

Amendment 25 (Revised)
to the
Northeast Multispecies Fishery Management Plan

Appendix I
Scientific and Statistical Committee
Recommendations for Atlantic Cod FY2025– FY2027



New England Fishery Management Council

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Eric Reid, *Chair* | Cate O’Keefe, PhD, *Executive Director*

MEMORANDUM

DATE: July 31, 2024

TO: Cate O’Keefe, Ph.D., Executive Director

FROM: Scientific and Statistical Committee

SUBJECT: Response to Terms of Reference – (1) Overfishing Limits and Acceptable Biological Catches for Georges Bank Yellowtail Flounder (FY 2025-FY 2026) and Atlantic Cod (FY 2025-2027), and (2) apportioning Georges Bank Atlantic Cod and Haddock biomass into the Eastern Georges Bank Management Area

The Scientific and Statistical Committee (SSC) met in person in Portsmouth, NH and via webinar on July 30-31, 2024, to address terms of reference (TOR) for recommending overfishing limits and acceptable biological catches for Georges Bank yellowtail flounder and Atlantic cod and to review apportioning Georges Bank Atlantic cod and haddock biomass into the Eastern Georges Bank Management Area.

SSC members in attendance: Anna Birkenbach, Edward Camp, Yong Chen, Jeremy Collie, Adam Delargy, Adrian Jordaan, Lisa Kerr, Gareth Lawson, Kai Lorenzen, Jason McNamee, Richard Merrick, Conor McManus, Fred Serchuk, Michelle Staudinger, Kevin St. Martin, Sam Truesdell, Lindsey Williams

OVERFISHING LIMIT AND ACCEPTABLE BIOLOGICAL CATCHES FOR GEORGES BANK ATLANTIC COD AND YELLOWTAIL FLOUNDER

Terms of Reference

- A. Consider the results of the Northeast Fisheries Science Center’s (NEFSC) spring 2024 management track stock assessments for the Georges Bank Yellowtail Flounder and Atlantic Cod stocks and information provided by the Council’s Groundfish Plan Development Team (PDT).
- B. Recommend an overfishing limit (OFL) and acceptable biological catch (ABC) for the following groundfish stocks that will prevent overfishing, meet the management objective to rebuild, are consistent with the Council’s groundfish ABC control rule and rebuilding plans, and consider the Council’s Risk Policy Statement.
 1. Georges Bank (GB) Atlantic cod, fishing years (FY) 2025 – 2027
 2. Georges Bank (GB) yellowtail flounder, FY 2025 – 2026

For the SSC recommendations for GB cod and GB yellowtail flounder, the Council requested that the SSC forward a “Summary of Recommendations” report by the end of the SSC meeting on July 31, 2024, so that the information can be delivered to Department of Fisheries and Oceans Canada (DFO) and the Transboundary Management Guidance Committee (TMGC) and it can be considered in developing recommendations for the TMGC meeting.

Documents

To address these TORs, the SSC considered the following information:

- a. Stock Assessments
 - i. Presentation on GB cod 2024 assessment by NEFSC staff
 - ii. Georges Bank Cod 2024 Management Track Assessment Report
 - iii. Presentation on GB yellowtail flounder 2024 assessment by NEFSC staff
 - iv. Georges Bank Yellowtail Flounder 2024 Management Track Assessment Report
 - v. Peer Review Report, Spring 2024 Management Track Stock Assessments
 - vi. Assessment supporting materials available at: https://apps-nefsc.fisheries.noaa.gov/saw/sasi/sasi_report_options.php
- b. Groundfish Plan Development Team
 - i. Groundfish PDT presentation by Council staff
 - ii. Groundfish PDT memo to SSC re OFLs and ABCs for GB Atlantic cod, FY 2025 -2027
 - iii. Groundfish PDT memo to SSC re OFL and ABC for GB yellowtail flounder, FY 2025 -2026
 - iv. Risk Policy Matrix for GB Atlantic cod
 - v. Risk Policy Matrix for GB yellowtail flounder
- c. Prior SSC memos to Council re OFLs and ABCs
 - i. FY 2023 - 2024 GB Atlantic cod, September 2, 2022
 - ii. FY 2024 - 2025 GB yellowtail flounder, September 15, 2023
- d. Northeast Multispecies SAFE Report, including background information on the social and economic status of the fishery and prior management actions
- e. FY 2022 Northeast Multispecies (Groundfish) Catch Report, GARFO
- f. Correspondence
- g. General Background Documents
 - i. The Council's Risk Policy Road Map (2016), which includes the Risk Policy Statement and Implementation Plan, see pp. 4-5
 - ii. 2024 State of the Ecosystem – New England. NOAA/NEFSC

