



Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: August 9, 2018

To: Council and ASMFC Summer Flounder, Scup, and Black Sea Bass Management Board

From: Julia Beaty and Jason Didden, MAFMC staff

Subject: Scup incidental possession limit

Background

Requested change

Representatives from Massachusetts and Rhode Island requested an increase in the federal/interstate scup incidental possession limit to 4,000 pounds during April 15 - June 15. This change would apply to all state and federal commercial scup permit holders, not just those from Massachusetts and Rhode Island. The intent behind the request is to allow the spring small mesh inshore fisheries for longfin squid in those states to retain, rather than discard, the scup they catch incidentally.¹

Current regulations

The incidental scup possession limit is currently 1,000 pounds during October - April and 200 pounds during May - September. A 4,000 pound incidental possession limit during April 15 - June 15, as proposed, would represent a notable increase, especially compared to the current incidental possession limit of 200 pounds during May 1 - September 30 (Table 1).

Trawl vessels which possess more than the incidental possession limit must comply with the minimum mesh size of 5.0 inches diamond, as well as the directed fishery possession limits (Table 2).

The commercial minimum fish size of 9 inches total length applies to both directed and incidental scup landings. All scup smaller than 9 inches total length must be discarded. A recent analysis suggests that the 5 inch minimum mesh size is effective at releasing most scup smaller than 9 inches in length (Hasbrouck et al. 2018). Smaller mesh sizes retain higher amounts of

¹ The full proposal is available at: http://www.mafmc.org/s/Tab10_Scup-2019-Specs_2018-08.pdf

undersized and immature scup. Longfin squid are typically harvested with mesh sizes of 2.25 inches or smaller in diameter.

Staff recommendation

As described in more detail later in this document, discards of legal-sized scup could be high in 2019 under the current incidental possession limits. An increase in the incidental possession limits should help reduce scup discards. Commercial scup discards from all mesh sizes increased steadily from 2014 through 2017. In 2017, about 10.42 million pounds of scup were discarded in commercial fisheries, the highest amount since 1981 (NEFSC 2018; Figure 1).

Council staff support an increase in the incidental scup possession limit as this could help reduce discards of legal-sized scup (i.e. scup at least 9 inches in length). As described in more detail below, it is difficult to predict how fishing behavior and the ratio of discards to landings will change under any change in the incidental possession limits. If an increase to a 4,000 pound incidental limit encourages targeting of scup with small mesh, this could lead to increased discards of small scup. For this reason, Council staff suggest consideration of a more moderate increase in the incidental possession limit. The current incidental possession limit during January 1 - April 30 is 1,000 pounds. Starting May 1, this limit drops to 200 pounds. Council staff recommend extending the 1,000 pound incidental limit through the end of June (Table 1). This would help address discards in the spring longfin squid fishery while also minimizing the potential for targeting of scup with small mesh.

Rationale and supporting analysis

It should be noted that, with the exception of Figure 1, all discard information summarized in this document is based on raw observed discard data, not expanded discard estimates.

It is difficult to predict with confidence how the ratio of discards to landings will change under any change in the incidental possession limit. Discards and landings are influenced by a variety of factors, including but not limited to, possession limits, fishing behavior, market factors, and the availability of scup of different sizes.

A previous Monitoring Committee analysis of observer data found that in 2014 some trips fished with small mesh (<5 inches) until the incidental scup possession limit was reached, then switched to larger mesh, effectively increasing the possession limit to the directed fishery possession limits. Other trips continued to use small mesh after the scup incidental limit was reached. These behaviors complicate the assumption that if the incidental trip limits were increased, the proportion of scup discards would decrease and landings would increase (i.e. discards would “turn into” landings). Increasing the incidental possession limits could simply increase the level of scup catch at which the trips switch mesh or become non-compliant. This analysis has not been updated; however, the conclusions are likely still relevant.

