Atlantic States Marine Fisheries Commission

DRAFT ADDENDUM XXIX TO THE SUMMER FLOUNDER, SCUP, BLACK SEA BASS FISHERY MANAGEMENT PLAN FOR PUBLIC COMMENT

Scup Commercial Quota Management

March 2017

Sustainably Managing Atlantic Coastal Fisheries

Draft Addendum for Public Comment

Public Comment Process and Proposed Timeline

In December 2016, the Summer Flounder, Scup, and Black Sea Bass Management Board approved a motion to initiate the development of an addendum to the Interstate Fishery Management Plan (FMP) for Summer Flounder, Scup, and Black Sea Bass. The addendum will address the management of the scup commercial quota periods. This Draft Addendum presents background on the Atlantic States Marine Fisheries Commission's (Commission) management of scup; the addendum process and timeline; and a statement of the problem. This document also provides options of management for public consideration and comment.

The public is encouraged to submit comments regarding this document at any time during the public comment period. The final date comments will be accepted is **March 31, 2017 at 5:00 p.m**. Comments may be submitted at state public hearings or by mail, email, or fax. If you have any questions or would like to submit comment, please use the contact information below.

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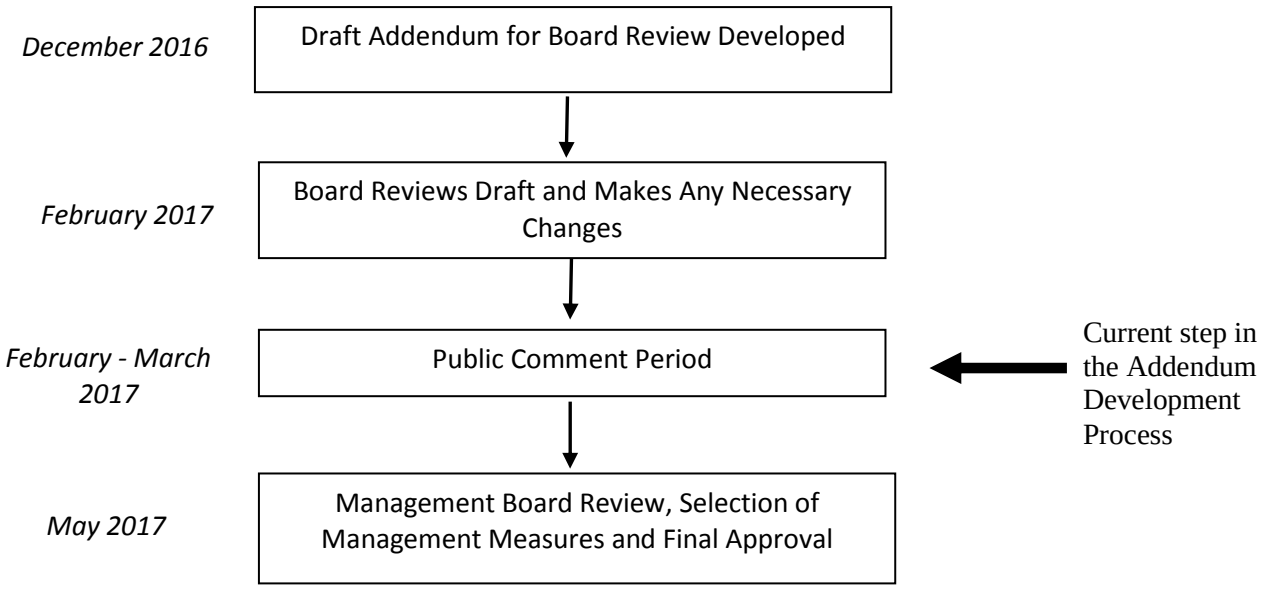

Draft Addendum for Public Comment

1.0 Introduction

This Draft Addendum is proposed under the adaptive management/framework procedures of Amendment 12 that are a part of the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (FMP). Summer flounder, scup, and black sea bass fisheries are managed cooperatively by the states through the Atlantic States Marine Fisheries Commission (Commission) in state waters (0-3 miles), and through the Mid-Atlantic Fishery Management Council (Council) and the NOAA Fisheries in federal waters (3-200 miles).

The management unit for scup in US waters is the western Atlantic Ocean from Cape Hatteras North Carolina northward to the US-Canadian border. The Commission's Summer Flounder, Scup, and Black Sea Bass Management Board (Board) approved the following motion on December 13, 2016:

Move to initiate a scup addendum for the Commission with alternative 1 (no action), alternative 2 (move October to winter II), and alternative 3 (move first half of May to winter I and October to winter II).

This Draft Addendum proposes alternate start and end dates for the scup commercial quota periods.

2.0 Overview

2.1 Statement of the Problem

Since 2011, commercial scup landings have been 20-47% below the commercial quota. In recent years, the Commission and Council Advisory Panel members requested modifications to the dates of the quota periods with all other regulations related to the quota periods, including the allocations and possession limits, remaining unchanged. The requested changes are intended to allow higher possession limits for a longer period of time each year, thus increasing the likelihood that the commercial fishery will fully harvest the quota in the future.

2.2 Background

The Scup FMP was incorporated into the Summer Flounder FMP through Amendment 8 and established several coastwide management measures for the scup fishery. At the time, the scup stock was overexploited. Amendment 8 included several measures to rebuild the stock, including a coastwide commercial quota beginning on January 1, 1997. During development of Amendment 8, the Commission and Council considered, but did not fully develop, a system of quota allocation and possession limits. They agreed to submit Amendment 8 to NOAA Fisheries before fully developing these measures so the other measures in the Amendment could be implemented as quickly as possible and the rebuilding program could begin. However, without trip limits and seasonal allocations, the annual quota could be fully harvested early in the year, which could have economic implications for the entire fishery and created the potential for issues regarding equitable access to the fishery. Traditionally, larger vessels harvested scup offshore during the winter months and smaller vessels harvested scup inshore during the summer. If larger vessels harvested the full annual quota early in the year, smaller vessels

would not be able to harvest scup in the summer. To address this issue, the Commission and Council developed three quota periods, each allocated a percentage of the annual commercial quota and each with different possession limits. These measures were first implemented in 1997 through a regulatory amendment to the FMP (MAFMC 1996 & ASMFC 1996).

The dates of the quota periods and the allocation percentages have not changed since they were first implemented. These measures include a Winter I period, lasting from January 1 through April 30 and allocated 45.11% of the annual quota; a Summer period, lasting from May 1 through October 31 and allocated 38.95% of the annual quota; and a Winter II quota period, lasting from November 1 through December 31 and allocated 15.94% of the annual commercial quota (Table 1).

The Summer quota period allocation is further divided into state shares. The state shares have been modified since they were first implemented. The current state shares are shown in Table 2. State shares were removed from the Council's FMP but are managed by the Commission through Addendum V (ASMFC 2002).

Commercial landings data from 1983 through 1992 were used to define the dates and allocations for the quota periods, including the state allocations for the Summer period. These years were chosen because they were thought to best represent historical participation in the fishery and included years when scup were abundant (though they have become far more abundant since then) and available to both northern and southern states (MAFMC 1996). There was some concern that these data underestimated harvests from state waters with some gear types, especially in Massachusetts. To address this concern, the state summer shares were modified in 2002 through Addendum V to the Commission's FMP (ASMFC 2002).

The seasonal possession limits have been modified several times since implementation. Current management measures include a 50,000 pound possession limit during Winter I. If 80% of the Winter I quota is harvested, the possession limit drops to 1,000 pounds for the remainder of the Winter I period. The initial Winter II possession limit is 12,000 pounds. If the Winter I quota is not fully harvested, unused quota may rollover to the Winter II period. If this occurs, the Winter II possession limit may increase up to a maximum of 18,000 pounds. There are no Federal waters possession limits during the Summer period; however, various state-specific possession limits are enforced in state waters. These possession limits are much lower than those in Winter I and Winter II (Table 3).

The Federal commercial scup fishery is closed coastwide when the allocation for a given quota period is reached. Any overages during a given quota period are subtracted from that period's allocation for the following year. If the Summer period quota is exceeded, overages from a given state during the Summer period are subtracted by the Commission from the state's Summer period share in a future year. If an individual state exceeds its Summer quota, but the overall Summer quota is not exceeded, deductions are not applied.

Although the dates of the quota periods have not been modified since their initial implementation, Addendum X to the FMP, implemented in 2003, allows landings during April 15-30 by state-only permit holders to be counted towards that state's Summer period allocation in years when the Winter I fishery closes before April 15. Under this provision, states must request the date of Summer period change for state permit holders and notify NOAA Fisheries that landings by state-permit holders apply to the Summer period quota (ASMFC 2003).

2.3 Description of the Fishery

Scup are highly sought after by commercial and recreational fishermen throughout Southern New England and the Mid-Atlantic. Scup support commercial fisheries from Massachusetts to North Carolina. Commercial landings peaked in 1960 at 48.9 million pounds, and then ranged between 11.02 and 22.04 million pounds until the late 1980s. From the 1987-1996, commercial landings averaged 10.8 million pounds, and then declined to an average of 8.8 million pounds from 1997-2014. In 2015 commercial landings were 15.86 million pounds, about 75% of the commercial quota. Since 1979, commercial landings have largely come from Rhode Island (38%), New Jersey (26%), and New York (16%).

Analysis of the potential impacts of the changes to the quota period dates requested by advisors is presented in this section. The figures and tables at the end of this document show scup landings by month (Figure 1, Table 4), scup prices by month (Figure 2, Table 5), and number and size of vessels landing scup by month (Figure 3, Table 6, Figure 4), as well as the importance of each month to scup landings in each state (Table 7).

Although October is within the Summer quota period, it has had similar average values to the Winter II quota period in terms of scup landings (Figure 1, Table 4) and number of vessels landing scup (Figure 3, Table 6). The size distribution of vessels which landed scup in October was in between that of September (Summer quota period) and November (Winter II quota period; Figure 4) during 2011-2015. The month of May, which is currently in the Summer quota period, had values for scup landings which were in between the months of April (Winter I quota period) and June (Summer quota period; Figure 1, Table 4). The number and size of vessels landing scup in May was similar to the number and size of vessels landing scup in June (Figures 3 and 4, Table 4). In general, October appears to be more similar to the Winter II period than the Summer period in terms of landings and number of vessels. May appears to be more similar to the Summer period than the Winter I period in terms of the number and size of vessels landing scup per month, but in between Winter I and Summer in terms of scup landings.

If each month contributed equally to scup landings, 8% of annual landings would occur in each month. The month of October contributed to more than 8% of annual scup landings in Rhode Island. The month of May contributed to more than 8% of annual scup landings in the states of Massachusetts, Rhode Island, and New York (Table 7).

At their July 2016 meeting, the Monitoring Committee discussed ideas for analyzing the impacts of modifying the scup quota period dates. Monitoring Committee members noted if October were moved to the Winter II period, this would allow a higher commercial possession limit (on

the order of 12,000 pounds) and if scup are close inshore during that time of year, this could potentially impact recreational fisheries which mostly operate in state waters. Data from the Marine Recreational Information Program (MRIP) includes recreational catches and landings by two-month periods known as waves. From a coast-wide perspective, waves 3 (May-June), 4 (July-August), and 5 (September-October) each contributed about one third of annual scup landings from 2013 through 2015. Wave 3 dominated the scup landings (i.e. greater than 50% of the annual landings) in Massachusetts. Wave 5 dominated the scup landings (i.e. greater than 50% of annual landings) in New Jersey and Virginia and was also important (i.e. greater than 40% of annual landings) for Connecticut and New York (Table 8).

The Northeast Fisheries Science Center (NEFSC) fall bottom trawl survey and the Northeast Area Assessment and Monitoring Program (NEAMAP trawl survey) suggest commercial-sized scup are available in both state and Federal waters during October (Figures 5-9). However, the Rhode Island Department of Environmental Management (RI DEM) trawl survey, the University of Rhode Island Graduate School of Oceanography (URI GSO) Narragansett Bay trawl survey, and the state of New Jersey Ocean Trawl Survey suggest scup are present in state and Federal waters during October, but most of those scup are below the commercial size (Figures 10-14).The NEAMAP, RI DEM, URI GSO Narragansett Bay, and Massachusetts Department of Marine Fisheries (MA DMF) trawl surveys suggest commercial-sized scup are present in state and Federal waters during May 1-15 (Figures 10-14).

2.4 Life History

Scup are a schooling, demersal (i.e., bottom-dwelling) species with a geographic range as far north as the Bay of Fundy in southern Nova Scotia and as far south as Florida. 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. Water temperature is a main factor influencing the range of scup, as they prefer temperatures greater than 45°F and are most frequently in waters between 55–77°F.

