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: June 29, 2018

TO: Chris Moore, Executive Director

FROM: Kiley Dancy, Staff

SUBJECT: Summer Flounder Specifications for 2019

Executive Summary

In 2016, two-year specifications were implemented for summer flounder for 2017-2018. No specifications have yet been recommended or implemented for the 2019 fishing year. A benchmark stock assessment for summer flounder is scheduled to undergo peer review in November 2018, with results expected to be available in early 2019. Interim 2019 specifications are needed for implementation by January 1, 2019. Revisions based on the new stock assessment would likely be implemented in spring 2019.

The most recent stock assessment update was completed in July 2016. This update indicated that the summer flounder stock was not overfished, but overfishing was occurring in 2015. Spawning stock biomass (SSB) was estimated to be 79.90 million lb (36,240 mt) in 2015, 58% of SSB at maximum sustainable yield, SSB_{MSY} = 137.56 million lb (62,394 mt). The fishing mortality rate (F) in 2015 was 0.390, 26% above the fishing mortality threshold reference point $F_{MSYPROXY} = F_{35\%} = 0.309$.

The Northeast Fisheries Science Center (NEFSC) provided a data update for 2018, with catch, landings, and fishery independent survey indices through 2017. In addition, this data update provides projections of stock biomass for 2019.The projections use the 2016 stock assessment update model run, updated to reflect realized catch from 2016 and 2017 and the assumption that the 2018 Acceptable Biological Catch (ABC) will be caught. Staff recommend using these projections to set a preliminary 2019 ABC for summer flounder, for revision later in 2019 based on the forthcoming benchmark assessment.

The Monitoring Committee will review recent fishery performance and recommend to the Council and Board commercial and recreational Annual Catch Limits (ACLs) and Annual Catch Targets (ACTs) for 2019 as well as any modifications to the commercial management measures for 2019.

The currently implemented 2018 catch and landings limits, and the staff recommendation for 2019 limits, are shown in Table 1. The methods used to derive these measures are described in more detail later in this memo.

Table 1: Currently implemented catch and landings limits for summer flounder for 2018, and staff recommended measures for 2019.

Management Measure	2018		Basis	2019 (Staff Rec.)		Basis
	mil lb.	mt		mil lb.	mt	
OFL	18.69	8,476	2016 stock assessment update projections	20.60	9,343	Updated stock projections for 2019 based on the 2016 assessment update
ABC	13.23	5,999	Stock assessment projections/SSC recommendation	15.41	6,988	Revised 2019 projections/Council Risk Policy application
ABC Landings Portion	11.05	5,010	Stock assessment projections	12.86	5,834	Stock assessment projections
ABC Discards Portion	2.18	989	Stock assessment projections	2.54	1,154	Stock assessment projections
Projected Commercial Discards	1.07	485	49% of ABC discards portion, based on 2013-2015 average % discards by sector	1.47	666	58% of ABC discards portion, based on 2015-2017 average % discards by sector
Projected Recreational Discards	1.11	504	51% of ABC discards portion, based on 2013-2015 average % discards by sector	1.08	488	42% of ABC discards portion, based on 2015-2017 average % discards by sector
Commercial ACL	7.70	3,491	60% of ABC landings portion (per FMP allocation) + projected commercial discards	9.18	4,166	60% of ABC landings portion (FMP allocation) + projected commercial discards
Commercial ACT	7.70	3,491	Monitoring Committee recommendation: no deduction from ACL for management uncertainty	9.18	4,166	Staff recommendation: no deduction from ACL for management uncertainty
Commercial Quota	6.63	3,006	Commercial ACT, less projected commercial discards	7.72	3,500	Commercial ACT, less projected commercial discards
Recreational ACL	5.53	2,508	40% of ABC landings portion (per FMP allocation) + projected recreational discards	6.22	2,822	40% of ABC landings portion (FMP allocation) + projected recreational discards
Recreational ACT	5.53	2,508	Monitoring Committee recommendation; no deduction from ACL for management uncertainty	6.22	2,822	Staff recommendation: no deduction from ACL for management uncertainty
Recreational Harvest Limit	4.42	2,004	Recreational ACT, less projected recreational discards	5.15	2,334	Recreational ACT, less projected recreational discards

As described below, staff recommend that ACTs for the commercial and recreational fisheries be set equal to their respective ACL. Staff also recommend no changes to the commercial minimum size, mesh requirements, or exemption programs for summer flounder in 2019.

