



Mid-Atlantic Fishery Management Council

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Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

DATE: July 8, 2021

TO: Chris Moore, Executive Director

FROM: Kiley Dancy, Staff

SUBJECT: Summer Flounder Specifications for 2022-2023

Executive Summary

This memorandum includes information to assist the Mid-Atlantic Fishery Management Council's (Council's) Scientific and Statistical Committee (SSC) and Monitoring Committee in recommending 2022-2023 catch and landings limits for summer flounder, as well as summer flounder commercial management measures for 2022. Additional information on fishery performance and past management measures can be found in the 2021 Summer Flounder Fishery Information Document and the 2021 Summer Flounder, Scup, and Black Sea Bass Fishery Performance Report developed by advisors.¹

In 2021, the Northeast Fisheries Science Center (NEFSC) provided a management track assessment update for summer flounder, which updated the current assessment model with data through 2019.² This is an update to the most recent benchmark stock assessment for summer flounder which was developed and peer reviewed in 2018 through the 66th Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC 66; NEFSC 2019).³

The 2021 stock assessment update indicates that the summer flounder stock was not overfished and overfishing was not occurring in 2019. Spawning stock biomass (SSB) was estimated to be 104.49 million lb (47,397 mt) in 2019, 86% of the updated biomass target reference point ($SSB_{MSY} = 121.73$ million lb or 55,217 mt). The fishing mortality rate (F) in 2019 was 0.340, 81% of the updated fishing mortality threshold reference point ($F_{MSY\ proxy} = F_{35\%} = 0.422$).

¹ Available at: <https://www.mafmc.org/fishery-performance-reports>.

² To be posted at: <https://www.mafmc.org/council-events/2021/ssc-july-21-23>.

³ 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/>.

The Magnuson-Stevens Act requires the Council's SSC to provide ongoing scientific advice for fishery management decisions, including recommendations for Acceptable Biological Catch limits (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.

There are currently no catch and landings limits in place for summer flounder beyond the 2021 fishing year. The SSC should recommend ABCs for 2022-2023 for the Council and Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Board (Board) to consider at their joint August 2021 meeting. Two year specifications are recommended to align with the current stock assessment schedule for summer flounder, under which the next update is expected in 2023 to inform 2024-2025 specifications.

Based on the SSC's recommendations for ABCs, the Monitoring Committee recommends sector specific catch and landings limits and management measures to constrain catch and landings to these limits. Specifically, the Monitoring Committee should review recent fishery performance and make a recommendation to the Council and Board regarding 2022-2023 commercial and recreational Annual Catch Limits (ACLs) and Annual Catch Targets (ACTs), commercial quotas, and recreational harvest limits. 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) for 2022. Recreational measures for 2022 will be considered later in 2021.

The currently implemented 2021 catch and landings limits are shown in Table 1.

Table 1: Currently implemented catch and landings limits for summer flounder for 2021.

Measure	2021		Basis
	mil lb	mt	
OFL	31.67	14,367	Stock projections
ABC	27.11	12,297	SSC recommendation (July 2020)
ABC Landings Portion	20.81	9,439	ABC discards to landings ratio from previous 2021 ABC projections (from NEFSC; Feb. 2019)
ABC Discards Portion	6.30	2,858	ABC discards to landings ratio from previous 2021 ABC projections (from NEFSC; Feb. 2019)
Expected Commercial Discards	2.14	972	34% of ABC discards portion, based on 2015-2017 average % discards by sector (using new MRIP data)
Expected Recreational Discards	4.16	1,886	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	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	No deduction from ACL for management uncertainty
RHL	8.32	3,776	Recreational ACT, minus expected recreational discards

ABC projections for 2022-2023 were provided by NEFSC staff assuming the continued application of an overfishing limit (OFL) CV of 60%, as has been applied by the SSC in recent years for summer flounder. In addition, these projections apply the previous SSC recommendation that recruitment should be sampled from a recent time series of generally below-average recruitment. In this case, recruitment is sampled from 2011-2019. The projections also assume that the total fishery catch in 2020 and 2021 is equal to the ABCs in those respective years. Alternative projections may be needed if the SSC determines that different assumptions are warranted.

Projections were provided for both varying ABCs from 2022-2023, as well as an averaging approach where the 2022-2023 ABCs are identical. The Council and Board have requested the ability to determine which approach is more appropriate from a policy standpoint; therefore, the SSC is requested to provide recommendations for both varying and averaged ABCs. The resulting ABCs and associated staff-recommended commercial and recreational limits are provided in Table 2. Staff recommend that the Council and Board adopt the averaged ABC approach for 2022-2023 such that the catch and landings limits are held constant over the two years. This would result in a 2022-2023 ABC equal to 33.12 million pounds (15,021 metric tons), which would represent a 22% increase from the 2021 ABC of 27.11 million pounds (12,297 metric tons).

As discussed later in this memo, the recommendations for commercial and recreational catch and landings limits (ACLs, ACTs, RHLs, and commercial quotas) shown in Table 2 are subject to discussion by the Monitoring Committee, which will provide recommendations on these limits for the Council and Board's consideration. The Monitoring Committee should also provide recommendations for varying and constant ACLs, ACTs, RHLs, and commercial quotas based on the two sets of ABCs recommended by the SSC.

Table 2: Potential 2022-2023 catch and landings limits for summer flounder, under both annually varying and averaged ABC approaches, based on ABC projections provided by the NEFSC. The sector-specific catch and landings limits are initial limits prior to any deductions for past overages.