Scup undertake extensive seasonal migrations between coastal and offshore waters. They are mostly found in estuaries and coastal waters from southern New England to the Chesapeake Bay during the spring and summer, within depths up to 120 feet (NEFSC 2015b). In the fall and winter, they move offshore and to the south, to outer continental shelf waters south of New Jersey at depths of 250–610 feet. Juveniles follow adults to wintering areas, although some remain in larger and deeper estuaries during warm winters. Scup migrate to summering grounds in spring when water temperatures start to rise about 45°F.

Scup spawn once annually from May through August and peaking in June (ASMFC 2015), mostly off southern New England from Massachusetts Bay south to the New York Bight. Spawning begins during the inshore migration when water temperatures are above 50°F, with the largest fish arriving to the spawning grounds first, followed by progressively smaller fish. Scup usually spawn over weedy or sandy areas. In some locations, such as eastern Long Island bays and Raritan Bay, spawning mostly occurs in May and June (Steimle et al. 1999).

Scup eggs and larvae are pelagic and are found in coastal waters in and near southern New England during spring and summer. As larvae mature, they settle to the seafloor and develop into juveniles. About 50% of scup (both male and female) are sexually mature at two years of age and 6–7 inches total length. Nearly all scup of age 3 and older are mature. They reach a maximum age of at least 14 years; however, very few scup older than age 7 are caught in the Mid-Atlantic (DPSWG 2009, NEFSC 2015b).

Adult scup are benthic feeders. They consume a variety of prey, including small crustaceans, polychaetes, mollusks, small squid, vegetable detritus, insect larvae, hydroids, sand dollars, and small fish. Scup are prey for numerous predators, including multiple shark species, skates, silver hake, bluefish, summer flounder, black sea bass, weakfish, lizardfish, king mackerel, and monkfish (Steimle et al. 1999).

2.5 Status of the Stock

The most recent peer-reviewed benchmark assessment for scup (SAW/SARC 60, NEFSC 2015) was completed in May 2015. The assessment utilizes an age-structured assessment model called ASAP. Results of the assessment indicate the scup stock was not overfished or experiencing overfishing was occurring in 2014 relative to the updated biological reference points established in the 2015 SAW 60 assessment. The fishing mortality rate was estimated to be 0.127 in 2014, below the threshold fishing mortality reference point F_{MSY} = 0.22. Spawning stock biomass (SSB) was estimated to be 403.6 million pounds (182,915 mt) in 2014, about two times the biomass target SSB_{MSY} = 192.47 million pounds (87,302 mt). The 2014 year class is estimated to be above average at 112 million fish at age 0.

In 2016, a data update was completed with information on scup fishery catch, landings, and discards, as well as NEFSC and state survey catches through 2015 indicates that scup biomass continues to be high, relative exploitation ratios remain low, and the 2015 year class appears to be large (NEFSC 2016a). Scup were under a formal rebuilding plan from 2005 through 2009. NMFS declared the scup stock rebuilt in 2009 based on the findings of the Data Poor Stocks Working Group (DPSWG 2009).

3.0 Proposed Management Program

The following alternatives were developed based recommendations from the Advisory Panel and on analysis referenced in section 2.3 ‘Description of the fishery’. If selected, the management program would be implemented as soon as possible, possibly adjusting the 2017 summer quota period end date and winter II quota period start date.

Alternative 1: No action/*status quo: the start and end dates of the quota periods remain the same.*

- Winter I: January 1 – April 30 (120 days)
- Summer: May 1 – October 31 (184 days)
- Winter II: November 1 – December 31 (61 days)

Alternative 2: Move October to the Winter II period. Under this alternative the Summer period would be shortened by 31 days and the Winter II period would be extended by 31 days.

- Winter I: January 1 – April 30 (120 days)
- Summer: May 1 – September 30 (153 days)
- Winter II: October 1 – December 31 (92 days)

Alternative 3: Move October to the Winter II period and move the first two weeks of May to the Summer period. Under this alternative the Winter I period would be extended by 15 days, the Summer period would be shortened by 46 days and the Winter II period would be extended by 31 days.

- Winter I: January 1 – May 15 (135 days)
- Summer: May 16 – September 30 (138 days)
- Winter II: October 1 – December 31 (92 days)

Alternative 3.A: Modify the dates of the quota periods as described under alternative 3 and leave the Winter I and Summer quota counting procedures unchanged

Addendum X (2003) states on pg.4: "Under this addendum, this alternative requires a slight modification to the current Federal regulations. It recognizes that the states could allow for landings of scup by state permit holders that would apply to the Summer period quota beginning on April 15th. Specifically, in the event of a closure [Winter I period] prior to April 15th, state permit holders could land and sell scup caught exclusively in state waters to state and Federally permitted dealers after April 15th and prior to the Federal opening of the Summer period on May 1. Landings by state permitted fishermen after April 15th and prior to May 1 will apply to the Summer period quota allocated to the state where the scup were landed. States have to request that the date of the Summer period change for state permit holders and are required to notify NMFS that these landings will apply to the Summer period quota."

Please note: federally-permitted vessels cannot land scup when Winter quota periods are closed or prior to the official start of the Summer period quota. Under the following sub-alternatives, federal permitted vessels may not be able to land scup when state permitted fishermen can.

Under alternative 3.A, the Summer quota period would start on May 16 (rather than on May 1, as under the no action alternative) and the regulations from Addendum X would remain unchanged. If the Winter I period closes prior to April 15, state permit holders would be able to

land scup in state waters from April 15-30 and those landings would count towards the state's Summer quota. The commercial fishery would then close from May 1-May 15 and would resume again on May 16 (the new start of the Summer Quota period)

Alternative 3.B: Modify the dates of the quota periods as described under alternative 3 and modify the end date of the Winter I and Summer quota counting procedures

Under alternative 3.B, when the Winter I period closes prior to April 15, state-only permitted fishermen would be able to land scup in state waters from April 15- May 15. State permit holders could land and sell scup caught exclusively in state waters to state and Federally permitted dealers after April 15th. Landings by state permitted fishermen after April 15th will apply to the Summer period quota allocated to the state where the scup were landed. States will notify NOAA Fisheries of the date of the Summer period change for state permit holders and their landings will apply to the Summer period quota.

Effectively, under sub-alternative 3.B, when the Winter I period closes prior to April 15, the Summer period quota could start on April 15 for state-permit holders.

Alternative 3.C: Modify the dates of the quota periods as described under alternative 3 and modify the start and end dates of the Winter I and Summer quota counting procedures

Under alternative 3.C, when the Winter I period closes prior to April 30, state only permitted fishermen would be able to land scup in state waters from May 1 –May 15. **Note**: if the winter period closes prior to April 30th, the commercial fishery will remain closed until the end of April (April 30). State permit holders could land and sell scup caught exclusively in state waters to state and Federally permitted dealers starting May 1st and prior to the Federal opening of the Summer period on May 16. Landings by state permitted fishermen starting May 1st will apply to the Summer period quota allocated to the state where the scup were landed. States will notify NOAA Fisheries of the date of the Summer period change for state permit holders and their landings will apply to the Summer period quota.

Effectively, under sub-alternative 3.C, when the Winter I period closes prior to April 30th, the Summer Quota period begins on May 1 for state-permit holders.

4.0 Compliance

Following the May 2017 Joint Board/Council Meeting, states will go through their regulatory process to promulgate changes to management in state waters that the Board approves; in turn, the Council will recommend to NOAA that the selected alternative be implemented through the federal rule making process. Once implemented, if quota period start and end dates are adjusted through the selected alternative, both federal and state permit holders will be notified.

References

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Steimle, F.W. and C. Zetlin. 2000. Reef habitats in the middle Atlantic bight: abundance, distribution, associated biological communities, and fishery resource use. *Marine Fisheries Review*. 62: 24-42.

Tables and Figures

Table 1. Commercial scup quota period dates, percentage of annual quota allocated, and Federal waters possession limits.

Quota Period	Dates	% of annual quota	Possession limit
Winter I	Jan 1–Apr 30	45.11%	50,000 pounds
Summer	May 1–Oct 31	38.95%	State-specific (Table 3)
Winter II	Nov 1–Dec 31	15.94%	12,000-18,000 pounds depending on amount of unused quota from Winter I

Table 2. State allocations of commercial scup quota for the Summer quota period.

State	Share of summer quota
Maine	0.1210%
New Hampshire	0.0000%
Massachusetts	21.5853%
Rhode Island	56.1894%
Connecticut	3.1537%
New York	15.8232%
New Jersey	2.9164%
Delaware	0.0000%
Maryland	0.0119%
Virginia	0.1650%
North Carolina	0.0249%

Table 3. Commercial scup possession limits for trawl vessels in state waters during the Summer quota period (May 1 – October 31) in 2016.

State	Dates	Possession limit
Maine	May 1 – Oct 31	None
New Hampshire	May 1 – Oct 31	None (allocated no quota)
Massachusetts	May 1 – Oct 31	800 lb
Rhode Island	May 1 – Oct 31	10,000 lb per vessel per week
Connecticut[a]	May 1 – July 2	1,500 lb
	July 3 – November 1[b]	750 lb
New York	May 1 – Oct 31	800 lb
New Jersey	May 1 – Oct 31	5,000 lb
Delaware	May 1 – Oct 31	None (allocated no quota)
Maryland	May 1 – Oct 31	None
Virginia	May 1 – Oct 31	None
North Carolina	May 1 – Oct 31	None

[a]Adjusted periodically to maintain consistent weekly landings rate, prevent in-season closure, and take 100% of summer period quota allocated to Connecticut.

[b]As of August 26, 2016. Possession limit may be further adjusted prior to end of Summer quota period.

Landings by Month

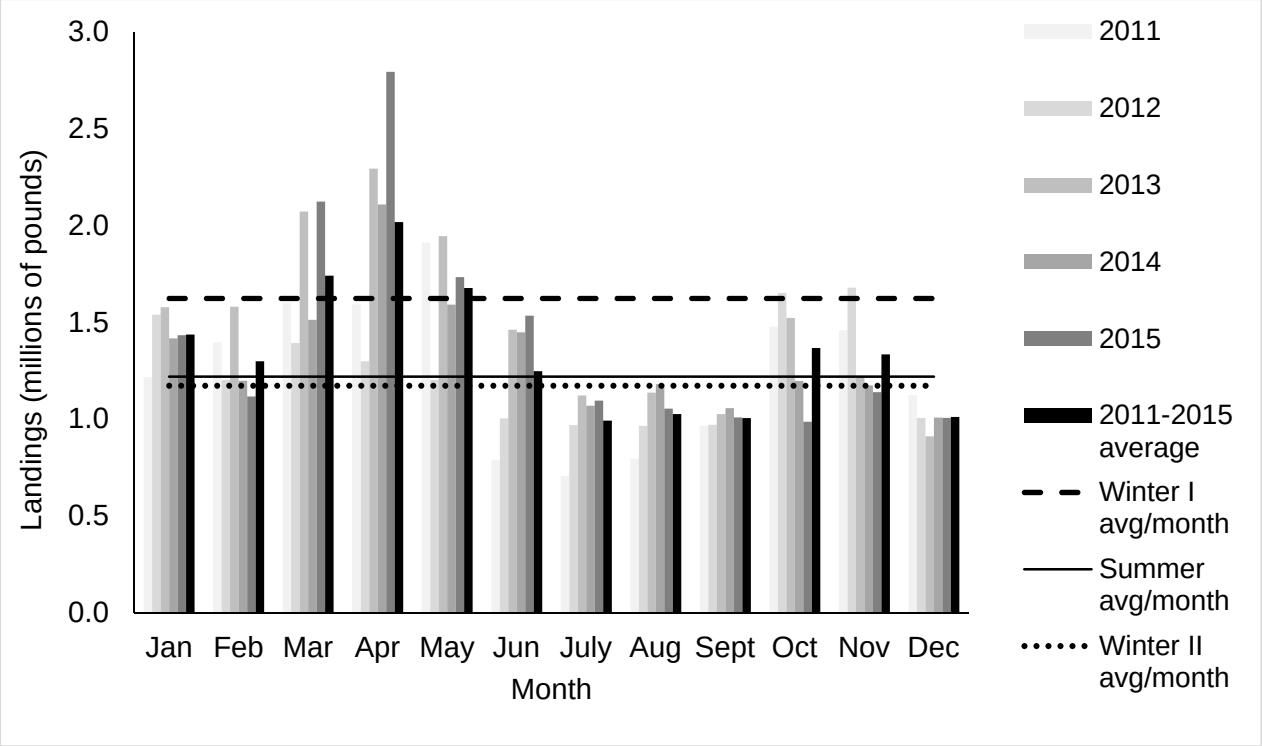

Figure 1. Commercial scup landings per month, 2011-2015 shown with average landings per month during the Winter I (January – April), Summer (May-October), and Winter II (November and December) quota periods.

Table 4. Commercial scup landings per month, 2011-2015 shown with average landings per month during the Winter I (January – April), Summer (May-October), and Winter II (November and December) quota periods.