Introduction

The Magnuson-Stevens Act (MSA) requires each Council's Scientific and Statistical Committee (SSC) to provide ongoing scientific advice for fishery management decisions, including recommendations for ABC, preventing overfishing, and achieving maximum sustainable yield. The Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABC recommendation of the SSC. In addition, the Monitoring Committee established by the Fishery Management Plan (FMP) is responsible for developing recommendations for management measures designed to achieve the recommended catch limits. The SSC is responsible for recommending ABCs that address scientific uncertainty, while the Monitoring Committee recommends ACTs that address management uncertainty and management measures to constrain landings to the ACTs.

In 2015, the SSC recommended 2016-2018 specifications based on a phased-in reduction approach taken at the request of the Council. In 2016, the SSC revised their previously recommended 2017-2018 ABCs after reviewing the results of the 2016 stock assessment update (see "Review of Prior SSC Recommendations" below). The revised 2017-2018 measures were implemented by NMFS in December 2016. In 2017, the SSC reviewed and maintained their previous recommendations for the 2018 fishing year (ABC = 13.24 million lb or 5,999 mt)

No specifications are currently in place for the 2019 fishing year. A benchmark stock assessment is currently in development and is scheduled for peer review at the 66th Stock Assessment Review Committee (SARC 66) in November 2018.[1] Because specifications for summer flounder must be implemented by January 1, 2019, the assessment results will not be available with enough time to incorporate into the initial 2019 ABC recommendations. Thus, interim specifications are required for the first part of 2019, which will then be revised after the final benchmark stock assessment results are available for review.

The SSC is asked to develop 2019 ABC recommendations, and the Monitoring Committee will need to develop 2019 ACL and ACT recommendations. Based on these recommendations, the Council will make a recommendation to the NMFS Greater Atlantic Regional Administrator. Because the FMP is cooperatively managed with the Atlantic States Marine Fisheries Commission, the Commission's Summer Flounder, Scup, and Black Sea Bass Board will meet jointly with the Council in August 2018 to recommend summer flounder management measures. In this memorandum, information is presented to assist the SSC and Monitoring Committee in developing recommendations for the Council and Board to consider for the 2019 fishing year for summer flounder.

Additional relevant information about the fishery and past management measures is presented in the Fishery Performance Report for summer flounder developed by the Council and Commission Advisory Panels, as well as in the corresponding Summer Flounder Fishery Information Document prepared by Council staff.[2]

---

[1] See https://www.nefsc.noaa.gov/saw/ for more information.

[2] Available at: http://www.mafmc.org/council-events/2018/july-2018-ssc-meeting.

Recent Catch and Landings

Reported 2017 landings in the commercial fishery were approximately 5.83 million lb (2,644 mt), about 3% over the commercial quota of 5.66 million lb (2,567 mt). The 2017 commercial ACL (6.57 million pounds or 2,982 mt) was exceeded by 17%, with 2017 commercial catch estimated at 7.71 million pounds (3,498 mt) according to the 2018 data update.

Recreational harvest in 2017 was 3.19 million (1,447 mt), about 85% of the recreational harvest limit (3.77 million lb or 1,711 mt). Recreational catch (harvest plus dead discards) in 2017 was estimated at 4.13 million pounds (1,873 mt), about 87% of the recreational ACL (4.72 million pounds = 2,143 mt).

Total fishery dead catch in 2017 was estimated at 11.84 million pounds (5,371 mt) according to the 2018 data update, about 5% above the 2017 ABC of 11.30 million pounds (5,125 mt).

The 2018 commercial landings as of the week ending June 23, 2018, indicate that 58% of the 2018 coastwide commercial quota has been landed (Table 2). Last year, 62% of the 2017 commercial quota had been landed as of June 24. No recreational data are available yet for summer flounder for 2018.

Table 2: The 2018 state-by-state commercial quotas and the amount of summer flounder landed by commercial fishermen, in each state as of week ending June 23, 2018.

State	Cumulative Landings (lb)	Quota (lb)[a]	Percent of Quota (%)
ME	0	3,061	0
NH	0	30	0
MA	123,616	410,192	30
RI	623,925	1,001,381	62
CT	72,154	145,268	50
NY	246,436	492,169	50
NJ	529,906	1,076,440	49
DE	0	0	0
MD	20,168	131,239	15
VA	783,257	1,371,972	57
NC	1,310,224	1,755,989	75
Other	0	0	0
Totals	**3,709,686**	**6,387,741**	**58**

[a]Quotas adjusted for overages. Source: NMFS Weekly Quota Report for week ending June 23, 2018.

