



Scup Fishery Information Document

August 2019

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for scup (*Stenotomus chrysops*) with an emphasis on 2018. Data Sources for Fishery Information Documents are generally from unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), permit, and Marine Recreational Information Program (MRIP) databases and should be considered preliminary. For more resources on scup management, including previous Fishery Information Documents, please visit <http://www.mafmc.org/sf-s-bsb/>.

Key Facts:

- An assessment update using data through 2016 indicated that the scup stock was not overfished, and overfishing was not occurring in 2016. An updated stock assessment was peer reviewed in August 2019; however, final results from that peer review are not currently available.
- Commercial landings decreased by about 2 million pounds and recreational landings decreased by about 0.6 million pounds from 2017 to 2018.
- Commercial discards decreased by 30% from 2017 to 2018 but remain above average.
- Price per pound increased by \$0.12 and total ex-vessel value increased by \$0.4 million in 2018.
- Private vessels and anglers fishing from shore caught the majority of the 12.98 million pounds of scup harvested recreationally in 2018.

Basic Biology

Scup are a schooling, demersal (i.e., bottom-dwelling) species. They are found in a variety of habitats in the Mid-Atlantic. Scup essential fish habitat 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. They are found in estuaries and coastal waters during the spring and summer. In the fall and winter, they move offshore and to the south, to outer continental shelf waters south off New Jersey. Scup spawn once annually over weedy or sandy areas, mostly off southern New England. Spawning takes place from May through August and usually peaks in June and July.¹

About 50% of scup are sexually mature at two years of age and about 17 cm (about 7 inches) 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 7 years are caught in the Mid-Atlantic.^{2,3}

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's (NEFSC's) 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 monkfish.¹

Status of the Stock

A benchmark stock assessment was peer reviewed and approved in 2015. An update to that assessment using commercial and recreational fishery data and fishery-independent survey data through 2016 indicated that the stock was not overfished and overfishing was not occurring. Spawning stock biomass (SSB) was estimated to be 396.6 million pounds in 2016, about 2.1 times the target SSB level (Figures 1 and 2).^{3,4}

The NEFSC bottom trawl survey biomass indices for scup in fall 2015 and spring 2016 were record highs for the time series (i.e. 1963 - 2017 for the fall survey and 1968 -2017 for the spring survey). Both seasonal indices decreased after 2016. Several state fisheries-independent surveys show similar trends.⁵

Fishing mortality was estimated to be 0.139 in 2016, 37% below the fishing mortality reference point (Figure 1). The 2015 year class (i.e. those scup spawned in 2015) was estimated to be 252 million fish, about 2.1 times the average recruitment from 1984 to 2016. The 2016 year class is estimated to be 65 million fish, about 47% below the average (Figure 2).⁴

Scup recently underwent an operational assessment for use in management for 2020 and beyond and will be final by the end of August. The assessment will include the revised MRIP values and is expected to change the current biological reference points and estimated biomass and fishing mortality. New assessment information was not available during the development of this fishery information document.

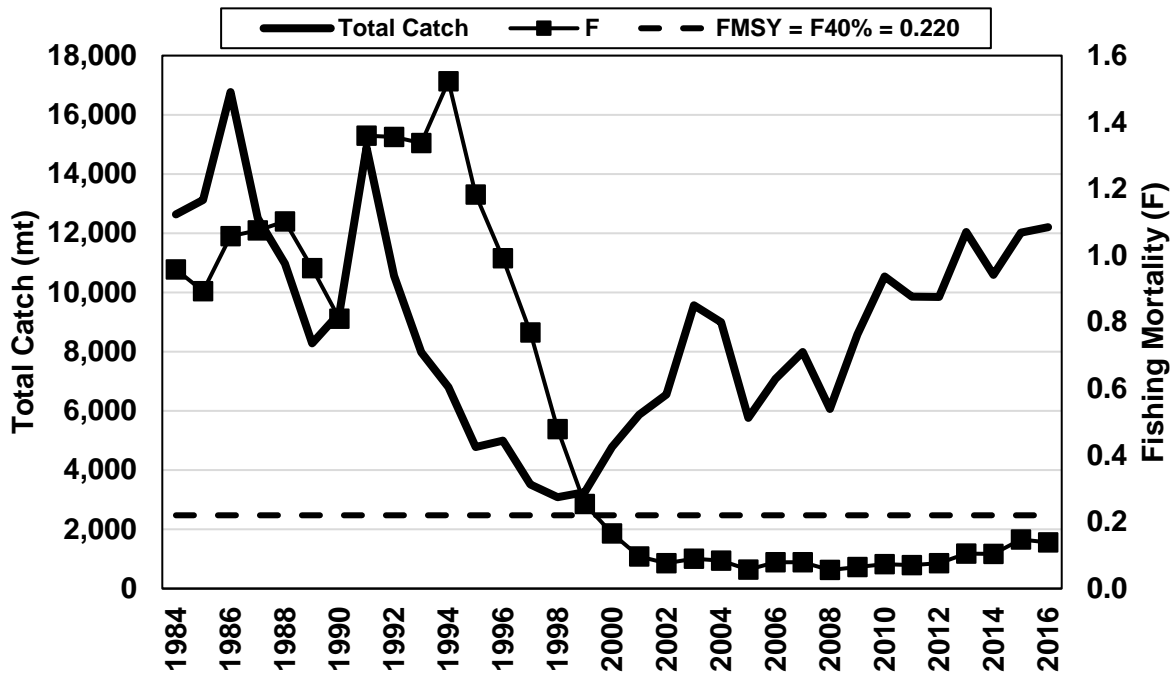


Figure 1: Total fishery catch and fishing mortality rate (F) for fully selected age 3 scup, 1984-2016. The horizontal dashed line is the fishing mortality reference point from the 2015 benchmark stock assessment. Overfishing is occurring when the fishing mortality rate exceeds this threshold.⁴

