02
Gifts and souvenirs	1.67	0.10	1.45
Total	107.13	39.14	55.39

Table 13: Purpose of Marine Recreational Fishing in the Northeast. Source: Steinback et al., 2009.

	Percent	Number of anglers in 2005 (thousands)
Purpose of recreational fishing trips		
All for food or income	2.1	92.4
Mostly for food or income	<1.0	34.3
Both for recreation and for food or income	11.7	514.8
Mostly for recreation	13.2	580.8
All for recreation	72.2	3,176.8

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