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Correction on page 13

MEMORANDUM

DATE: August 18, 2022

TO: Scientific and Statistical Committee

CC: Groundfish Committee

FROM: Groundfish Plan Development Team

SUBJECT: **Southern New England/Mid-Atlantic winter flounder Overfishing Limits and Acceptable Biological Catches for fishing years 2023 to 2025**

The Groundfish Plan Development Team (PDT) discussed overfishing limits (OFLs) and acceptable biological catches (ABCs) for Southern New England/Mid-Atlantic (SNE/MA) winter flounder, following the Management Track Assessment in June 2022. The PDT met by webinar on July 11, July 25, and August 15, 2022.

1. Overview

This memorandum provides information to support FY2023 – FY2025 OFL and ABC recommendations by the Scientific and Statistical Committee (SSC) for SNE/MA winter flounder. The PDT reviewed 2020 and 2022 stock assessments and peer review reports, SSC reports, PDT reports, survey information, catch information, and economic information.

The PDT applies the Council's default ABC control rule for groundfish stocks (see Amendment 16) and offers some options for the SSC to consider based on the recommendations from the 2022 Peer Review Panel or previous SSC recommendations (e.g., constant ABCs, three-year average catches). **The PDT raises concerns with basing ABCs only on 75%F_{MSY} and recommends the SSC consider the use of a constant ABC for this stock.**

> *The ABC control rules will be used in the absence of better information that may allow a more explicit determination of scientific uncertainty for a stock or stocks. If such information is available – that is, if scientific uncertainty can be characterized in a more accurate fashion -- it can be used by the SSC to determine ABCs. These ABC control rules can be modified in a future Council action (an amendment, framework, or specification package):*
>
> a. *ABC should be determined as the catch associated with 75% of F_{MSY}.*
> b. *If fishing at 75% of F_{MSY} does not achieve the mandated rebuilding requirements for overfished stocks, ABC should be determined as the catch associated with the fishing mortality that meets rebuilding requirements ($F_{rebuild}$).*

c. *For stocks that cannot rebuild to B_{MSY} in the specified rebuilding period, even with no fishing, the ABC should be based on incidental bycatch, including a reduction in bycatch rate (i.e., the proportion of the stock caught as bycatch).*
d. *Interim ABCs should be determined for stocks with unknown status according to case- by case recommendations from the SSC*

Appendices

This memorandum includes two appendices:

- Appendix I – Estimates of CY 2022 catches – for the "bridge year" in the projections
- Appendix II – Groundfish PDT memo to Groundfish Committee re SNE/MA winter flounder catches in other federal fisheries (April 1, 2022)

2. Management Track Stock Assessment (2022)

Trends

Fishery catches in 2021 represent the second lowest (216 mt) in the time series (Figure 1). The SNE/MA winter flounder stock shows an overall declining trend in SSB over the time series, with the current estimate (3,353 mt) as the second lowest in the time series (Figure 2). Estimates of fishing mortality have been declining since 2015 and the current value (0.061) is also the second lowest of the time series (Figure 3). Recruitment has remained low and steady over the past decade with a current value of 4.4 million fish, which is above the 10-year average of 3.9 million fish. (Figure 4).

Figure 1- Total catch of Southern New England Mid-Atlantic winter flounder between 1981 and 2021 by fleet (commercial, recreational) and disposition (landings and discards). Source: 2022 Management Track Assessment Report, NESFC

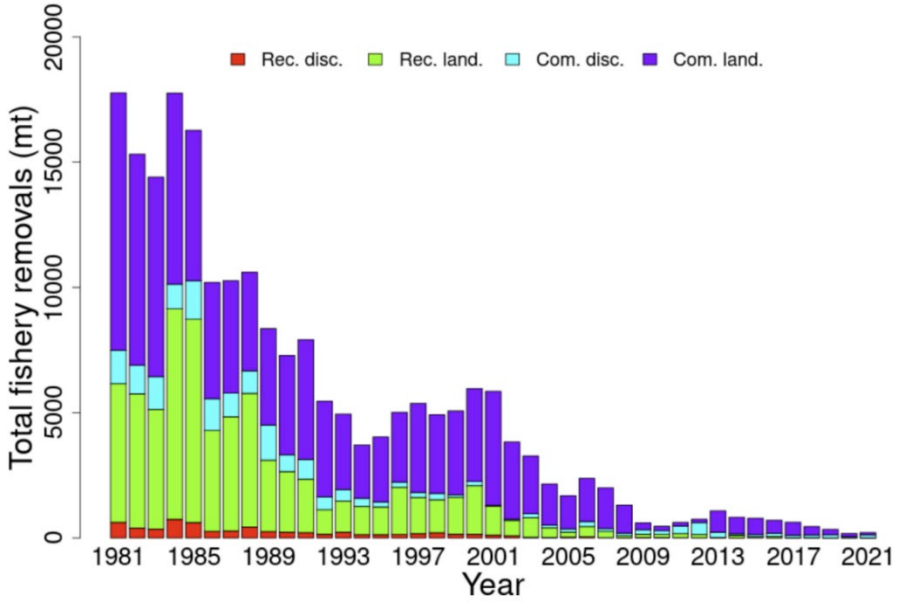


Figure 2- Southern New England/Mid-Atlantic winter flounder biomass (total, spawning stock, and exploitable) (mt) between 1981 and 2021. Source: 2022 Management Track Assessment presentation, NEFSC

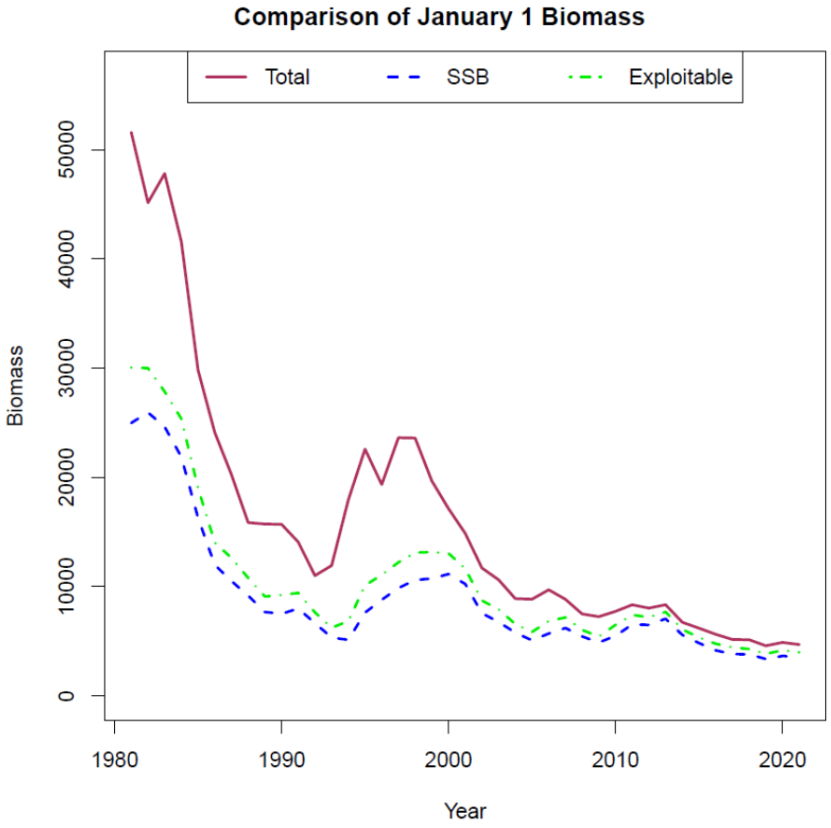


Figure 3- Southern New England/Mid-Atlantic winter flounder fishing mortality (F.full is fully selected (ages 4 and 5)) for 1981-2021. Source: 2022 Management Track Assessment presentation, NEFSC