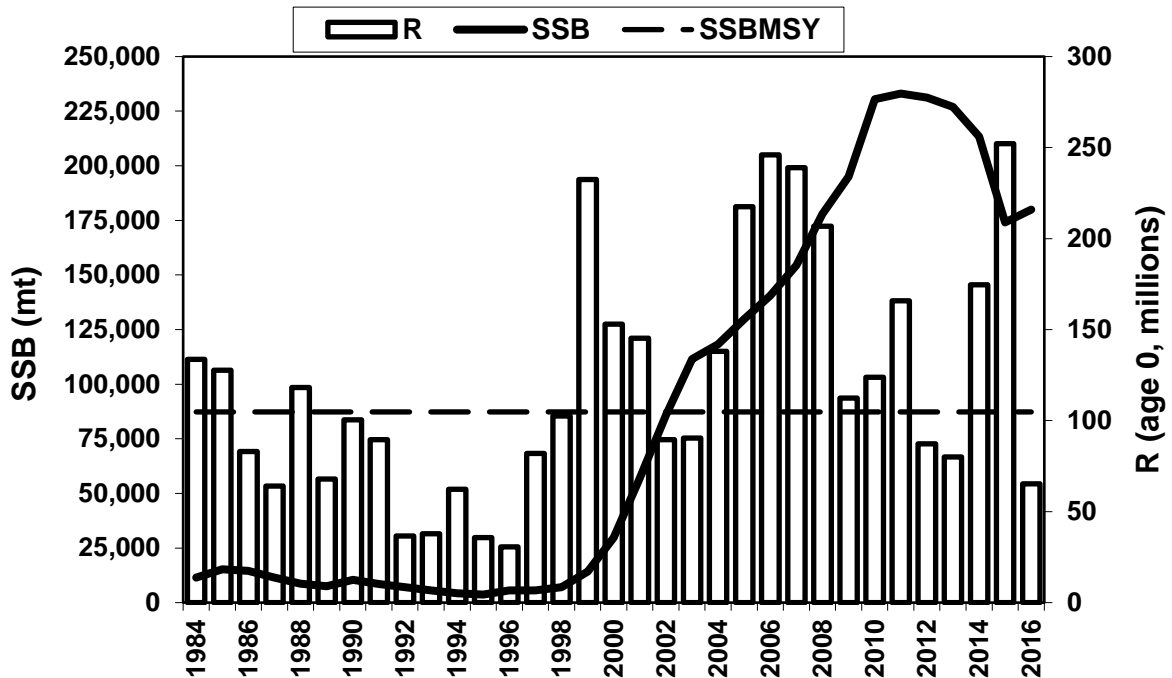


Figure 2: Scup spawning stock biomass and Recruitment, 1984-2016.⁴

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission) cooperatively develop fishery regulations for scup off the east coast of the United States. The National Marine Fisheries Service (NMFS) 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). The management unit for scup includes U.S. waters from Cape Hatteras, North Carolina to the U.S./Canadian border.

The federal Fishery Management Plan (FMP) for scup has been in place since 1996, when scup were incorporated into the Summer Flounder FMP through Amendment 8. Amendment 8 established gear restrictions, reporting requirements, commercial quotas, a moratorium on new commercial scup permits, recreational possession limits, and minimum size restrictions for scup fisheries. 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/.

The Council's Scientific and Statistical Committee (SSC) recommends annual Acceptable Biological Catch (ABC) levels for scup. The annual ABC is divided into commercial and recreational Annual Catch Limits (ACLs), based on the allocation percentages prescribed in the FMP (i.e. 78% commercial, 22% recreational). Both ABCs and ACLs are catch-based limits, meaning they account for both landings and discards. Projected discards are subtracted to determine the commercial quota and recreational harvest limit (RHL), which are landings-based limits. Table 1 shows scup catch and landings limits from 2009 through 2019, as well as commercial and recreational landings through 2018.

Total scup landings (commercial and recreational) from Maine to North Carolina peaked in 1981 at over 32 million pounds and reached a low of 6 million pounds in 1998. In 2018, about 26.35 million pounds of scup were landed by commercial and recreational fishermen (Figure 3).^{6,7}

Recreational data are available from MRIP. In July 2018, MRIP released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology, including a transition from a telephone-based effort survey to a mail-based effort survey. The new estimates of catch and landings are several times higher than the previous estimates for shore and private boat modes, substantially raising the overall scup catch and harvest estimates. The RHLs and other management measures through 2019 were based on the old MRIP estimates. Once the new estimates are incorporated into a peer reviewed and accepted stock assessment (expected August 2019), they will be used to derive RHLs and other management measures for future years.

Table 1: Summary of scup catch limits, landings limits, and landings, 2009 through 2019. Values are in millions of pounds unless otherwise noted.

