



Mid-Atlantic Fishery Management Council
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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

DATE: July 7, 2020

TO: Chris Moore, Executive Director

FROM: Kiley Dancy, Staff

SUBJECT: Review of Summer Flounder Specifications for 2021

Executive Summary

In 2019, multi-year specifications for summer flounder were set for 2019 (revised) through 2021 based on the results of a benchmark stock assessment developed and peer reviewed in 2018 through the 66th Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC 66; NEFSC 2019).¹ The assessment incorporated data through 2017, including the revised time series (1981-2017) of recreational catch provided by the Marine Recreational Information Program (MRIP).²

The 2018 stock assessment indicates that the summer flounder stock was not overfished and overfishing was not occurring in 2017. Spawning stock biomass (SSB) was estimated to be 98.22 million lb (44,552 mt) in 2017, 78% of SSB at maximum sustainable yield ($SSB_{MSY} = 126.01$ million lb/57,159 mt). The fishing mortality rate (F) in 2017 was 0.334, 25% below the fishing mortality threshold reference point ($F_{MSY\ proxy} = F_{35\%} = 0.448$).

In February 2019, the Council and the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Board (Board) approved constant three-year catch and landings limits for 2019-2021 based on a three-year averaging approach. The revised 2019 specifications were implemented via interim final rule on May 17, 2019 (84 FR 22392), and the 2020-2021 specifications were implemented via final rule on October 9, 2019 (84 FR 54041).

The measures currently implemented include an Acceptable Biological Catch (ABC) for 2019-2021 of 25.03 million lb (11,354 mt). This ABC and the corresponding sector-specific catch and landings limits for 2021 may remain unchanged if the Scientific and Statistical Committee (SSC), Council, and Board determine that no changes are warranted. However, the Council recommended revisions to their risk

¹ Northeast Fisheries Science Center (NEFSC). 2019. 66th Northeast Regional Stock Assessment Workshop (66th SAW) Assessment Summary Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 19-01; 40 p. Available from: <https://www.nefsc.noaa.gov/publications/crd/crd1908/>.

² In July 2018, MRIP released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology (i.e., a transition from a telephone-based effort survey to a mail-based effort survey). The revised estimates of catch and landings for most years are several times higher than the previous estimates for shore and private boat modes.

policy in December 2019 with the intent that 2021 specifications would reflect the new policy. As such, the SSC should consider whether the 2021 summer flounder ABC warrants revision.

Similarly, the Monitoring Committee will review recent fishery performance and make a recommendation to the Council and Board regarding any potential modifications to the implemented 2021 commercial and recreational Annual Catch Limits (ACLs) and Annual Catch Targets (ACTs) as well as the set of commercial management measures that can be modified through specifications.

The currently implemented 2021 catch and landings limits are shown in Table 1. Staff recommend modifying the currently implemented catch and landings limits for 2021 to reflect recent changes to the Council's risk policy recommended in December 2019 (Table 2). The revised risk policy includes an increased acceptable risk of overfishing at most biomass thresholds, and as such would result in an 8% increase in the 2021 summer flounder ABC if applied. 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 2021. These measures are identical to those implemented for 2019 and 2020, with the exception of the OFL which varies slightly in each year. The sector-specific catch and landings limits are initial limits prior to any deductions for past overages.

Measure	2021		Basis
	mil lb	mt	
OFL	31.67	14,367	Stock projections
ABC	25.03	11,354	SSC recommendation for 3-year averaged approach with projections sampling from recent 7-year recruitment series
ABC Landings Portion	19.21	8,715	Stock projections
ABC Discards Portion	5.82	2,639	Stock projections
Expected Commercial Discards	2.00	907	34% of ABC discards portion, based on 2015-2017 average % discards by sector (using new MRIP data)
Expected Recreational Discards	3.82	1,732	66% of ABC discards portion, based on 2015-2017 average % discards by sector (using new MRIP data)
Commercial ACL	13.53	6,136	60% of ABC landings portion (FMP allocation) + expected commercial discards
Commercial ACT	13.53	6,136	No deduction from ACL for management uncertainty
Commercial Quota	11.53	5,229	Commercial ACT, minus expected commercial discards
Recreational ACL	11.51	5,218	40% of ABC landings portion (FMP allocation) + expected recreational discards
Recreational ACT	11.51	5,218	No deduction from ACL for management uncertainty
RHL	7.69	3,486	Recreational ACT, minus expected recreational discards

Table 2: Staff recommended revisions to 2021 catch and landings limits for summer flounder based on the revised Council risk policy recommended in December 2019. The sector-specific catch and landings limits are initial limits prior to any deductions for past overages.

Measure	2021		Basis
	mil lb	mt	
OFL	31.67	14,367	Stock projections
ABC	27.11	12,297	Staff recommendation applying revised Council risk policy to existing OFL
ABC Landings Portion	20.81	9,439	Maintains existing projections for discards: landings proportions
ABC Discards Portion	6.30	2,858	Maintains existing projections for discards: landings proportions
Expected Commercial Discards	2.14	972	Maintains current discards split: 34% of ABC discards portion, based on 2015-2017 average % discards by sector (using new MRIP data)
Expected Recreational Discards	4.16	1,886	Maintains current discards split: 66% of ABC discards portion, based on 2015-2017 average % discards by sector (using new MRIP data)
Commercial ACL	14.63	6,635	60% of ABC landings portion (FMP allocation) + expected commercial discards
Commercial ACT	14.63	6,635	Staff recommendation: Maintain no deduction from ACL for management uncertainty
Commercial Quota	12.49	5,663	Commercial ACT, minus expected commercial discards
Recreational ACL	12.48	5,662	40% of ABC landings portion (FMP allocation) + expected recreational discards
Recreational ACT	12.48	5,662	Staff recommendation: Maintain no deduction from ACL for management uncertainty
RHL	8.32	3,776	Recreational ACT, minus expected recreational discards

Staff recommend no changes to the commercial minimum size or mesh exemption requirements for 2021. As described below in "Commercial Management Measures," staff recommend further evaluation of commercial mesh size issues in 2021 for potential application in 2022, in particular consideration of phasing out the 6" square minimum mesh size regulation, leaving the 5.5" diamond minimum mesh size in place. In addition, the MC should consider whether changes to the small mesh exemption program should be evaluated.