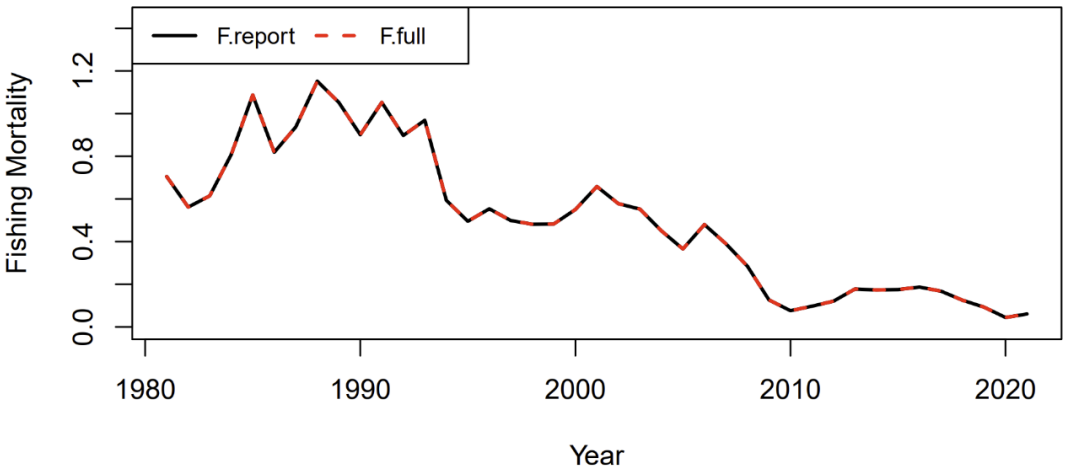
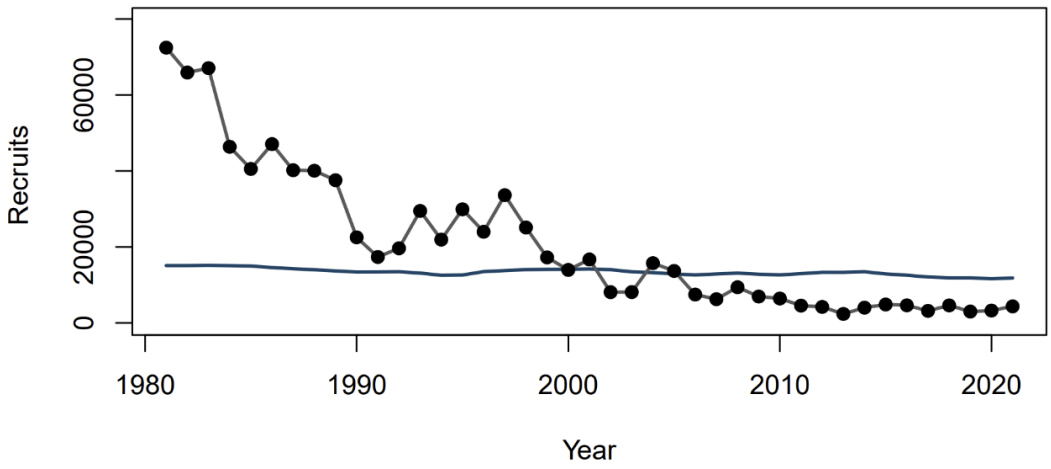


Figure 4- Southern New England/Mid-Atlantic winter flounder recruits (000s) from 1981-2021. Source: 2022 Management Track Assessment presentation, NEFSC



Changes Made to the Assessment

There was a change to the stanza of recruitment that is used in the projections for this update (which led to the level 3 peer review requirement). This new recruitment stanza uses the last 20 years of estimates (2002-2021) for both short term projections, and to estimate the biomass target (SSBMSY) from a long term (100yr) projection. Previous assessments have used the entire time series of recruitment (1981-present). Many of the historical recruitment estimates are overly optimistic, if not impossible, for the current stock size and productivity to achieve under current environmental conditions. Very early recruitment estimates from the entire time series of recruitment are 20 times the levels seen in recent years. At the 2020 management track review the main recommendation from the review panel was:

> *The Peer Review Panel notes, as had been done in previous reviews, that recruitment had been declining throughout the period and was currently very low. As for several other stocks under the purview of the NEFSC it would be helpful to evaluate if the previously observed high recruitment are possible; i.e., is it simply a matter of building back SSB and recruits will follow, or are there other factors at play. If the productivity of the resource(s) has decreased, it would be helpful to adjust reference points accordingly. This would be unlikely to change fisheries yield much but would be more realistic in terms of setting expectations.*

Extensive work has been carried out to evaluate the effects of climate change on recruitment for SNE/MA winter flounder. Two assessment models that include environmental covariates have been developed: an environmental ASAP model (Bell et al 2018) and the transition of this environmental model into the state space Woods Hole Assessment Model (WHAM). In order to move to one of these alternative models for management, SNE/MA winter flounder would have to go through a research track assessment. To help bridge the gap from now until the next research track (2026) more realistic reference points were estimated in this assessment. The environmental index (time series of mean winter estuary temperatures) applied in the alternative assessment

models was used as support in this assessment for choosing a more representative time period of recruitment for the projections.

Additionally, there has been a change in the commercial data processing, as the Northeast Fisheries Science Center (NEFSC) has switched to the Catch Accounting and Monitoring System (CAMS) from the AA table procedure. CAMS estimates of landings were available for 2020 and 2021. CAMS will be used going forward for commercial catch information and historical catch from 1981-2019 will remain based upon the AA table estimates. A comparison between CAMS and the AA tables was done for 2019 landings. While total landings amongst the three winter flounder stocks is consistent between CAMS and the AA tables, the switch to CAMS resulted in 53.4 mt of landings shifting from the SNE/MA stock to the Gulf of Maine and Georges Bank stocks.

A minor change was also made to the assessment model data for this update. The NEFSC fall survey index was previously input as an age 2-7+ index. This input format was carried over from when the model was a VPA. The index was un-bumped to an age 1-7+ index, which did not have any noticeable impacts on model performance or estimates.

Sources of Uncertainty

Natural mortality - A source of uncertainty is the estimate of natural mortality based on longevity, which is not well studied in SNE/MA winter flounder and is assumed constant over time. Natural mortality affects the scale of the biomass and fishing mortality estimates.

Recreational catches – Length distribution of the recreational discards is a source of uncertainty. The recreational discards are a small component of the total catch, but the assessment suffers from very little length information used to characterize the recreational discards (1 to 2 lengths in recent years). For the 2022 assessment a compiled discard length distribution for all years was used to characterize the recreational discards. Poor sampling of recreational fishery information could be an issue moving forward.

Recruitment - The population projections are sensitive to the recruitment model chosen, as well as the temporal period selected from which recruitment estimates are drawn. In addition, recruitment and natural mortality are likely both dependent on environmental conditions, which cannot be explored within the framework of the ASAP model.

3. Stock Status and Rebuilding Plan

Based on the 2022 management track assessment, SNE/MA winter flounder is not overfished, overfishing is not occurring, and the stock may now be considered rebuilt. This would be a substantial change in the status of the SNE/MA winter flounder stock, in which the stock was previously considered overfished with overfishing not occurring. This potential change in status is directly due to changing the recruitment stanza going into the projections (see above). NMFS has yet to make an official stock status determination based on the 2022 stock assessment and does not anticipate a determination prior to the August 25 SSC meeting.

SNE/MA winter flounder has been in a rebuilding plan, with a rebuild by date of 2023 (Table 1). GARFO notified the Council on August 13, 2021 that SNE/MA winter flounder had not been making adequate rebuilding progress. The Council is required to prepare and implement a

revised rebuilding plan for SNE/MA winter flounder within two years of the notification. The Council is expected to take up this issue this year in Framework Adjustment 65 (FW65). However, if NMFS revises the official stock status to be rebuilt, the Council could choose to end the rebuilding plan, rather than revise the existing plan.