Stock Status and Biological Reference Points

The last peer-reviewed benchmark stock assessment was conducted in the summer of 2013 at the 57th Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC 57).[3] The SAW/SARC 57 biological reference points include a fishing mortality threshold of $F_{MSY} = F_{35\%}$ (as the F_{MSY} proxy) = 0.309, and a biomass reference point of $SSB_{MSY} = SSB_{35\%}$ (as the SSB_{MSY} proxy) = 137.56 million lb = 62,394 mt. The minimum stock size threshold (1/2 SSB_{MSY}), is 68.78 million lb (31,197 mt).

[3] Northeast Fisheries Science Center. 2013. 57th Northeast Regional Stock Assessment Workshop (57th SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 13-14; 39 p.

The most recent stock assessment update was completed in July 2016, using data through 2015.[4] This assessment update uses the model from the 2013 benchmark stock assessment, which is a combined-sex age-structured ASAP assessment model.

Results from the 2016 assessment update indicate that the summer flounder stock was not overfished, but overfishing was occurring in 2015 relative to the biological reference points from the 2013 benchmark assessment. Fishing mortality on the fully selected age 4 fish ranged between 0.799 and 1.775 during 1982-1996 and then decreased from 0.871 in 1997 to 0.288 in 2007. Since 2007 the fishing mortality rate has increased and was 0.390 in 2015, 26% above the fishing mortality reference point (F_{MSY} proxy = $F_{35\%}$ = 0.309). The 90% confidence interval for F in 2015 was 0.292 to 0.490.

SSB was estimated to be 79.90 million lb (36,240 mt) in 2015, about 58% of the biomass target (SSB_{MSY} =137.6 million lb, 62,394 mt), and 16% above the biomass threshold (½ SSB_{MSY} proxy = ½ $SSB_{35\%}$ = 68.78 million lb, 31,197 mt). A rebuilding plan will be triggered if estimated biomass falls below the minimum biomass threshold. Figures showing the trends in F and SSB over time are provided in the 2017 Summer Flounder Fishery Information Document.

The 2016 assessment update indicated that while catches in recent years have not been substantially over the ABCs, the projected fishing mortality rates have been exceeded and projected SSB has not been achieved. This update showed a moderate internal model retrospective pattern with continued recent underestimation of F and overestimation of SSB. A historical retrospective analysis, comparing model estimates from the 1990-2015 assessments, likewise indicates the same trend since the 2011 assessment update. These results appear to be largely driven by below average recruitment from 2010-2015. The assessment continues to show a consistent recent retrospective pattern in recruitment averaging +22%. The update shows that recruitment of age 0 fish was below the time series average (41 million fish at age 0; 1982-2015) each year from 2010 through 2015. Recruitment of age 0 fish in 2015 was estimated at 23 million fish.

In June 2018, the Council received a data update for summer flounder[5], including updated catch and landings information as well as survey indices through 2017 (through spring 2018 for NESFC indices). The data update indicates that most state and federal survey indices of abundance, with the exception of Massachusetts and Delaware, have seen declines from their most recent peaks (generally during 2009-2012) through 2017, although most indices are variable in recent years, and some have shown signs of slight to moderate rebounding. The NEFSC fall survey was unable to sample the summer flounder strata in fall 2017, however the NEFSC spring survey biomass index increased between 2017 and 2018. The Delaware index peaked in 2017. Indices of recruitment (age 0 fish) have generally been below average over the last 6-7 years. Recruitment indices in 2017 were highly variable.

[4] Northeast Fisheries Science Center. 2015. Stock Assessment Update of Summer Flounder for 2015. US Dept Commer, Northeast Fish Sci Cent; 17 p.

[5] Posted at http://www.mafmc.org/s/Summer_flounder_2018_Data_Projection_Update.pdf.

Review of Prior SSC Recommendations

In July 2016, the SSC recommended, and the Council and Board adopted, revised two-year ABCs for summer flounder for 2017-2018, based on new stock status information and projections from the 2016 assessment update.[6] In July 2017, the SSC reviewed the 2018 recommendation and recommended no changes.

The SSC classified the current assessment as an assessment requiring an "SSC-modified OFL (overfishing limit) probability distribution." In this type of assessment, the SSC provides its own estimate of uncertainty in the distribution of the OFL. In 2016, the SSC concluded that no new information was presented that would cause the SSC to deviate from using the previously applied OFL CV of 60%.

Assuming an OFL with a lognormal distribution and a 60% CV, and a stock status lower than B_{MSY}, the 2018 OFL was determined to be 18.69 million lb (8,476 mt), based on an F_{MSY} proxy of F = 0.309 ($F_{35\%}$) and 2017 projected SSB. For 2018, this procedure resulted in a P*=0.267 and an ABC of 13.23 million lb (5,999 mt).