GEORGES BANK ATLANTIC COD

TERMS OF REFERENCE FINDINGS

The SSC received a presentation from Northeast Fisheries Science Center (NEFSC) staff on the first management track (MT) assessment of the Georges Bank stock of Atlantic cod since the 2023 research track (RT) assessment. The RT assessment adopted the Woods Hole Assessment Model (WHAM), with this MT assessment updating the WHAM model with recalibrated NEFSC/DFO survey indices, revised weight-at-age and Canadian commercial landings-at-age, and updated US landings and discards using the Catch Accounting and Monitoring System. Short-term projections were updated through 2027. Retrospective adjustments were not made to the model results because the retrospective pattern was minor.

This MT stock assessment estimated the spawning stock biomass (SSB) in 2023 to be 2,668 mt which is 32% of the biomass target (SSB_{MSY} proxy = 8,290). The 2023 fully selected fishing mortality was estimated to be 0.13, which is 56% of the overfishing threshold proxy (F_{MSY} proxy = 0.233). Based on these results, the stock status is overfished but overfishing is not occurring. The stock is not currently in a rebuilding plan, and thus there is no $F_{REBUILD}$.

The SSC also received a presentation from the Groundfish Plan Development Team (PDT) on recommendations of possible overfishing limits (OFLs) and acceptable biological catches (ABCs) for FY 2025-2027 based on projections at 75%F_{MSY} along with a sensitivity run conducted at 60%F_{MSY}.

The SSC supports an OFL of 518 mt for FY 2025, 433 mt for FY 2026, and 420 mt for FY 2027. The SSC recommends ABCs of 397 mt, 331 mt, and 321 mt for FY 2025-2027. These OFLs and ABCs, are not likely to result in overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy Statement.

RATIONALE INCLUDING SIGNIFICANT SOURCES OF UNCERTAINTY

The SSC applied Option A of the Council's ABC control rule which states that the *ABC should be determined as the catch associated with 75% of F_{MSY}*. There was recognition that while stock status based on the 2024 management track assessment indicates the stock is overfished, this stock has not been added to the Northeast Multispecies (groundfish) fishery management plan, and the supporting analysis required to define a rebuilding plan (i.e., definition of F_{REBUILD} and a rebuilding timeline) have not yet been conducted. The SSC deemed it appropriate to use Option A of the Council's ABC Control Rule in this circumstance. Selecting another value for the ABC (e.g., 60%F_{MSY}) presupposes what F_{REBUILD} will be, although a minority of the SSC members supported the use of 60%F_{MSY} for setting the ABC (see Minority Report).

The recommended ABCs represent a reduction from the FY 2024 catch in the stock area, with decreasing ABCs over the period FY 2025-2027 (i.e., ranging from a 5% to 23% decrease from FY 2024 catch). The SSC believes these reductions support the goal of preventing overfishing. The SSC discussed that while most (~75%) of the stock's harvest is by Canadian harvesters; the decreased annual catch limits will still impact U.S. landings and have socioeconomic consequences.

During discussion, the SSC raised several concerns with the assessment. Recruitment remains a source of uncertainty in this assessment. There were persistent trends in recruitment residuals that could not be fully resolved in this assessment. Additionally, insufficient port sampling, gaps in surveys, and age truncation in the NEFSC fall index terminal years make it more difficult to characterize age composition for this stock. The reliability of population projections for Georges Bank Atlantic cod also cannot be determined because of differences between the data and methods used in the prior RT and in the current MT assessments, such as the change in the survival process error assumptions, which impact how errors are propagated in the projections.