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.³

³ The Fishery Information Document and Fishery Performance Report are available at: <https://www.mafmc.org/council-events/2020/july-ssc-meeting>.

Introduction

The Magnuson-Stevens Act requires the Council's SSC to provide ongoing scientific advice for fishery management decisions, including recommendations for ABCs, 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 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 early 2019, the SSC recommended revised 2019 and new 2020-2021 specifications based on the 2018 benchmark stock assessment results. The Council and Board adopted three-year specifications for 2019-2021 based on an averaged ABC approach, where the initial catch and landings limits in each of the three years are identical.

The SSC is asked to review the 2021 ABC and recommend changes if warranted. Similarly, the Monitoring Committee will review the previously implemented 2021 ACL and ACT recommendations, as well as the commercial quota and recreational harvest limit, recommending any changes as needed. The Monitoring Committee will also consider whether any revisions are needed to the commercial management measures (minimum fish size, minimum mesh size, and mesh exemption programs). The Council will meet jointly with the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Board (Board) in August 2020 to review the SSC, Monitoring Committee, and Advisory Panel recommendations.

Recent Fishery Catch

Landings in the commercial fishery in 2019 were approximately 9.06 million pounds (4,109 mt), about 83% of the adjusted commercial quota (after overage deductions) of 10.98 million pounds (4,981 mt). Commercial dead discards were estimated⁴ at 1.73 million pounds (783 mt). Total commercial catch (10.79 million pounds or 4,892 mt) was estimated at about 20% below the commercial ACL. This is likely due to the mid-year revisions of the commercial quota, and the fact that not all states were able to adjust their management measures mid-year to encourage full quota utilization.

Recreational harvest in 2019 was 7.80 million pounds (3,537 mt), about 101% of the revised 2019 RHL of 7.69 million pounds (which was set based on the 2018 assessment incorporating revised MRIP estimates). Recreational dead discards were estimated at 3.04 million pounds (1,379). Total recreational catch (10.84 million pounds or 4,916 mt) was approximately 6% below the recreational ACL of 11.51 million pounds (5,218 mt).

The 2020 commercial landings as of June 24, 2020, indicate that 34% of the 2020 coastwide commercial quota has been landed (Table 3). Last year, 39% of the 2019 revised commercial quota had been landed as of June 22, 2019. Both of these values are below average for landings through the last week in June; on average from 2015-2018, 60% of the commercial summer flounder quota was taken by this point in the year. In 2019, mid-year quota increases were implemented on May 17, 2019, impacting the quota utilization trajectory for 2019. In 2020, advisors and others have reported that markets and ex-vessel

⁴ These estimates were generated by the NEFSC and may differ from commercial dead discard estimates generated by GARFO. The Northeast Regional Coordinating Council is working toward a unified database and methodology for estimating dead discards.

prices (and therefore landings) are substantially down due to the COVID-19 pandemic.

Table 3: The 2020 state-by-state commercial quotas and the amount of summer flounder landed by commercial fishermen, in each state as of June 24, 2020.

State	Cumulative Landings (lb)	Quota (lb) ^a	Percent of Quota (%)
ME	0	5,484	
NH	0	53	
MA	213,963	786,399	27%
RI	1,003,205	1,808,248	55%
CT	104,853	260,241	40%
NY	346,635	881,698	39%
NJ	568,284	1,928,391	29%
DE	0	0	0%
MD	27,757	235,108	12%
VA	864,440	2,457,822	35%
NC	788,890	3,164,505	25%
Totals	3,918,027	11,530,000	34%

^a Quotas adjusted for overages. Source: NMFS Weekly Quota Report with data reported through June 24, 2020.

As of this memo, recreational estimates for 2020 are only available through wave 2 (March/April), which does not provide meaningful information about 2020 recreational harvest trends for summer flounder given that in recent years wave 2 has accounted for less than 1% of annual summer flounder harvest.

Stock Status and Biological Reference Points

The recent benchmark stock assessment was developed through the 66th SAW process, and peer reviewed at the 66th SARC from November 27-30, 2018. The assessment incorporated the revised time series of recreational catch from MRIP, which is 30% higher on average compared to the previous summer flounder estimates for 1981-2017. The MRIP estimate revisions account for changes in both the angler intercept survey and recreational effort survey methodologies. While fishing mortality rates were not strongly affected by incorporating these revisions, increased recreational catch resulted in increased estimates of stock size compared to past assessments.

The biological reference points for summer flounder as revised through the SAW/SARC 66 process include a fishing mortality threshold of $F_{MSY} = F_{35\%}$ (as the F_{MSY} proxy) = 0.448, and a biomass reference point of $SSB_{MSY} = SSB_{35\%}$ (as the SSB_{MSY} proxy) = 126.01 million lb = 57,159 mt. The minimum stock size threshold ($1/2 SSB_{MSY}$), is estimated to be 63.01 million lb (28,580 mt; Figure 1).

Assessment results indicate that the summer flounder stock was not overfished and overfishing was not occurring in 2017. Fishing mortality on the fully selected age 4 fish ranged between 0.744 and 1.622 during 1982-1996 and then decreased to 0.245 in 2007. Since 2007 the fishing mortality rate (F) has increased, and in 2017 was estimated at 0.334, below the SAW 66 F_{MSY} proxy of $F_{35\%} = 0.448$ (Figure 2). The 90% confidence interval for F in 2017 was 0.276 to 0.380.

SSB decreased from 67.13 million lb (30,451 mt) in 1982 to 16.33 million lb (7,408 mt) in 1989, and then increased to 152.46 million lb (69,153 mt) in 2003. SSB has decreased since 2003 and was estimated to be 98.22 million lb (44,552 mt) in 2017, about 78% of $SSB_{MSY} = 126.01$ million lb (57,159 mt), and 56% above the $\frac{1}{2} SSB_{MSY}$ proxy = $\frac{1}{2} SSB_{35\%} = 63.01$ million lb (28,580 mt; Figure 1). The 90% confidence interval for SSB in 2017 was 39,195 to 50,935 mt.