Measure	Varying ABCs				Averaged ABCs (Staff recommended)				Basis
	2022		2023		2022		2023		
	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt	
OFL	36.28	16,458	34.74	15,759	36.28	16,458	34.98	15,865	Management track stock assessment projections
ABC	33.96	15,403	32.27	14,639	33.12	15,021	33.12	15,021	ABC projections provided by the NEFSC for varying and averaged 2022-2023 ABC approaches; 60% CV; sampling from 2011-2019 recruitment time series
ABC Landings Portion	26.48	12,009	25.29	11,470	25.89	11,743	25.89	11,743	ABC projections provided by the NEFSC for varying and averaged 2022-2023 ABC approaches; average approach includes averaged 2022-2023 expected landings
ABC Dead Discards Portion	7.48	3,394	6.99	3,169	7.23	3,279	7.23	3,279	ABC projections provided by the NEFSC for varying and averaged 2022-2023 ABC approaches; average approach includes averaged 2022-2023 expected dead discards
Expected Commercial Dead Discards	3.05	1,383	2.85	1,292	2.95	1,336	2.95	1,336	41% of ABC dead discards portion, based on 2017-2019 average % dead discards by sector
Expected Recreational Dead Discards	4.43	2,011	4.14	1,877	4.28	1,942	4.28	1,942	59% of ABC dead discards portion, based on 2017-2019 average % dead discards by sector
Commercial ACL	18.94	8,589	18.02	8,174	18.48	8,382	18.48	8,382	60% of ABC landings portion (FMP allocation) + expected commercial dead discards
Commercial ACT	18.94	8,589	18.02	8,174	18.48	8,382	18.48	8,382	Staff recommendation: Maintain no deduction from ACL for management uncertainty
Commercial Quota	15.89	7,205	15.17	6,882	15.53	7,046	15.53	7,046	Commercial ACT, minus expected commercial dead discards
Recreational ACL	15.02	6,814	14.25	6,465	14.64	6,639	14.64	6,639	40% of ABC landings portion (FMP allocation) + expected recreational dead discards
Recreational ACT	15.02	6,814	14.25	6,465	14.64	6,639	14.64	6,639	Staff recommendation: Maintain no deduction from ACL for management uncertainty
RHL	10.59	4,804	10.12	4,588	10.36	4,697	10.36	4,697	Recreational ACT, minus expected recreational dead discards

Staff recommend no changes to the commercial minimum size or mesh exemption requirements for 2022. As described below in the "Commercial Management Measures" section, staff recommend further evaluation of potential changes to the commercial minimum mesh size in 2022, possibly by an external contractor, for potential application in 2023. In particular, staff recommends continued consideration of phasing out the 6" square minimum mesh size regulation, (leaving the 5.5" diamond minimum mesh size in place), further evaluation of potential changes to the small mesh exemption program, and further evaluation of the regulatory criteria for the summer flounder flynet mesh exemption.

Recent Fishery Catch

Commercial landings in 2020 were approximately 9.11 million pounds (4,132 mt), about 79% of the commercial quota of 11.53 million pounds (5,229 mt). This underage is likely due in large part to market related impacts of COVID-19. Commercial dead discard estimates are not available for 2020 due to data gaps resulting from the suspension of the observer program from mid-March through mid-August 2020. As such, it is not currently possible to evaluate commercial catch against the 2020 commercial ACL. At this time, it is not clear whether alternative methodologies will be developed to generate 2020 commercial discard estimates for summer flounder and other species.

The 2021 commercial landings as of June 30, 2021, indicate that 41% of the 2021 coastwide commercial quota has been landed (Table 3).

Table 3: The 2021 state-by-state commercial quotas and the amount of summer flounder landed by commercial fishermen, in each state as of June 30, 2021.

State	Cumulative Landings (lb)	Quota (lb)^a	Percent of Quota (%)
ME	0	14,332	0%
NH	0	9,834	0%
MA	305,308	1,015,179	30%
RI	1,114,319	1,861,550	60%
CT	322,547	579,376	56%
NY	483,552	1,094,113	44%
NJ	957,239	1,961,062	49%
DE ^b	0	0	0%
MD	66,698	558,559	12%
VA	834,951	2,399,576	35%
NC	1,028,875	2,984,903	35%
Total	5,113,489	12,478,484	41%

^a Quotas adjusted for overages. Source: NMFS Weekly Quota Report with data reported through June 30, 2021.

^b There is no quota available for 2021 in Delaware because the amount of over-harvest from previous years is greater than the amount of quota allocated to Delaware for 2021.

The mail and telephone surveys that collect effort data on recreational fishing continued largely uninterrupted in 2020; however, the COVID-19 pandemic disrupted the Access Point Angler Intercept Survey (APAIS). All New England and Mid-Atlantic states suspended APAIS sampling starting in late March or April 2020. States resumed sampling between May and August 2020, depending on the state. NMFS used imputation methods to fill gaps in 2020 catch data with data collected in 2018 and 2019. These proxy data match the time, place, and fishing mode combinations that would have been sampled had the APAIS continued uninterrupted. Proxy data were combined with observed data to produce 2020 catch estimates using the standard estimation methodology. For summer flounder, these estimates using

imputed data show that approximately 10.06 million pounds (4,565 mt) of summer flounder were harvested in 2020, which is about 131% of the 2021 RHL of 8.32 million pounds. Recreational dead discard estimates in weight are not available for 2020 as the method for estimating the weight of discards relies on age and length information that is not complete at this time.

NMFS has indicated that when complete 2021 recreational data become available in 2022, they will evaluate the effects of including 2021 data (for example, alongside 2019 data and instead of 2018 data) in the imputation. Because these effects are unknown, the agency cannot predict whether it will seek to revise its 2020 catch estimates.

As of this memo, recreational estimates for 2021 are only available through wave 2 (March/April), which does not provide meaningful information about 2021 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

In June 2021, the NEFSC provided a management track assessment update for summer flounder with data through 2019. The update adds two additional years of data to the model developed for the most recent benchmark stock assessment, which was developed through the 66th SAW/SARC in 2018 using data through 2017. The 2018 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. 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 2021 management track assessment update made minor revisions to the biological reference points for spawning stock biomass and fishing mortality. The 2021 assessment update results indicate that the summer flounder stock was not overfished and overfishing was not occurring in 2019. SSB has generally decreased since 2003 and was estimated to be 104.49 million lb (47,397 mt) in 2019, about 86% of the updated biomass target reference point $SSB_{MSY\ proxy} = 121.73$ million lb (55,217 mt). This estimate is 72% above the overfished threshold of $\frac{1}{2} SSB_{MSY\ proxy} = \frac{1}{2} SSB_{35\%} = 60.87$ million lb (27,609 mt; Figure 1). There is a 90% chance that SSB in 2019 was between 42,000 and 54,000 mt.