Although the impacts of an increase in the scup incidental possession limit are uncertain, an increase could be beneficial for the following reasons:

- Availability of legal-sized scup is expected to be high in 2019. This could lead to high discards under the current incidental limits.
 - The 2015 year class is estimated to be the largest since at least 1984. The 2016 year class is estimated to be below average (Figure 2; NEFSC 2017). Estimates of the size of the 2017 and 2018 year classes are not currently available; however, survey catches suggest that these year classes are not notably above or below average (NEFSC 2018).
 - In 2017, the scup which made up the record high 2015 year class were mostly too small to be landed due to the commercial minimum fish size of 9 inches total length (about 23 cm). This led to high commercial discards (i.e. 10.42 million pounds) in 2017 (Figure 1; NEFSC 2018; Dr. Mark Terceiro, NEFSC, personal communication).
 - The length frequency of discarded scup in all fisheries (i.e. not limited to any mesh size) shows that most of the scup discarded during April - June 2017 were below the commercial minimum size of 9 inches total length. These data also show higher discards of 6 - 7 inch scup compared to other sizes (Figure 3). According to age and length data from the spring 2017 NEFSC trawl survey, these 6 - 7 inch scup were from the 2015 year class.
 - During April - June 2015 - 2017, on trips where at least 40% of the landings were longfin squid (a proxy for a directed squid trip), the reported reasons for most scup discards when small mesh was used were “regulations prohibit retention, too small” (accounting for 51% of observed scup discards on small mesh tows on these trips) and “no market, too small” (accounting for 33%).
 - As summarized in more detail in the appendix to MAFMC 2018A, scup discards increased across all mesh sizes, areas, and calendar quarters in 2017, which further suggests that the 2015 year class had an important impact on discards in 2017 (e.g. Figure 1).
 - Although scup discards during 2015-2017 were driven by catches of undersized scup, the commercial incidental and directed possession limits may have a greater influence on discards in 2019 because availability of legal-sized scup is expected to be higher in 2019 than during 2015-2017 as a result of the abundant 2015 year class. The scup in this year class will be large enough to be landed (i.e. at least 9 inches in length) in 2019.
- An increase in incidental landings is not expected to cause the 2019 scup quota or ABC to be exceeded.
 - The 2019 scup quota is the second highest since joint management began in 1997 (Figure 4). Based on recent fishery performance (Figure 4) and advisor input (e.g. MAFMC 2018B), commercial landings are not expected to exceed the 2019 quota under current management measures.

- In 2017, the scup acceptable biological catch (ABC) was exceeded by 13% due to commercial discards. This was the first time since 2011 that the ABC was exceeded. The 2018 and 2019 ABCs are 38% and 29% higher than the 2017 ABC, respectively.
- Scup biomass was estimated to be 2.1 times the biomass target in 2016 (NEFSC 2017). This suggest that there may be low risk of substantial negative impacts to the scup stock from an increase in the incidental possession limit.
- An increase in the incidental limit could allow some amount of scup which would otherwise be discarded to be landed.
 - As previously stated, it is difficult to predict how much scup will be discarded or landed under any possession limit.
 - The longfin squid fishery catches notable amounts of scup during April - June.
 - During 2015-2017, 312 observed trips (24 in 2015, 92 in 2016, and 196 in 2017) had landings that were at least 40% longfin squid (a proxy for a directed squid trip) and had at least one tow that occurred in April, May, or June. Of these 312 observed trips, 306 trips (98%) also caught scup while using mesh smaller than 5 inches in diameter. In total, 81% of the observed scup catch on these trips was discarded.
 - When considering only catch from tows using small mesh, the average ratio of scup to squid catch on these 312 trips was 61%, meaning that for every 100 pounds of squid caught, 61 pounds of scup were caught. The average ratio varied between 2015 (15%), 2016 (46%), and 2017 (73%). The median ratio for 2015-2017 was 23%. The difference between the average and the median indicates that a relatively small number of trips with high scup to squid catch ratios influenced the average. In addition, some of these trips had low total catches. For example, despite the fact that longfin squid made up at least 40% of the landings on each trip, 13 trips caught less than 500 pounds of squid and caught more scup than squid.
 - During 2015-2017, observed scup discards in the longfin squid fishery were relatively high during May and June, compared to other months. Discards were also relatively high during August; however, August was not included in the proposal submitted by representatives from Massachusetts and Rhode Island (Figure 5, Table 4).
 - Observer data suggest that 7% of longfin squid trips (as defined above) during April - June, 2015-2017 caught 4,000 pounds or more of scup, 10% caught 3,000 pounds or more, 14% caught 2,000 pounds or more, and 28% caught 1,000 pounds or more. This means that 72% of these trips caught less than 1,000 pounds of scup, which suggests that a 1,000 pound incidental limit may be sufficient to eliminate most discards of legal-sized scup in the longfin squid fisheries during April - June.
 - An increase in the incidental scup possession limit may allow for increased targeting of scup with small mesh, which could lead to increased discards of small

scup. However, during April - June 2015 - 2017, scup were on average worth less per pound than longfin squid (i.e. \$0.48 per pound for scup vs. \$1.33 per pound for longfin squid, and \$0.61 per pound for scup and \$1.36 per pound for longfin squid when all months are considered). This could discourage longfin squid fishermen from targeting scup with small mesh.