The SSC is concerned about this stock's poor condition (i.e., lowest SSB on record and persistent low recruitment). The SSC anticipates a rebuilding plan with an associated F_{REBUILD} will be developed for the new Georges Bank Atlantic cod stock after May 2025 and that the newly defined F_{REBUILD} will be used in future catch advice setting for this stock.

ADDITIONAL COMMENTS AND RESEARCH RECOMMENDATIONS

The SSC recommends further consideration of how the NEFSC bottom trawl survey is integrated into the assessment. There were suggestions to explore splitting the Albatross and Bigelow portions of the time series, as well as recommendations to maintain the full time series within the assessment with further exploration of the differences in scale (catchability) between the two survey's time series. The SSC also discussed the multiple survey indices that inform this assessment and recommends evaluating the utility

of a model-based approach (e.g., Vector Autoregressive Spatio-Temporal model) to derive abundance indices in future management track assessments.

The SSC emphasizes the insufficient port sampling that was raised as a concern for this stock in the assessment and PDT reports and recommends efforts to expand biological sampling. This includes developing ways to address current limitations of port sampling protocols, such as not sampling trips made to multiple stock areas, a situation that often applies to Georges Bank.

The SSC recommends further work to define the appropriate approach to estimating reference points for this stock and continued evaluation of the appropriate use of the full time series of recruitment to inform future expectations of stock productivity. This recommendation reflects evidence from peer-reviewed literature and public comments that overall species distribution and productivity may have shifted for this stock due to climate change and other factors.

The SSC noted that there was limited socioeconomic data provided on this stock. While this was due, in part, to it being a newly defined stock unit, more information, particularly pertaining to fishing practices (e.g., ACE lease price, potential to be a choke stock, ability of fishers to switch to other stocks), would allow the SSC to provide more nuanced management advice. Further research is needed on the impacts to multiple and differentiated communities due to catch advice resulting from the new spatial scale of the cod stock assessments.

SUMMARY OF RECOMMENDATIONS

1. The SSC recommends OFLs of 518 mt, 433 mt, and 420 mt for FY 2025-2027, respectively, for the Georges Bank Atlantic cod stock.
2. The SSC recommends ABCs of 397 mt, 331 mt, and 321 mt for FY 2025-2027, respectively, for the Georges Bank Atlantic cod stock.
3. The SSC recommends further research on: 1) appropriate treatment of surveys included in the assessment, 2) appropriate method for estimating reference points, 3) socioeconomic information on the fishery and communities associated with this newly defined stock area, and 4) development of approaches to expand biological sampling.

Fishing Year	OFL (mt)	ABC (mt)
2025	518	397
2026	433	331
2027	420	321

Minority Report - Georges Bank Atlantic Cod 2025-2027 ABC Recommendation

A minority of the NEFMC SSC members supported setting the FY 2025-2027 GB cod ABC at 322, 274 and 268 mt, respectively. These values result from the 60%F_{MSY} sensitivity run produced by the PDT using a constant $F = 0.138$, which aligns with the recent fishing mortality rate.

Recommendations from these SSC members included:

1. The current assessment indicates that the Georges Bank Atlantic cod stock is overfished, and, as such, it is highly likely that NOAA will determine the stock is overfished, and a rebuilding plan (with $F_{REBUILD}$) will be developed after May 2025. The minority view is that reducing catch now could ease the transition to anticipated reduced catch advice made under a future $F_{REBUILD}$.
2. The stock's condition is poor (declining abundance with SSB lowest on record and continuing low recruitment) suggesting that fishing pressure should not be increased. The minority view is that this supports application of 60% F_{MSY} which would not increase F from recent levels, whereas 75% F_{MSY} would. ABCs calculated with 60% F_{MSY} provide a larger projected SSB in 2025-2027, and the minority view is that this could result in increased recruitment in subsequent years.
3. There is significant uncertainty with the data used in the assessment (e.g., limited port sampling, missed surveys, etc.). The minority view is that this uncertainty suggests a precautionary approach should be followed in setting the ABC.
4. There are inconsistencies between the RT and MT analyses, such that the reliability of the projections cannot be determined. The minority view is that this suggests a need for caution in setting out year ABCs.