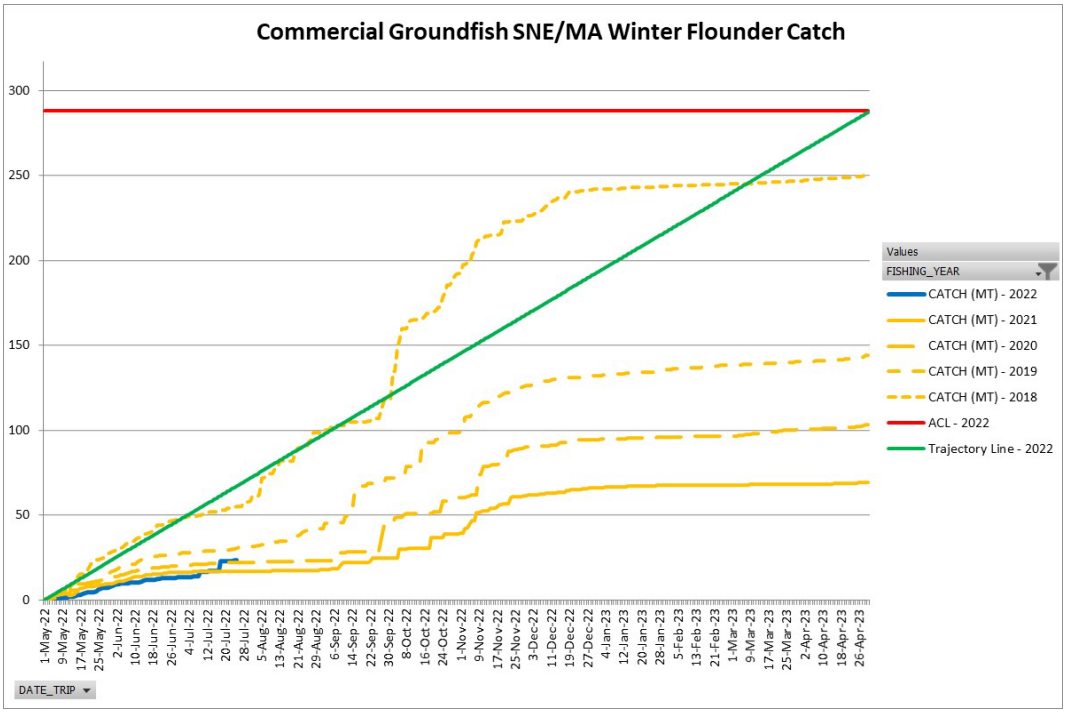
Table 1- Summary of rebuilding status for SNE/MA winter flounder based on the previous assessment in 2020.

Groundfish Stock	**Rebuilding Plan Start of the Current Plan**	**Planned Rebuilding Date**	**Years Remaining in Plan, starting with FY2022**	**Total ACLs exceeded within past three completed FYs?** *If yes, identify the FYs.*	**Has the original rebuilding F been achieved? Or is this unknown?** *Indicate the current F estimate relative to F rebuild at the start of the plan.*	**What is current SSB estimate relative to SSBMSY? Or is this unknown?**
Southern New England/Mid-Atlantic winter flounder	5/1/2004	2023	2	No	F rebuild (plan start) = 0.175 F2019 = 0.077	SSB2019 = 3,638 mt 30% of SSBMSY

4. Economic Information

Commercial Fishery – Figure 5 shows commercial groundfish (sector and common pool) SNE/MA winter flounder catches since FY2018 along with the FY2022 commercial ACL. Utilization by the commercial groundfish fishery has been decreasing over time.

Figure 5- In-season utilization of SNE/MA winter flounder by the commercial (sectors and common pool) groundfish fishery.



The PDT previously examined SNE/MA winter flounder catches in other federal fisheries (included as Appendix II). See Table 2 and 3 in the appendix for other sub-component catch performance.

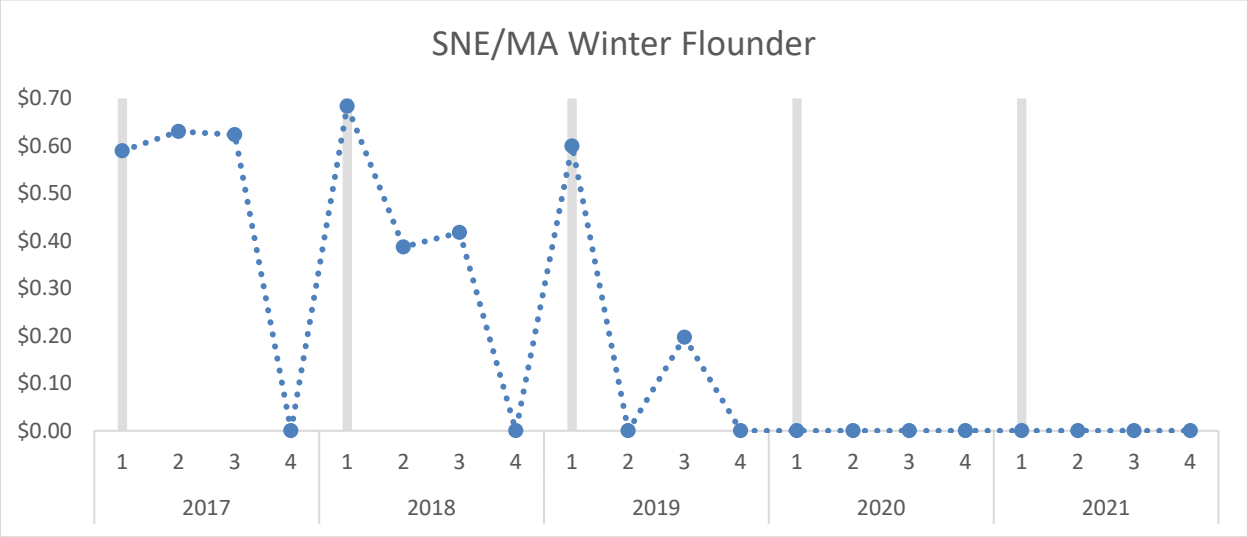
Sectors – Table 2 compares the performance of the quota-change model (QCM) since FY2012 to realized outcomes for SNE/MA winter flounder. Performance of the QCM varies year to year (in some years it under-predicts, while in others it over-predicts). In recent years, the model has over-predicted catch and revenue, likely because of realized values trending downward. The QCM trip selection pool generally consists of trips taken in 2 fishing years prior (e.g. the FY2021 prediction drew from FY2019 trips). As a result, the fishery being represented in the model does not always translate to current fishing conditions on the water. Realized utilization rates for SNE/MA winter flounder are generally low, ranging from 21% in FY2020 to 76% in FY2016.

Table 2- SNE/MA winter flounder stock-level catch and revenue predictions from the Quota Change Model (QCM) for each fishing year between 2012 and 2021 compared to realized catch and revenue (in 2021$).

	Sector	Catch (mt)		*Utilization (%)*		Gross Rev ($mil, 2021)	
FY	sub-ACL	Realized	Predicted	*Realized*	*Predicted*	Realized	Predicted
2012	N/A	105	N/A	*N/A*	*N/A*	N/A	N/A
2013	1,074	670	N/A	*0.62*	*N/A*	2.9	N/A
2014	1,063	490	95	*0.46*	*0.10*	2.4	3.0
2015	1,147	583	833	*0.51*	*0.73*	3.3	1.1
2016	523	397	355	*0.76*	*0.69*	3.0	2.1
2017	515	372	386	*0.72*	*0.74*	2.1	3.0
2018	456	229	428	*0.50*	*0.94*	1.5	2.8
2019	444	135	455	*0.30*	*1*	0.8	2.8
2020	475	97	314	*0.21*	*0.68*	0.4	1.8
2021	247	83	163	*0.34*	*0.64*	0.4	0.9

ACE lease prices for SNE/MA winter flounder were estimated for fishing years 2017-2021 using a hedonic price model (Figure 6). Input data into the model is comprised of inter-sector ACE leases over the FY2017-2021 period. SNE/MA winter flounder quota traded from around $.40 - $.60 per pound for the majority of the 2017 and 2018 fishing years. Lease prices have since not been statistically significant from $0.00 over the 2020 and 2021 fishing years. These results for the two most recent completed fishing years are logical given low sector utilization rates for SNE/MA winter flounder (21% in FY2020; 34% in FY2021).

Figure 6- ACE lease prices estimated for SNE/MA winter flounder for fishing years 2017-2021 using a hedonic price model. First quarter (May-July) lease prices are indicated by the vertical gray bars.



Recreational Fishery - While SNE/MA winter flounder is not a primary target species for recreational fishermen, recreational catches do account for a small portion of total catch (included within "other sub-components"). See Appendix II.