At their July 2016 meeting, the SSC considered the following to be the most significant sources of uncertainty associated with the determination of the OFL and/or ABC:

- Retrospective patterns were evident in the assessment update that have substantial implications for the reliability of model projections and inferences regarding the status of the stock. The causes of the retrospective pattern are unknown, but might include changes in the following:
    1) Sources of mortality that are not fully accounted in the assessment. These could include:
        - Under-estimation of discards in both the commercial and recreational fisheries and lower estimates of mortality rates applied to the discards than are actually occurring; and
        - Under-reported landings.
    2) Natural mortality, which may be underestimated – but the presence of older male flounder in the population suggest this is unlikely.
    3) Availability or catchability of fish due to changes in stock distribution.
- Changes in life history are apparent in the population.
- Potential changes in availability of fish to some surveys and to the fishery as a result of changes in the distribution of the population.

Staff Recommendation for 2019 ABC

As described in the 2018 data update, projections using the existing 2016 updated assessment model were made to estimate the 2019 OFL and ABC. The projections use the realized catches for 2016 and 2017 and assume that 100% of the 2018 ABC (13.23 million lb = 5,999 mt) will be caught. The OFL

[6] The previous 2016-2018 ABC specifications were recommended by the SSC in 2015 based on a three-year phased in reduction, at the request of the Council. This was a deviation from the Council's risk policy that was intended to mitigate negative economic and social impacts of large cuts in the ABC. After reviewing the 2016 stock assessment update, the SSC concluded that the patterns in the survey and recruitment indices indicated a longer-term decline in stock performance and required additional caution compared to the phased-in approach adopted in 2015. Accordingly, the SSC recommended against continuation of the phased-in approach, and recommended revised ABCs for 2017 and 2018 based on a return to its standard approach for implementing the Council's risk policy.

projection uses $F_{2019}=F_{MSY}$ = 0.309. The total catch associated with the projected 2019 OFL is 20.60 million lb = 9,343 mt.

Based on these updated 2019 OFL projections, staff recommend a 2019 ABC of 15.41 million lb (6,988 mt). This is derived by applying the same application of the Council's risk policy that the SSC has used in recent years, including assuming an OFL with a lognormal distribution and a 60% CV, projected 2018 SSB at 75.6% of SSB_{MSY}, and a typical life history. This results in a 2019 ABC of 15.41 million pounds = 6,988 mt and a P* of 0.300 (Table 3).

Table 3: Staff recommendations based on 2019 stock biomass projections and application of the Council's risk policy.

Year	OFL	ABC Total Catch	ABC % of OFL	Landings portion of ABC	Discards portion of ABC	F	P* Value	Projected SSB
2019	20.60 mil lb (9,343 mt)	15.41 mil lb (6,988 mt)	75%	12.86 mil lb (5,834 mt)	2.54 mil lb (1,154 mt)	0.225	0.300	117.28 mil lb (53,198 mt)

As discussed above, these specifications are intended to serve as initial 2019 specifications until they can be revised based on the results of the 2018 benchmark assessment scheduled for peer review in November 2018.

Sector-Specific Catch and Landings Limits

Recreational and Commercial Annual Catch Limits

The summer flounder ABC includes both landings and discards, and is equal to the sum of the commercial and recreational ACLs for summer flounder (Figure 1). Based on the allocation percentages in the FMP, 60% of the landings are allocated to the commercial fishery, and 40% to the recreational fishery. Discards are apportioned based on the discards contribution from each fishing sector using a 3-year moving average percentage. When 2017-2018 specifications were revised in 2016, the most recent three-year period was 2013-2015, during which 51% of dead discards were attributable to the recreational fishery, and 49% to the commercial fishery, on average (Table 1). According to the 2018 data update, the proportion of discards attributable to the commercial fishery increased in 2017, with approximately 58% of discards originating from the commercial fishery and 42% from the recreational fishery between 2015-2017. This is accounted for in the staff recommendation for 2019 ACLs and ACTs.