A minority of SSC members supported the use of a more precautionary approach (60% F_{MSY}) to define catch advice for an overfished stock that is at historically low abundance levels, shows no sign of increased recruitment, and is struggling to persist under low productivity environmental conditions.

GEORGES BANK YELLOWTAIL FLOUNDER

TERMS OF REFERENCE FINDINGS

The SSC received presentations from Northeast Fisheries Science Center (NEFSC) staff and the Groundfish Plan Development Team (PDT) on the recent management track stock assessment for Georges Bank (GB) yellowtail flounder, and possible ABC and OFL options. GB yellowtail flounder does not currently have an analytical stock assessment and therefore there are no estimates of reference points or criteria to define the status of the stock. NOAA Fisheries previously determined GB yellowtail flounder is overfished but overfishing status is unknown. GB yellowtail flounder is in a 26-year rebuilding plan, with a target rebuild by 2032.

The SSC recommends that the OFL for the GB yellowtail flounder stock remains unknown and recommends an ABC of 200 mt for FY 2025-2026 based on the results of the 2024 management track stock assessment.

RATIONALE INCLUDING SIGNIFICANT SOURCES OF UNCERTAINTY

The SSC is using Option D from the Council's ABC control rule in deriving its catch advice. Option D states: *Interim ABCs should be determined for stocks with unknown status according to case-by-case recommendations from the SSC.*

The SSC recommendation for GB yellowtail flounder ABC of 200 mt is consistent with the GB Yellowtail Limiter Approach developed in 2021, which sets constant catch advice if survey biomass estimates fall within upper and lower biomass boundaries informed by science and management.

The average survey biomass for 2024 using the Miller et al. (2023) catchability estimates was 1,276 mt. This biomass estimate is between the bounds of the Limiter (lower limit: 1,000 mt; upper limit 7,300-8,500 mt). Thus, the constant catch advice of 200 mt is recommended.

The Limiter Approach was designed to include the NMFS spring and fall bottom trawl and Canadian DFO spring surveys. In recent years, missing surveys have been a source of uncertainty in the application of the Limiter approach. However, all three surveys were available in 2024 for the first time since 2019, which reduced uncertainty in the application of the Limiter. The Yellowtail Flounder Research Track assessment, which is ongoing, is evaluating alternative assessment approaches for GB yellowtail flounder to replace or improve upon the Limiter Approach. A peer review is expected in November 2024.

ADDITIONAL COMMENTS AND RESEARCH RECOMMENDATIONS

Similar to previous years, the SSC noted the continued low stock biomass and poor recruitment for this stock. The SSC recommended continued investigation of the environmental drivers affecting the stock. The size composition of discards and whether there are size-based discard mortality differences within the scallop dredge fishery will have important implications for interpreting the biomass removed by the fishery. The SSC also noted that the Miller et al. (2021) catchability estimates were applied to the NMFS surveys, but not the DFO surveys, in accordance with the Limiter Approach.

LITERATURE CITED

Miller, T.J., Richardson, D.E., Politis, P.J., Roebuck, C.D., Manderson, J.P., Martin, M.H., and Jones, A.W. 2023. Estimation of survey efficiency and biomass for commercially important species from industry-based paired gear experiments. *Fisheries Research*, 259(106565).

SUMMARY OF RECOMMENDATIONS

1. The SSC recommends that the OFL for the GB yellowtail flounder stock remains unknown.
2. The SSC recommends an ABC of 200 mt for FY 2025-2026 based on the results of the 2024 Management Track stock assessment.
3. The SSC recommends investigation of the environmental drivers affecting this species through the ongoing Yellowtail Flounder Research Track assessment process.