5. OFL and ABC Projections (2023-2025)

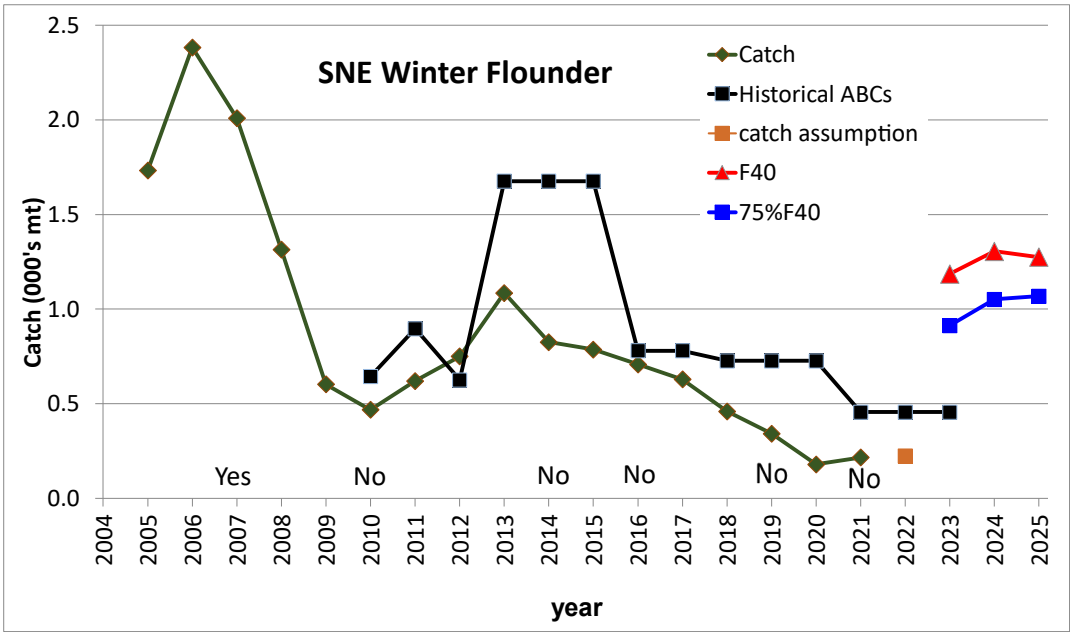
The PDT provides information on catch performance for SNE/MA winter flounder in Table 3 and Figure 7).

- Catch is the calendar year catches from 2005-2021.
- Historical OFLs and ABCs are provided for each fishing year (May 1 start) since 2010.
- The catch performance information provides calendar year catches from the stock assessments and fishing year ABC's, and therefore that data sources do not temporally align. As an example, this means calendar year 2013 catch exceeding fishing year 2013 ABC does not necessarily mean an overage occurred. However, this misalignment in catch accounting between the stock assessments and management is a source of error. In addition, stocks with updated MRIP catch estimates (GOM winter flounder, SNE/MA winter flounder, and wolffish) also do not necessarily align with the past calculated OFLs and ABCs.
- The catch assumption is the calendar 2022 "bridge year" estimated catch used in the assessments (see Appendix I).
- F_{MSY} and 75%F_{MSY}projections for FY2023 - FY2025 are plotted, as appropriate.

Table 3- Catch performance (CY2010-CY2021), historical OFLs and ABCs (FY2010-FY2021), CY2022 "bridge year" catch assumption, and catch projections for F40 and 75%F40 (FY2023-FY2025) for SNE/MA winter flounder.

Year	Catch	Historical OFLs	Historical ABCs	Catch Assumption	F_{40}	$75\%F_{40}$
2010	469	1,568	644			
2011	620	2,117	897			
2012	750	2,336	626			
2013	1,085	2,732	1,676			
2014	826	3,372	1,676			
2015	787	4,439	1,676			
2016	708	1,041	780			
2017	629	1,021	780			
2018	460	1,228	727			
2019	342	1,228	727			
2020	180	1,228	727			
2021	216	1,438	456			
2022		1,438	456	224		
2023		1,438	456		1,186	914
2024					1,306	1,052
2025					1,275	1,069

Figure 7- Catch performance for SNE/MA winter flounder including: catches from CY2005-CY2021, historical OFLs and ABCs since FY2010, CY2022 "bridge year" catch assumption, and projections for FY2023 - FY2025 at F40 and 75%F40. Overfishing status in the terminal year of the assessment indicated on the x-axis ("Yes" = overfishing or "No" = not overfishing).



The terminal year of the assessment is 2021. The catch projections use a bridge year of 2022 (Appendix I).

The PDT conducted catch projections for FY2023- FY2025 following "Option A" in the control rule: 75%F_{MSY} (Table 4), and for comparison by holding the catch for the first year (FY2023) under 75%F_{MSY} (914 mt) constant for three years (through FY2025; Table 5).

The PDT also conducted catch projections at $F_{rebuild}$ following control rule "Option B" given that SNE/MA winter flounder is currently in a rebuilding plan (Table 6), and for comparison by holding the catch for the first year (FY2023) under $F_{rebuild}$ (811 mt) constant for three years (through FY2025; Table 7).

Table 4- Possible OFLs and ABCs (mt) for FY2023- FY2025 for SNE/MA winter flounder, under 75%F_{MSY} projections. Projected F and SSB provided.

Year	OFL	ABC	F	SSB
2023	1,186	914	0.199	3,666
2024	1,365	1,052	0.199	4,281
2025	1,387	1,069	0.199	4,756

Table 5- Comparison OFLs and ABCs (mt) for FY2023- FY2025 for SNE/MA winter flounder, holding the lowest first year value constant of 75%F_{MSY} for FY2023- FY2025. Projected F and SSB provided.

Year	OFL	ABC	F	SSB
2023	1,186	914	0.199	3,666
2024	1,365	914	0.171	4,304
2025	1,417	914	0.164	4,913

Table 6- Possible OFLs and ABCs (mt) for FY2023- FY2025 for SNE/MA winter flounder, under $F_{rebuild}$ (F=0.175) projections. Projected F and SSB provided.

Year	OFL	ABC	F	SSB
2023	1,186	811	0.175	3,683
2024	1,386	949	0.175	4,381
2025	1,429	979	0.175	4,949

Table 7- Comparison OFLs and ABCs (mt) for FY2023- FY2025 for SNE/MA winter flounder, holding the lowest first year value constant of $F_{rebuild}$ (F=0.175) projections. Projected F and SSB provided.

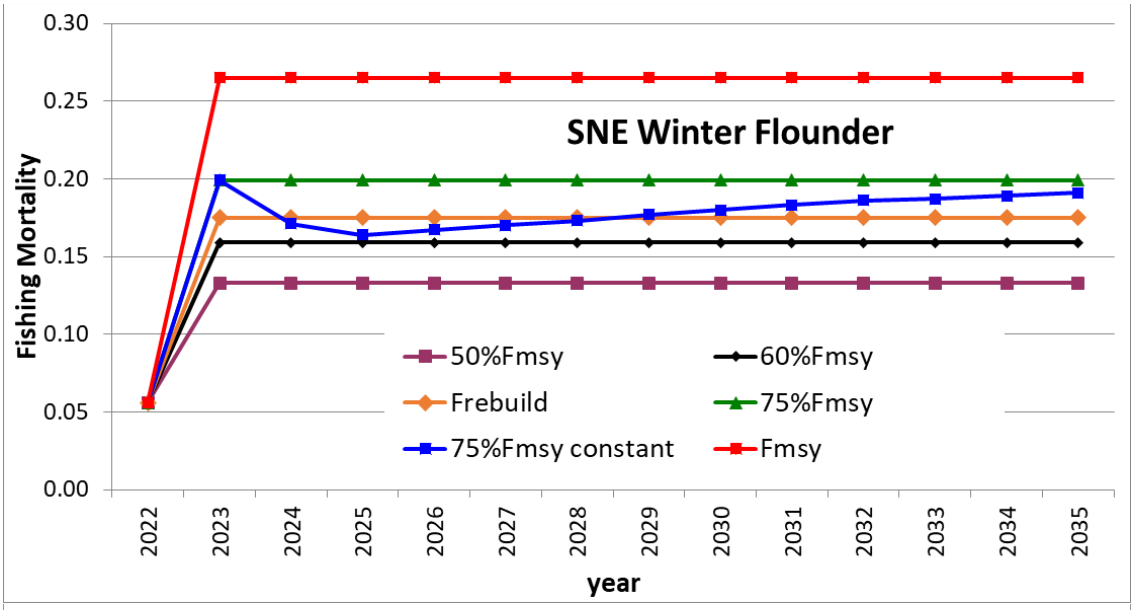
Year	OFL	ABC	F	SSB
2023	1,186	811	0.175	3,683
2024	1,386	811	0.175	4,381
2025	1,459	811	0.175	4,949