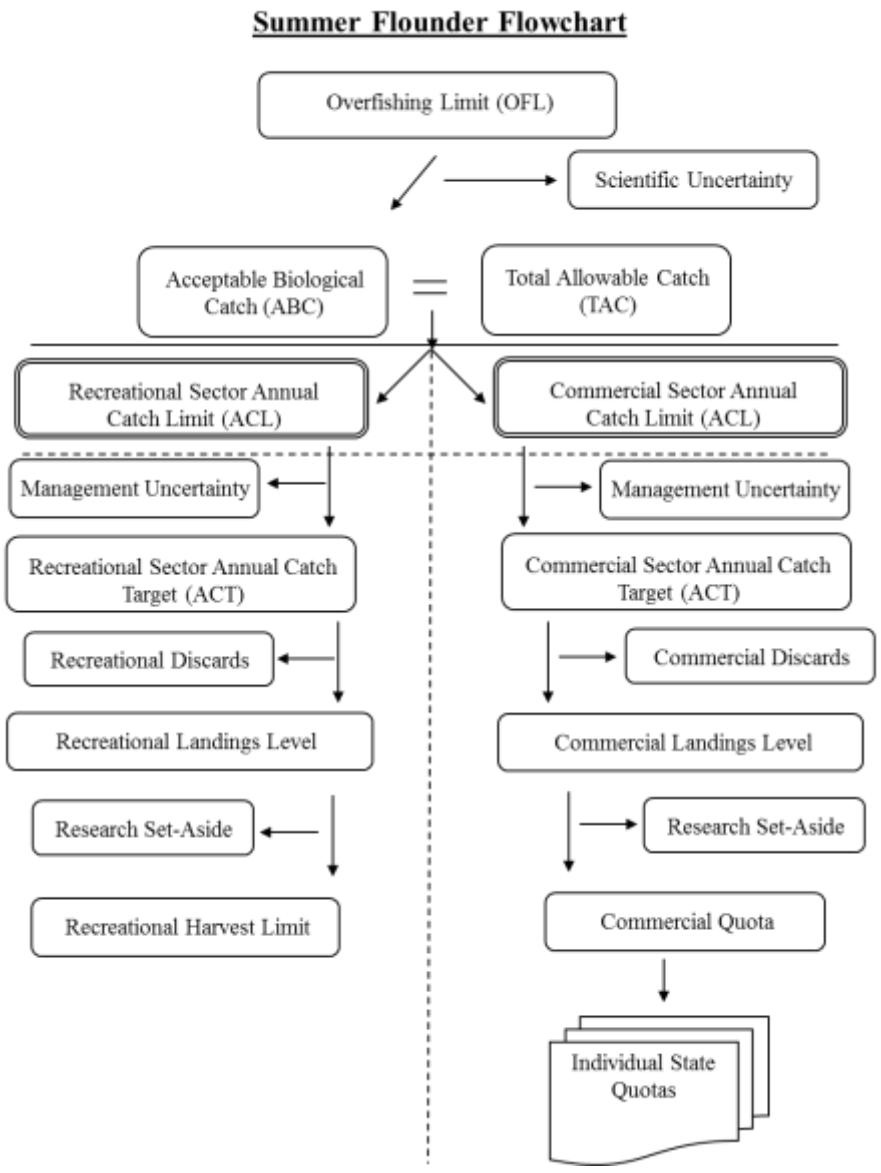

Figure 1: Flowchart for summer flounder catch and landings limits. Note: the research set-aside program was suspended in 2014.

Annual Catch Targets

The Summer Flounder Monitoring Committee is responsible for recommending ACTs, which are intended to account for management uncertainty. The Monitoring Committee should consider all relevant sources of management uncertainty in the summer flounder fishery and provide the technical basis, including any formulaic control rules, for any reduction in catch when recommending an ACT.

Management uncertainty is comprised of two parts: uncertainty in the ability of managers to control catch and uncertainty in quantifying the true catch (i.e., estimation errors). Management uncertainty can occur because of a lack of sufficient information about the catch (e.g., due to late reporting, underreporting, and/or misreporting of landings or bycatch) or because of a lack of management precision (i.e., the ability to constrain catch to desired levels).

Recreational harvest fluctuated widely in relation to the recreational harvest limits (RHLs) for the past five years. Over the past five years (2013-2017), harvest varied substantially (Table 4), even with constant recreational measures between 2014-2016. This illustrates the substantial uncertainty around predicting recreational harvest, which results in occasionally large RHL underages and overages. Given recent substantial underages, staff believe a reduction in the recreational ACL to an ACT is not necessarily the appropriate management response. Instead, the Monitoring Committee should continue ongoing work to incorporate estimates of uncertainty in the recreational data and more fully consider various factors that may influence recreational catch and harvest. For example, the impacts of management changes on recreational discards and the impacts of year class size and trends in biomass projections should be more thoroughly considered with the goal of better predicting impacts of management measure changes. The Council and Board are currently considering both short-term and long-term modifications to the recreational management system to address some of these uncertainties in recreational management, and achieve a balance of flexibility and stability in the recreational measures. For example, the Council funded a proposal to evaluate moving to an F-based management system for the recreational summer flounder fishery. This type of management would fundamentally alter the approach to recreational management.