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 2019 was estimated at 0.340, 81% of the updated fishing mortality threshold reference point ($F_{MSY\ proxy} = F_{35\%} = 0.422$; Figure 2). There is a 90% probability that the fishing mortality rate in 2019 was between 0.280 and 0.396.

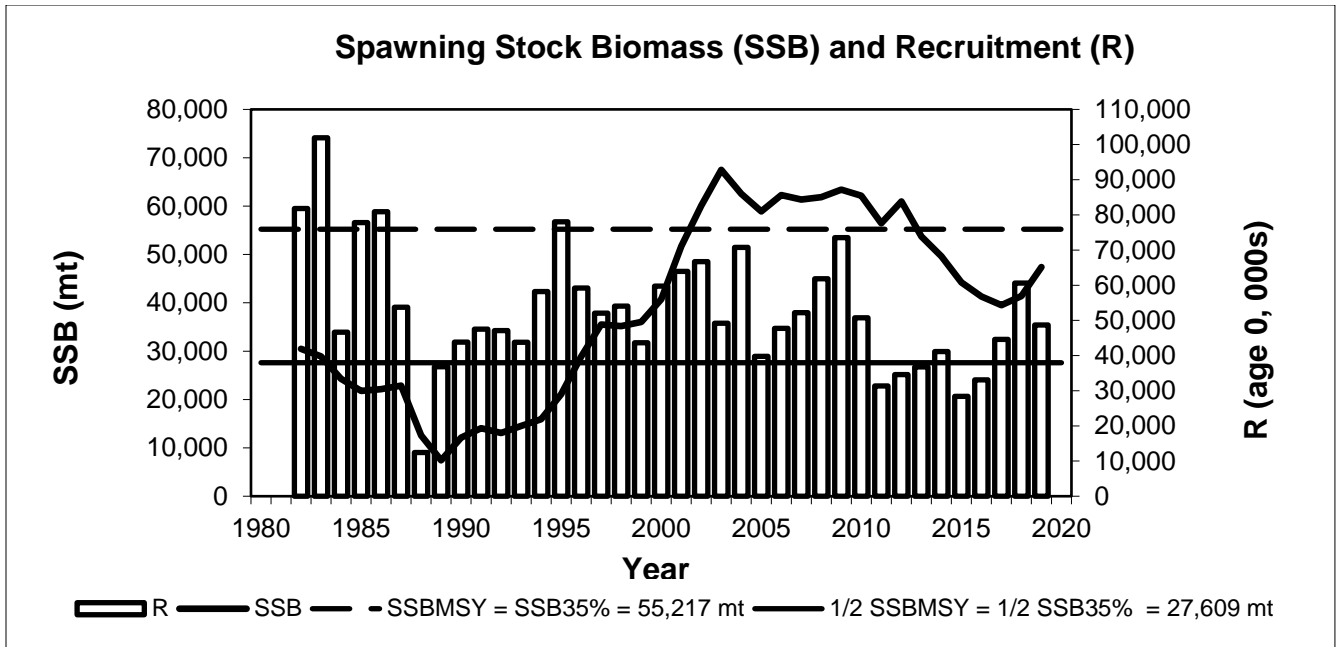


Figure 1: Summer flounder spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars), 1982-2019. The horizontal dashed line is the updated target biomass reference point. The horizontal solid line is the updated threshold biomass reference point.

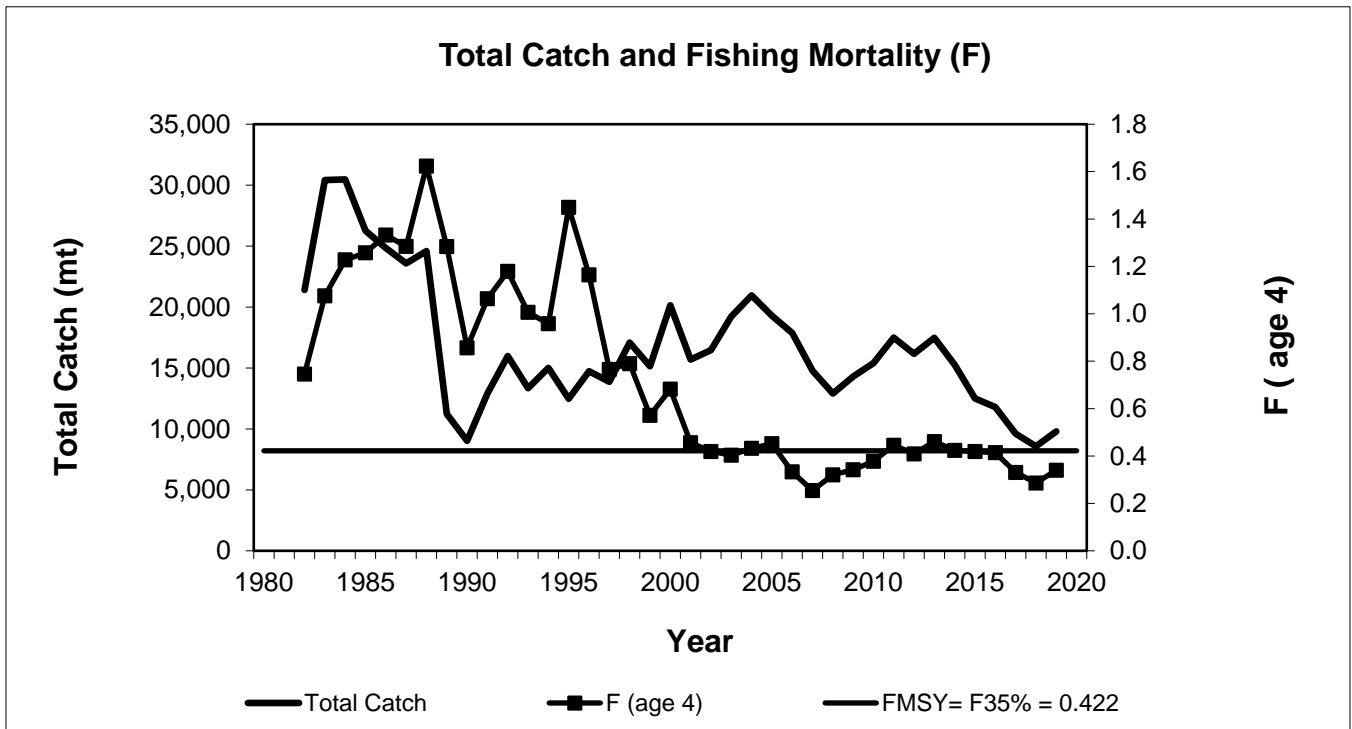


Figure 2: Total fishery catch (metric tons; mt; solid line) and fully-recruited fishing mortality (F, peak at age 4; squares) of summer flounder, 1982-2019. The horizontal solid line is the updated fishing mortality reference point.