Measure	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ABC	11.70	17.09	51.70	40.88	38.71	35.99	33.77	31.11	28.40	39.14	36.43
TAC ^a	15.54	17.09	31.92	--	--	--	--	--	--	--	--
Commercial ACL	--	--	--	31.89	30.19	28.07	26.35	24.26	22.15	30.53	28.42
Commercial quota ^b	8.37	10.68	20.36	27.91	23.53	21.95	21.23	20.47	18.38	23.98	23.98
Commercial landings	8.20	10.40	15.03	14.88	17.87	15.96	17.03	15.76	15.44	13.37	--
% of commercial quota landed	98%	97%	74%	53%	76%	72%	80%	77%	84%	55%	--
Recreational ACL	--	--	--	8.99	8.52	7.92	7.43	6.84	6.25	8.61	8.01
RHL ^b	2.59	3.01	5.74	8.45	7.55	7.03	6.80	6.09	5.50	7.37	7.37
Recreational landings, old MRIP estimates	3.23	5.97	3.67	4.17	5.37	4.43	4.41	4.26	5.42	5.61	--
% of RHL harvested (based on old MRIP estimates) ^c	125%	198%	64%	49%	71%	63%	65%	70%	98%	76%	--
Recreational landings, new MRIP estimates	6.28	12.48	10.32	8.27	12.64	10.27	12.17	10.00	13.54	12.98	

^a Prior to implementation of the 2011 Omnibus ACLs and AMs Amendment, the Council specified a Total Allowable Catch (TAC). After implementation of this amendment, the Council specified ABCs instead of TACs. Both terms refer to the total catch limit in a given year. The difference between the TAC and the ABC in 2009 is 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 that recommended by the SSC.

^b Commercial quotas and RHLs reflect the removal of projected discards from the sector-specific ACLs. For 2006-2014, these limits were also adjusted for Research Set Aside.

^c The percent of RHL harvested is based on a comparison of the RHL to the previous or old MRIP estimates. The RHLs did not account for the new MRIP estimates, which were released in July 2018 and were not incorporated into a stock assessment until 2019; therefore, it would be inappropriate to compare past RHLs to the revised MRIP estimates.

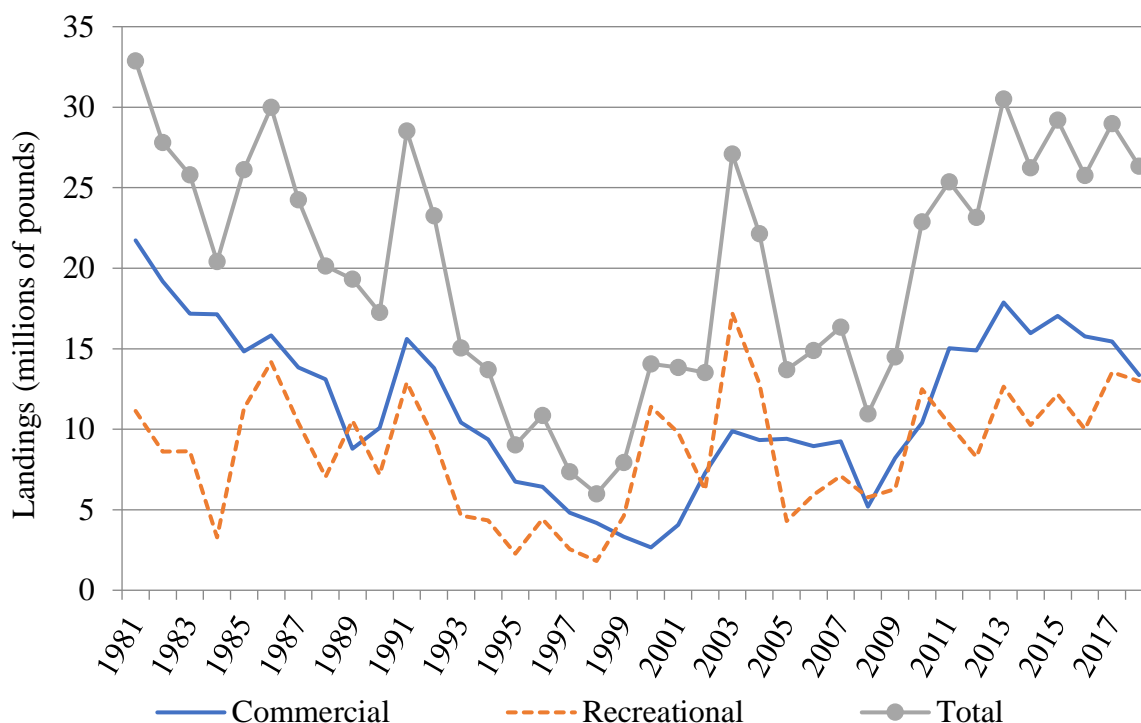


Figure 3: Commercial and recreational scup landings, Maine - North Carolina, 1981-2018. Recreational landings are based on the new MRIP numbers.^{6,7}

Commercial Fishery

Commercial scup landings peaked in 1981 at 21.73 million pounds and reached a low of 2.66 million pounds in 2000 (Figure 3). In 2018, commercial fishermen landed 13.37 million pounds of scup, about 55% of the commercial quota.⁶

In 2018, about 7.26 million pounds of scup were discarded in commercial fisheries, representing a 30% decrease from 2017. Commercial discards increased from 2014-2017, peaking at about 10.42 million pounds in 2017. This was the highest number of discards since at least 1981 and resulted in the 2017 commercial ACL being exceeded by about 17% and the ABC being exceeded by about 11%, despite a quota underage. This increase in discards was likely mainly due to the large 2015 year class, which is the largest year class since at least 1984. In 2017, these scup were very abundant, but mostly too small to be landed in the commercial fishery due to the commercial minimum fish size of 9 inches total length.⁵

The commercial scup fishery operates year-round, taking place mostly in federal waters during the winter and mostly in state waters during the summer. A coast-wide commercial quota is allocated between three quota periods, known as the winter I, summer, and winter II quota periods. These seasonal quota periods were established to ensure that both smaller day boats, which typically operate near shore in the summer months, and larger vessels operating offshore in the winter months can land scup before the annual quota is reached. The dates of the summer and winter II periods were modified in 2018 (Table 2). Both winter periods are managed under a coastwide quota while the summer period quota is divided among states according to the allocation percentages outlined in the Commission's FMP (Table 3).