Year	**Landings** (millions of pounds)											
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
2011	1.22	1.40	1.60	1.59	1.91	0.79	0.71	0.79	0.96	1.48	1.46	1.12
2012	1.54	1.20	1.39	1.30	1.20	1.00	0.97	0.96	0.97	1.65	1.68	1.01
2013	1.58	1.58	2.07	2.29	1.95	1.46	1.12	1.14	1.03	1.52	1.22	0.91
2014	1.42	1.20	1.51	2.11	1.59	1.45	1.07	1.18	1.06	1.20	1.17	1.01
2015	1.43	1.12	2.12	2.80	1.73	1.53	1.10	1.05	1.01	0.99	1.14	1.01
Average	1.44	1.30	1.74	2.02	1.68	1.25	0.99	1.03	1.01	1.37	1.34	1.01
Winter I avg/month	1.62											
Summer avg/month	1.22											
Winter II avg/month	1.17											

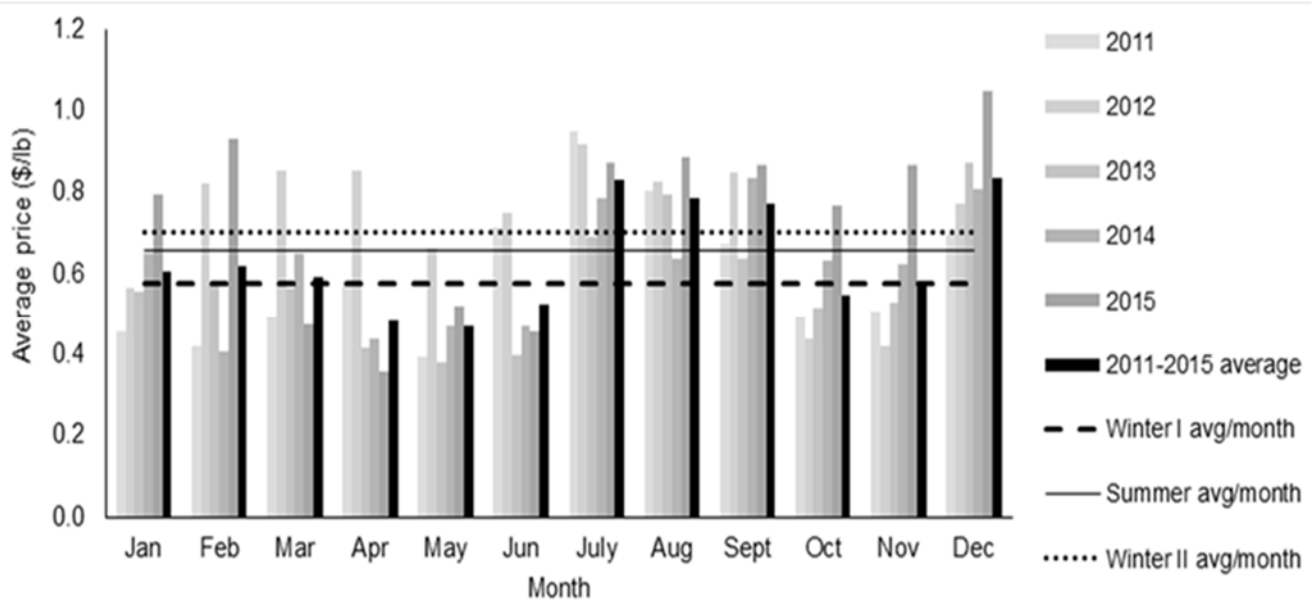

Figure 2: Average scup price per month, 2011-2015 shown with average price per month during the Winter I (January – April), Summer (May-October), and Winter II (November and December) quota periods.

Table 5: Average scup price (in dollars) per month, 2011-2015 shown with average price per month during the Winter I (January – April), Summer (May-October), and Winter II (November and December) quota periods. Values are not adjusted to account for inflation.

Year	**Average Price** (Dollars)											
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**July**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
2011	0.45	0.42	0.49	0.57	0.40	0.72	0.95	0.81	0.68	0.49	0.51	0.69
2012	0.56	0.82	0.85	0.85	0.67	0.75	0.92	0.83	0.85	0.44	0.42	0.77
2013	0.55	0.58	0.57	0.42	0.38	0.40	0.69	0.79	0.64	0.51	0.53	0.87
2014	0.65	0.41	0.65	0.44	0.47	0.47	0.79	0.64	0.84	0.63	0.62	0.81
2015	0.79	0.93	0.48	0.36	0.52	0.46	0.87	0.89	0.87	0.77	0.87	1.05
Average	0.61	0.62	0.59	0.649	0.47	0.53	0.983	0.79	0.77	0.55	0.57	0.83
Winter I avg/month	0.58											
Summer avg/month	0.66											
Winter II avg/month	0.70											

Number of Vessels by Month

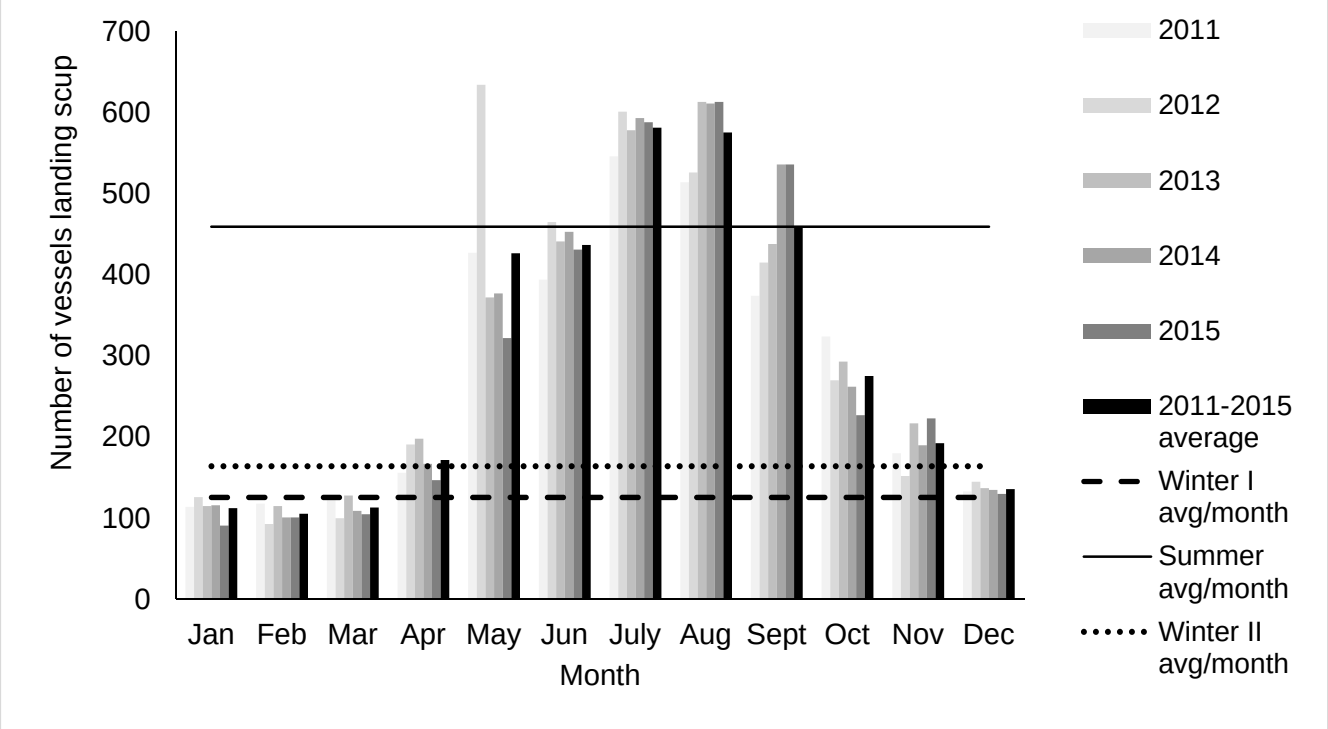

Figure 3: Number of commercial vessels which landed scup per month, 2011-2015 shown with average number of vessels per month during the Winter I (January – April), Summer (May-October), and Winter II (November and December) quota periods. Number of vessels was determined based on a combination of permit number and hull number, as shown in dealer data. Vessels with an unknown permit number and an unknown hull number are not included in this figure.

Table 6: Number of commercial vessels which landed scup per month, 2011-2015 shown with average number of vessels per month during the Winter I (January – April), Summer (May-October), and Winter II (November and December) quota periods. Number of vessels was determined based on a combination of permit number and hull number, as shown in dealer data. Vessels with an unknown permit number and an unknown hull number are not included in this table.

Year	Number of Vessels											
	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sept	Oct	Nov	Dec
2011	114	118	124	156	427	394	546	514	372	324	180	133
2012	126	93	100	191	634	465	601	526	415	270	152	145
2013	115	115	128	198	372	441	578	613	438	293	217	137
2014	116	101	109	167	377	453	593	611	536	262	190	135
2015	91	101	105	147	322	431	588	613	536	227	223	130
Average	112	106	113	172	426	437	581	575	460	275	192	136
Winter I avg/month	126											
Summer avg/month	459											
Winter II avg/month	164											

Landings by Month by State

Table 7. Percent of annual scup landings by month by state. "C" refers to confidential data representing fewer than three vessels and/or dealers.

Month	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Jan	13%	3%	15%	9%	19%	0%	22%	11%	11%
Feb	5%	4%	14%	6%	19%	0%	25%	9%	75%
Mar	3%	7%	12%	10%	20%	0%	30%	39%	1%
Apr	3%	7%	17%	16%	23%	0%	21%	24%	7%
May	16%	15%	3%	10%	1%	C	0%	1%	0%
Jun	6%	10%	6%	11%	1%	0%	0%	C	0%
Jul	23%	7%	5%	4%	0%	0%	0%	C	0%
Aug	21%	9%	4%	3%	0%	0%	0%	0%	0%
Sep	6%	11%	3%	3%	1%	C	0%	0%	0%
Oct	2%	14%	6%	7%	2%	C	0%	1%	0%
Nov	2%	9%	7%	12%	6%	C	0%	6%	0%
Dec	2%	5%	7%	9%	8%	C	2%	8%	6%

Landings by Vessel Size

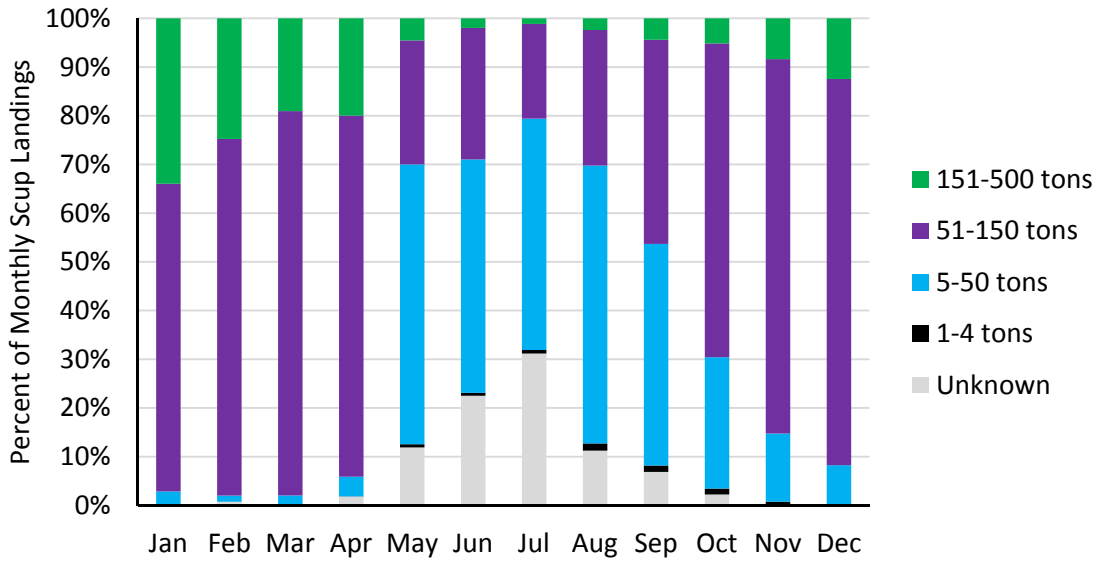

Figure 4. Average scup landings by month by vessel ton class, 2011-2015. Data for vessels greater than 500 tons are confidential and are not shown.

Recreational Landings

Table 8. Percent of annual landings by wave and by state, 2013-2015. (Source: MRIP data, downloaded January 11, 2017).