- All vessels which hold state or federal permits for scup² would be able to take advantage of an increase in the incidental possession limit. During 2015-2017, 707 vessels held federal scup moratorium permits during at least one of the three years. Of these, 325 (46%) also held federal longfin squid moratorium permits (required for possessing more than 2,500 pounds of longfin squid), 471 (66%) also held federal incidental longfin squid permits (allowing possession of up to 2,500 pounds of longfin squid), and 152 (22%) held both longfin moratorium and incidental permits. Not all permit holders are active participants in the fisheries in any given year.

² A federal moratorium permit is required to retain any amount of scup in excess of the recreational possession limit in federal waters.

Tables and Figures

Table 1: Proposed and current scup incidental possession limits and dates.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
MA/RI Proposal	1,000 lb			4,000 lb		200 lb				1,000 lb		
Staff Proposal	1,000 lb					200 lb				1,000 lb		
Current	1,000 lb			200 lb						1,000 lb		

Table 2: Commercial scup possession limits, 2016-2018.

Date	Directed fishery possession limit (must use ≥5" mesh)	Incidental possession limit (<5" mesh)
January 1 - March 31 (Winter I quota period)	50,000 lb	1,000 lb
April 1 - September 30 (Summer quota period)	State-specific (e.g. Table 2)	200 lb
October 1 - December 31 (Winter II quota period)	12,000 lb*	1,000 lb

* Or higher depending on quota rollover (if any) from Winter I

Table 3: Commercial scup possession limits for trawl vessels during the Summer quota period (May 1 – October 31) in 2017.

State	Possession limit
Maine	None
New Hampshire	None
Massachusetts	10,000 lb per vessel per week
Rhode Island	10,000 lb per vessel per week
Connecticut	0 - 1,500 lb, depending on date
New York	600 - 800 lb depending on date
New Jersey	5,000 lb
Delaware	None
Maryland	None
Virginia	None
North Carolina (north of Cape Hatteras)	100

Table 4: Observed scup discards by year and month on trips where at least 40% of landings (by weight) were longfin squid and when mesh smaller than 5 inches in diameter was used. Discards are shown as the percent of annual discards by month and are based on raw observer data (not expanded estimates).

Month	Observed scup discards on longfin squid trips			
	2015	2016	2017	2015-2017 average
Jan	17%	10%	2%	5%
Feb	0%	6%	0%	2%
Mar	29%	2%	1%	3%
Apr	0%	0%	2%	1%
May	2%	29%	18%	21%
Jun	1%	13%	37%	27%
Jul	0%	5%	13%	9%
Aug	12%	22%	14%	17%
Sep	17%	6%	1%	4%
Oct	14%	4%	8%	7%
Nov	5%	3%	3%	3%
Dec	4%	0%	0%	0%