Once the quota for a given period is reached, the commercial fishery is closed for the remainder of that period. If the full winter I quota is not harvested, unused quota is added to 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.

A possession limit of 50,000 pounds is in effect during the winter I quota period. A possession limit of 12,000 pounds is in effect during the winter II period. If the winter I quota is not reached, the winter II possession limit increases by 1,500 pounds for every 500,000 pounds of quota not caught during winter I. The winter II possession limit was 28,500 pounds in 2018 due to quota rollover from the winter I period. During the summer period, various state-specific possession limits are in effect.

The commercial scup fishery in federal waters is predominantly a bottom otter trawl fishery. In 2018, about 97% of the commercial scup landings (by weight) reported on VTRs were caught with bottom otter trawls. Pots/traps accounted for about 1.7% of landings while all other gear types each accounted for less than 1% of the 2018 commercial scup landings.⁹

In 2018, trawl vessels could not possess 1,000 pounds or more of scup during October - April, or 200 pounds or more during May - September, unless they use 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. In 2019, another threshold period was added from April 15-June 15 with a 2,000 pound possession limit to allow for higher retention in the small-mesh squid fishery (Table 4).

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.

VTR data suggest that NMFS statistical areas 537, 539, 611, 612, 613, and 616 were responsible for the largest percentage of commercial scup catch in 2018. Statistical area 539, off Rhode Island, had the highest number of trips which caught scup (Table 5, Figure 4).⁹

Over the past two decades, total scup ex-vessel revenue ranged from a low of \$2.36 million in 2000 to a high of \$10.77 million in 2015. In 2018, 13.37 million pounds of scup were landed by commercial fishermen from Maine through North Carolina. Total ex-vessel value in 2018 was \$9.70 million, resulting in an average price per pound of \$0.73. All revenue and price values were adjusted to 2018 dollars to account for inflation.⁶

In general, the price of scup tends to be lower when landings are higher, and vice versa (Figure 5). This relationship is not linear and many other factors besides landings also influence price. The highest average price per pound over the past two decades was \$1.46 (\$1.00 in 2018 dollars) and occurred in 1998. The lowest mean price per pound was \$0.55 (\$0.50 in 2018 dollars) and occurred in 2013.⁶

Over 176 federally-permitted dealers from Maine through North Carolina purchased scup in 2018. More dealers in New York purchased scup than in any other state (Table 6).⁶

At least 100,000 pounds of scup were landed by commercial fishermen in 17 ports in 6 states in 2018. These ports accounted for approximately 93% of all 2018 commercial scup landings. Point Judith, Rhode Island was the leading port, both in terms of landings and number of vessels landing scup (Table 7).⁶ The ports and communities with the greatest participation in the scup fishery 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/.

A moratorium permit is required to fish commercially for scup. In 2018, 618 vessels held commercial moratorium permits for scup.¹⁰

Table 2: Dates, allocations, and possession limits for the commercial scup quota periods. Winter period possession limits apply in both state and federal waters.

Quota Period	Dates	% 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 – September 30*	38.95%	State-specific
Winter II	October 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 of scup not landed during winter I.

*Prior to 2018, the summer period was May 1 - October 31 and the winter II period was November 1 - December 31, with the same allocations as shown above.

Table 3: State-by-state quotas for the commercial scup fishery during the summer quota period (May-September).

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%

Table 4: Changes in scup small mesh incidental possession limit for the commercial fishery from 2018-2019.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
2018	1,000 lb				200 lb					1,000 lb		
2019	1,000 lb			2,000 lb			200 lb			1,000 lb		

Table 5: Statistical areas which accounted for at least 5% of the total commercial scup catch (by weight) in 2018, with associated number of trips.⁹

Statistical area	% of 2018 commercial scup catch	Number of trips
616	27%	823
537	20%	988
539	14%	2,628
613	14%	1,217
611	8%	2,016
612	7%	627