State	May/June	July/Aug	Sept/Oct	Nov/Dec
MASSACHUSETTS	73%	15%	11%	0%
RHODE ISLAND	16%	44%	40%	0%
CONNECTICUT	10%	42%	48%	0%
NEW YORK	9%	46%	44%	2%
NEW JERSEY	0%	27%	73%	0%
DELAWARE	7%	4%	0%	89%
MARYLAND	0%	0%	3%	97%
VIRGINIA	0%	35%	65%	0%
NORTH CAROLINA	40%	16%	39%	5%
Total	**32%**	**34%**	**33%**	**1%**

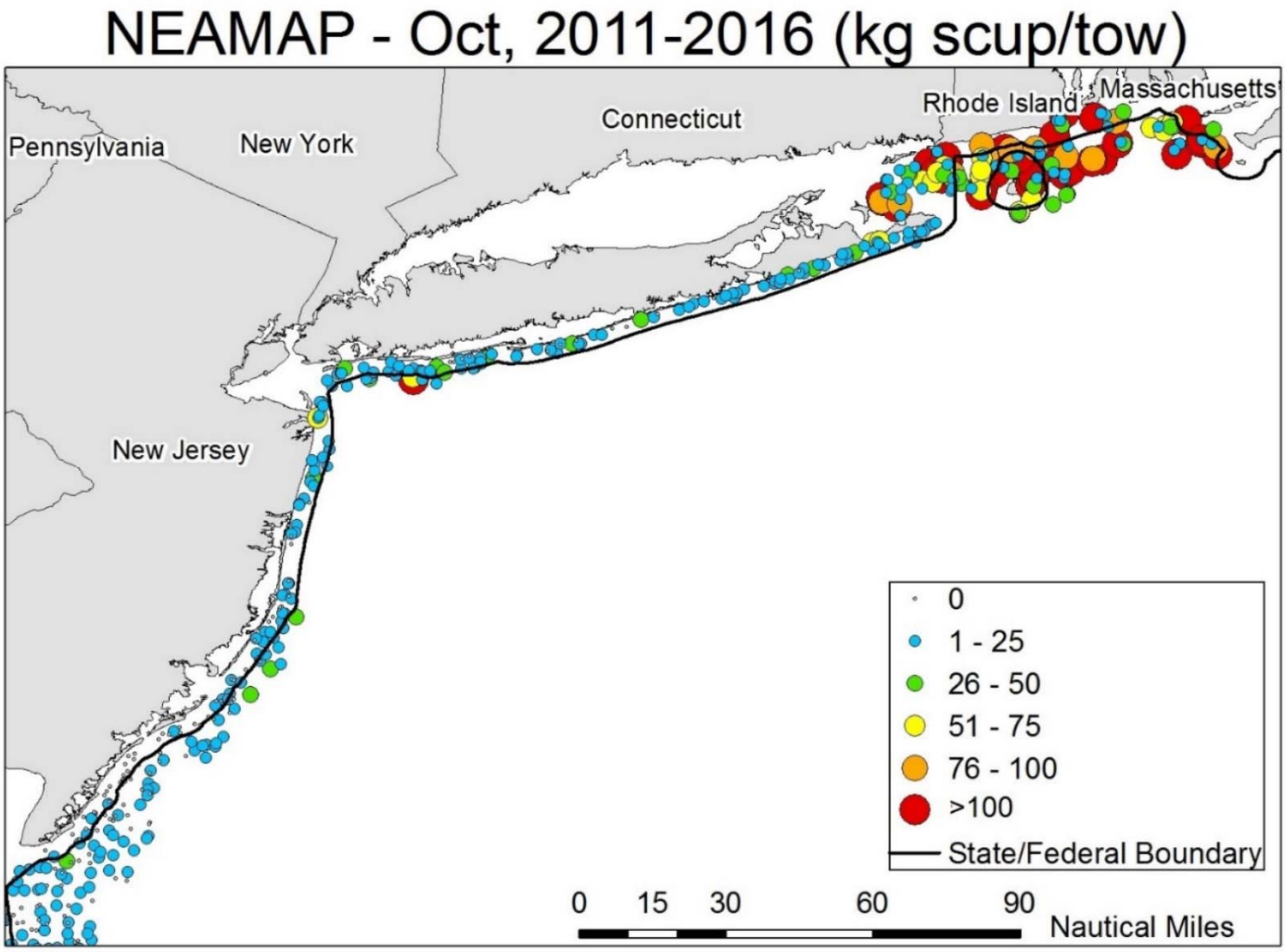

Figure 5. Scup catch per tow in October, 2011-2016, in the NEAMAP trawl survey off the states of Massachusetts through New Jersey.

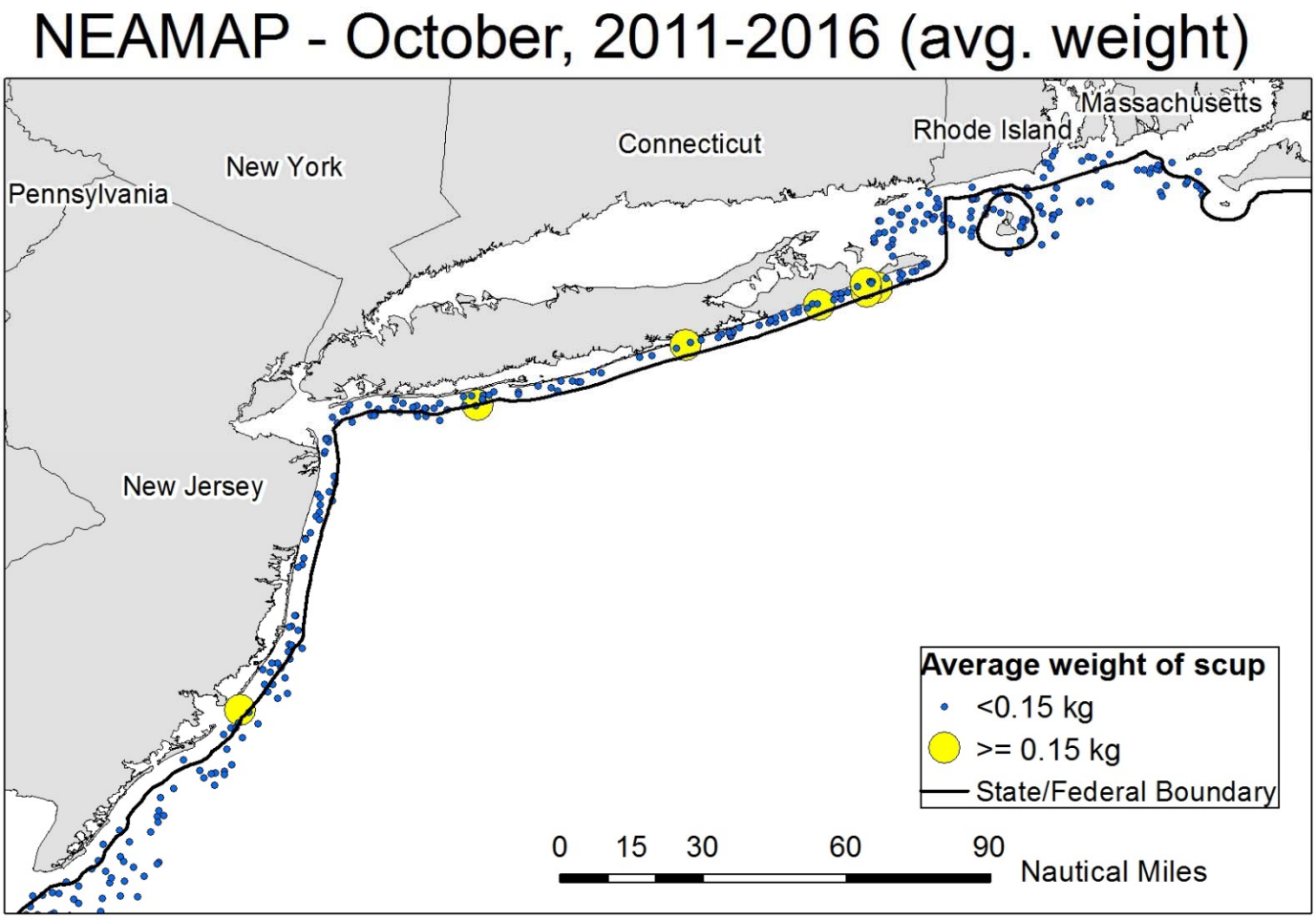

Figure 6. Average weight per scup in NEAMAP tows from Massachusetts through New Jersey, October, 2011-2016. Average weights are shown as those less than 0.15 kg and those greater than or equal to 0.15 kg, which is approximately the weight of a scup that has reached the commercial minimum size of nine inches total length (based on Morse 1978 and Hamer 1979).

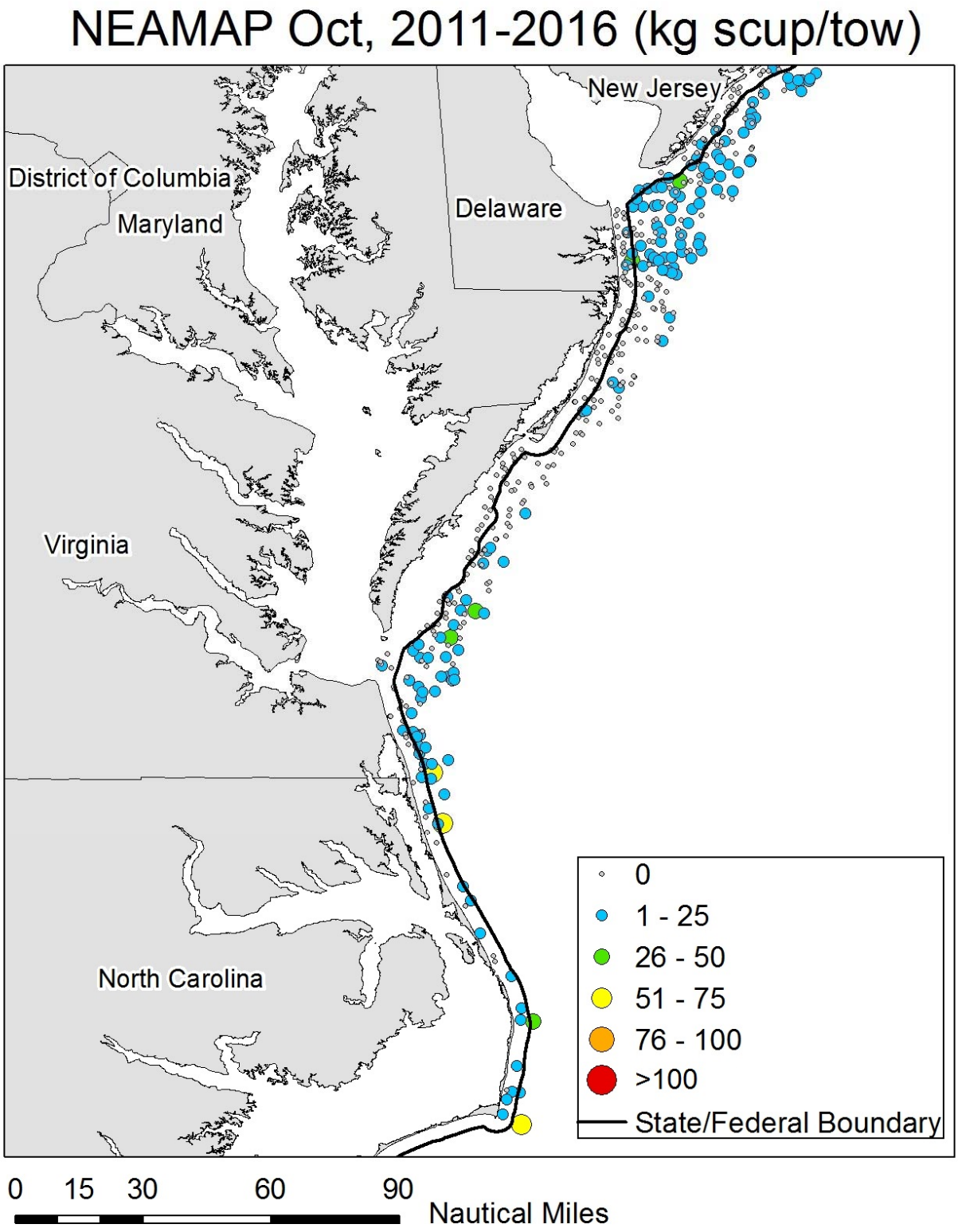

Figure 7. Scup catch per tow in October, 2011-2016, in the NEAMAP trawl survey off the states of Delaware through North Carolina.