Recreational dead discards as a percentage of total catch has been stable in recent years, averaging 8% of total catch from 2013-2017. As a percentage of recreational catch, recreational dead discards have averaged 24% over the same time period.

Commercial landings have generally been very near the commercial quotas for the last five years (2013-2017). Although the commercial quota overages were higher than average in 2013 and 2014, landings have been closer to the commercial quota for the past two years (Table 4). The NMFS Regional Administrator has in-season closure authority for the commercial summer flounder fishery, and commercial quota monitoring systems in place are typically effective in allowing timely reactions to landings levels that approach quotas.

Commercial discards as a percentage of the total catch increased in 2017 relative to recent years. Typically, commercial discards have comprised 10% of the total catch on average since 1989, and in 2017 were 16% of the total catch. Commercial discards were 24% of commercial catch in 2017, above the prior 10-year average of 17%. According to observer data, the increase in discards in 2017 appears to be largely driven by low quotas in 2017 and resulting closures (Table 5). The top reasons shown below account for about 90% of observed trawl discards over this period.

Because increases in commercial discards resulted in the commercial ACL being exceeded in 2017, trends in commercial discards should continue to be monitored closely for potential future incorporation into ACT recommendations. However, given the forthcoming benchmark stock assessment that is expected to revise 2019 catch limits, as well as the forthcoming revised time series of recreational catch that will change the understanding of discards by sector, staff recommend that no changes to the ACTs be made until this new information becomes available. Thus, for preliminary 2019 specifications, staff recommend that the commercial and recreational ACTs be set equal to their respective sector ACLs. This should be re-evaluated when revised recreational time series are released, as well as when new stock assessment catch time series are available.

Table 4: Summer flounder commercial and recreational fishery performance relative to quotas and harvest limits, 2013-2017.

Year	Commercial Landings (mil lb)[a]	Commercial Quota (mil lb)	Percent Overage(+)/ Underage(-)	Recreational Landings (mil lb)[b]	Recreational Harvest Limit (mil lb)	Percent Overage(+)/ Underage(-)
2013	12.49	11.44	+9%	7.36	7.63	-4%
2014	11.07	10.51	+5%	7.39	7.01	+5%
2015	10.68	11.07	-4%	4.72	7.38	-36%
2016	7.81	8.12	-4%	6.18	5.42	+14%
2017	5.83	5.66	+3%	3.19	3.77	-15%
5-yr Avg.	-	-	+2%	-	-	-7%

[a] Source: NMFS dealer data, as of May 2018.
[b] Source: NMFS MRIP database as of April 23, 2018. Recreational landings from Maine through North Carolina.

Table 5: Top reasons recorded for discarding summer flounder on observed trawl trips, 2013-2017.

Recorded Discard Reason	2013	2014	2015	2016	2017	Avg
Regulations Prohibit Retention, Too Small	6.2%	10.4%	9.5%	9.2%	10.4%	9.1%
Regulations Prohibit Retention, Quota Filled	2.9%	3.2%	3.6%	4.1%	6.1%	4.0%
Regulations Prohibit Any Retention	1.5%	1.8%	0.8%	1.8%	4.4%	2.1%
Regulations Prohibit Retention, No Quota in Area	0.5%	0.6%	1.2%	0.9%	5.1%	1.7%
Retaining Only Certain Size Better Price Trip Quota in Effect	0.2%	1.1%	0.6%	1.1%	1.9%	1.0%

Commercial Quotas and Recreational Harvest Limits

Projected discards are removed from the sector-specific ACTs to derive landings limits, which include annual commercial quotas and RHLs (Table 1). The sum of the commercial quota and RHL is equivalent to the total allowable landings in a given year. The commercial quota is divided amongst the states based on the allocation percentages in the FMP, shown in Table 6. Revisions to the commercial allocations are currently being considered through the Council and Commission's Summer Flounder Commercial Issues Amendment.[7] Any revisions to these allocations would not be implemented until January 1, 2020 at the earliest.

[7] http://www.mafmc.org/actions/summer-flounder-amendment.

Table 6: The summer flounder quota allocations for the commercial fisheries in each state.

State	Allocation (%)
ME	0.04756
NH	0.00046
MA	6.82046
RI	15.68298
CT	2.25708
NY	7.64699
NJ	16.72499
DE	0.01779
MD	2.03910
VA	21.31676
NC	27.44584
Total	100

Specific management measures that will be used to achieve the RHL for the recreational fishery in 2019 will not be determined until later in 2018. Typically, the Council and Board review data through Wave 4 (July-August) in the current year to set specifications in the upcoming year. The Monitoring Committee meets in November to review these data and make recommendations regarding any necessary changes in the recreational management measures (i.e., bag limit, minimum size, and season). Given that MRIP time series revisions are expected in July 2018, and that the benchmark assessment is expected to revise recreational catch and landings limits in mid-2019, the Monitoring Committee and Council/Board will need to consider how the timing of 2019 recreational measures development may need to be modified to accommodate this new information.