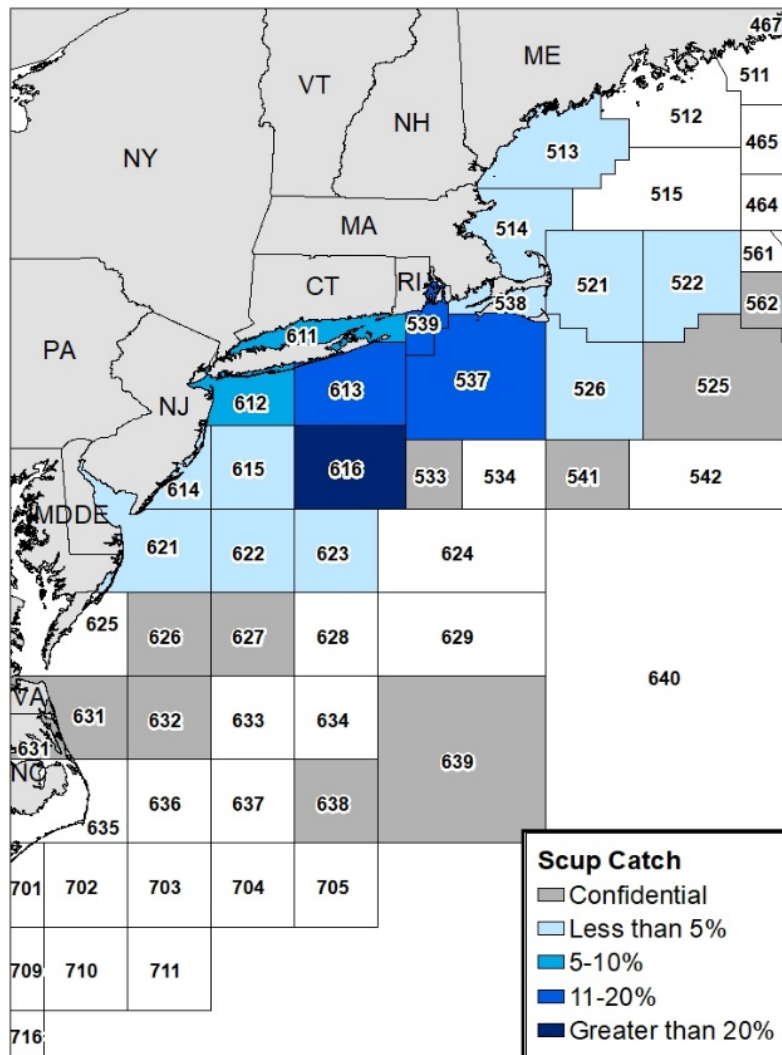


Figure 4: Proportion of scup catch by statistical area in 2018. Statistical areas marked “confidential” are associated with fewer than three vessels and/or dealers.⁹

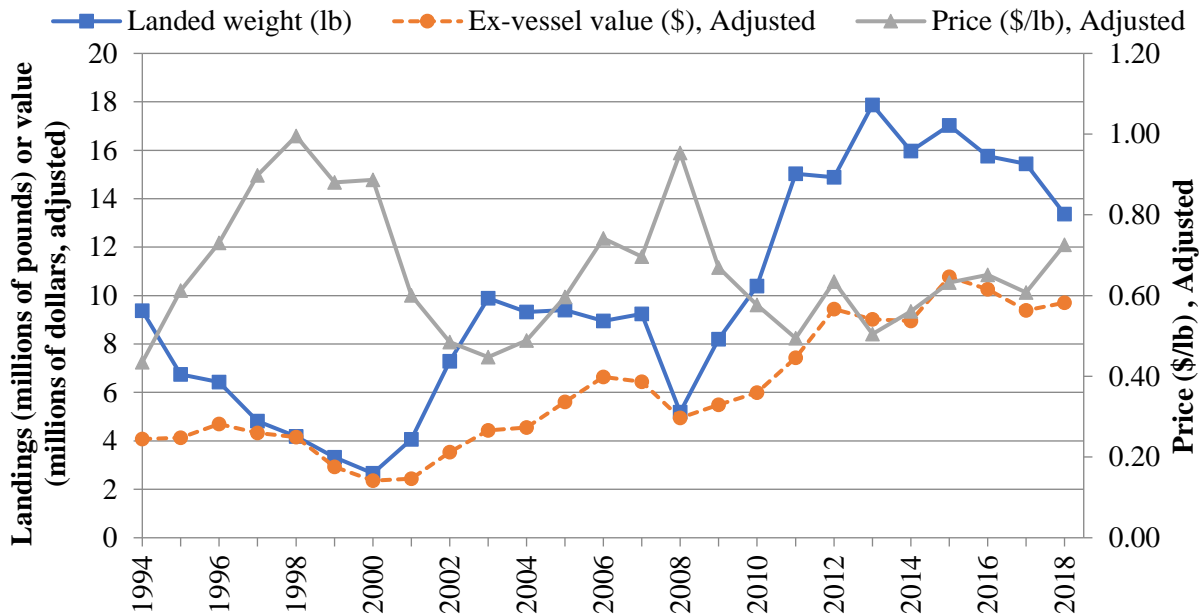


Figure 5: Landings, ex-vessel value, and price for scup from Maine through North Carolina, 1994-2018. Ex-vessel value and price are adjusted to show real 2018 dollars using the Gross Domestic Product Price Deflator.⁶

Table 6: Number of dealers per state which reported purchases of scup in 2018. C = Confidential.⁶

State	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number of Dealers	C	32	31	14	48	20	C	5	11	15

Table 7: Ports reporting at least 100,000 pounds of scup landings in 2018, based on NMFS dealer data. C = Confidential.⁶

Port	Scup Landings (lb)	% of total commercial scup landings	Number of vessels
POINT JUDITH, RI	3,947,294	30%	136
MONTAUK, NY	2,406,758	18%	78
PT. PLEASANT, NJ	2,159,292	16%	37
NEW BEDFORD, MA	1,116,915	8%	60
STONINGTON, CT	428,232	3%	17
LITTLE COMPTON, RI	394,109	3%	11
MATTITUCK, NY	341,233	3%	4
NEW LONDON, CT	264,862	2%	10