Fishing Year	OFL (mt)	ABC (mt)
2025	unknown	200
2026	unknown	200

3. APPORTIONING THE BIOMASS OF GEORGES BANK COD AND HADDOCK INTO THE EASTERN GEORGES BANK (EGB) MANAGEMENT AREA

Terms of Reference

- A. Consider the methods of the NEFSC for apportioning the biomass of GB cod and GB haddock into the eastern GB management area and provide feedback on:
 1. Appropriateness of the approach for spatial apportionment of biomass, and
 2. Recommendations for possible future revisions to the methods.

Historically, stock assessments for EGB stocks were developed through the TRAC process. The shift to using domestic assessments to support transboundary management means that a new method was required to apportion total Georges Bank (TGB) domestic assessment advice to the EGB management unit for Atlantic cod and haddock. This change necessitated the development of a new approach to apportion domestic assessment advice from the TGB footprint to the EGB management unit.

The SSC received presentations from Northeast Fisheries Science Center (NEFSC) staff on the method for apportionment of biomass for Georges Bank cod and haddock to the EGB management unit. The presentation outlined the existing Transboundary Management Guidance Committee (TMGC) method to calculate the 2024 resource share allocations for the US and Canada, and the method to apportion advice from TGB assessment footprint to the EGB management unit for Georges Bank Atlantic cod and haddock.

The SSC had clarifying questions regarding the spatial footprint of the surveys, survey timing, averaging of the various surveys, and the smoothing methods. These clarifying comments informed the recommendations for possible future revisions to the methods. Procedurally, the SSC inquired whether any proposed revisions would disrupt consistency between the methods that US and Canada use for the resource sharing allocation. Council leadership noted that there is a strong desire to maintain consistency in the methods for US-Canada resource sharing and domestic apportionment. It was clarified that the SSC could provide recommendations on the apportionment and resource sharing methods (e.g., aligning the methods), but those would be addressed next year at the earliest.

Terms of Reference Findings

Appropriateness of the approach for spatial apportionment of biomass

The SSC considers this approach to be both appropriate and consistent. The approach uses trawl survey data to apportion the domestic advice from the TGB footprint into the EGB management unit. The NMFS spring and fall surveys were relied on for both GB cod and haddock stocks and the DFO spring survey data was only used for Atlantic cod apportionment due to concerns over low sampling coverage on western Georges Bank for haddock. The methods are well-defined and transparent. This method is consistent with the US-Canada resource sharing allocation calculations, with only small deviations that are well described in the report.

Recommendations for possible future revisions to the methods.

The SSC provided several recommendations for future consideration. The SSC recommended considering survey seasonality and reevaluating equal survey weightings when averaging. The SSC also recommended evaluating the frequency of no tows occurring in a stratum and the impact of the assumption whereby stratum with no tows were assumed to have a mean of zero.

The SSC discussed whether the NEFSC and DFO surveys sample similar aspects of the stocks. The SSC recommended looking at the size distributions of the catch from the different surveys to assess whether surveys are providing similar information on the stocks.

The SSC also understands that use of the loess smoother maintains consistency with the calculation of the US-Canada resource sharing allocation, but there are other time series modeling techniques that could be evaluated. Specifically, a desired tool would be a time series model that provides predictions bound between 0 and 100 and that minimizes prediction error.



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Rick Bellavance, *Acting Chair* | Cate O'Keefe, PhD, *Executive Director*

MEMORANDUM

DATE: September 4, 2024
TO: Cate O'Keefe, Ph.D., Executive Director
FROM: Scientific and Statistical Committee
SUBJECT: Response to Terms of Reference - Overfishing Limits and Acceptable Biological Catches for Western Gulf of Maine, Eastern Gulf of Maine and Southern New England Atlantic cod for FY2025 to FY2027

The Scientific and Statistical Committee (SSC) met in person in Portsmouth, NH and via webinar on July 30-31, 2024, to address terms of reference (TOR) for recommending overfishing limits and acceptable biological catches for Western Gulf of Maine, Eastern Gulf of Maine, and Southern New England Atlantic cod. Note: The SSC's response to additional terms of reference discussed during the July 30-31, 2024 meeting are in our July 31 report, including: (1) overfishing limits and acceptable biological catches for Georges Bank yellowtail flounder (FY 2025-FY 2026) and Atlantic cod (FY 2025-2027), and (2) apportioning Georges Bank Atlantic cod and haddock biomass into the Eastern Georges Bank Management Area.