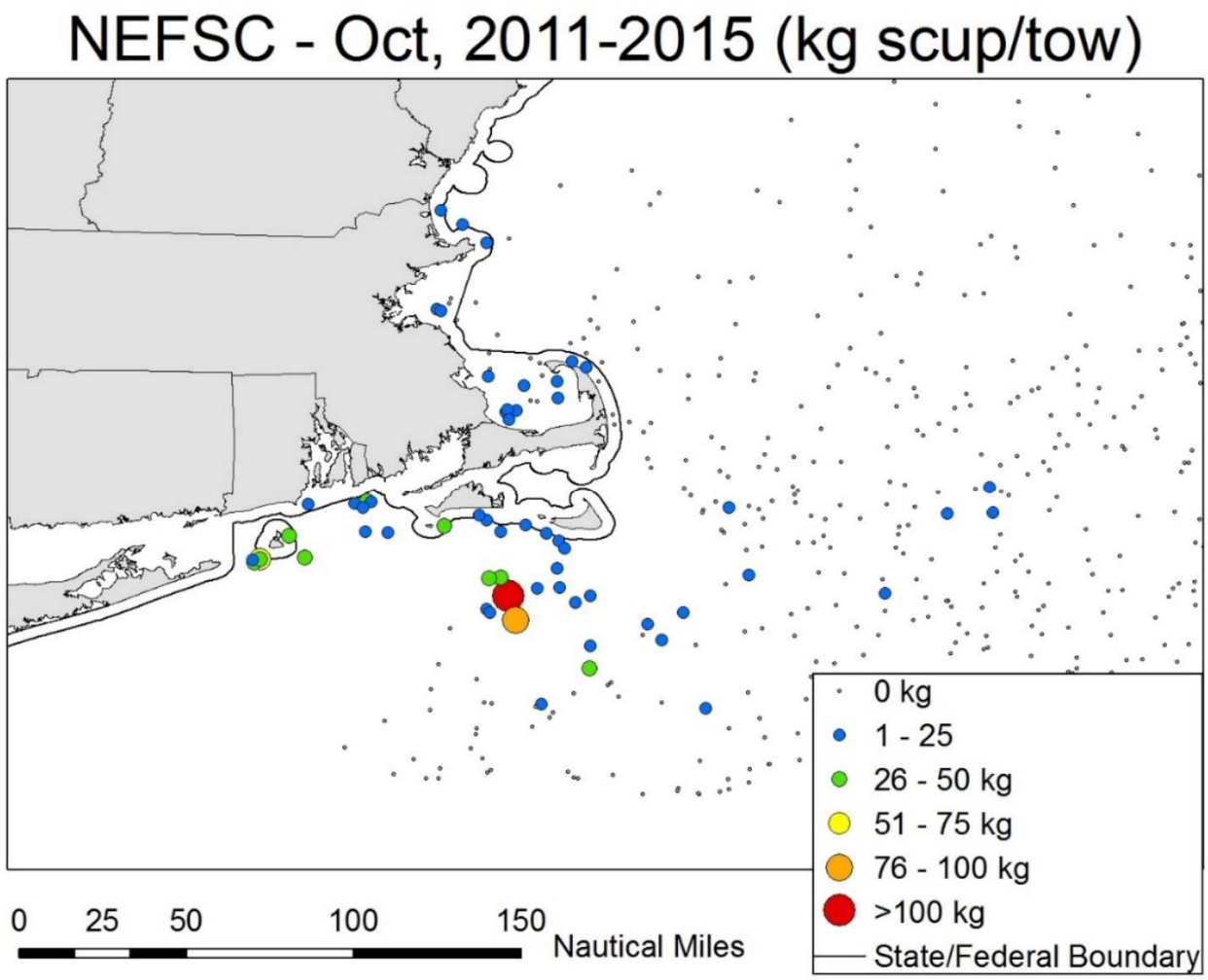

Figure 8. Scup catch per tow in October, 2011-2015, in the NEFSC fall bottom trawl survey.

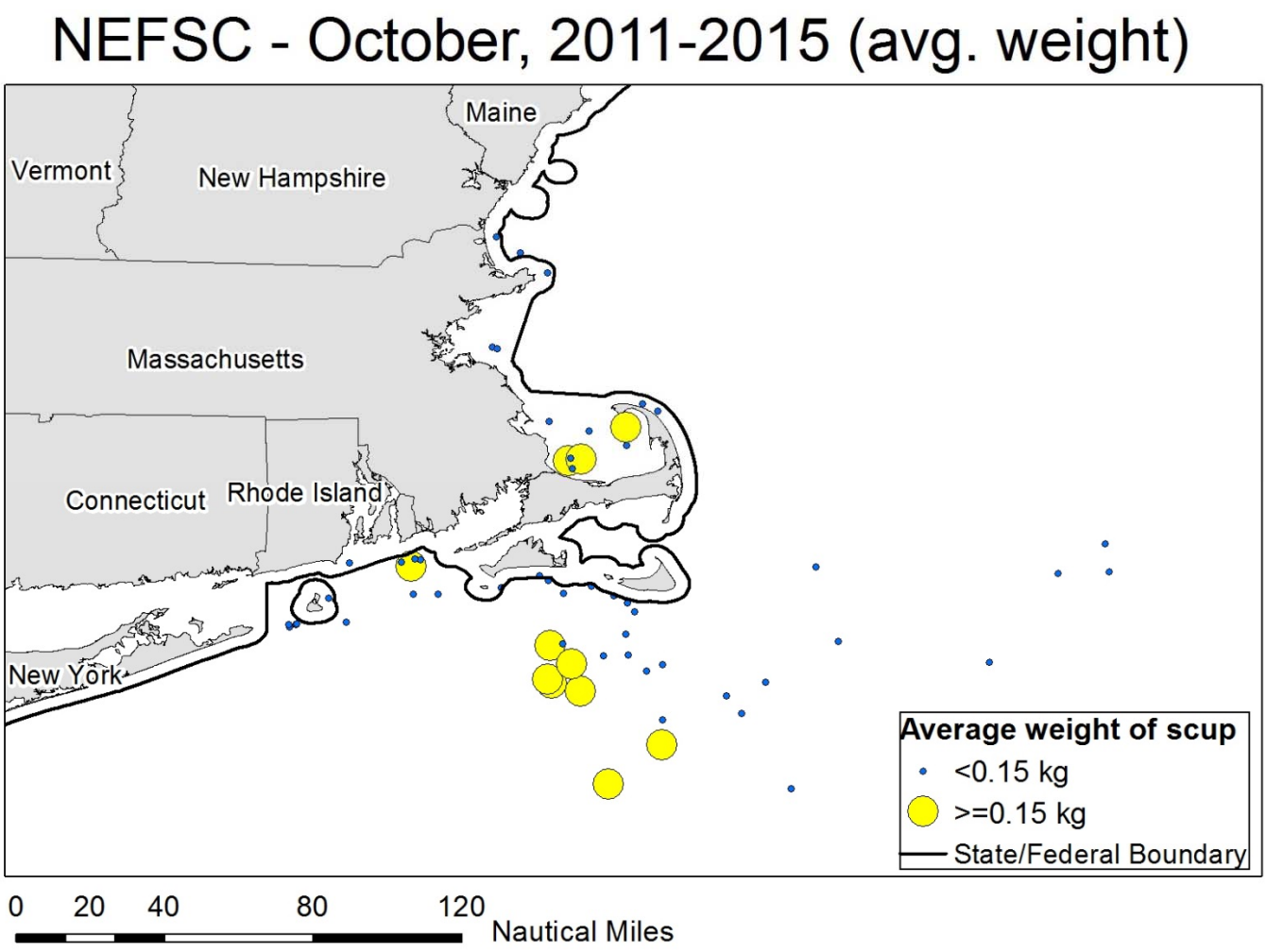

Figure 9. Average weight per scup in NEFSC fall bottom trawl survey tows, October, 2011-2015. Average weights are shown as those less than 0.15 kg and those greater than or equal to 0.15 kg, which is approximately the weight of a scup that has reached the commercial minimum size of nine inches total length (based on Morse 1978 and Hamer 1979).

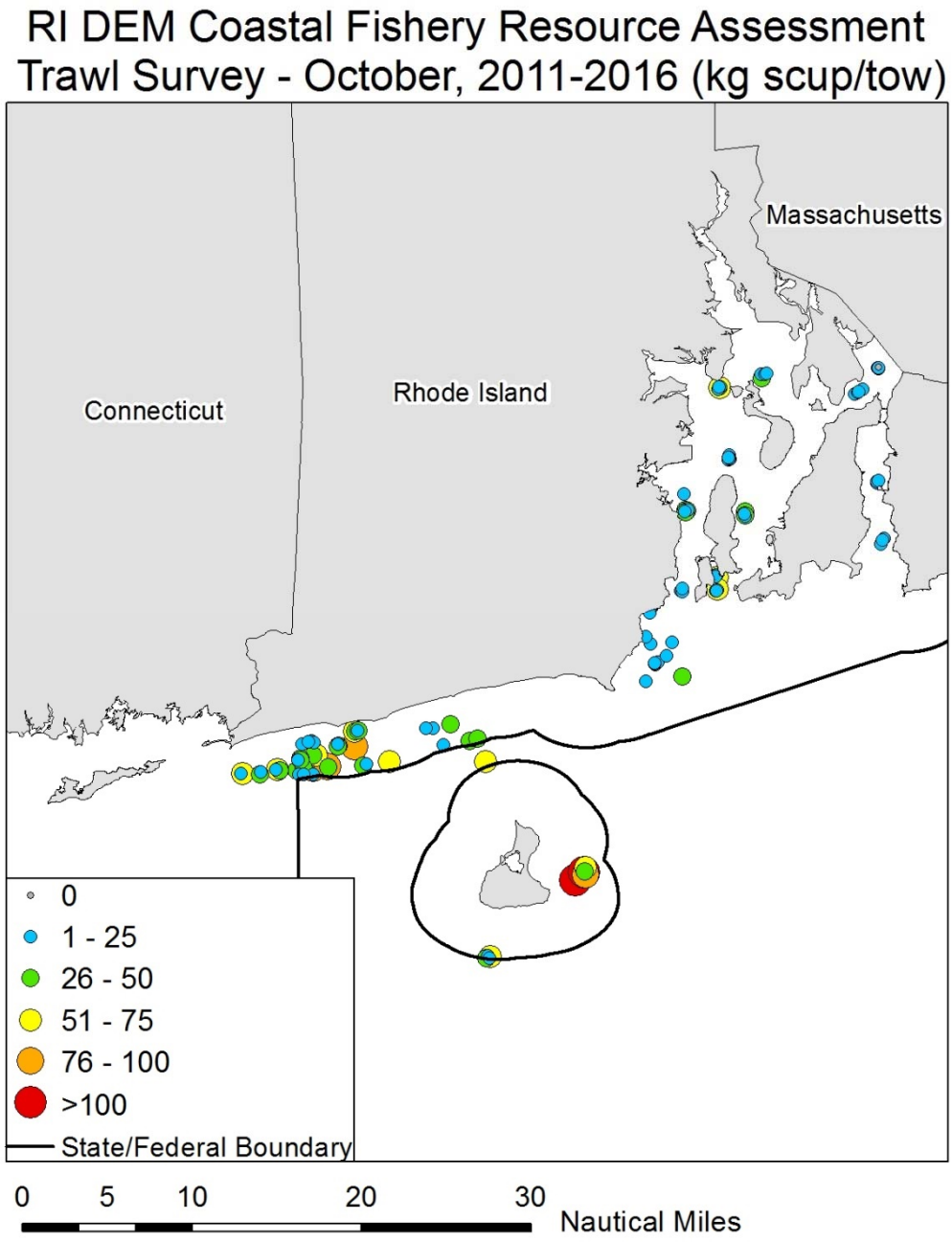

Figure 10. Scup catch per town in the RI DEM coastal fishery resource assessment trawl survey, during October, 2011-2016.