The average recruitment from 1982 to 2019 is 53 million fish at age 0. Recruitment of juvenile summer flounder was below-average from 2011-2017, ranging from 31 to 45 million fish and averaging 36 million fish. The driving factors behind this period of below average recruitment have not been identified. The 2018 year class is above average at an estimated 61 million fish, which is largest recruitment estimate since 2009, while the 2019 year class is below average at 49 million fish.

Review of Prior SSC Recommendations

In February 2019, the SSC recommended, and the Council and Board adopted, summer flounder ABCs for 2019-2021 based on new stock status information and projections from the 2018 assessment. An ABC of 25.03 million pounds (11,354 mt) was implemented for each year 2019-2021; however, in 2020, the 2021 ABC was revised to account for changes to the Council's risk policy, as described in more detail below.

In February 2019, as requested by the Council, the SSC recommended two alternative sets of three-year ABCs based on the SAW66 assessment: one with varying ABCs each year, and one with a constant ABC for all three fishing years derived by averaging the three ABCs resulting from the varying approach. The Council and Board ultimately adopted the SSC-recommended ABCs based on the three-year averaged approach, implementing a constant ABC of 25.03 million pounds (113,54 mt) in each year 2019-2021.

The SSC indicated that the approach to estimating uncertainty in the OFL had not changed since the previous 2013 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 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 2018 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 (2011-2017) because near-term future conditions were more likely to reflect recent recruitment patterns than those in the entire 36-year time series.

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.

In December 2019, the Council adopted revisions to its risk policy. These revisions modified the ABC control rule to allow for a greater acceptable risk of overfishing at most biomass levels, while maintaining a risk of overfishing below 50% for all stocks. In light of these changes, in July 2020, the SSC considered whether the 2021 ABC should be modified in accordance with the revised risk policy.

In their July 2020 report, the SSC noted that the 2020 data update suggested an above average year class in 2018. These fish would not be fully recruited to the landings in the fishery until 2022, which the SSC noted may cause an increase in fishery discards in 2021 from this year class, as information about this year class was not incorporated into the previous projections for 2019-2021. The SSC believed this implied some uncertainty in the reliability of the projections from the assessment given the assumptions associated with those projections, but determined this was not a rationale for not applying the new Council risk policy. The SSC recommended that the ABC for the 2021 fishing year be revised to 27.11 million pounds (12,297 mt) to be consistent with the revised Council risk policy. This represented an 8% increase in the previously adopted 2021 ABC recommendation. The revised 2021 ABC recommendation was calculated based on the previously adopted 2021 OFL of 31.67 million pounds (14,365 mt), a projected 2021 B/Bmsy of 0.88, a P* value of 0.39 under the revised risk policy, and the previously applied OFL CV of 60%.

Table 4 shows the previously adopted 2019-2021 ABCs and the revised 2021 ABC, along with the associated OFLs and P* values.

Table 4: SSC-recommended 2019-2021 OFLs, ABCs, and P* values for the 3-year averaged ABC approach adopted by the Council and Board, and revisions to the 2021 ABC in response to changes in the Council’s risk policy.

Timing of Recommendation	Year	OFL	ABC	P*
February 2019	2019	30.00 mil lb (13,609 mt)	25.03 mil lb (11,354 mt)	0.37
	2020	30.94 mil lb (14,034 mt)		0.35
	2021 (initial)	31.67 mil lb (14,367 mt)		0.34
July 2020	2021 (revised)	31.67 mil lb (14,367 mt)	27.11 mil lb (12,297 mt)	0.39

Staff Recommendation for 2022-2023 ABCs

ABC projections for 2022-2023 were developed using several assumptions based on staff recommendations and past recommendations of the SSC. Staff recommend continued use of projections that sample from a shorter, more recent time series of recruitment since 2011, in this case, the 9-year time series of 2011-2019. Recruitment was generally below average in these years, although as described above, recruitment in 2018 was above average. The causes of below-average recruitment have not been identified, and the SSC previously recommended the use of a shorter recruitment series believing that near-term future conditions are more likely to reflect recent recruitment patterns than those in the entire assessment time series (now 38 years).

Staff recommend continued use of the 60% OFL CV, which has been adopted by the SSC for summer flounder each year since 2014. The latest benchmark assessment did not result in major changes to the quality of the data and model that the SSC has previously determined to meet the criteria for a 60% CV. 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. Several different models and model configurations were considered and evaluated by the most recent SAW, most of which showed similar stock trends and stock status. No major persistent retrospective patterns were identified in the most recent model.

Projections were provided for both varying 2022-2023 ABCs, as well as an averaging approach where the 2022-2023 ABCs are held constant. In each case, an iterated approach was used where the projected biomass for the subsequent year was updated assuming that the ABC was caught in the preceding year. This results in differing 2023 OFLs between various projection approaches. All 2022-2023 projections provided below assume that catch in 2020 and 2021 was equal to the implemented ABCs in those respective years.⁴

Using the assumptions described above, Table 5 provides projections under the varying 2022-2023 ABC approach while Table 6 provides projections using the constant ABC approach. Biologically, the outcome of an averaged vs. non-averaged approach is very similar and the projected spawning stock biomass trajectory is approximately the same in either scenario. Under these options, consistent with the Council’s revised risk policy, the probability of overfishing (P*) in 2022-2023 could range from 0.435-0.461.

Table 5: Projections for varying 2022-2023 ABCs, including OFL and ABC total catch, ABC projected landings and discards, ABC projected F, and projected SSB. These projections sample from a recent time series of recruitment (2011-2019) and assume application of the current Council risk policy with a 60% OFL CV.