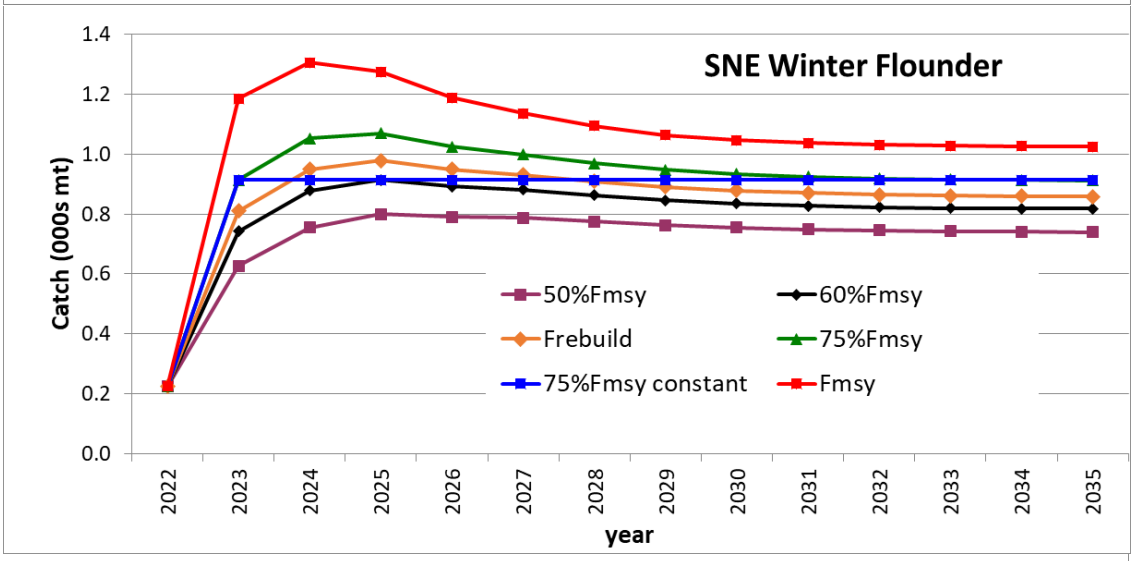
The PDT raises several concerns regarding setting ABCs based only on the projections at 75%F_{MSY}:

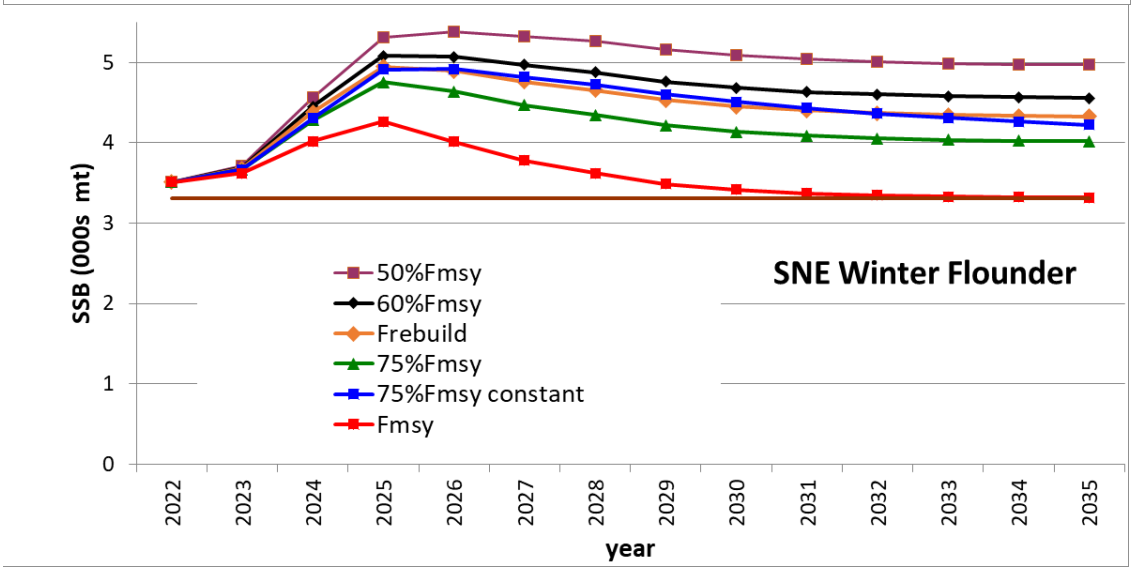
- While the updated 2022 assessment indicates that the stock is rebuilt, this change is directly due to changing the recruitment stanza going into the projections, and not due to an increase in the stock biomass. Previous assessments have used the entire time series of recruitment, with historical recruitments that are well beyond the current productivity of the stock. The truncated recruitment stanza led to a much-reduced biomass target and as a result the assessment finds the overfished status of the stock has changed. While the PDT anticipates NMFS will change the official stock status to reflect the results of the assessment, the perception of the stock has not changed, and recent model estimates and fishery independent survey indices all reveal a poor stock condition for SNE/MA winter flounder.
- The ABC estimates based on the projections at 75%F_{MSY} have the potential to increase catch advice and possible targeting of SNE/MA winter flounder by the fishery. However, SNE/MA winter flounder catch appears to be on a declining trend (most recently 216 mt in 2021). Still, the PDT cautions against a doubling of the ABCs and subsequent ACLs, given the low productivity regime and poor condition of the stock.
- The PDT is concerned about the short-term projections under 75%F_{MSY} that result in catches higher than MSY (1,025 mt) which drive the stock down to the new SSB_{MSY} target in the short term (Figure 8). This is designed to perpetuate maintaining the stock at the updated lower SSB_{MSY} biomass target. The PDT feels that this stock should be allowed to rebuild further if by chance environmental factors resulted in increases in productivity, given the overall concerning time series trends in the assessment.
- The PDT is concerned that large increases in the catch could potentially contribute to further declines in recruitment which could result in a future overfished status determination relative to the updated lower BRPs, as was seen in a previous situation that occurred with the history of the SNE/MA yellowtail flounder stock. However, it is important to note that with SNE/MA yellowtail flounder, catches and productivity continued to decline regardless of the catch advice. Nevertheless, the PDT feels catch advice should not ensure that biomass remains low if conditions happen to become more favorable.

Given the above concerns, setting ABCs at 75%F_{MSY} may not be appropriate given the low productivity regime of the stock and more caution may be necessary.

Figure 8- SNE/MA winter flounder projections for F_{MSY}, 75%F_{MSY}, 75%F_{MSY} constant, $F_{rebuild}$, 60%F_{MSY}, and 50%F_{MSY} fishing mortality (top), catch (middle), and SSB (bottom).







The PDT conducted projections at 60%F_{MSY} and 50%F_{MSY} (Table 8) as sensitivity runs, and to consider as rebuilding plan options and possible alternatives to following the control rule. However, previous PDT work has shown that projections tend to show rapid projected increases in catch and biomass within AGEPRO which tend to be overly optimistic when compared to updated assessments. If an alternative %F_{MSY} is considered, then perhaps holding the catch in first year (2023) constant for either 60%F_{MSY} (742 mt; Table 9) or 50%F_{MSY} (627 mt; Table 10) is also desirable to help ensure the potential for rebuilding since the projected increases are not reliable estimates.

Table 8- Projected catch (mt) under SNE/MA winter flounder sensitivity runs at 60%F_{MSY} and 50%F_{MSY}.

Year	60%F_{MSY}	50%F_{MSY}
2023	742	627
2024	878	755
2025	914	800

Table 9- Comparison OFLs and ABCs (mt) for FY2023- FY2025 for SNE/MA winter flounder, holding the lowest first year value constant of sensitivity runs at 60%F_{MSY} projections. Projected F and SSB provided.

Year	OFL	ABC	F	SSB
2023	1,186	742	0.159	3,694
2024	1,401	742	0.133	4,471
2025	1,488	742	0.125	5,239

Table 10- Comparison OFLs and ABCs (mt) for FY2023- FY2025 for SNE/MA winter flounder, holding the lowest first year value constant of sensitivity runs at 50%F_{MSY} projections. Projected F and SSB provided.