Commercial Management Measures

Commercial Gear Regulations and Minimum Fish Size

Management measures in the commercial fishery other than quotas (i.e., minimum fish size, gear requirements, etc.) have remained generally constant since 1999.

The current commercial minimum fish size is 14 inches total length (TL). The 14-inch minimum size was implemented in 1997 and represented an increase from the previous minimum size of 13 inches TL.

Current trawl gear regulations require a 5.5-inch diamond or 6.0-inch square minimum mesh in the entire net for vessels possessing more than the threshold amount of summer flounder, i.e., 200 lb in the winter (November 1-April 30) and 100 lb in the summer (May 1-October 31). The minimum fish size and mesh requirements may be changed through specifications based on the recommendations of the Monitoring Committee. The 5.5 inch diamond or 6.0 inch square minimum mesh size requirements were first implemented in 1993 under Amendment 2 to the FMP, but at the time applied only to the net's codend. Under Amendment 10 to the FMP, effective in 1998, the minimum mesh requirements were modified to apply throughout the whole net.

Summer flounder, scup, and black sea bass are all currently managed with different minimum mesh sizes (i.e. 5.5" diamond or 6" square for summer flounder, 5" diamond for scup, and 4.5" diamond for

black sea bass). A study by Hasbrouck et al. (2018)[8] confirmed that the current minimum mesh sizes for all three species are effective at releasing most fish smaller than the commercial minimum sizes (i.e., 14" total length for summer flounder, 9" total length for scup, and 11" total length for black sea bass). One goal of the Hasbrouck et al. study was to evaluate the potential for a common mesh size across all three species. The study was not able to identify a mesh size for all three species that would be effective at minimizing discards under the current minimum fish size limits. However, the authors concluded that a common mesh size of 4.5" or 5" diamond for scup and black sea bass would be effective at releasing undersized fish.

Council staff recommend no changes to the minimum mesh sizes for 2019. The Monitoring Committee will review the results of Hasbrouck et al. (2018) during their July 2018 meeting. If the Council wishes to consider modifications to the minimum mesh sizes, the objectives should be clarified. Possible objectives could include establishing a common minimum mesh size, minimizing discards, and/or maintaining or increasing catches of legal-sized fish; however, some of these objectives may be at odds with each other. Input from the commercial fishing industry should be sought before any minimum mesh size changes are considered. As the Monitoring Committee has noted in the past, changes to these requirements can create an economic burden for fishermen if they necessitate purchase of new nets.

Staff recommend no changes to the current 14-inch minimum fish size, gear requirements, or seasonal thresholds for 2019.

Minimum Mesh Size Exemption Programs

Small Mesh Exemption Area

Vessels landing more than 200 lb of summer flounder, east of longitude 72° 30.0'W, from November 1 through April 30, and using mesh smaller than 5.5-inch diamond or 6.0-inch square are required to obtain a small mesh exemption program (SMEP) permit from NMFS. The exemption is designed to allow vessels to retain a bycatch of summer flounder while operating in other small-mesh fisheries.

The FMP requires that observer data be reviewed annually to determine whether vessels fishing seaward of the SMEP line with smaller than the required minimum mesh size and landing more than 200 lb of summer flounder are discarding more than 10% (by weight) of their summer flounder catch per trip. Typically, staff evaluate the Northeast Fisheries Observer Program (NEFOP) data for the period from November 1 in the previous year to April 30 in the current year. However, when this analysis is conducted in early July, complete observer data is not yet available through the end of April in the current year. As such, a year-long lag in the analysis is used.

Staff evaluated NEFOP data for November 1, 2016 through April 30, 2017. These data indicate that a total of 555 trips with at least one tow were observed east of 72° 30.0'W and 376 of these trips used small mesh (Table 7). Of those 376 trips, 150 trips reported landing more than 200 lb of summer flounder. Of those 150 trips, 36 trips discarded more than 10% of their summer flounder catch. The percentage of trips that met all these criteria relative to the total number of observed trips east of 72° 30.0'W is 6.5% (36/555 trips). The prior year percentage of trips that met the criteria, also shown in Table 7, was about 4.6%. This percentage has seen small increases over the last several years, and the Monitoring Committee should continue to closely monitor the use of this exemption program. If the rate

[8] Available at: http://www.mafmc.org/s/Tab08_SFSBSB-Mesh-Selectivity-Study-Apr2018.pdf

of trips meeting these criteria continues to increase, the Monitoring Committee should consider modifications to this program.