Year	OFL Total Catch		ABC Total Catch		ABC Landings		ABC Discards		ABC F	ABC P*	SSB	
	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt			mil lb	mt
2020	31.27	14,183	25.03	11,354	18.97	8,604	6.06	2,750	0.328	0.344	119.83	54,352
2021	32.81	14,884	27.11	12,297	20.87	9,468	6.24	2,829	0.32	0.365	125.49	56,920
2022	36.28	16,458	33.96	15,403	26.48	12,009	7.48	3,394	0.391	0.452	121.04	54,901
2023	34.74	15,759	32.27	14,639	25.29	11,470	6.99	3,169	0.387	0.447	113.69	51,570

⁴ While official catch estimates for 2020 are not currently available due to COVID-19 related data issues, the management track assessment estimates that 2020 total catch was approximately 99% of the 2020 ABC.

Table 6: Projections for averaged 2022-2023 ABCs, including OFL and ABC total catch, ABC projected landings and discards, ABC projected F, and projected SSB. These projections sample from a recent time series of recruitment (2011-2019) and assume application of the current Council risk policy with a 60% OFL CV.

Year	OFL Total Catch		ABC Total Catch		ABC Landings		ABC Discards		ABC F	ABC P*	SSB	
	mil lb	mt	mil lb	mt	mil lb	mt	mil lb	mt			mil lb	mt
2020	31.27	14,183	25.03	11,354	18.97	8,604	6.06	2,750	0.328	0.344	119.83	54,352
2021	32.81	14,884	27.11	12,297	20.87	9,468	6.24	2,829	0.32	0.365	125.49	56,920
2022	36.28	16,458	33.12	15,021	25.82	11,713	7.29	3,308	0.38	0.435	121.72	55,211
2023	34.98	15,865	33.12	15,021	25.95	11,772	7.16	3,249	0.396	0.461	113.77	51,605

Whether or not to average the ABCs is a policy decision for the Council and Board. Because the Council is unable to recommend ABCs higher than what the SSC recommends for any given year, the SSC is asked to provide ABC recommendations for both approaches to allow the Council and Board to select their preferred approach.

Staff recommend that the Council and Board adopt ABCs for 2022-2023 based on the averaged ABC approach. This is consistent with the previous approach for summer flounder, and would provide stability and simplicity between limits in these two years.

The Northeast Regional Coordinating Council (NRCC)’s stock assessment process⁵ now has summer flounder receiving management track updates every two years. The next management track assessment update is expected in 2023 to inform 2024-2025 catch and landings limits. Data updates (updated fishery catch and survey data only) would be requested in the interim years. 2022-2023 ABCs adopted this year are not expected to be revised unless there are unusual signals in interim data updates that prompt the SSC to determine that changes may be warranted.

Sector-Specific Catch and Landings Limits

The Council and Board are currently developing an amendment to reconsider the allocation of catch or landings between the commercial and recreational sectors for summer flounder, scup, and black sea bass.⁶ Final action on this amendment is scheduled for December 2021 and any changes are expected to be implemented starting in 2023. Thus, while the below discussion of sector specific limits for 2023 assumes the current allocations will apply in 2023, this may not necessarily be the case, and 2023 limits may need revisions based on any allocation changes made by the Council and Board. Allocation changes would not impact the ABCs discussed above.

Recreational and Commercial Annual Catch Limits

The ABC projections provided in Table 5 and Table 6 above include an amount of catch expected to be landed and an amount expected to be discarded (dead discards) in 2022-2023 based on projections provided by the NEFSC. For the averaged ABC approach, staff recommends averaging the expected discards and landings across the two years given minor differences in these projections, to ensure that all limits would be held constant over the two years (see Table 2). Based on the allocation percentages in

⁵ <http://www.mafmc.org/s/Stock-assessment-process-FINAL.pdf>.

⁶ <http://www.mafmc.org/actions/sfsbsb-allocation-amendment>

the Fishery Management Plan (FMP), 60% of the amount of the ABC expected to be landed is allocated to the commercial fishery, and 40% to the recreational fishery. Dead discards are typically apportioned based on the dead discards contribution from each fishing sector using a 3-year moving average percentage.

Due to data issues related to COVID-19, dead discard data are not currently available for 2020 for the commercial or recreational fisheries. As such, recommendations for the split of projected dead discards between the commercial and recreational fisheries were developed using 2017-2019 data from the management track assessment. On average over these years, 41% of dead discards were attributable to the commercial fishery and 59% to the recreational fishery.

The allocated landings for each sector are added to the expected sector-specific dead discards to arrive at the commercial and recreational ACLs. Any deductions for management uncertainty (see below) would be deducted from the sector-specific ACLs to arrive at the sector-specific ACTs. Expected dead discards are subtracted from the sector ACTs to derive the commercial quota and RHL in each year (Figure 3).