Year	OFL	ABC	F	SSB
2023	1,186	627	0.133	3,712
2024	1,425	627	0.109	4,583
2025	1,536	627	0.101	5,456

In previous years, the SSC based ABCs on a three-year average of catch due to concerns with the assessment and trends in the indices (see below). The PDT provides the updated three-year average of catch for comparison, as an additional option to consider. The three-year (2019-2021) average catch is 246 mt (Table 11).

Table 11- Three-year average catch (2019-2021) (mt) for SNE/MA winter flounder, to consider as an option for setting ABCs, based on prior SSC recommendations for this stock.

Year	ABC
2023	246
2024	246
2025	246

The PDT recommends the SSC consider the use of a constant ABC, given the above highlighted concerns about following increased catches in the projections. If the SSC decides to pursue this approach, the range of options developed by the PDT for SSC consideration includes an upper (constant 75%F_{MSY}, 914 mt) and lower (three-year average catch, 246 mt) bound for possible ABCs.

6. Past SNE/MA Winter Flounder Specifications

This section summarizes past SSC recommendations for SNE/MA winter flounder OFLs and ABCs.

2021-2023 Specifications

The SSC accepted the continued use of ASAP for assessing this winter flounder stock and as a basis for setting OFL and ABC. Retrospective patterns occurred in the assessment results, but these were lower than the 90% confidence intervals of the 2019 estimates of SSB and F. The assessment indicated that the SNE/MA winter flounder stock is overfished, but overfishing is not occurring. Short-term projections were made following standard protocols, without retrospective adjustment, assuming a catch of 231 mt in 2020 and fishing at F40% in 2021-2023. The SSC recommended an OFL based on the projected value for 2021 (1,438 mt) and maintained at the same level for 2022 and 2023. The SSC recommended a static ABC (456 mt) for the years 2021-2023, corresponding to the three-year average catch from 2016-2018.

2018-2020 Specifications

The SSC noted a couple of issues with SNE/MA winter flounder. The first was that the projections were overly optimistic, and this was driven by over-estimating recruitment. The SSC noted that we appeared to be in a period of low recruitment, therefore assuming that this recruitment will be higher in the projections was not a reasonable assumption. Additionally, the assessment for this stock was allowing for domed shaped selectivity. This was creating an abundance of "cryptic biomass", or biomass seen in the computer output of the population, but which does not show up in catch or survey data. This was another factor that caused the SSC to question the performance of the projections. The decision was to use the model output and PDT option as an initial basis for the SSCs recommendation on catch advice, but to account for the scientific uncertainties mentioned above. In accounting for scientific uncertainty the SSC chose to base the ABC on an average of recent 3 years of catch (CY2014-CY2016). This resulted in the recommendation of an OFL of 1,228 mt and an ABC not to exceed 727 mt, keeping this catch advice constant for 2018–2020. The action to reduce the ABC is based on the continued poor stock status and need to account for the scientific uncertainties associated with the cryptic biomass issue within the catch advice. An additional recommendation from the SSC was to better account for changes in productivity manifested in periods of low recruitment by sub-setting the recruitment from this period of lower productivity when doing the projections.

Appendix I: Estimates of CY2020 catches – for the "bridge year" in the projections

Table 1- Estimated CY 2022 Northeast Multispecies Total Catch (mt)

Stock	**Total Catch**	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
SNE/MA Winter Flounder	223.9	84.4	79.7	4.7					5.2	134.3

Sector and common pool first six month catch estimates used FY21 DMIS data run July 13, 2022 and FY22 DMIS data run July 20, 2022.
Second six month catch estimates based on FY21 DMIS data run July 13, 2022.

State waters landings used FY20 DMIS data run October 27, 2021, FY21 DMIS data run June 1, 2022, and CFDERS dealer data as of May 17, 2022.

State water discards assumed equal to FY20 discard estimates.

Other sub-component catch estimates based on flat trend of catch since FY18.

Values in metric tons of live weight

Sector and common pool include estimate of missing dealer reports

Any value for a non-allocated species may include landings of that stock or misreporting of species and/or stock area. These are northern windowpane, southern windowpane, ocean pout, halibut, and wolffish.

Source: NMFS Greater Atlantic Regional Fisheries Office

July 22, 2022

These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.

Table 2- Estimated CY 2022 Northeast Multispecies Landings (mt)

Stock	**Total Landings**	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
SNE/MA Winter Flounder	89.9	81.2	76.7	4.5					4.6	4.1

Sector and common pool first six month catch estimates used FY21 DMIS data run July 13, 2022 and FY22 DMIS data run July 20, 2022.
Second six month catch estimates based on FY21 DMIS data run July 13, 2022.
State waters landings used FY20 DMIS data run October 27, 2021, FY21 DMIS data run June 1, 2022, and CFDERS dealer data as of May 17, 2022.
State water discards assumed equal to FY20 discard estimates.
Other sub-component catch estimates based on flat trend of catch since FY18.

Values in metric tons of live weight
Sector and common pool include estimate of missing dealer reports

Any value for a non-allocated species may include landings of that stock or misreporting of species and/or stock area. These are northern windowpane, southern windowpane, ocean pout, halibut, and wolffish.

Source: NMFS Greater Atlantic Regional Fisheries Office
July 22, 2022

These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.

Table 3- Estimated CY 2022 Northeast Multispecies Discards (mt)

Stock	**Total Discards**	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
SNE/MA Winter Flounder	134.0	3.1	2.9	0.2					0.6	130.3

Sector and common pool first six month catch estimates used FY21 DMIS data run July 13, 2022 and FY22 DMIS data run July 20, 2022.
Second six month catch estimates based on FY21 DMIS data run July 13, 2022.
State waters landings used FY20 DMIS data run October 27, 2021, FY21 DMIS data run June 1, 2022, and CFDERS dealer data as of May 17, 2022.
State water discards assumed equal to FY20 discard estimates.
Other sub-component catch estimates based on flat trend of catch since FY18.

Values in metric tons of live weight
Sector and common pool include estimate of missing dealer reports

Source: NMFS Greater Atlantic Regional Fisheries Office
July 22, 2022

These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.

Appendix II

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
Eric Reid, *Chair* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: April 1, 2022

TO: Groundfish Committee

FROM: Groundfish Plan Development Team

SUBJECT: **Framework Adjustment 65 – SNE/MA winter flounder other federal fisheries catches**

The Groundfish Plan Development Team (PDT) met on Wednesday March 23, 2022, via webinar to discuss tasking from the Groundfish Committee related to possible measures to be included in Framework Adjustment 65 (*to be initiated at the April Council meeting*): adopt additional measures to promote stock rebuilding for Gulf of Maine cod and Southern New England/Mid-Atlantic (SNE/MA) winter flounder.

> *Committee Consensus Statement:*
> Task the Groundfish Plan Development Team with conducting a preliminary analysis of other federal fisheries catches of Southern New England/Mid-Atlantic winter flounder and present this at the April 2022 Council meeting.

Amendment 16 provision on setting sub-ACLs

Amendment 16 specified a process for allocating portions of the available groundfish annual catch limits (ACLs) to other fisheries through sub-ACLs, which are subject to accountability measures (AMs) designed for these specific fishery components, and sub-components, which are not considered ACLs and are not subject to a specific AM.[1] Amendment 16 also provided guidance for when the Council may consider establishing AMs for other sub-components.

> "For those sub-components that are not ACLs, there are broad categories. This category does not include catches in state waters taken outside the federal management plan (as these are accounted for prior to this step) and does not include regulated groundfish landed by vessels using a federal groundfish permit. First, small amounts of regulated groundfish are caught in a variety of fisheries that occur in federal waters (for example, the fluke fishery, the northern shrimp fishery, etc.). Generally these fisheries are not allowed to land regulated groundfish, though this may change in the future as stocks rebuild. Where individually these elements are too small to reliably monitor, they are aggregated into an "Other non-specified" category. Second, some fisheries are specifically identified. For the category described as "other non-specified", catches will

[1] The Groundfish FMP does have AMs established for one sub-component: southern windowpane AMs for large-mesh non-groundfish fisheries (e.g., summer flounder and scup trawl fisheries) in the other fisheries sub-component.

be monitored and if the catch rises above five percent accountability measures will be developed to prevent the overall ACL from being exceeded."

Catch performance

The catch performance figure and table from the most recent stock assessment in 2020 for SNE/MA winter flounder is included below. These will be updated following the management track assessment peer review to occur this spring.