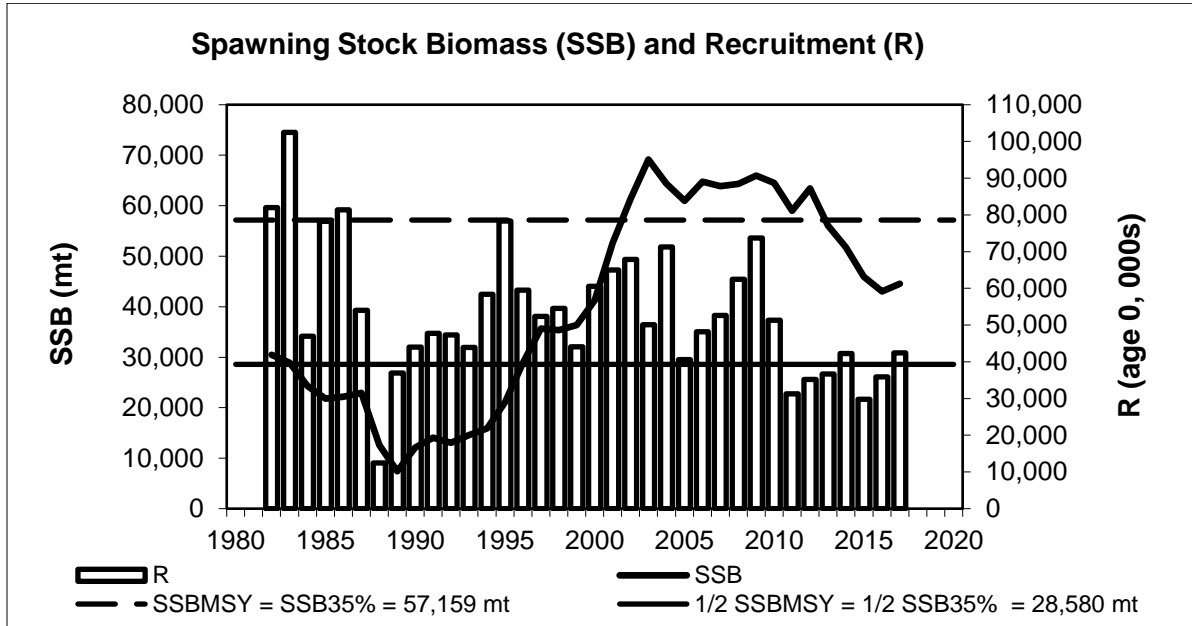


Figure 1: Summer flounder spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars) 1980-2017. The horizontal dashed line is the 2018 SAW66 recommended target biomass reference point proxy, $SSB_{MSY} = SSB_{35\%} = 57,159$ mt. The horizontal solid line is the 2018 SAW66 recommended threshold biomass reference point proxy $\frac{1}{2} SSB_{MSY} = \frac{1}{2} SSB_{35\%} = 28,580$ mt. Source: NEFSC 2019.

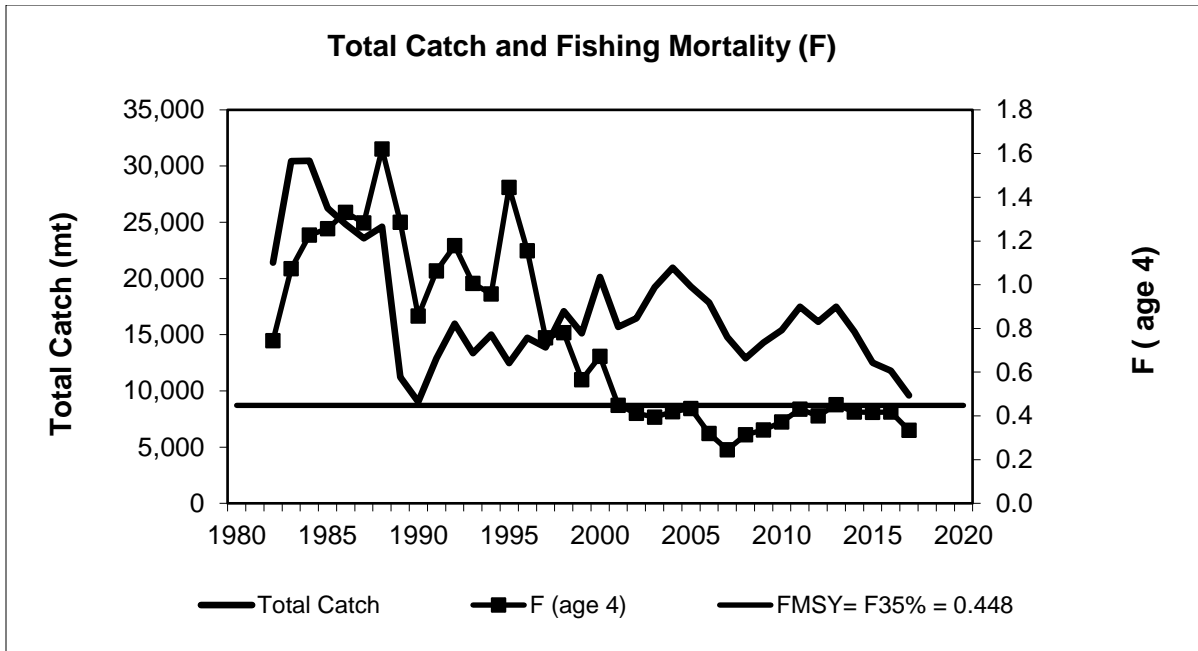


Figure 2: Total fishery catch (mt; solid line) and fully-recruited fishing mortality (F, peak at age 4; squares) of summer flounder. The horizontal solid line is the 2018 SAW66 recommended fishing mortality reference point proxy FMSY = F35% = 0.448. Source: NEFSC 2019.

Recruitment of juvenile summer flounder has been below-average in most years since 2011, although the driving factors behind this trend have not been identified. Bottom trawl survey data also indicate a recent trend of decreasing length and weight at age, which implies slower growth and delayed maturity. These factors affected the change in biological reference points used to determine stock status.