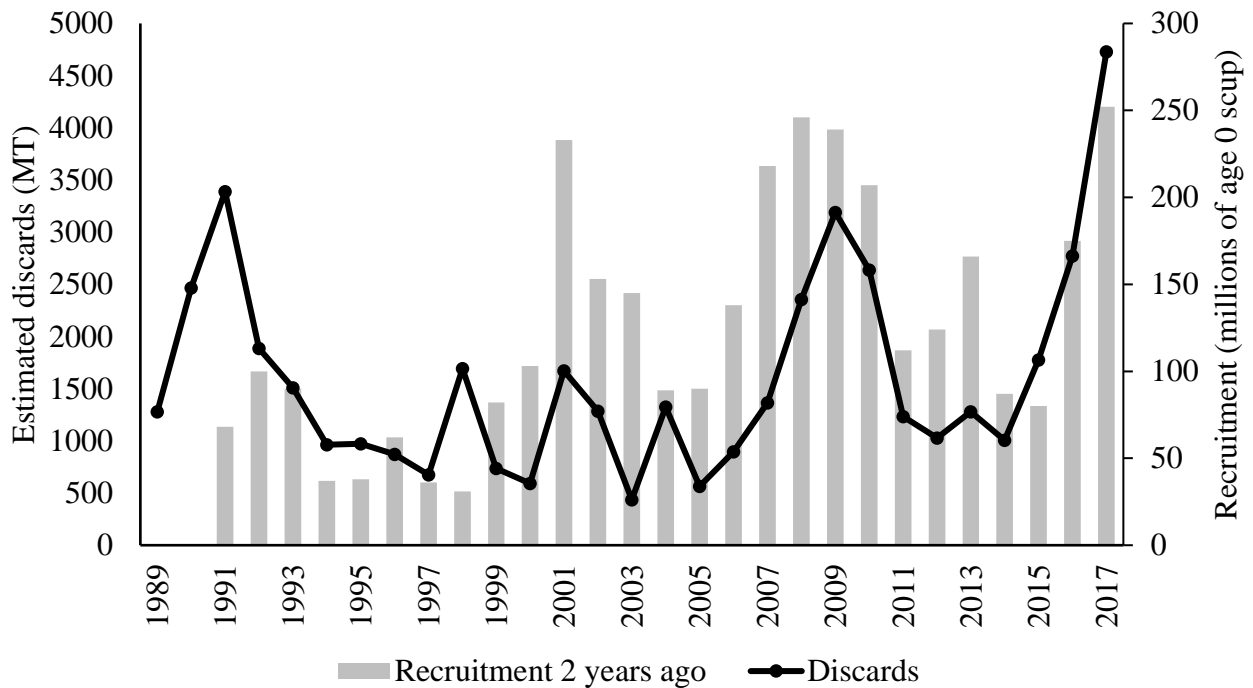


Figure 1: Estimated scup discards from all statistical areas, mesh sizes, and calendar quarters, as well as recruitment from two years prior (e.g. 2015 recruitment is shown in 2017).

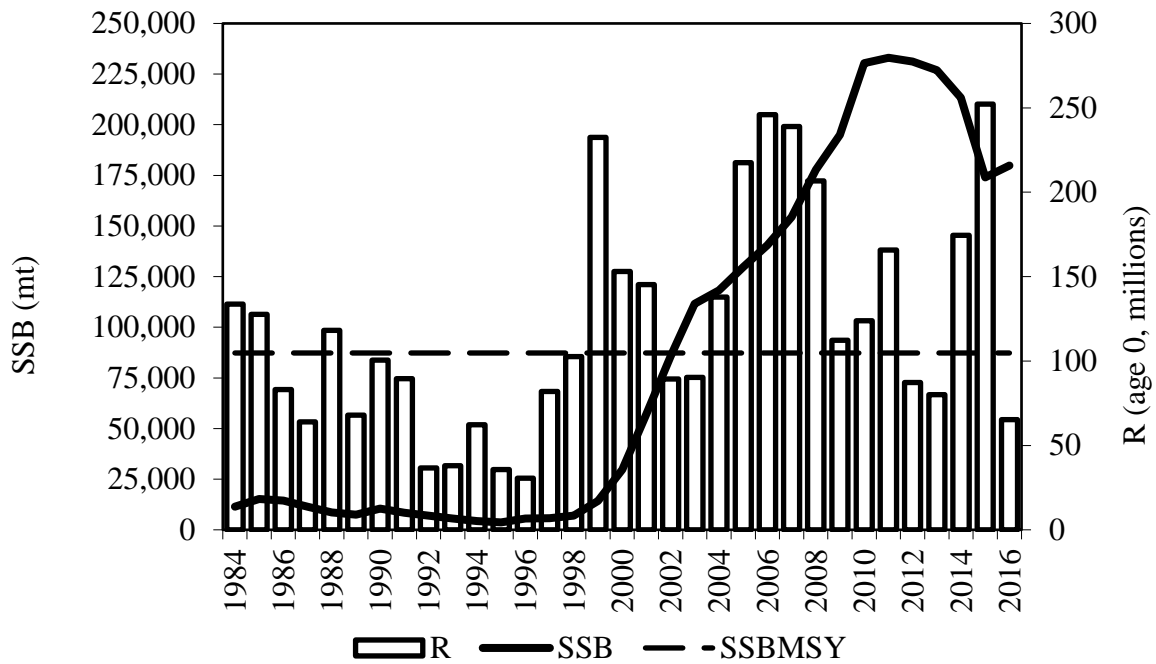


Figure 2: Spawning stock biomass (SSB; solid line) and recruitment (R; vertical bars) for scup. The horizontal dashed line is the SSB_{MSY} proxy = $SSB_{40\%}$ = 87,302 mt from the 2015 benchmark stock assessment. Source: NEFSC 2017.