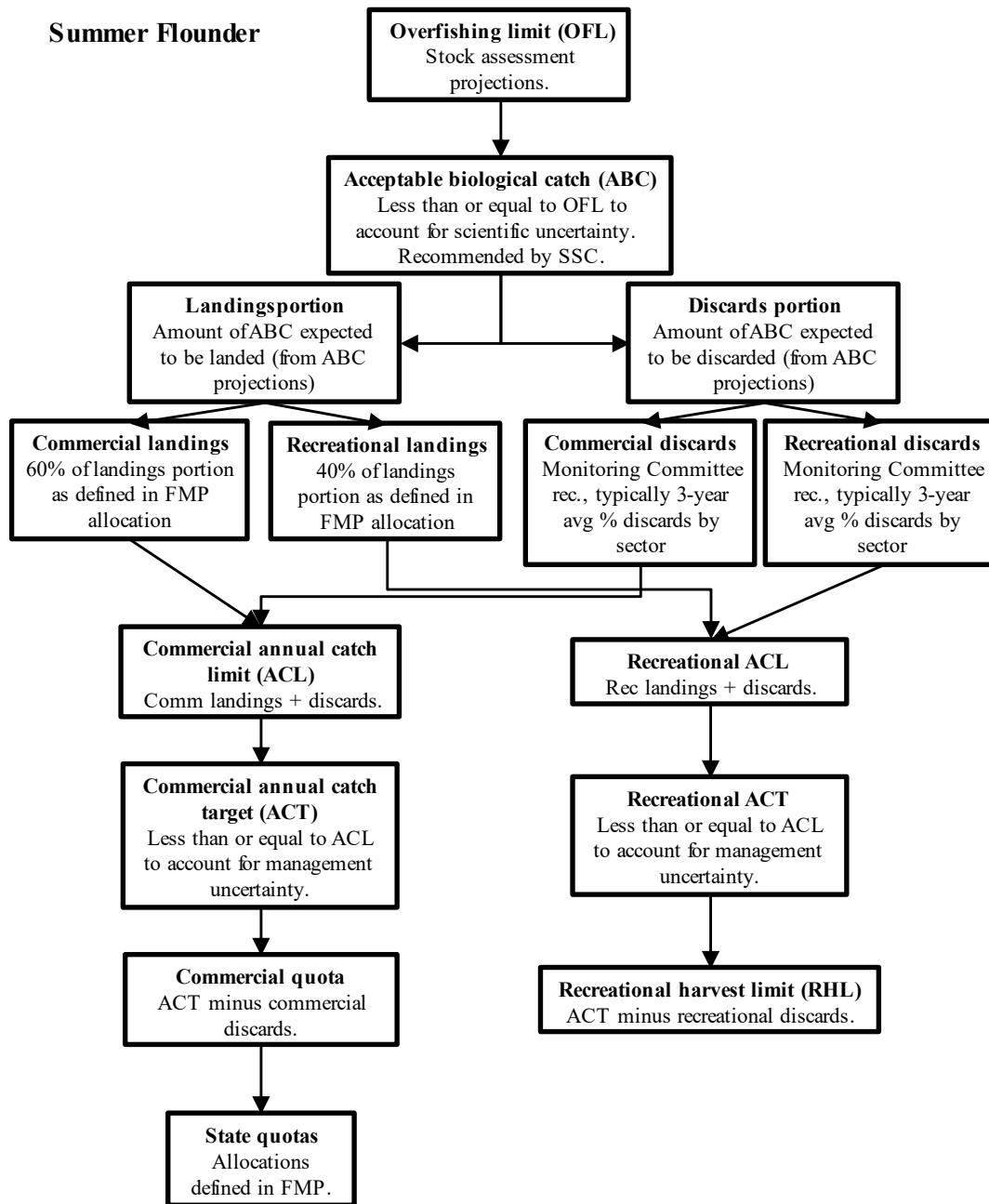


Figure 3: Flowchart for summer flounder catch and landings limits.

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 were near the commercial quotas in recent years prior to the substantial commercial quota increase in 2019. In 2019 and 2020, more notable underages were observed (Table 7). In 2019 this was due to the mid-year increase in quota that did not allow the fishery the opportunity to fully harvest the quota, and in 2020, the underage was likely due to market impacts of COVID-19.

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. At this time, 2020 dead discards estimates are not available for the commercial fishery, however, NMFS may consider any available 2020 data later in the year during the rulemaking process for 2022-2023 specifications to determine whether adjustments to the commercial limits are needed.

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 support 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. As previously stated, commercial discard information is not available for 2020 at this time.

Staff recommend maintaining commercial ACTs set equal to the ACLs for 2022-2023, such that no reduction in catch is taken for management uncertainty.

For the recreational fishery, performance relative to RHLs through 2018 cannot be evaluated using the revised MRIP data, since past RHLs were set based on assessments that used the old data. A performance evaluation for 2016-2020 using a combination of old and new MRIP data is provided in Table 7 (2016-2018 uses pre-calibration MRIP data). Data for 2019-2020 are from the revised MRIP methodology and can be compared to the 2019-2020 limits given that they were set using the new assessment which incorporated revised MRIP information.

Compared to the commercial fishery, recreational performance has been 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 2016-2020, recreational harvest was below the RHLs in two of the five years (2017 and 2018). A moderate (14%) overage of the RHL was observed in 2016, and a more substantial (31%) overage in 2020. However, as discussed above, the 2020 MRIP data are based on imputation methods incorporating some 2018 and 2019 data to address 2020 gaps in intercept sampling coverage. The 2020 estimates should be reviewed by the Monitoring Committee, which may wish to provide recommendations on whether or how to use these estimates in evaluation of fishery performance to the RHL and ACL, as well as

whether or how to use estimates broken down by state, wave, area, or mode when considering recreational measures later this year.

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. A recreational AM was not triggered for application in 2021 based on an evaluation of 2017-2019 catch data. At this time 2020 recreational dead discard estimates are not available; however, they may be available for an ACL evaluation later this fall during the process of setting recreational measures for 2022.

The Council and Board are considering a number of potential changes to recreational fisheries management through the Recreational Reform Initiative, with the goal of providing more stability in the recreational bag, size, and season limits from year to year, greater flexibility in the management process, and recreational accessibility aligned with availability. This is an ongoing effort. Specific changes could include greater consideration of stock status when setting recreational management measures, better addressing uncertainty in the MRIP data, and other changes.

Staff recommend maintaining recreational ACTs set equal to the ACLs for 2022-2023, 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, 2016-2020. Recreational data show pre-revision MRIP estimates for 2016-2018 to allow comparison to past RHLs, and 2019-2020 are evaluated with the new MRIP estimates given that RHLs in these years were 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(-)
2016	7.80	8.12	-4%	6.18	13.24	5.42	+14%
2017	5.87	5.66	+4%	3.19	10.08	3.77	-15%
2018	6.17	6.44	-4%	3.35	7.60	4.42	-24%
2019	9.06	10.98	-17%	N/A	7.80	7.69	+1%
2020	9.11	11.53	-21%	N/A	10.06 ^e	7.69	+31%
5-yr Avg.	-	-	-9%	-	-	-	+1%

^a Source: NMFS dealer data, as of June 2021.

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

^c Source: 2016-2017 pre-calibration MRIP data from NMFS MRIP calibration comparison query accessed June 27, 2019. 2018 back-calibrated data is from personal communication with NMFS. 2019-2020 recreational landings are from a NMFS recreational fisheries statistics query May 12, 2021. Recreational landings are from Massachusetts through North Carolina.

^d RHLs for 2016-2018 were set using a prior assessment that did not incorporate revised MRIP values. The 2019-2020 RHLs were set using the 2018 assessment which incorporated revised MRIP values.