HAMPTON, VA	258,591	2%	41
HYANNIS, MA	179,220	1%	10
NEWPORT, RI	154,140	1%	12
AMMAGANSETT, NY	153,223	1%	C
BELFORD, NJ	144,198	1%	20
HAMPTON BAYS, NY	134,307	1%	33
CHINCOTEAGUE, VA	132,210	1%	13
CAPE MAY, NJ	127,329	1%	24
GREENPORT, NY	102,215	1%	C

Scup Gear Restricted Areas

Two scup gear restricted areas (GRAs) were first implemented in 2000 with the goal of reducing scup discards in small-mesh fisheries. The GRA boundaries have been modified multiple times since their initial implementation. The current boundaries are shown in Figure 6. Trawl vessels may not fish for or possess longfin squid, black sea bass, or silver hake in the Northern GRA from November 1 – December 31 and in the Southern GRA from January 1 – March 15 unless they use mesh which is at least 5 inches in diameter. The GRAs are thought to have contributed to the recovery of the scup population in the mid- to late-2000s.⁸ As previously stated, commercial scup discards increased by 71% between 2016 and 2017, likely due to the large 2015 year class.⁵ Although discards decreased by about 30% in 2018, they still remain well above average. Further analysis is needed to evaluate the impact of the GRA modification on commercial scup discards in 2017 and 2018.

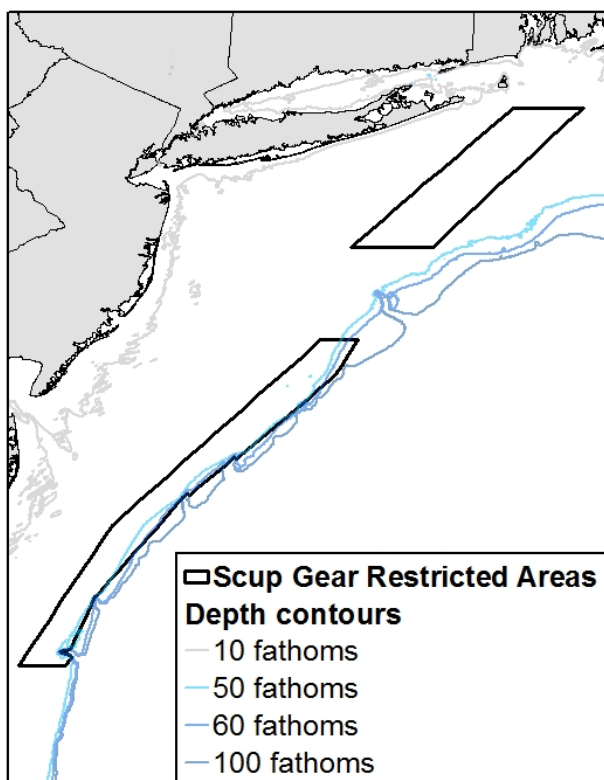


Figure 6: The Scup Gear Restricted Areas.

Recreational Fishery

The recreational scup fishery is managed on a coast-wide basis in federal waters. Current federal regulations include a minimum size of 9 inches total length, a year-round open season, and a possession limit of 50 scup (Table 8). These measures have been unchanged since 2015.

As previously described, MRIP released a revised time series of recreational fishery data in July 2018. The revised catch, harvest, and effort estimates for scup are substantially higher than the previous estimates. Information presented in this section is based on the new estimates.

The Commission applies a regional management approach to recreational scup fisheries in state waters, where New York, Rhode Island, Connecticut, and Massachusetts develop regulations intended to achieve 97% of the recreational harvest limit. The minimum fish size, possession limit, and open season for recreational scup fisheries in state waters vary by state. State waters measures remained unchanged from 2015 through 2017. Massachusetts through New Jersey liberalized their minimum size limits and/or seasons in 2018 compared to 2017 and there were very minor changes in the state regulations from 2018 to 2019 (Tables 9 and 10).

From 1981-2018, recreational catch of scup peaked in 2017 at 41.20 million scup and landings peaked in 1986 with an estimated 30.43 million scup landed by recreational fishermen from Maine through North Carolina. Recreational catch was lowest in 1998 when an estimated 6.86 million scup were caught and 2.74 million scup were landed. Recreational anglers from Maine through North Carolina caught an estimated 30.37 million scup and landed 14.55 million scup (about 12.98 million pounds) in 2018 (Table 11).⁷

Vessels carrying passengers for hire in federal waters must obtain a federal party/charter permit. In 2018, 731 vessels held scup federal party/charter permits. Many of these vessels also held party/charter permits for summer flounder and black sea bass.¹⁰

Most recreational scup catch occurs in state waters during the warmer months when the fish migrate inshore. Between 2016 and 2018, about 96% of recreational scup landings (in numbers of fish) occurred in state waters and about 4% occurred in federal waters (Table 12). New York, Massachusetts, Connecticut, Rhode Island, and New Jersey accounted for over 99.9% of recreational scup harvest in 2018 (Table 13).⁷

About 48% of recreational scup landings (in numbers of fish) in 2018 were from anglers who fished on private or rental boats. About 9% were from anglers fishing on party or charter boats, and about 43% were from anglers fishing from shore (Table 14).⁷

Table 8: Federal recreational measures for scup, 2005-2019.

Regulation	2005-2007	2008-2009	2010-2011	2012	2013	2014	2015-2019
Minimum size (total length)	10 in.	10.5 in.	10.5 in.	10.5 in.	10 in.	9 in.	9 in.
Possession limit	50	15	10	20	30	30	50
Open season	Jan 1–Feb 28 & Sept 18 – Nov 30	Jan 1–Feb 28 & Oct 1–Oct 31	Jun 6 – Sept 26	Jan 1 – Dec 31	Jan 1 – Dec 31	Jan 1 – Dec 31	Jan 1 – Dec 31

Table 9: State recreational fishing measures for scup in 2018.