In June 2020, the Northeast Fisheries Science Center (NEFSC) provided a data update for 2020⁵, including updated landings information as well as federal trawl survey indices through 2019. The data update indicates that the NEFSC spring survey index of summer flounder stock biomass decreased by 4% from 2018 to 2019 and the fall index decreased by 36% from 2018 to 2019. The NEFSC fall survey length frequency distributions suggest that an above average year class recruited to the stock in 2018. The 2020 data update does not provide information on state survey indices.

Review of Prior SSC Recommendations

In February 2019, the SSC recommended, and the Council and Board adopted, three-year ABCs for summer flounder for 2019-2021, based on new stock status information and projections from the 2018 assessment.

The SSC indicated that the approach to estimating uncertainty in the overfishing limit (OFL) had not changed since the previous benchmark (SAW/SARC 57). Accordingly, the SSC maintained its determination that the assessment should be assigned an “SSC-modified OFL probability distribution.” In this type of assessment, the SSC provides its own estimate of uncertainty in the distribution of the OFL. The SSC continued the application of a 60% OFL CV, because: (1) the latest benchmark assessment did not result in major changes to the quality of the data and model that the SSC has

⁵ Available at https://www.mafmc.org/s/Summer_flounder_2020_Data_Update.pdf.

previously determined to meet the criteria for a 60% CV; (2) the summer flounder assessment continues to be a data rich assessment with many fishery independent surveys incorporated and with relatively good precision of the fishery dependent data; (3) several different models and model configurations were considered and evaluated by SAW-66, most of which showed similar stock trends and stock status; and (4) no major persistent retrospective patterns were identified in the most recent model. The SSC noted that significant improvements in quality of data and exhaustive investigations of alternate model structures affirm the specification of the 60% OFL CV by the SSC.

The SSC accepted the OFL proxy ($F_{35\%} = 0.448$) used in the assessment. Given recent trends in recruitment for summer flounder, the SSC recommended the use of the most recent 7-year recruitment series for OFL projections because near-term future conditions are more likely to reflect recent recruitment patterns than those in the entire 36-year time series.

As requested by the Council, the SSC recommended two alternative sets of three-year ABCs based on the SAW66 assessment: ABCs for 2019-2021 fishing years derived by the “typical” approach resulting in ABCs varying each year, and a constant ABC for all three fishing years derived by averaging the three ABCs resulting from the “typical” approach. The Council and Board ultimately adopted the SSC-recommended ABCs based on the three-year averaging approach. Table 4 shows these ABCs along with the associated OFLs and P* values.

Table 4: SSC-recommended OFLs, ABCs, and P* values for both the 3-year averaged ABC approach adopted by the Council and Board.

Year	OFL	ABC	P*
2019	30.00 mil lb (13,609 mt)	25.03 mil lb (11,354 mt)	0.372
2020	30.94 mil lb (14,034 mt)		0.351
2021	31.67 mil lb (14,367 mt)		0.336

The SSC considered the following to be the most significant sources of uncertainty associated with the determination of the OFL and/or ABC:

- Changes in life history are apparent in the population; for example, declining growth rates.
- Potential changes in productivity of the stock, which may affect estimates of biological reference points. Changes in size-at-age, growth, and recruitment may be environmentally mediated, but mechanisms are unknown.
- Potential changes in availability of fish to some surveys and to the fishery as a result of changes in the distribution of the population.

Revisions to the Council's Risk Policy

The Council first implemented a risk policy and ABC control rule in 2011 to comply with the 2006 re-authorization of the MSA. In 2017, the Council expressed interest in more comprehensively considering economic and social factors in addition to biological factors in its risk policy. In 2019, a workgroup comprised of NOAA Fisheries staff, SSC members, academics and Council staff was formed and tasked with developing and analyzing various risk policy alternatives in order to assess the short and long-term trade-offs between stock biomass protection and economic yield and benefits. Members of the

workgroup built off their existing biological and economic management strategy evaluation (MSE) models.

The Council considered nine different risk policy alternatives at its December 2019 meeting, ultimately approving a combination of two alternatives described in the document.⁶ The approved risk policy allows for increased risk under high stock biomass conditions (increased p^* at most biomass levels, compared to the previous risk policy; Figure 3). The change is greatest for stocks with biomass above the target level (B_{MSY}). The revised risk policy retains the previous stock replenishment threshold (i.e., biomass levels where $P^*=0$) of $B/B_{MSY} \leq 0.1$. The policy uses a linear ramping for B/B_{MSY} values less than 1.0 up to a maximum P^* of 0.45 when stock biomass is at its target. For stocks with B/B_{MSY} values over 1.0, a second linear ramp is used up to a maximum P^* of 0.49 for stocks at or above $B/B_{MSY} = 1.5$.

In addition to the changes described above, the Council also approved removing the typical/atypical designation associated with the current risk policy.

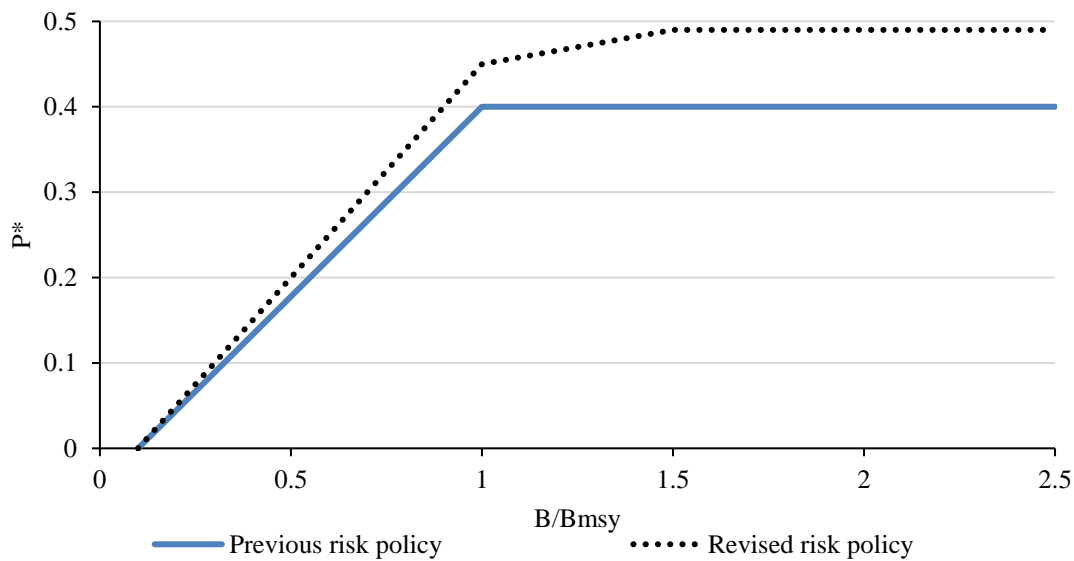


Figure 3: Acceptable probability of overfishing (p^*) at different biomass levels under the Council’s previous and revised risk policies.