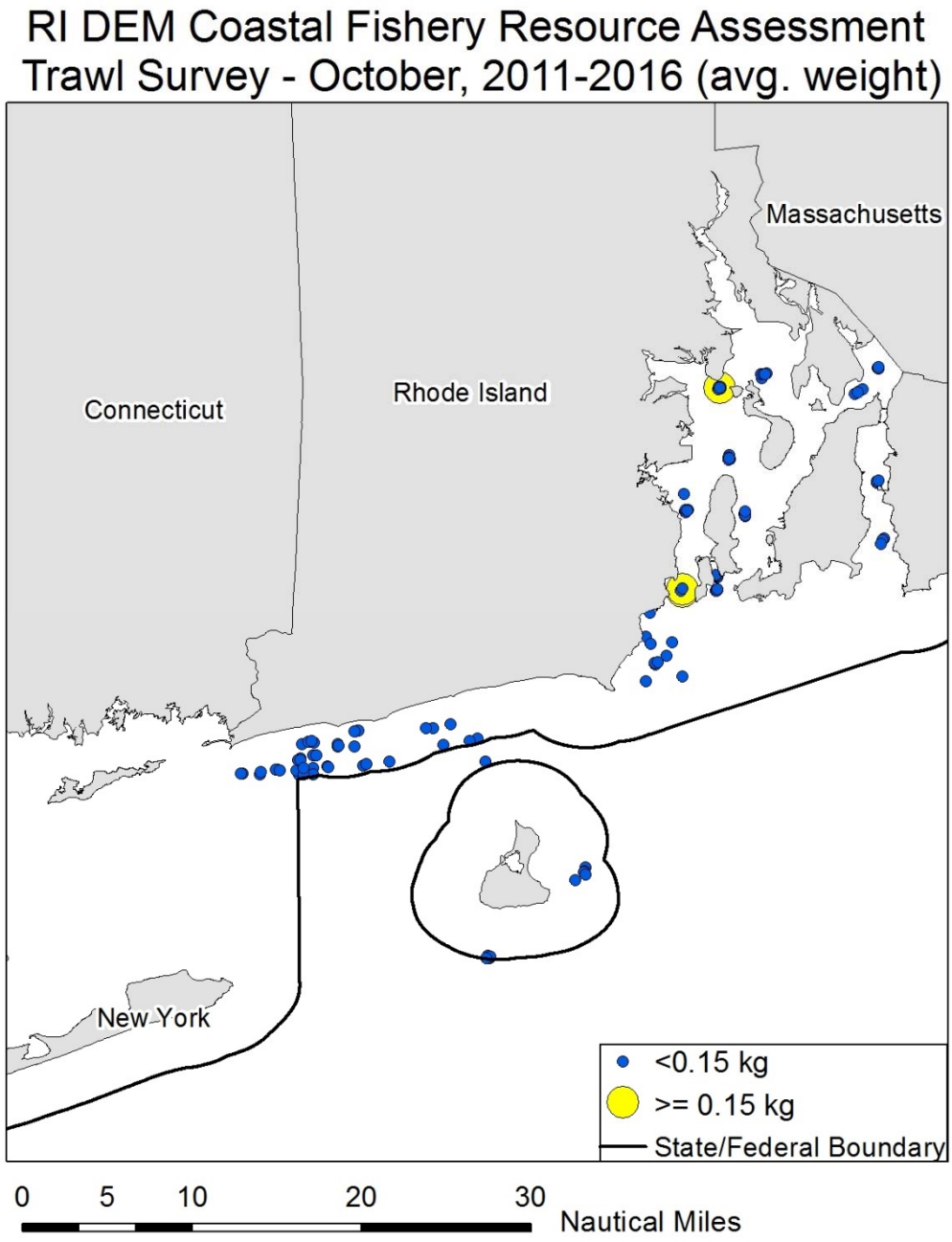

Figure 11. Average weight per scup in the RI DEM coastal fishery resource assessment trawl survey, October, 2011-2016. Average weights are shown as those less than 0.15 kg and those greater than or equal to 0.15 kg, which is approximately the weight of a scup that has reached the commercial minimum size of nine inches total length (based on Morse 1978 and Hamer 1979).

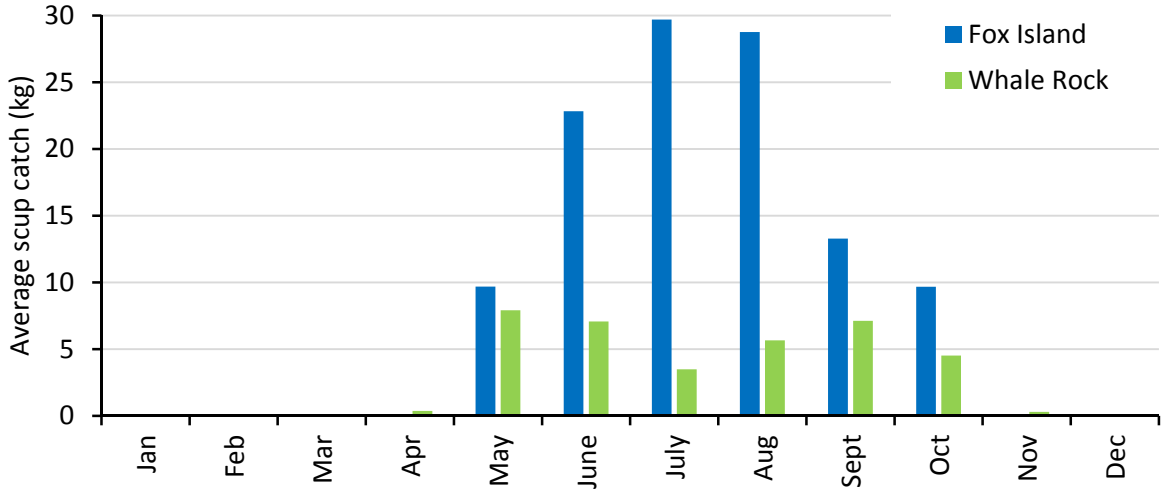

Figure 11. Average scup catch by month in the URI GSO Narragansett Bay fish trawl survey, 2011-2015.

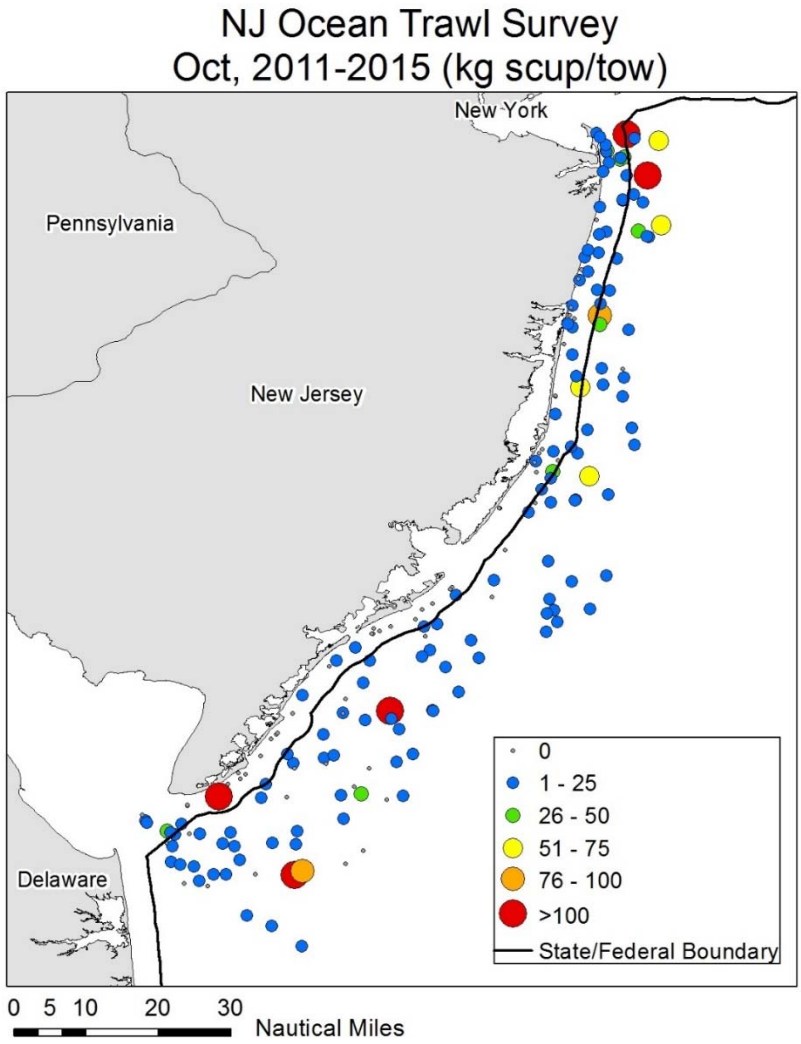

Figure 12. Scup catch per tow in October, 2011-2015, in the New Jersey Ocean Trawl Survey.

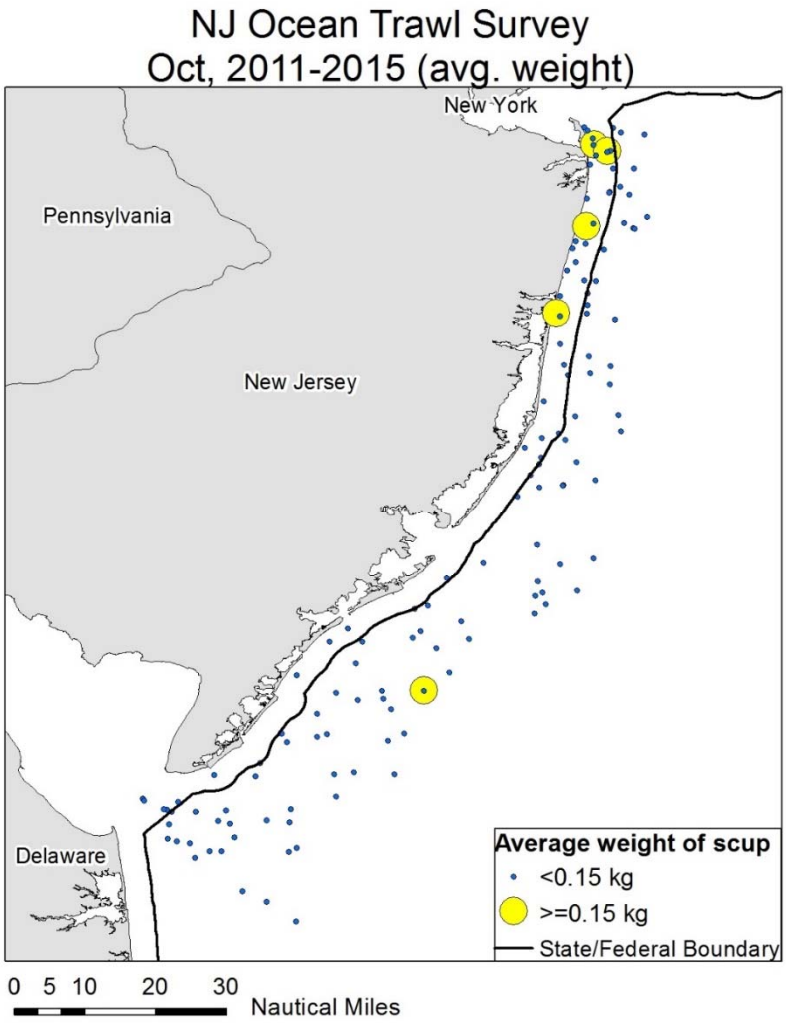

Figure 14. Average weight of scup caught in in the New Jersey Ocean Trawl Survey, October, 2011-2015. Average weights are shown as those less than 0.15 kg and those greater than or equal to 0.15 kg, which is approximately the weight of a scup that has reached the commercial minimum size of nine inches total length (based on Morse 1978 and Hamer 1979).

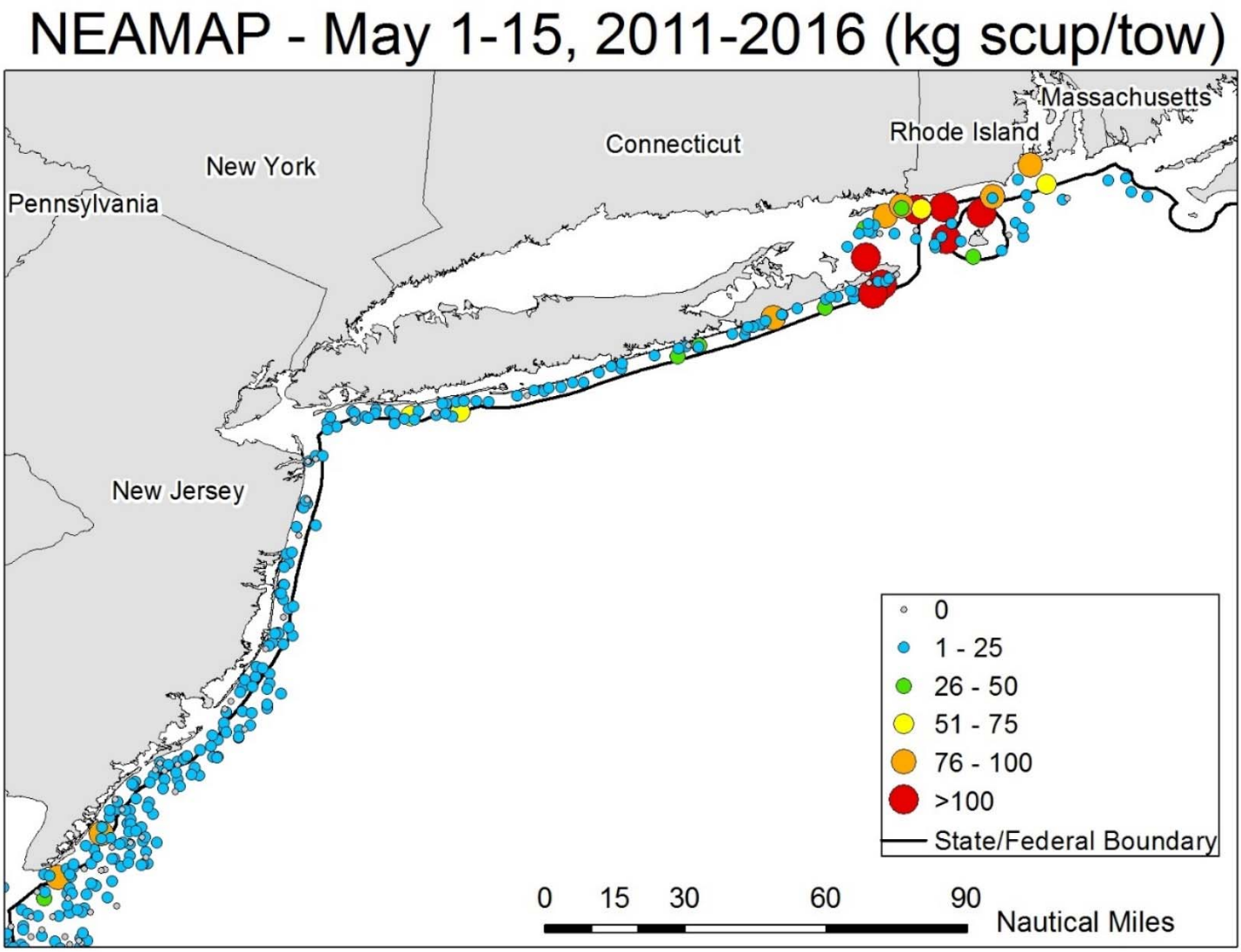

Figure 15. Scup catch per tow, May 1-15, 2011-2016, in the NEAMAP trawl survey off the states of Massachusetts through New Jersey.