State	Minimum Size (inches)	Possession Limit	Open Season
MA	9	30 fish; 150 fish/vessel with 5+ anglers on board	May 1-December 31
MA (party/charter)	9	45 fish	May 1-June 30
		30 fish	July 1-December 31
RI (private & shore)	9	30 fish	May 1-December 31
RI shore program (7 designated shore sites)	8		
RI (party/charter)	9	30 fish	May 1-August 31; November 1-December 31
		45 fish	September 1-October 31
CT (private & shore)	9	30 fish	May 1-December 31
CT shore program (46 designated shore sites)	8		
CT (party/charter)	9	30 fish	May 1-August 31; November 1-December 31
		45 fish	September 1-October 31
NY (private & shore)	9	30 fish	May 1-December 31
NY (party/charter)	9	30 fish	May 1-August 31; November 1-December 31
		45 fish	September 1-October 31
NJ	9	50 fish	January 1-December 31
DE	8	50 fish	January 1-December 31
MD	8	50 fish	January 1-December 31
VA	8	30 fish	January 1-December 31
NC, North of Cape Hatteras (N of 35° 15'N)	8	50 fish	January 1-December 31

Table 10: State recreational fishing measures for scup in 2019.

State	Minimum Size (inches)	Possession Limit	Open Season
MA (private & shore)	9	30 fish; 150 fish/vessel with 5+ anglers on board	April 13-December 31
MA (party/charter)	9	30 fish	April 13-April 30; July 1-December 31
		50 fish	May 1-June 30
RI (private & shore)	9	30 fish	January 1-December 31
RI shore program (7 designated shore sites)	8		
RI (party/charter)	9	30 fish	January 1-August 31; November 1-December 31
		50 fish	September 1-October 31
CT (private & shore)	9	30 fish	January 1-December 31
CT shore program (45 designated shore sites)	8		
CT (party/charter)	9	30 fish	January 1-August 31; November 1-December 31
		50 fish	September 1-October 31
NY (private & shore)	9	30 fish	January 1-December 31
NY (party/charter)	9	30 fish	January 1-August 31; November 1-December 31
		50 fish	September 1- October 31
NJ	9	50 fish	January 1- December 31
DE	8	50 fish	January 1-December 31
MD	8	50 fish	January 1-December 31
VA	8	30 fish	January 1-December 31
NC, North of Cape Hatteras (N of 35° 15'N)	8	50 fish	January 1-December 31