⁶ Alternatives 2 and 8 described in the December 2019 discussion document available at <http://www.mafmc.org/briefing/december-2019>.

Staff Recommendation for 2021 ABC

Staff recommend revising the previously implemented specifications for summer flounder for the 2021 fishing year based on the recent revisions to the Council's risk policy, as described in Table 5. This would revise the 2021 ABC from 25.03 million pounds (11,354 mt) to 27.11 million pounds (12,297 mt). This represents an 8% increase in the ABC. Recommended revisions were calculated based on the Council's revised risk policy using the currently implemented 2021 OFL of 31.67 million pounds (14,365 mt), a projected 2021 B/Bmsy of 0.88, and the SSCs currently applied OFL CV of 60%.

Table 5: Current and staff recommended 2021 ABCs and P* values.

Measure	2021: Current	2021: Staff Recommendation
ABC	25.03 mil lb (11,354 mt)	27.11 mil lb (12,297 mt)
P*	0.34	0.39

Sector-Specific Catch and Landings Limits

Recreational and Commercial Annual Catch Limits

The summer flounder ABC includes both landings and discards, and is divided into the commercial and recreational ACLs (Figure 4). Staff recommend maintaining the currently implemented split of the ABC into expected discards (23%) and landings (77%), which was included in the NEFSC's ABC projections based on the proportion at age of discards vs. landings for the terminal 5 years in the assessment (i.e., 2013-2017). This proportion is very close to average estimated discards/landings for the past several years (Table 6).

Table 6: Percentage of total summer flounder catch from actual fishery landings and estimated discards, 2015-2019, based on NEFSC data.

	Landings	Discards
2015	82%	18%
2016	81%	19%
2017	75%	25%
2018	76%	24%
2019	78%	22%

Based on the allocation percentages in the FMP, 60% of the amount of the ABC expected to be landed is allocated to the commercial fishery, and 40% to the recreational fishery. Discards are typically apportioned based on the discards contribution from each fishing sector using a 3-year moving average percentage.

When 2019-2021 specifications were set in early 2019, the most recent three-year period of available data was 2015-2017. The discard percentages by sector were calculated using the revised MRIP data, resulting in an estimated at 66% of dead discards attributable to the recreational fishery and 34% to the commercial fishery (Table 1). The Monitoring Committee should consider whether more recent data should be used to split the expected discards between the commercial and recreational fisheries, such as the three-year average of discards by sector from 2017-2019 (estimated at 59% from the recreational fishery and 41% from the commercial fishery). This would result in a shift of 441,000 pounds (200 mt) of projected discards from the recreational ACL to the commercial ACL and does not impact the landings limits. Staff recommend maintaining the current distribution of projected discards based on 2015-2017 given that this difference is minor, and recent discards trends indicate that neither configuration is expected to meaningfully influence whether either sector exceeds its ACL. In addition, the proportions of discards by sector from 2015-2017 are more consistent with trends in most of the last 10 years (using revised MRIP data), while the proportion from 2017-2019 is more heavily influenced by the year 2018 which saw a lower proportion of recreational discards than usual (a 50/50 split between the sectors).

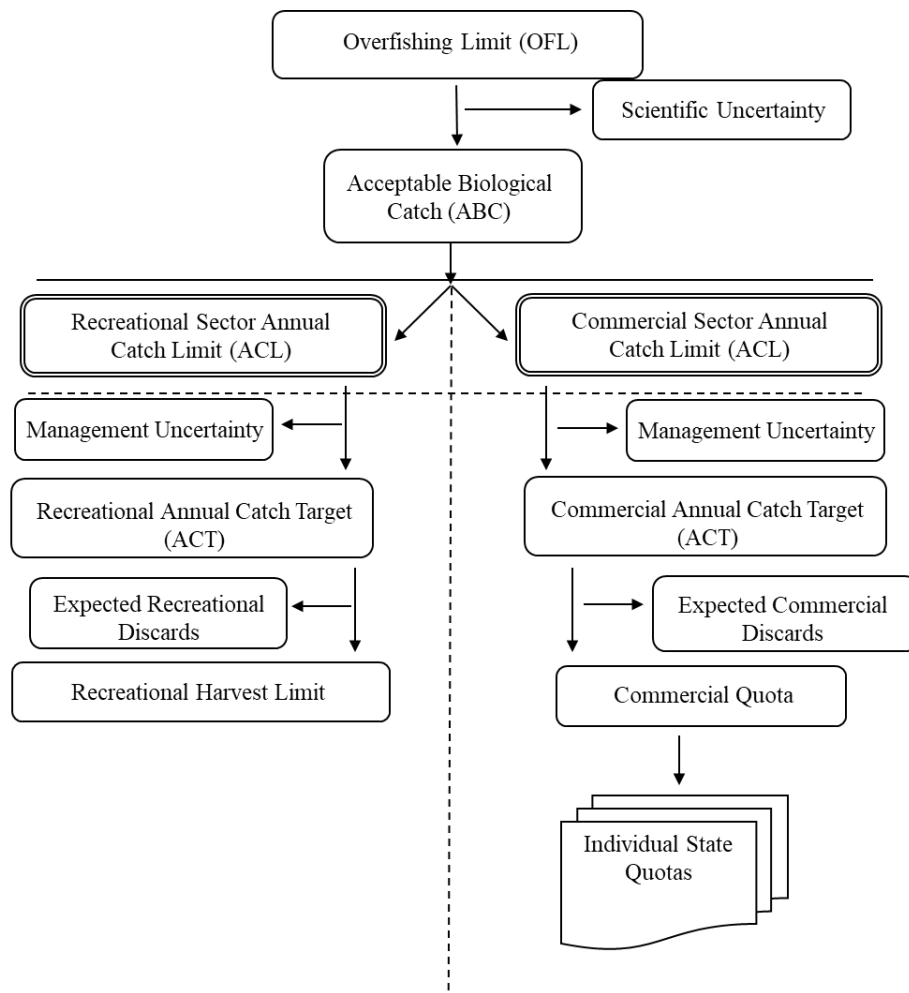


Figure 4: Flowchart for summer flounder catch and landings limits.