Figure 1- Catch performance for Southern New England Mid-Atlantic Winter Flounder including: catches from CY2005- CY2019, historical OFLs and ABCs since FY2010, CY2020 "bridge year" catch assumption, and projections for FY2021 - FY2023 at F40 and 75%F40. Overfishing status in the terminal year of the assessment indicated on the x-axis ("Yes" = overfishing or "No" = not overfishing).

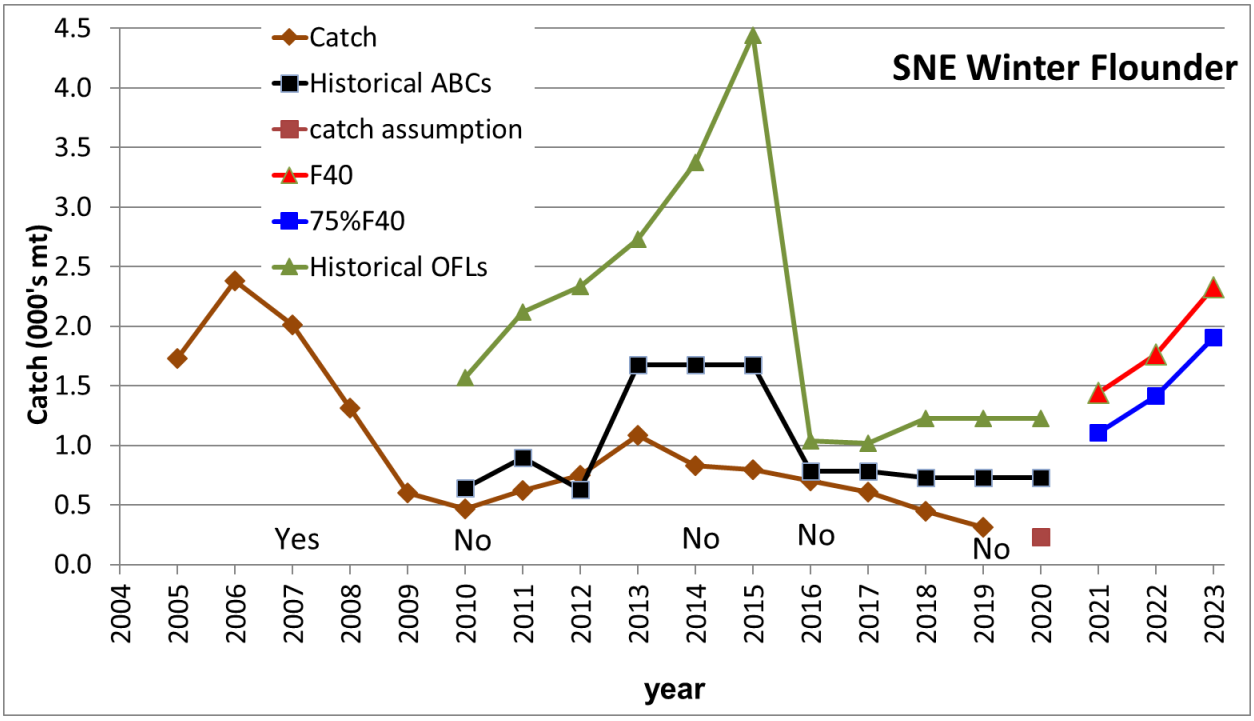


Table 1- Catch performance (CY2010-CY2019), historical OFLs and ABCs (FY2010-FY2020), CY2020 "bridge year" catch assumption, and catch projections for F40 and 75%F40 (FY2021-FY2023) for Southern New England Mid-Atlantic Winter Flounder.

Year	Catch	Historical OFLs	Historical ABCs	Catch Assumption	F_{40}	$75\%F_{40}$
2010	469	1,568	644			
2011	620	2,117	897			
2012	752	2,336	626			
2013	1,087	2,732	1,676			
2014	827	3,372	1,676			
2015	795	4,439	1,676			
2016	704	1,041	780			
2017	608	1,021	780			
2018	449	1,228	727			
2019	310	1,228	727			
2020		1,228	727	231		
2021					1,438	1,108
2022					1,763	1,412
2023					2,328	1,905

Summary of recent catches – total and other federal fisheries

The PDT provides a summary of SNE/MA winter flounder catches from FY2010-FY2020, including total catches, landings, and discards, and detailed catches for the other federal fisheries sub-component (see Attachment 1).

For the other federal fisheries sub-component, catches are attributed mainly to the scallop, fluke, scup, squid, and squid/whiting fishery groups (Table 2 below). Catches for these sub-components as a percentage of total catch is shown in Table 3. Shown also are catches from the groundfish fishery for comparison.

Table 2- SNE/MA winter flounder other sub-component catch (mt). Total catch and groundfish fishery catch shown for comparison.

	Catch (mt)						
Fishing Year	Total	Groundfish Fishery	SCALLOP[1]	FLUKE	SCUP	SQUID	SQUID/ WHITING
2010	370.1	47.4	NA	NA	NA	NA	NA
2011	298.7	93.9	60.3	16.4	8.3	19.5	6.8
2012	315.9	106.0	68.9	15.0	10.7	17.3	6.6
2013	1025.9	788.6	78.2	10.8	9.7	14.5	11.2
2014	703.2	545.8	33.3	6.4	5.7	6.6	3.2
2015	886.7	688.0	65.9	7.6	6.5	3.1	2.2
2016	597.2	453.3	40.4	3.6	3.7	19.6	8.5
2017	550.5	409.3	48.6	5.5	5.6	35.2	2.9
2018	398.0	250.7	52.5	3.8	3.5	47.9	3.2
2019	295.4	143.8	39.0	5.4	3.4	66.4	4.8
2020	233.4	103.2	34.6	6.3	3.3	57.2	4.8

[1]Based on scallop fishing year; all other columns are based on groundfish fishing year

Table 3- SNE/MA winter flounder other sub-components percentage of total catch (%). Groundfish fishery shown for comparison. Years in which catches exceeded 5% of total catch indicated by yellow cells.

	Percentage of Total Catch (%)					
Fishing Year	Groundfish Fishery	SCALLOP[1]	FLUKE	SCUP	SQUID	SQUID/ WHITING
2010	12.8	NA	NA	NA	NA	NA
2011	31.4	20.2	5.5	2.8	6.5	2.3
2012	33.5	21.8	4.7	3.4	5.5	2.1
2013	76.9	7.6	1.1	0.9	1.4	1.1
2014	77.6	4.7	0.9	0.8	0.9	0.5
2015	77.6	7.4	0.9	0.7	0.3	0.2
2016	75.9	6.8	0.6	0.6	3.3	1.4
2017	74.3	8.8	1.0	1.0	6.4	0.5
2018	63.0	13.2	0.9	0.9	12.0	0.8
2019	48.7	13.2	1.8	1.1	22.5	1.6
2020	44.2	14.8	2.7	1.4	24.5	2.1

[1]Based on scallop fishing year; all other columns are based on groundfish fishing year

Overall, SNE/MA winter flounder catches in the scallop, fluke, and scup fisheries appear to be declining in recent years, while catches appear to be increasing in the squid fishery. The increased percentage of SNE/MA winter flounder catches in non-groundfish fisheries in recent years is most likely explained by the dramatic decline in groundfish fishery catch (landings in particular) since this stock was allocated to the fishery in 2013.

Catches from the scallop fishery sub-component have exceeded 5% of total catches in all but one year from FY2011-2020, though catches have declined slightly in recent years. The increased percentage of total catch likely reflects the continued decline in overall catches and ACLs. Catches from the squid fishery sub-component have exceeded 5% of total catches in recent years from FY2017-2020, and catches have also increased over this time period.

This preliminary analysis raised several questions by the PDT, mainly on squid fishery catches, that could be explored in future analyses depending on the Committee's direction:

- Bycatch of SNE/MA winter flounder in the squid fishery has been increasing in recent years – is this being driven by an increase in squid catch?
- Is the increase in bycatch of SNE/MA winter flounder in the squid fishery a result of changes in winter flounder habitat due to climatic shifts, changes in effort and the areas where the squid fishery is prosecuted, or some combination?
- Groundfish monitoring reports do not distinguish between longfin squid and *Illex* squid trips. However, there are expected differences in both landings trends and bycatch of SNE/MA winter flounder between the two squid fisheries.[2] The PDT could explore further to understand differences between the two fisheries and their interactions with winter flounder.
- Understanding the cause of higher SNE/MA winter flounder bycatch in the squid fishery requires further investigation due to differences between the longfin fishery and *Illex* fishery.