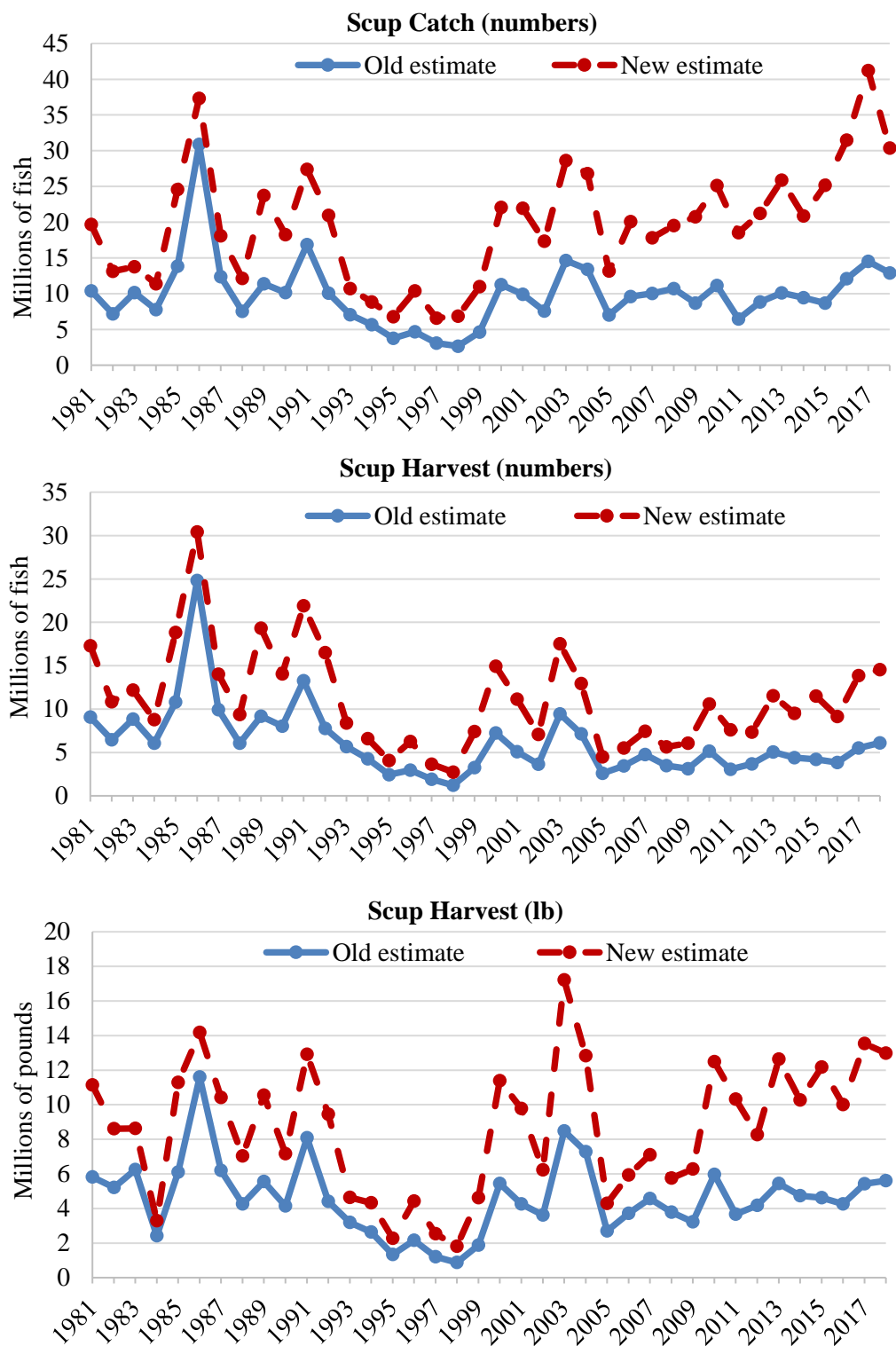


Figure 7: Old and new MRIP estimates of recreational scup catch in numbers of fish and harvest in numbers of fish and pounds, ME - NC, 1981 - 2018. 2018 old MRIP values are back-calibrated, as MRIP stopped producing estimates using the old methodology after 2017.⁷

Table 11: Estimated recreational catch and harvest of scup, Maine - North Carolina, 2009- 2018, based on the revised MRIP estimates.⁷

Year	Recreational catch (millions of fish)	Recreational harvest (millions of fish)	Recreational harvest (millions of pounds)	% of catch retained
2009	20.75	6.06	6.28	29%
2010	25.13	10.60	12.48	42%
2011	18.52	7.60	10.32	41%
2012	21.24	7.33	8.27	35%
2013	25.88	11.55	12.64	45%
2014	20.89	9.49	10.28	45%
2015	25.15	11.50	12.17	46%
2016	31.49	9.14	10.00	29%
2017	41.20	13.85	13.54	34%
2018	30.38	14.55	12.98	48%

Table 12: Estimated percent of scup (in numbers of fish) caught by recreational fishermen in state and federal waters, Maine - North Carolina, 2009 - 2018, based on the revised MRIP estimates.⁷

Year	State waters	Federal waters
2009	95.6%	4.4%
2010	94.4%	5.6%
2011	98.5%	1.5%
2012	99.7%	0.3%
2013	96.3%	3.7%
2014	96.5%	3.5%
2015	98.9%	1.1%
2016	93.5%	6.5%
2017	96.0%	4.0%
2018	96.2%	3.8%
2009-2018 average	96.6%	3.4%
2016-2018 average	95.2%	4.8%

Table 13: Recreational scup harvest by state, 2016- 2018. Percentages were calculated based on numbers of fish using the revised MRIP estimates.⁷

State	2016	2017	2018	2016-2018 average
Maine	0%	0%	0%	0%
New Hampshire	0%	0%	0%	0%
Massachusetts	20%	15%	22%	19%
Rhode Island	17%	10%	16%	14%
Connecticut	15%	12%	21%	16%
New York	40%	47%	37%	41%
New Jersey	7%	16%	3%	9%
Delaware	0%	0%	0%	0%
Maryland	0%	0%	0%	0%
Virginia	2%	0%	0%	1%
North Carolina	0%	0%	0%	0%

Table 14: Scup harvest (in numbers of fish) by recreational fishing mode, Maine - North Carolina, 1981 - 2018, based on the revised MRIP estimates. Some percentages do not sum to 100% due to rounding.⁷

Year	Shore	Party/charter	Private/rental	Total number
1981	17%	5%	77%	17,309,466
1982	27%	19%	54%	10,833,209
1983	48%	15%	37%	12,189,399
1984	39%	1%	59%	8,780,949
1985	17%	1%	82%	18,840,079
1986	20%	5%	75%	30,431,320
1987	13%	2%	85%	14,030,573
1988	20%	7%	73%	9,388,288
1989	25%	10%	64%	19,324,847
1990	18%	9%	74%	14,040,609
1991	31%	7%	62%	21,904,578
1992	27%	8%	65%	16,496,804
1993	17%	18%	65%	8,403,033
1994	14%	9%	77%	6,614,976
1995	31%	10%	59%	4,063,825
1996	8%	5%	86%	6,266,685
1997	18%	13%	69%	3,664,972
1998	23%	5%	72%	2,738,577
1999	14%	15%	71%	7,413,091
2000	19%	8%	73%	14,942,137
2001	33%	12%	54%	11,132,587
2002	31%	15%	54%	7,074,231
2003	17%	9%	74%	17,519,824
2004	25%	12%	63%	12,943,178
2005	24%	4%	73%	4,499,104
2006	20%	10%	71%	5,521,170
2007	15%	8%	77%	7,459,506
2008	22%	20%	58%	5,650,033
2009	14%	18%	68%	6,064,112
2010	18%	13%	70%	10,598,648
2011	22%	7%	72%	7,598,242
2012	14%	16%	69%	7,334,845
2013	34%	15%	51%	11,547,027
2014	20%	15%	65%	9,493,673
2015	17%	8%	76%	11,498,783
2016	34%	10%	56%	9,143,579
2017	23%	11%	65%	13,845,319
2018	43%	9%	48%	14,546,549
1981-2018 average	23%	10%	67%	11,082,838
2016-2018 average	34%	10%	56%	12,511,816

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