Annual Catch Targets and Accountability Measures

The 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. ACTs may be reduced upon implementation in some cases if an Accountability Measure (AM) is triggered for a given fishery, as described below.

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).

Commercial landings have generally been near the commercial quotas for the last five years (2015-2019), with the exception of 2019 which had a more notable underage given a substantial mid-year increase in quota (Table 7). 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. As such, any landings-based overages tend to be small in magnitude and are deducted from state quotas in the following years. Commercial ACL overages caused by higher than projected discards result in a payback amount scaled based on estimates of stock biomass relative to the biomass target. This occurred in 2019 based on a 2017 ACL overage driven by discards; the revised 2019 commercial ACT was reduced by 547,000 pounds based on the scaling calculation using the biomass estimate from the most recent assessment. For 2020, no commercial AM was triggered based on 2018 performance. While 2019 catch estimates are available from the NEFSC, GARFO estimates of commercial catch used in the ACL evaluation may differ and are still being finalized for 2019. Thus, it is not known at this time what the magnitude of any reductions would be for the 2021 commercial ACT.

The Monitoring Committee had previously recommended closely monitoring commercial discards trends due to discards-driven overages of the commercial ACL in 2017 and 2018; however, in these years, a large proportion of discards were likely the result of below-average quotas. Observer data for observed trawl hauls from 2015-2019 supports this conclusion (Table 8). Commercial discards decreased in 2019, possibly due in part to increased quotas although this is difficult to determine given the mid-year quota change. Note that observer data show an increased proportion of observed discards attributed to "too small," possibly driven by an above average 2018 year class as indicated by fishery independent surveys. The commercial sector was under their commercial ACL by approximately 20% in 2019.

Staff recommend maintaining commercial ACTs set equal to the ACLs for 2021, such that no reduction in catch is taken for management uncertainty.

For the recreational fishery, performance relative to past RHLs cannot be evaluated using the revised MRIP data, since past harvest limits were set based on assessments that used the old data. A performance evaluation for 2015-2019 using a combination of old and new MRIP data is provided in Table 7 (2015-2018 uses pre-calibration MRIP data). Data for 2019 are from the revised MRIP methodology and can be compared to the 2019 limits given that they were set using the new assessment which incorporated revised MRIP information. Compared to the commercial fishery, recreational performance has been much more variable relative to the RHLs given the difficulty forecasting

recreational effort and catch rates in any given year, as well as the lack of timely in-season data and in-season closure authority for the recreational fishery. Between 2015-2019, recreational harvest was below the RHLs in three of the five years, notably in 2015 when the recreational fishery experienced a large underage, with landings 36% below the RHL.

The Monitoring Committee should continue its 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.

Recreational AMs are evaluated based on a three-year moving average of recreational catch compared to the average recreational ACL over the same time period. These are typically evaluated in the fall during the setting of recreational measures for the upcoming fishing year. Given recreational ACL underages during 2017-2019, a recreational AM is not expected to be triggered for summer flounder in 2021; however, GARFO will conduct their own ACL evaluations later this fall.

For 2021, staff recommend maintaining the previously implemented recreational ACTs set equal to the ACLs, such that no reduction in catch is taken for management uncertainty.

Table 7: Summer flounder commercial and recreational fishery performance relative to quotas and RHLs, 2015-2019. Recreational data shows pre-revision MRIP estimates for 2015-2018 to allow comparison to past RHLs, and 2019 is evaluated with the new MRIP estimates given that the 2019 RHL was set with the new assessment which incorporated the revised MRIP data.

Year	Comm. Landings (mil lb) ^a	Comm. Quota (mil lb) ^b	Comm. Percent Overage(+)/ Underage(-)	Rec. Harvest - OLD MRIP (mil lb) ^c	Rec. Harvest - REVISED MRIP (mil lb) ^c	RHL(mil lb) ^d	Rec. Percent Overage(+)/ Underage(-)
2015	10.68	11.07	-4%	4.72	11.83	7.38	-36%
2016	7.81	8.12	-4%	6.18	13.24	5.42	+14%
2017	5.83	5.66	+3%	3.19	10.08	3.77	-15%
2018	6.14	6.44	-5%	3.35	7.60	4.42	-24%
2019	9.06	10.98	-17%	N/A	7.80	7.69	+1%
5-yr Avg.	-	-	-5%	-	-	-	-12%

^a Source: NMFS dealer data, as of June 2020.

^b Commercial quotas are post-deduction for past landings and discard overages.

^c Source: 2015-2017 pre-calibration MRIP data from NMFS MRIP calibration comparison query accessed June 27, 2019. 2018 back-calibrated data is from personal communication with NMFS. 2019 recreational landings are from a NMFS recreational fisheries statistics query May 12, 2020. Recreational landings are from Massachusetts through North Carolina.

^d RHLs for 2015-2018 were set using a prior assessment that did not incorporate revised MRIP values. The 2019 RHL was set using the 2018 assessment which incorporated revised MRIP values.

Table 8: Percent of observed bottom otter trawl hauls with discarded summer flounder by discard reason, 2015-2019.

Recorded Discard Reason	2015	2016	2017	2018	2019	Average
Too small	56.7%	50.9%	37.4%	45.6%	62.8%	50.7%
No Quota	31.9%	37.3%	49.9%	42.3%	27.1%	37.7%
High graded	4.4%	7.4%	7.2%	7.1%	6.4%	6.5%
Market reasons (unknown, will spoil, poor quality, too large)	7.0%	4.3%	5.3%	4.8%	3.7%	5.0%

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 (Figure 4). For 2021, the staff recommendation would revise the 2021 commercial quota from 11.53 million pounds to 12.49 million pounds, and the RHL from 7.69 million pounds to 8.32 million pounds due to the change in the Council’s risk policy (Table 2).