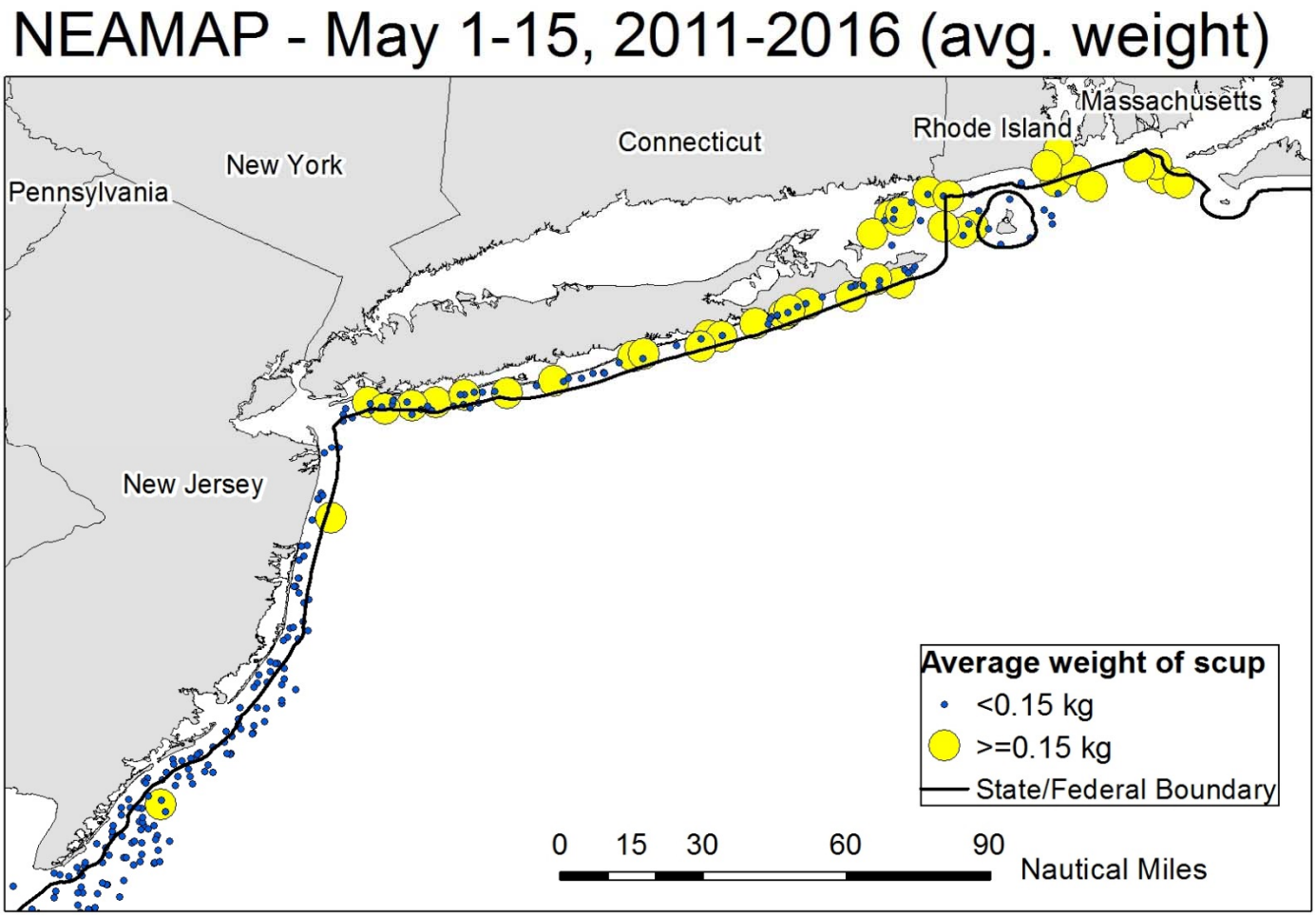

Figure 16. Average weight per scup in NEAMAP tows from Massachusetts through New Jersey, May 1-15, 2011-2016. Average weights are shown as those less than 0.15 kg and those greater than or equal to 0.15 kg, which is approximately the weight of a scup that has reached the commercial minimum size of nine inches total length (based on Morse 1978 and Hamer 1979).

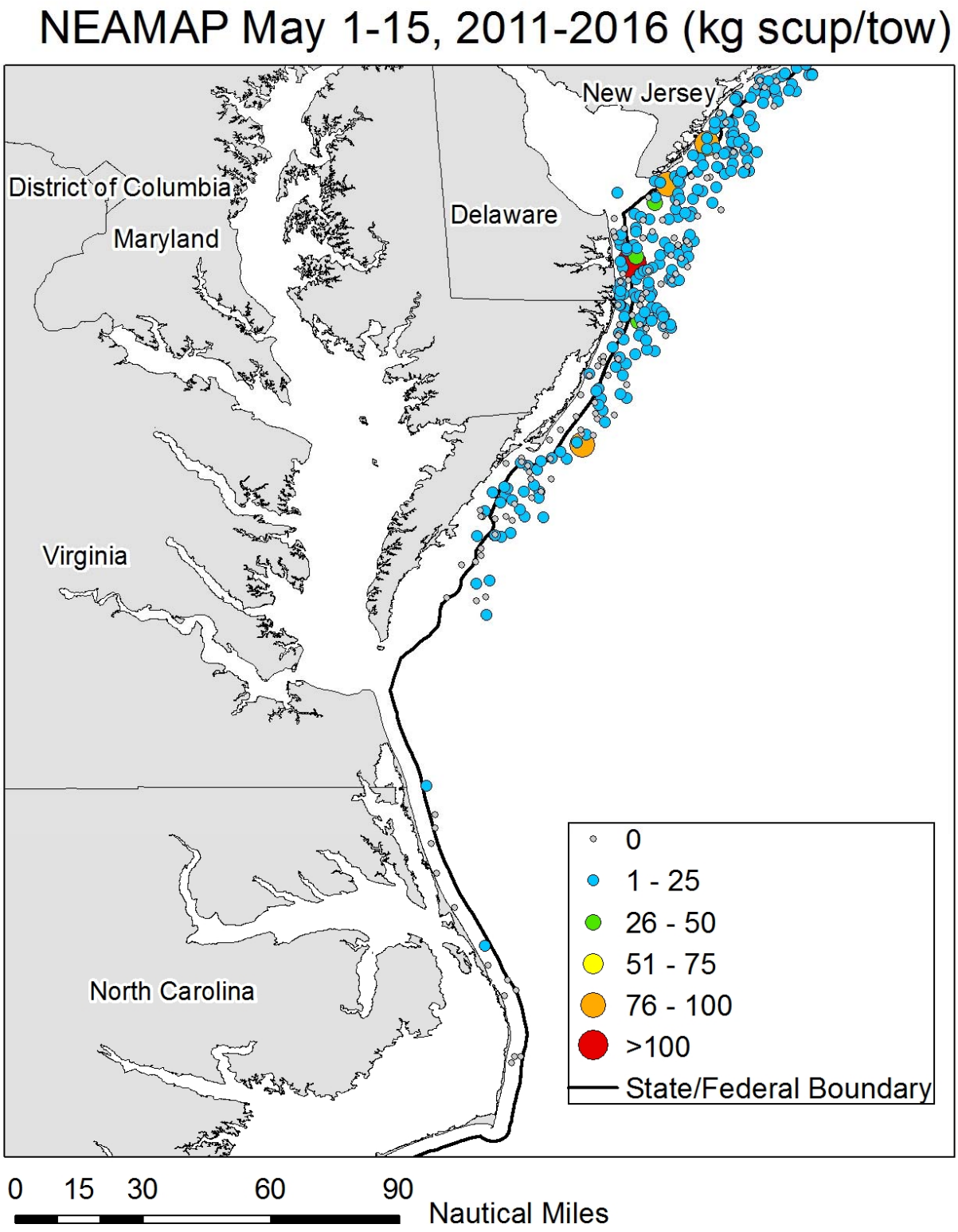

Figure 17. Scup catch per tow, May 1-15, 2011-2016, in the NEAMAP trawl survey off the states of Delaware through North Carolina.

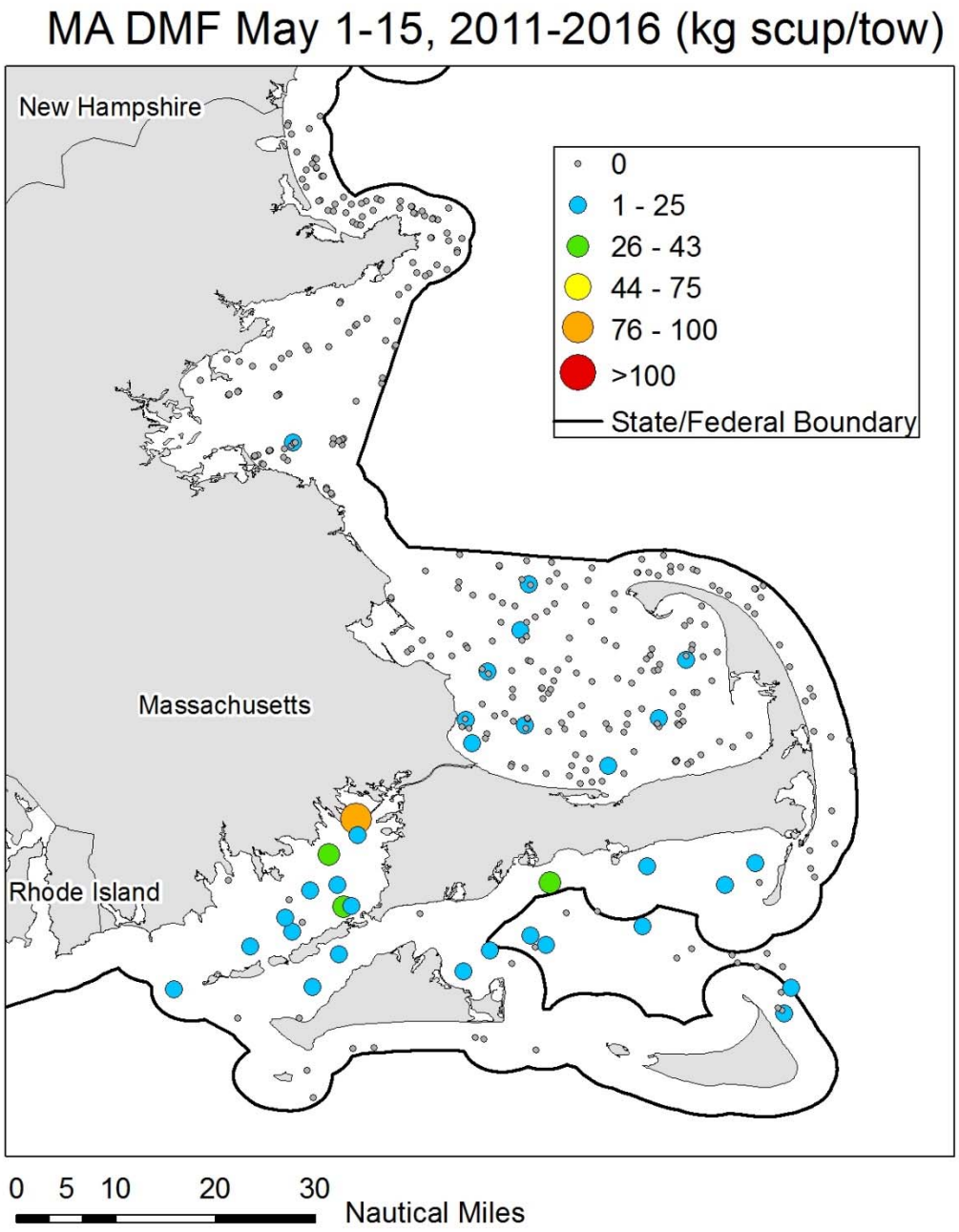

Figure 18. Scup catch per tow in the MA DMF spring trawl survey, May 1 – 15, 2011-2016.