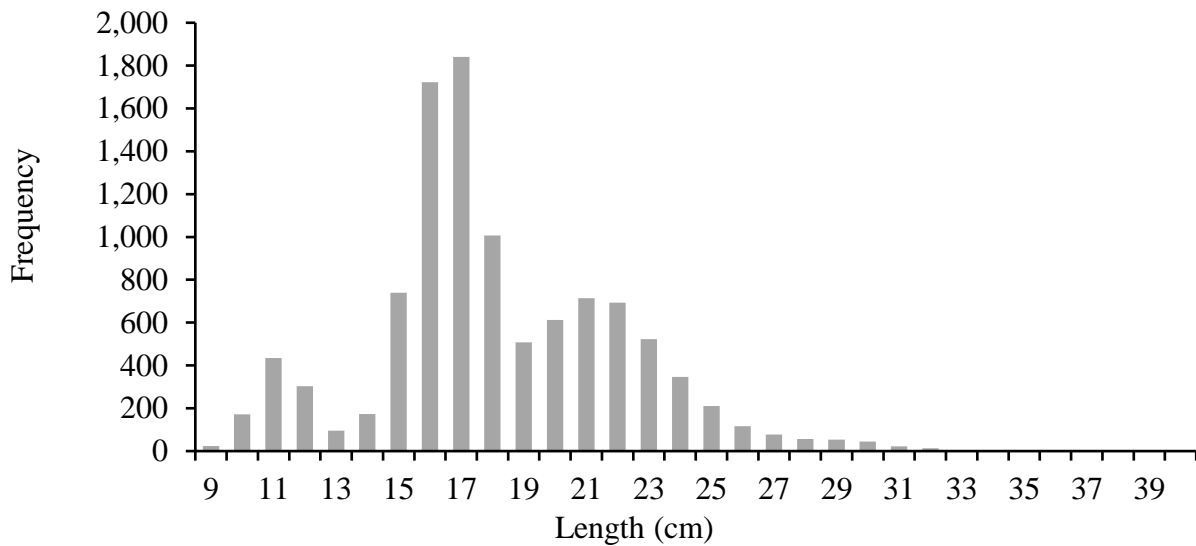


Figure 3: Length frequency of discarded scup during April - June, 2017 based on raw observer data (not expanded estimates) from all fisheries and all mesh sizes. The commercial minimum fish size is 9 inches total length (about 23 cm). The peak at 16 - 17 cm corresponds with the 2015 year class, according to age and length data from the spring 2017 NEFSC trawl survey.

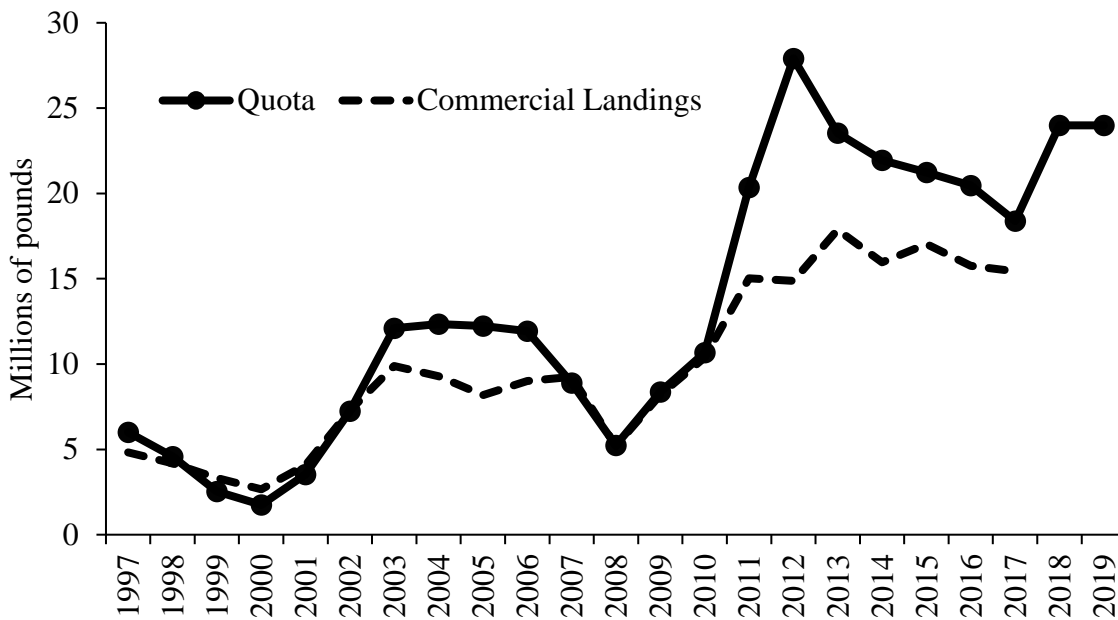


Figure 4: Annual commercial scup quotas and landings, Maine - North Carolina.