The commercial quota has historically been divided amongst the states based on the allocation percentages in the FMP, shown in Table 9. However, in March 2019, the Council and Board approved modifications to the commercial allocations through a Summer Flounder Commercial Issues Amendment (see: <http://www.mafmc.org/actions/summer-flounder-amendment>). These changes are pending implementation by the National Marine Fisheries Service, and if approved, are expected to take effect on January 1, 2021.

The Council and Board approved an allocation system which modifies the state-by-state commercial quota allocations in years when the annual coastwide commercial quota exceeds the specified trigger of 9.55 million pounds. Annual coastwide commercial quota of up to 9.55 million pounds will continue be distributed according to the current allocations. In years when the coastwide quota exceeds 9.55 million pounds, the *additional* quota amount beyond this trigger would be distributed by equal shares to all states except Maine, Delaware, and New Hampshire, which would split 1% of the additional quota (Table 9). The total percentage allocated annually to each state is dependent on how much additional quota beyond 9.55 million pounds, if any, is available to be distributed in any given year. This allocation system is designed to provide for more equitable distribution of quota when stock biomass is high, while also considering the historic importance of the fishery to each state.

Table 9: The current summer flounder quota allocations for the commercial fisheries in each state, and the proposed revisions expected to be effective January 1, 2021. Allocated poundage shown under a 11.53 mil lb coastwide quota (currently implemented for 2020 and 2021) and the staff recommended 2021 coastwide quota of 12.49 mil lb.

State	Existing Allocations		Revised Allocation System (Pending NMFS Approval and Implementation)		
	Allocation (%)	Status Quo Quotas under 11.53 mil lb quota (2020)	Allocation of baseline quota ≤9.55 mil lb (%)	Allocation of additional quota beyond 9.55 mil lb (%)	State Quotas under revised alloc. and 12.49 mil lb quota (2021 staff rec)
ME	0.04756	5,484	0.04756	0.333	14,342
NH	0.00046	53	0.00046	0.333	9,844
MA	6.82046	786,399	6.82046	12.375	1,015,179
RI	15.68298	1,808,248	15.68298	12.375	1,861,550
CT	2.25708	260,241	2.25708	12.375	579,376
NY	7.64699	881,698	7.64699	12.375	1,094,113
NJ	16.72499	1,928,391	16.72499	12.375	1,961,062
DE	0.01779	2,051	0.01779	0.333	11,499
MD	2.03910	235,108	2.03910	12.375	558,559
VA	21.31676	2,457,822	21.31676	12.375	2,399,576
NC	27.44584	3,164,505	27.44584	12.375	2,984,903
Total	100	11,530,000	100	100	12,490,001

Specific management measures that will be used to achieve the RHL for the recreational fishery in 2021 will not be determined until later in 2020. 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).

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) and has been in place since 1997.

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.

In September 2019, the Monitoring Committee discussed various mesh size issues for summer flounder, scup, and black sea bass, and revisited the 2018 mesh selectivity study for summer flounder, scup, and

black sea bass by Hasbrouck et al. (2018)⁷. The document provided for that discussion is available at <https://www.mafmc.org/s/FSB-Mesh-Size-Issues-Overview-Sept-2019.pdf>, and the MC report can be found at: https://www.mafmc.org/s/SFSBSB_MC_Summary_Sept_2019_FINAL.pdf. The Hasbrouck et al. study suggest that, in general, the current minimum mesh sizes are effective at releasing catch of most undersized and immature fish, but modifications could be considered to allow for consistent mesh sizes for black sea bass and scup, and to potentially reduce discards of undersized summer flounder. As described in the meeting summary, the MC identified additional analyses and input needed from industry before recommending changes to the mesh size regulations.

For summer flounder, the MC had noted that the selectivity curve described in the study for 6.0" square mesh does not appear to be equivalent to that of the 5.5" diamond. Instead, the 6.0" square is much more similar to a 5.0" diamond mesh. The 6.0" square mesh releases less than 50% of minimum size fish. The MC had some concerns with the amount of undersized summer flounder caught with the 6.0" square mesh and recommended further exploring the impacts of this mesh size. Phasing out the use of 6.0" square mesh for summer flounder could reduce discards of undersized fish. The Monitoring Committee noted that further analysis should be done on how many vessels are currently using 6.0" square vs. 5.5" diamond mesh.

While the MC was supportive of continuing to analyze this issue, the group recognized that it should be a lower priority issue in the near term given other pressing management concerns for this FMP such as responding to the 2019 scup and black sea bass operational assessments, and the amendment to address sector allocation concerns for all three species driven by recent recreational estimate changes. The Council and Board also agreed that while this issue should still be pursued, it was not a near-term priority given other management activities.

Staff recommend no changes to the current 14-inch minimum fish size, or seasonal possession thresholds triggering the minimum mesh size at this time. Staff recommend that additional work to evaluate minimum mesh requirements be conducted in 2021 for potential application in 2022, in particular consideration of phasing out the 6.0" square mesh size for summer flounder.

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 some 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 each summer, 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.

Over the past few years, these evaluations have shown an increased percentage in the number of

⁷ Available at: http://www.mafmc.org/s/Tab08_SFSBSB-Mesh-Selectivity-Study-Apr2018.pdf

observed trips in the small mesh exemption area landing over 200 pounds of summer flounder but discarding more than 10% of their summer flounder catch. The MC has identified this as a potential management issue which should be tracked to determine if changes to the program are needed. The MC has also noted that these increases in discards are possibly related to decreased commercial quotas, especially from 2017 through the first half of 2019.

Staff evaluated NEFOP data for the relevant November-April periods from November 1, 2012 through April 30, 2019. For 2019, a total of 646 trips with at least one tow were observed east of 72° 30.0'W and 354 of these trips used small mesh (Table 10). Of those 354 trips, 164 trips (46%) reported landing more than 200 lb of summer flounder. Of those 164 trips, 53 trips (32%) 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 8.2% (53/646 trips). The prior two relevant time periods showed 6.5% of observed trips east of the line that met the criteria. In prior years, this percentage has been closer to 2-5% (Table 10). While the amount of observed discards from these trips is low relative to the commercial catch limit, because these observed trips are a subset of the fishery operating under this exemption, the actual extent of discards under the exemption program is not known.