For an unrelated action in 2017, GARFO staff compiled the number of vessels issued a letter of authorization (LOA) for the small mesh exemption program in recent years, shown in Table 8, indicating that an average of 64 summer flounder permit holders have requested this LOA from 2013 through 2017.

Based on the information described above, staff recommend no change in the SMEP program, however, the rates of summer flounder discarding should continue to be closely tracked by the Monitoring Committee.

Table 7: Numbers of trips that meet specific criteria based on observed trips from November 1, 2015 to April 30, 2016, and November 1, 2016 to April 30, 2017.

Criteria		Nov. 1, 2015 – April 30, 2016	Nov. 1, 2016 – April 30, 2017
A	Observed trips with at least one catch record east of 72° 30' W Longitude	391	555
B	That met the criteria in row A and used small mesh at some point during their trip	252	376
C	That met the criteria in rows A-B and landed more than 200 pounds summer flounder on whole trip	92	150
D	That met the criteria in rows A-C and discarded >10% of summer flounder catch east of 72° 30' W Longitude	18	36
E	% of observed trips with catch east of 72° 30' W Longitude that also used small mesh, landed >200 pounds of summer flounder, and discarded >10% of summer flounder catch (row D/row A)	4.6%	6.5%
F	Total summer flounder discards (pounds) from trips meeting criteria in A-D	16,470	14,640
G	Total summer flounder landings (pounds) from trips meeting criteria in A-D	23,295	25,472
H	Total catch (pounds) from trips meeting criteria in A-D	39,765	40,113

Table 8: Number of vessels issued the small mesh LOA from fishing year 2013-2017.

Year	Vessels Enrolled
2013	71
2014	55
2015	65
2016	61
2017	69

Flynet Exemption Program

Vessels fishing with a two-seam otter trawl flynet are also exempt from the minimum mesh size requirements. Exempt flynets have large mesh in the wings that measure 8 to 64 inches, the belly of the net has 35 or more meshes that are at least 8 inches, and the mesh decreases in size throughout the body of the net to 2 inches or smaller. Only North Carolina has a flynet fishery at present. The supplemental memo from T.D. VanMiddlesworth dated June 22, 2018 (see Attachment) indicates that no summer flounder were landed in the North Carolina flynet fishery in 2015, 2016, or 2017. In 2015, as part of the review of commercial measures, the Monitoring and Technical Committees reviewed information indicating that summer flounder landings in this fishery have generally declined since 2007, and have been under 2,000 lb since 2010. Based on this information, staff recommend no change to this exemption program. Staff also note that scup and black sea bass were landed in the North Carolina flynet fishery in 2017, and the Monitoring Committee should consider whether similar exemptions should be explored for these species.

ATTACHMENT

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

STEPHEN W. MURPHEY
Director

Memorandum

To: Kiley Dancy, MAFMC

From: Todd Daniel VanMiddlesworth, NCDMF

Date: June 22, 2018

Subject: Species composition and landings from the 2017 North Carolina fly net fishery

The 2017 North Carolina fly net species composition and landings in pounds are provided in Table 1. Individual landings listed as "other species" are not reported because the data are confidential and cannot be distributed to sources outside the North Carolina Division of Marine Fisheries (North Carolina General Statute 113-170.3 (c)). Confidential data can only be released in a summarized format that does not allow the user to track landings or purchases to an individual. Summer flounder were not landed in the 2015, 2016 or 2017 fly net fishery. Note that fly net landings for most species were lower in 2017 than in 2016. Additionally, total fly net landings in 2017 were lower than those in 2016 which may be the result of reduced fishing effort on targeted fish species and increased shoaling at Oregon Inlet resulting in limited access of fly net boats to North Carolina ports.

Table 1. Species composition and landings for 2017 North Carolina fly net fishery. Species with confidential landings are listed under “Other Species”.

Species	Weight (lb)	Percent
Atlantic croaker	51,740	39.46
black sea bass	23,582	17.99
scup	18,859	14.38
other species*	36,923	28.16
Total	**131,104**	**100.00**

*Those species with confidential landings included bluefish, butterfish, cobia, cutlassfish (ribbonfish), hakes (ling), Atlantic menhaden bait (lbs), monkfish (whole), sea mullet (kingfish), spot, squid, loligo squid (lbs), starbutter (harvestfish) and trout (gray trout).