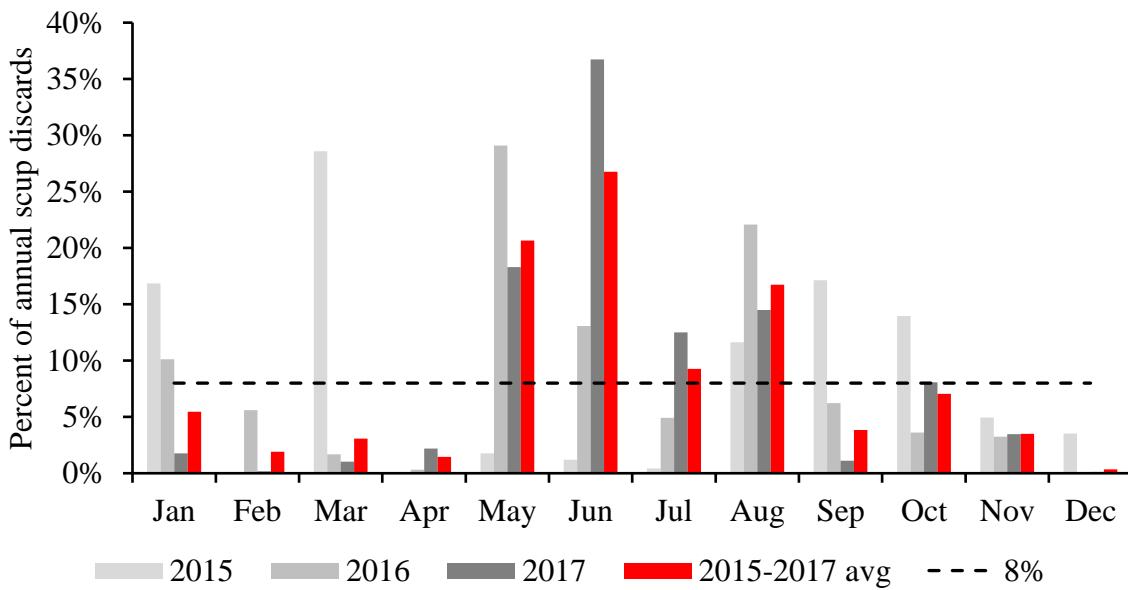


Figure 5: The percent of annual observed scup discards by year and month based on hauls using mesh smaller than 5 inches in diameter on trips where at least 40% of landings (by weight) were longfin squid. A dashed line indicating 8% is also shown because if discards were evenly distributed throughout the year, each month would account for 8% of annual discards.

References

Hasbrouck, E., S. Curatolo-Wagemann, T. Froehlich, K. Gerbino, D. Kuehn, P. Sullivan, and J. Knight. 2018. Determining Selectivity and Optimum Mesh Size to Harvest Three Commercially Important Mid-Atlantic Species - a Report to the Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission. Available at: http://www.mafmc.org/s/Tab08_SFSBSB-Mesh-Selectivity-Study-Apr2018.pdf

MAFMC (Mid-Atlantic Fishery management Council). 2018A. MAFMC staff memo dated July 3, 2018. "2019 Scup Management Measures and Review of Scup Discards Through 2017." Available at: http://www.mafmc.org/s/scup_specs2019memo-m7rd.pdf

MAFMC (Mid-Atlantic Fishery management Council). 2018B. Advisory Panel Summer Flounder, Scup, and Black Sea Bass Fishery Performance Reports. Available at: http://www.mafmc.org/s/SFSCBSB_FPRs_06-26-18_Final.pdf

MAFMC (Mid-Atlantic Fishery management Council). 2018C. Summer Flounder, Scup, and Black Sea Bass Monitoring Committee July 19, 2018 Meeting Summary. Available at: http://www.mafmc.org/s/Tab07_BSB-2019-Specs_2018-08.pdf

NEFSC (Northeast Fisheries Science Center). 2017. Scup Assessment Update for 2017. Available at: <http://www.mafmc.org/ssc-meetings/2017/july-19-20>.

NEFSC (Northeast Fisheries Science Center). 2018. Scup Data Update for 2018. Available at: <http://www.mafmc.org/ssc-meetings/2018/july-17-18>