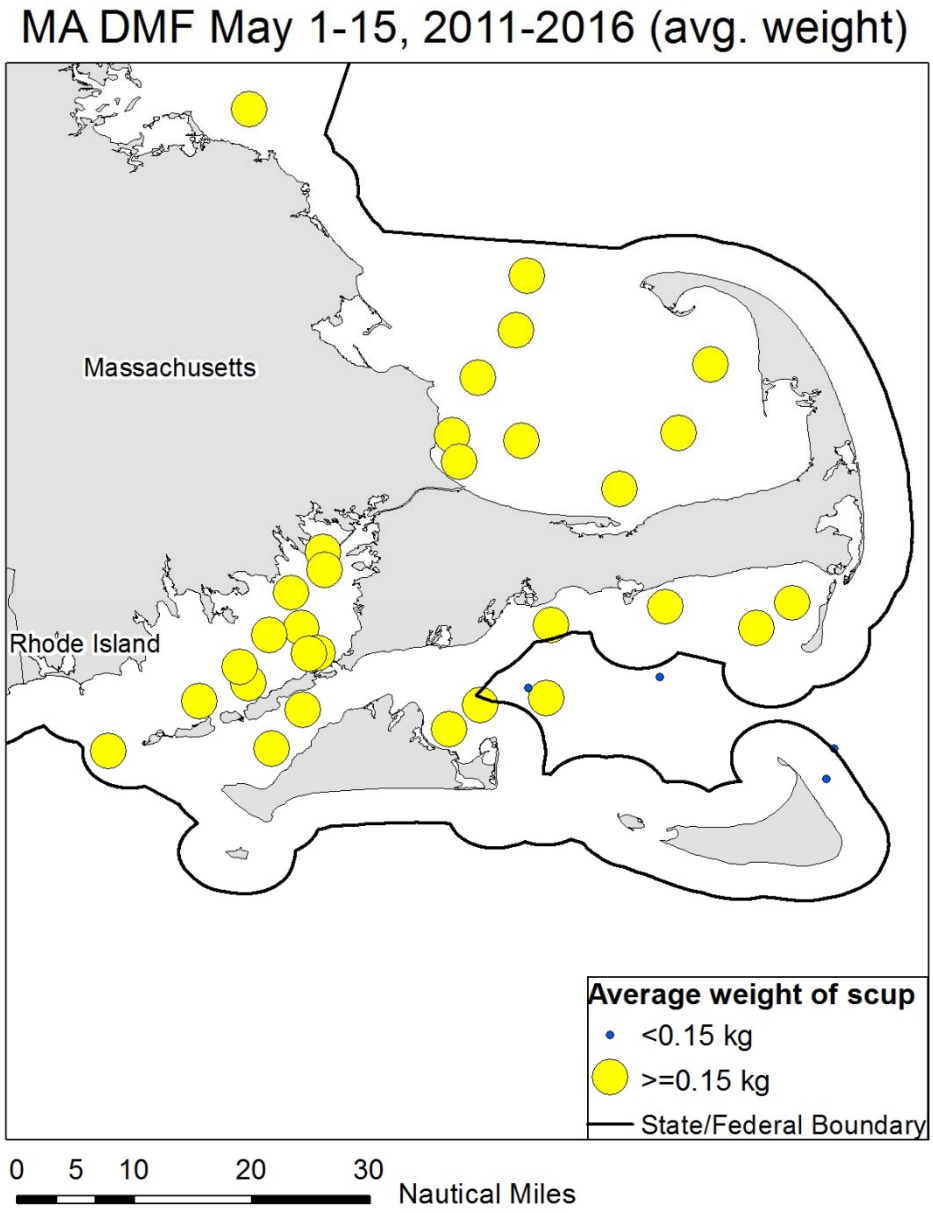

Figure 19. Average weight per scup in the MA DMF spring trawl survey, May 1 – 15, 2011-2016. Average weights are shown as those less than 0.15 kg and those greater than or equal to 0.15 kg, which is approximately the weight of a scup that has reached the commercial minimum size of nine inches total length (based on Morse 1978 and Hamer 1979).

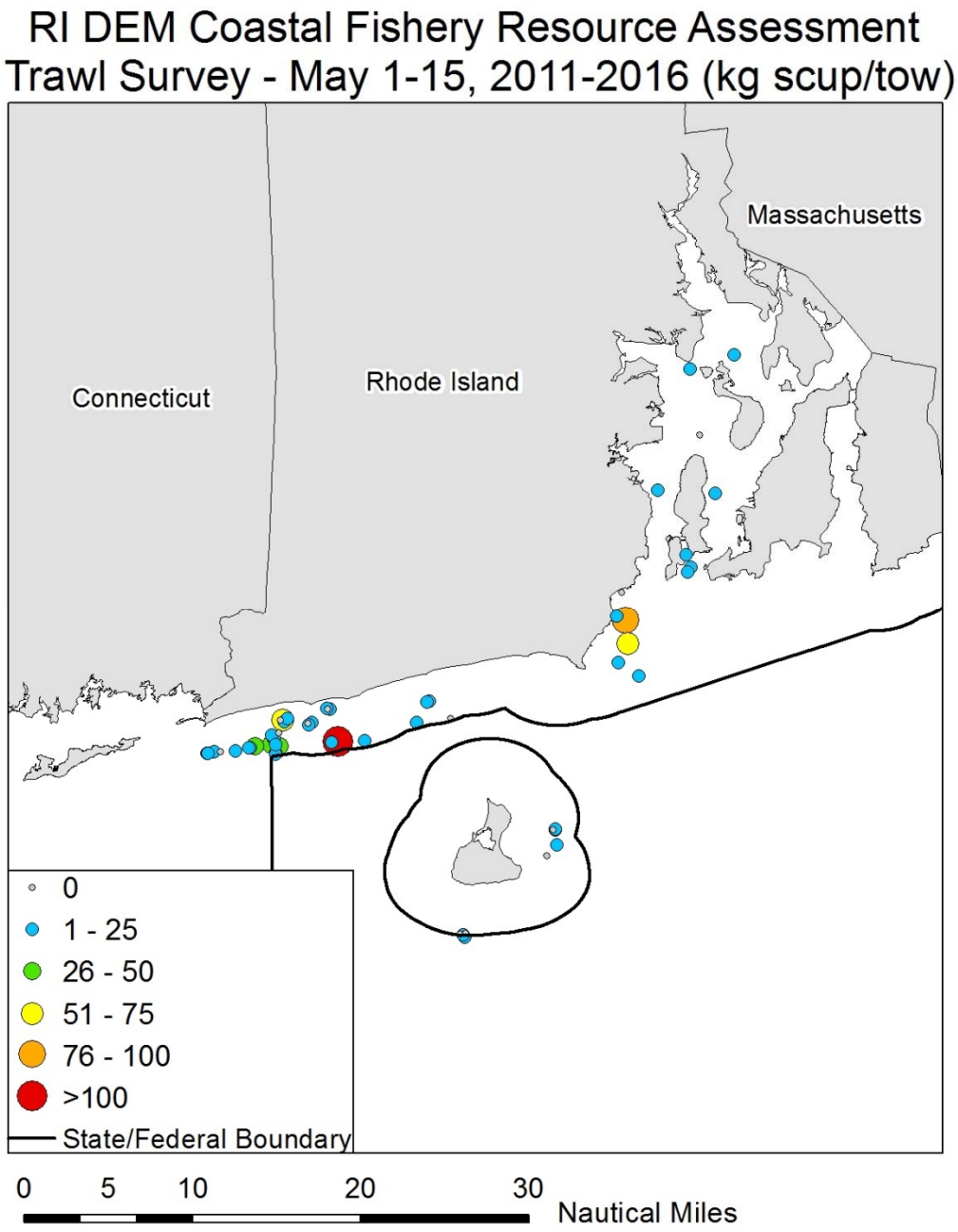

Figure 20. Scup catch per town in the RI DEM coastal fishery resource assessment trawl survey, May 1-15, 2011-2016.

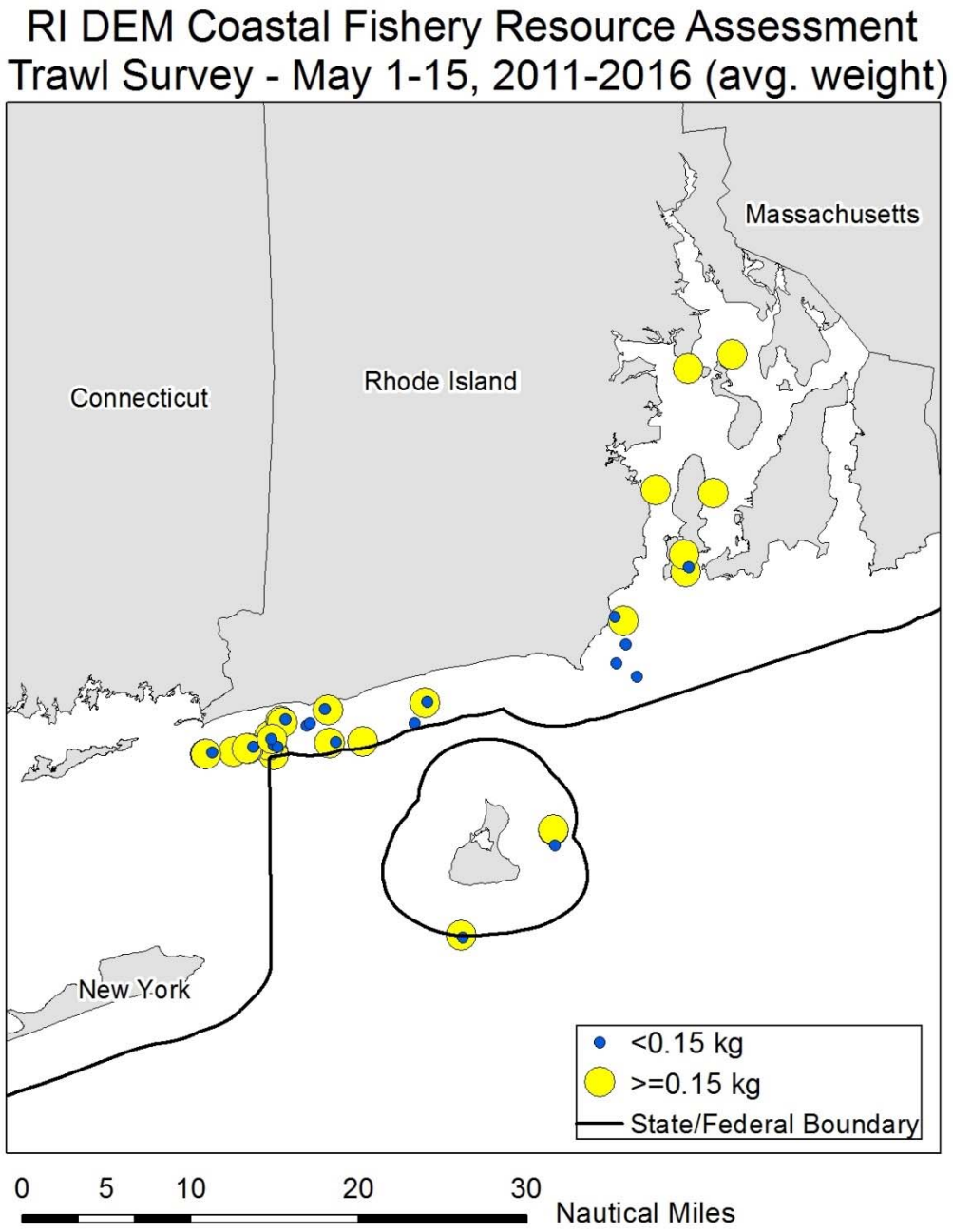

Figure 21. Average weight per scup in the RI DEM coastal fishery resource assessment trawl survey, May 1-15, 2011-2016. Average weights are shown as those less than 0.15 kg and those greater than or equal to 0.15 kg, which is approximately the weight of a scup that has reached the commercial minimum size of nine inches total length (based on Morse 1978 and Hamer 1979).