[2] Bycatch analysis referenced in the MAMFC Draft Environmental Assessment for Specifications and Related Management Measures for: Atlantic Mackerel (2021-2022), *Illex* squid (2021), Longfin Squid (2021-2023), and Butterfish (2021-2022)

Attachment 1 - SNE/MA winter flounder catch estimates

Table 1- SNE/MA Winter Flounder Total Catch by Fishing Year (mt)

Fishing Year	**Total Catch**	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery[1]	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
2010	370.1	47.4	42.3	5.1	-	-	-	-	181.0	141.8
2011	298.7	93.9	86.9	7.0	-	-	-	-	40.0	164.9
2012	315.9	106.0	104.8	1.1	-	-	-	-	58.9	151.0
2013	1025.9	788.6	670.4	118.3	-	-	-	-	55.7	181.6
2014	703.2	545.8	489.9	55.9	-	-	-	-	71.1	86.3
2015	886.7	688.0	583.4	104.6	-	-	-	-	85.2	113.5
2016	597.2	453.3	396.6	56.7	-	-	-	-	26.1	117.8
2017	550.5	409.3	372.0	37.2	-	-	-	-	23.2	118.0
2018	398.0	250.7	228.7	22.0	-	-	-	-	15.9	131.3
2019	295.4	143.8	135.1	8.7	-	-	-	-	9.1	142.5
2020	233.4	103.2	97.4	5.8	-	-	-	-	10.3	119.9

Values in metric tons of live weight
Sector and common pool include estimate of missing dealer reports
Source: NMFS Greater Atlantic Regional Fisheries Office, March 21, 2022

Any value for a non-allocated species may include landings of that stock or misreporting of species and/or stock area. These are northern windowpane, southern windowpane, ocean pout, halibut, and wolffish.

These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.

Table 2- SNE/MA Winter Flounder Total Landings by Fishing Year (mt)

Fishing Year	**Total Catch**	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery[1]	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
2010	161.9	10.6	7.9	2.6	-	-	-	-	144.2	7.2
2011	61.3	3.6	3.3	0.3	-	-	-	-	32.1	25.5
2012	69.1	0.7	0.6	0.1	-	-	-	-	55.0	13.4
2013	853.8	776.9	663.5	113.4	-	-	-	-	47.7	29.2
2014	631.5	541.6	486.8	54.8	-	-	-	-	70.4	19.5
2015	762.3	679.4	579.1	100.4	-	-	-	-	77.4	5.5
2016	485.7	443.8	388.9	54.9	-	-	-	-	24.4	17.5
2017	428.5	401.6	364.6	37.0	-	-	-	-	22.2	4.7
2018	269.7	247.7	226.5	21.2	-	-	-	-	14.7	7.3
2019	153.4	141.2	132.6	8.6	-	-	-	-	8.8	3.3
2020	115.1	101.0	95.3	5.7	-	-	-	-	9.7	4.4

Values in metric tons of live weight
Sector and common pool include estimate of missing dealer reports
Source: NMFS Greater Atlantic Regional Fisheries Office, March 21, 2022

Any value for a non-allocated species may include landings of that stock or misreporting of species and/or stock area. These are northern windowpane, southern windowpane, ocean pout, halibut, and wolffish.

These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.

Table 3- SNE/MA Winter Flounder Total Discards by Fishing Year (mt)

Fishing Year	**Total Catch**	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery[1]	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
2010	208.3	36.8	34.3	2.5	-	-	-	-	36.8	134.6
2011	237.5	90.2	83.5	6.7	-	-	-	-	7.9	139.4
2012	246.8	105.3	104.2	1.0	-	-	-	-	4.0	137.6
2013	172.2	11.7	6.8	4.9	-	-	-	-	8.1	152.4
2014	71.6	4.1	3.1	1.1	-	-	-	-	0.6	66.9
2015	124.4	8.6	4.3	4.3	-	-	-	-	7.8	108.0
2016	111.6	9.6	7.7	1.8	-	-	-	-	1.7	100.3
2017	122.0	7.7	7.4	0.3	-	-	-	-	1.1	113.2
2018	128.3	3.0	2.3	0.8	-	-	-	-	1.2	124.0
2019	142.0	2.6	2.5	0.2	-	-	-	-	0.2	139.1
2020	118.3	2.2	2.0	0.1	-	-	-	-	0.6	115.5

Values in metric tons of live weight
Sector and common pool include estimate of missing dealer reports
Source: NMFS Greater Atlantic Regional Fisheries Office, March 21, 2022

Any value for a non-allocated species may include landings of that stock or misreporting of species and/or stock area. These are northern windowpane, southern windowpane, ocean pout, halibut, and wolffish.

These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.

Table 4- SNE/MA Winter Flounder Other Sub-Component Catch Detail by Fishing Year (mt)

Fishing Year	Total	SCALLOP[1]	FLUKE	HAGFISH	HERRING	LOBSTER/ CRAB[2]	MACKEREL	MENHADEN	MONKFISH	REDCRAB	RESEARCH
2010											
2011	164.9	60.3	16.4	0.0	2.6	0.6	-	0.0	0.2	0.0	3.5
2012	151.0	68.9	15.0	0.0	4.0	0.0	-	0.0	0.0	-	2.6
2013	181.6	78.2	10.8	-	4.7	0.0	-	0.1	0.0	-	19.9
2014	86.3	33.3	6.4	-	0.9	0.1	-	0.0	0.1	-	3.6
2015	113.5	65.9	7.6	-	1.0	NA	-	0.0	0.2	-	0.1
2016	117.8	40.4	3.6	-	4.8	NA	-	0.1	0.1	-	11.1
2017	118.0	48.6	5.5	-	3.2	0.0	0.0	-	0.5	-	0.0
2018	131.3	52.5	3.8	0.0	0.3	0.0	0.6	0.0	0.5	0.0	0.0
2019	142.5	39.0	5.4	-	1.0	0.0	2.4	-	0.1	-	0.4
2020	119.9	34.6	6.3	-	0.4	0.0	1.6	0.0	0.1	-	0.1

Values in live weight
Discard mortality is 50% for all gears except 15% for recreational component
Source: NMFS Greater Atlantic Regional Fisheries Office, March 21, 2022

Fishery group catch was not estimated during these fishing years
[1]Based on scallop fishing year
[2]2011-2014 include discard estimate. 2017-2020 are landings only

Table 4- SNE/MA Winter Flounder Other Sub-Component Catch Detail by Fishing Year (mt) cont.

Fishing Year	SCUP	SHRIMP	SQUID	SQUID/ WHITING	SURFCLAM	WHELK/ CONCH	WHITING	UNCATEGORIZED	RECREATIONAL
2010									
2011	8.3	0.0	19.5	6.8	0.0	0.0	0.1	34.9	11.7
2012	10.7	0.0	17.3	6.6	0.0	0.0	0.0	25.9	0.0
2013	9.7	0.0	14.5	11.2	-	-	0.0	32.4	0.0
2014	5.7	0.2	6.6	3.2	0.6	-	0.0	21.0	4.7
2015	6.5	1.1	3.1	2.2	0.1	-	0.0	25.5	0.1
2016	3.7	3.4	19.6	8.5	0.4	-	0.1	20.3	1.7
2017	5.6	0.8	35.2	2.9	2.7	-	0.0	12.6	0.3
2018	3.5	0.1	47.9	3.2	0.8	0.0	0.1	14.1	4.1
2019	3.4	0.5	66.4	4.8	2.9	-	0.0	16.0	0.2
2020	3.3	0.4	57.2	4.8	2.4	-	0.1	7.0	1.6

Attachment 1 - SNE/MA winter flounder catch estimates

These criteria are used by the Greater Atlantic Regional Fisheries Office (GARFO) to categorize trips to attribute groundfish catch for groundfish ACL accounting. By necessity these rules cannot capture the full complexity of categorizing every trip taken by vessels fishing in the Northeast. Further analysis should be completed to definitively attribute groundfish catch to an FMP for management purposes.

These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting. Differences with previous reports are due to corrections made to the database.