^e 2020 recreational estimates were developed using imputation methods (incorporating 2018 and 2019 data) to account for missing 2020 APAIS data.

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 3). For 2022-2023, the staff recommendation for an averaged ABC approach in combination with the ACT and discard assumptions outlined above would result in a commercial quota of 15.53 million pounds and an RHL of 10.36 million pounds. Under the varying ABC approach, the commercial quota would be 15.89 million pounds in 2022 and 15.17 million pounds in 2023, while the RHL would be 10.59 million pounds in 2022 and 10.12 million pounds in 2023 (Table 2). These calculations are dependent on the ABC recommendations of the SSC and may vary if the SSC adopts different recommendations than outlined in this memo.

The commercial quota is divided among the states based on the allocation percentages specified in the FMP, and each state sets measures to achieve their state-specific commercial quotas. The commercial allocations to the states were modified via Amendment 21, which became effective on January 1, 2021. The revised allocation system 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 is distributed according to the previous state allocations. In years when the coastwide quota exceeds 9.55 million pounds, the *additional* quota amount beyond this trigger is distributed in equal shares to all states except Maine, Delaware, and New Hampshire, which 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 in any given year. This allocation system is designed to provide for more equitable distribution of quota when biomass is relatively higher, while also considering the historic importance of the fishery to each state.

Table 9: Previous (through 2020) and revised (effective January 2021) allocation of summer flounder commercial quota to the states.

State	Previous allocation of commercial quota	Revised allocation of commercial quota (total state allocation = baseline quota allocation + additional quota allocation)	
		Allocation of baseline quota ≤9.55 mil lb	Allocation of additional quota beyond 9.55 mil lb
ME	0.04756%	0.04756%	0.333%
NH	0.00046%	0.00046%	0.333%
MA	6.82046%	6.82046%	12.375%
RI	15.68298%	15.68298%	12.375%
CT	2.25708%	2.25708%	12.375%
NY	7.64699%	7.64699%	12.375%
NJ	16.72499%	16.72499%	12.375%
DE	0.01779%	0.01779%	0.333%
MD	2.03910%	2.03910%	12.375%
VA	21.31676%	21.31676%	12.375%
NC	27.44584%	27.44584%	12.375%
Total	100%	100%	100%

Specific management measures that will be used to achieve the RHL for the recreational fishery in 2022 will not be determined until later in 2021. Typically, the Council and Board review data through Wave 4 (July-August) in the current year to set recreational bag, size, and season limits for the upcoming year. The Monitoring Committee typically 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. Hasbrouck et al. study suggests 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

⁷ Hasbrouck et al. 2018 is available at: http://www.mafmc.org/s/Tab08_SFBSB-Mesh-Selectivity-Study-Apr2018.pdf. The Monitoring Committee discussion document from September 2019 is available at <https://www.mafmc.org/s/FSB-Mesh-Size-Issues-Overview-Sept-2019.pdf>, and the MC report from that discussion can be found at: https://www.mafmc.org/s/SFSBSB_MC_Summary_Sept_2019_FINAL.pdf. T

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 MC noted that further analysis should be done on how many vessels are currently using 6.0" square vs. 5.5" diamond mesh.

In recent discussions on this topic, the MC has been supportive of continuing to analyze this issue, but has also recognized that it should be a lower priority issue in the near term given other pressing management concerns for this FMP. The Council and Board have also agreed that while this issue should still be pursued, it was not a near-term priority given other management activities. Given staff resources required on other issues for these species and other Council and Board priorities, to date there has not been additional staff time available to further evaluate these issues. Staff recommend consideration of hiring an external contractor in late 2021/early 2022 to pursue further evaluation of this mesh size issue as well as re-evaluation of the mesh size exemptions as discussed below. Given this timing, staff recommend no changes to the current 14-inch minimum fish size, or seasonal possession thresholds triggering the minimum mesh size for 2022.

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.

Under normal circumstances, staff would evaluate observer data from November 1, 2019 through April 30, 2020 in the development of this memo. However, given the suspension of the observer requirements in mid-March 2020 due to COVID-19, complete observer data for this time period are not available. NEFOP data were evaluated for observed trips from November 1, 2019 through approximately March 19, 2020.⁸ For this time period, a total of 397 trips with at least one tow were observed east of 72° 30.0'W and 204 of these trips used small mesh (Table 10). Of those 204 trips, 97 trips (47%) reported landing more than 200 lb of summer flounder. Of those 97 trips, 24 trips (25%) discarded more than 10% of their summer flounder catch. The percentage of trips that met all these criteria relative to the

⁸ The observer requirement was first waived on March 20, 2020, although there are a few relevant observer records after this date, presumably from vessels which were already at sea.

total number of observed trips east of 72° 30.0'W is 6.0% (24/397 trips).

The number of vessels issued a letter of authorization (LOA) for the small mesh exemption program has remained relatively stable since 2013, fluctuating around an average of 66 vessels (Figure 4).

The MC had previously identified concerns with an increased percentage in the number of 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 (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 has also noted that these increases in discards were possibly related to decreased commercial quotas, especially from 2017 through the first half of 2019. Last year, the MC noted that the substantial increase in the commercial quota for 2019-2021 should reduce the rates of discarding in general, including under this exemption. General analysis of recorded discard reasons in the observer data (not specific to this exemption program) indicate that discards in recent years prior to 2019 have been more heavily driven by quota-related reasons, but in 2019 quota-related reasons accounted for a much smaller percentage of observed discards. The MC indicated that an analysis of the recorded discard reasons specifically for vessels operating under this exemption program would be useful but recognized that COVID-19 observer coverage disruptions would hinder the ability to evaluate the most recent relevant time period. As indicated above, for the recent data that are available, the percent of observed trips discarding more than 10% of their summer flounder catch declined in the November 2019-March 2020 period. However, because 2020 observer data are incomplete, it is difficult to evaluate whether this change represents a meaningful difference in discarding patterns.