The MC should consider whether changes may be needed to this exemption program given the increased proportion of observed trips discarding more than 10% of their summer flounder catch while using this exemption program. Because similar data is not yet available for the November 2019-April 2020 period, it is possible that the quota increase implemented for 2019-2021 will reduce the rates of summer flounder discarding observed under the below-average quotas of 2017-2019 (pre-revision).

The number of vessels issued a letter of authorization (LOA) for the small mesh exemption program has remained relatively stable since 2013, with a slight increase in 2019 (Table 11).

Based on the information described above, staff recommend that the MC identify additional analysis or industry input needed to inform potential changes to the small mesh exemption program, likely to be conducted in 2021 for potential application in 2022.

Table 10: Numbers of observed trips that meet specific criteria based on NEFOP data from November 1-April 30 from November 2012 through April 2019.

Criteria		Nov. 1, 2012 – Apr. 30, 2013	Nov. 1, 2013 – Apr. 30, 2014	Nov. 1, 2014 – April 30, 2015	Nov. 1, 2015 – April 30, 2016	Nov. 1, 2016 – April 30, 2017	Nov. 1, 2017 – April 30, 2018	Nov. 1, 2018 – April 30, 2019
A	Observed trips with at least one catch record east of 72° 30' W Longitude	395	382	401	391	555	724	646
B	That met the criteria in row A <u>and</u> used small mesh at some point during their trip	139	113	172	252	376	364	354
C	That met the criteria in rows A-B <u>and</u> landed more than 200 pounds summer flounder on whole trip	63	35	72	92	150	135	164
D	That met the criteria in rows A-C <u>and</u> discarded >10% of summer flounder catch east of 72° 30' W Longitude	8	7	21	18	36	47	53
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)	2.00%	1.80%	5.20%	4.60%	6.50%	6.50%	8.20%
F	Total summer flounder discards (pounds) from trips meeting criteria in A-D	1,472	2,140	14,579	16,470	14,640	33,868	18,186
G	Total summer flounder landings (pounds) from trips meeting criteria in A-D	4,342	5,876	15,224	23,295	25,472	76,780	59,960
H	Total catch (pounds) from trips meeting criteria in A-D	5,814	8,016	29,804	39,763	40,113	110,648	69,145

Table 11: Number of vessels issued the small mesh LOA for the SMEP from fishing year 2013-2019.

Year	Vessels Enrolled
2013	71
2014	55
2015	65
2016	61
2017	69
2018	62
2019	75

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, sometimes to 2 inches or smaller. This exemption was created through Amendment 2 in 1993, as suggested by the South Atlantic Fishery Management Council and the State of North Carolina to accommodate flynet fisheries targeting other species and catching limited amounts of summer flounder. The NMFS Regional Administrator may withdraw the exemption if the annual average summer flounder catch in the flynet fishery exceeds 1% of the total flynet catch.

Typically, the MC reviews data from the North Carolina flynet fishery as the bulk of flynet landings in the Greater Atlantic region originate from North Carolina, though the flynet fishery in North Carolina is small. The supplemental memo from Lee Paramore dated July 7, 2020 (see Attachment) indicates that no summer flounder were landed in the North Carolina flynet fishery in 2013, 2015, 2016, 2017, 2018, or 2019. Flynet landings in North Carolina have declined in recent years due to shoaling issues at Oregon Inlet.

The flynet exemption was explored in more depth through the Monitoring Committee's 2015 comprehensive review of commercial management measures.⁸ The MC determined at the time that other states, including Virginia, New Jersey, and Maryland may have small amounts of flynet landings; however, data were limited or unavailable for most other states and flynet landings of summer flounder in these states were believed to be insignificant.

A recent (January 2020) public comment from a New Jersey fisherman⁹ asserts that this exemption is being used more frequently than indicated by the Monitoring Committee analyses, and that many New Jersey vessels have been using this exemption to increase their flexibility to retain summer flounder on multispecies trips. He states that these vessels are using "high rise" nets that fall under the flynet definition, and as a result they are able to retain more than 200 pounds of summer flounder during the November 1-April 30 period without switching to summer flounder mesh sizes. He also requests a change in the definition of exempt flynet gear to include four-seam nets (in addition to two-seam nets) as well as some clarifying modifications to the regulatory language. Staff will continue to explore these comments with state technical representatives prior to the meeting. The MC should discuss whether the

⁸ See the report at: http://www.mafmc.org/s/Tab11_SF-S-BSB-Commercial-Measures.pdf.

⁹ See attachment at: <https://www.mafmc.org/s/Fluke-mesh-exemption-memo-MC-May-2020.pdf>.

comments raised represent a potential issue with the flynet definition, compliance, or enforcement, and whether future analyses of this exemption program need to be modified.

Based on this information, staff preliminarily recommend no change to the summer flounder flynet exemption program in 2021. However, staff recommend further evaluation of the use of flynets or flynet-type gear in other states that may be utilizing this exemption and exploration of whether changes to the exemption or annual analysis are needed.



ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

STEPHEN W. MURPHEY
Director

Memorandum

To: Kiley Dancy, MAFMC

From: Lee Paramore, NCDMF

Date: July 7, 2020

Subject: Species composition and landings from the 2019 North Carolina fly net fishery

The 2019 North Carolina fly net fishery landed 62,374 pounds of finfish and squid consisting of five species including black sea bass, scup, butterfish, blueline tilefish and longfin squid. All 2019 North Carolina fly net fishery landings are not reported within a table 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 2013, 2015, 2016, 2017, 2018 and 2019 fly net fisheries. Total fly net landings in 2019 are the second lowest since the trip ticket program began in 1994 and were only slightly higher than those in 2018 (40,460 pounds). Reduced fishing effort on targeted fish species and increased shoaling at Oregon Inlet continue to result in a low number of fly net boats landing at North Carolina ports.