Following the June 2021 Advisory Panel meeting, one advisor requested evaluation of changes to the small mesh exemption program.⁹ Specifically, this advisor requested that the small mesh exemption line be completely removed and that vessels be allowed to possess up to 1,000 pounds of summer flounder with small mesh no matter where they are fishing. Additionally, for directed summer flounder trips with possession limits over 1,000 pounds, a 5" minimum mesh size should be used. The advisor did not specify whether this modification should be seasonal or year-round. Staff note that this modification would essentially remove the small mesh exemption program as well as modify the seasonal possession limits triggering the minimum mesh size requirement (as discussed above, these limits are currently 200 pounds from November through April and 100 pounds May through October).

The MC should consider whether changes may be needed to this exemption program. As described above, there has not been sufficient staff time to dedicate to a more in depth evaluation of this exemption program in 2021. Staff recommend that the MC identify additional analysis or industry input needed to inform potential changes to the small mesh exemption program, and recommend that this be considered for evaluation by an external contractor in late 2021/early 2022 for potential application in 2023 and beyond.

⁹ See email comment from Hank Lackner included in the Fishery Performance Report at: https://www.mafmc.org/s/SFSBSB_FPR_June-2021.pdf.

Table 10: Numbers of observed trips that meet specific criteria based on NEFOP data from November 1-April 30 for 2014 through 2020; observer data for 2020 is only available through mid-March due to the COVID-19 related suspension of the observer program.

Criteria		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	Nov. 1, 2019 ~March 19, 2020
A	Observed trips with at least one catch record east of 72° 30' W Longitude	401	391	555	724	646	397
B	That met the criteria in row A <u>and</u> used small mesh at some point during their trip	172	252	376	364	354	204
C	That met the criteria in rows A-B <u>and</u> landed more than 200 pounds summer flounder on whole trip	72	92	150	135	164	97
D	That met the criteria in rows A-C <u>and</u> discarded >10% of summer flounder catch east of 72° 30' W Longitude	21	18	36	47	53	24
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)	5.20%	4.60%	6.50%	6.50%	8.20%	6.05%
F	Total summer flounder discards (pounds) from trips meeting criteria in A-D	14,579	16,470	14,640	33,868	18,186	11,672
G	Total summer flounder landings (pounds) from trips meeting criteria in A-D	15,224	23,295	25,472	76,780	59,960	29,540
H	Total catch (pounds) from trips meeting criteria in A-D	29,804	39,763	40,113	110,648	69,145	41,212

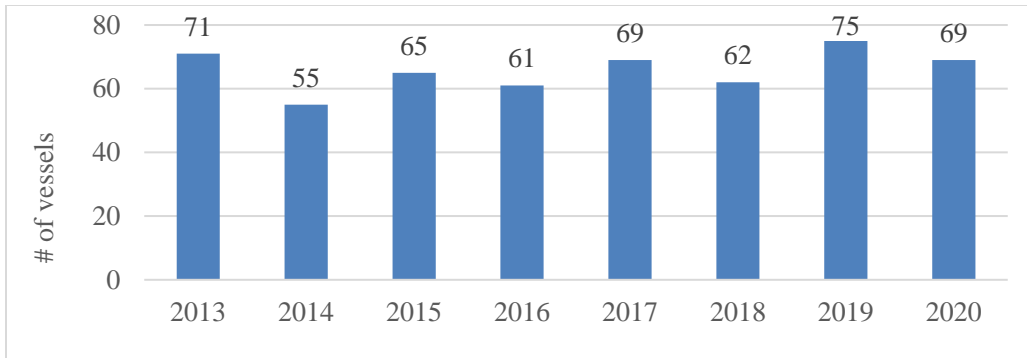


Figure 4: Number of vessels issued the small mesh LOA for the SMEP from fishing year 2013-2020. Source: Pers. Comm., GARFO Analysis & Program Support Division, June 17, 2021.

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 Lorena de la Garza dated July 1, 2021 (see Attachment) indicates that no summer flounder were landed in the North Carolina flynet fishery from 2015-2020. 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.¹⁰ 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 January 2020 public comment from a New Jersey fisherman¹¹ asserted 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.

In response to this request, at their 2020 meeting, the MC noted that there is a need to better understand the use and configuration of flynet and high rise trawl nets as they relate to this exemption. Additional

¹⁰ See the report at: http://www.mafmc.org/s/Tab11_SF-S-BSB-Commercial-Measures.pdf.

¹¹ See attachment at: <https://www.mafmc.org/s/Fluke-mesh-exemption-memo-MC-May-2020.pdf>.

information provided by Board member Emerson Hasbrouck indicates that the use of two-seam nets is rare in the Mid-Atlantic and Southern New England winter offshore trawl fishery. This may indicate a possible compliance and enforcement issue if vessels that don't meet the regulatory definition (which specifies a two-seam net) believe they are fishing under the flynet exemption. However, the MC stated that additional evaluation is needed to verify this. The MC also indicated a need to better understand the differences between a two-seam and four-seam net before commenting on whether an expansion of the flynet exemption definition is warranted. The MC also agreed that a change in this definition could lead to an increase in the number of vessels using this exemption and the consequences of this should be thoroughly understood before changes are adopted. The MC recommended exploration of the extent to which existing datasets allow for evaluation of specific trawl gear configurations, and noted the need for input from gear experts, industry, and enforcement on this issue.

As described above, there has not been sufficient staff time to dedicate to a more in depth evaluation of this exemption in 2021. Staff recommend no changes to this exemption for 2022, and that the MC identify additional analysis or industry input needed to inform potential changes to the small mesh exemption program, and recommend that this be considered for evaluation by an external contractor in late 2021/early 2022 for potential application in 2023 and beyond.



ROY COOPER
Governor

ELIZABETH S. BISER
Secretary

KATHY B. RAWLS
Director

Memorandum

To: Kiley Dancy, MAFMC

From: Lorena de la Garza, NCDMF

Date: July 1, 2021

Subject: Species composition and landings from the 2020 North Carolina flynet fishery

The 2020 North Carolina flynet fishery landed 34,484 pounds of finfish consisting of four species including black sea bass, scup, bluefish, and monkfish. All 2020 North Carolina flynet 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, 2019, and 2020 flynet fisheries. Total flynet landings in 2020 are the second lowest since the trip ticket program began in 1994 (2013 being the lowest). Reduced fishing effort on targeted fish species and increased shoaling at Oregon Inlet continue to result in a low number of flynet boats landing at North Carolina ports.