SSC members in attendance: Anna Birkenbach, Edward Camp, Yong Chen, Jeremy Collie, Adam Delargy, Adrian Jordaan, Lisa Kerr, Gareth Lawson, Kai Lorenzen, Jason McNamee, Richard Merrick, Conor McManus, Fred Serchuk, Michelle Standinger, Kevin St. Martin, Sam Truesdell, and Lindsey Williams.

TERMS OF REFERENCE

A. Consider the results of the Northeast Fisheries Science Center's (NEFSC) spring 2024 management track stock assessments for groundfish stocks and information provided by the Council's Groundfish Plan Development Team (PDT).

B. Recommend an overfishing limit (OFL) and acceptable biological catch (ABC) for the following groundfish stocks that will prevent overfishing, meet the management objective to rebuild, are consistent with the Council's groundfish ABC control rule and rebuilding plans, and consider the Council's Risk Policy Statement.

1. Southern New England (SNE) Atlantic cod, FY 2025 – 2027
3. Western Gulf of Maine (WGOM) Atlantic cod, FY 2025 – 2027
4. Eastern Gulf of Maine (EGOM) Atlantic cod, FY 2025 – 2027

DOCUMENTS

To address these TORs, the SSC considered the following information:

- a. Stock Assessments
 - i. Presentation on SNE cod 2024 assessment by NEFSC staff
 - ii. Southern New England Cod 2024 Management Track Assessment Report
 - iii. Presentation on WGOM cod 2024 assessment by NEFSC staff
 - iv. Western Gulf of Maine Cod 2024 Management Track Assessment Report
 - v. Presentation on EGOM cod 2024 assessment by NEFSC staff
 - vi. Eastern Gulf of Maine Cod 2024 Management Track Assessment Report
 - vii. Peer Review Report, Spring 2024 Management Track Stock Assessments
 - viii. Assessment supporting materials available at: https://apps-nefsc.fisheries.noaa.gov/saw/sasi/sasi_report_options.php
- b. Groundfish Plan Development Team
 - i. Groundfish PDT presentation by Council staff
 - ii. Groundfish PDT memo to SSC re OFLs and ABCs for Atlantic cod stocks, FY 2025 - 2027
 - iii. Risk Policy Matrix for SNE cod
 - iv. Risk Policy Matrix for WGOM cod
 - v. Risk Policy Matrix for EGOM cod
- c. Prior SSC memos to Council re OFLs and ABCs
 - i. FY 2022 - 2024 Gulf of Maine cod, October 25, 2021
 - ii. FY 2023 - 2024 GB cod, September 2, 2022
- d. Northeast Multispecies SAFE Report, including background information on the social and economic status of the fishery and prior management actions
- e. FY 2022 Northeast Multispecies (Groundfish) Catch Report, GARFO
- f. Correspondence

General Background Documents

- 1. The Council's Risk Policy Road Map (2016), which includes the Risk Policy Statement and Implementation Plan, see pp. 4-5
- 2. 2024 State of the Ecosystem – New England. NOAA/NEFSC

WESTERN GULF OF MAINE COD

The SSC received presentations from Northeast Fisheries Science Center (NEFSC) staff and the Groundfish Plan Development Team (PDT) on the June 2024 management track stock assessment for Western Gulf of Maine (WGOM) cod, and possible ABC and OFL options. This is the first management track (MT) since the 2023 research track (RT) assessment. The RT assessment adopted the Woods Hole Assessment Model (WHAM) and this MT assessment updated the WHAM model with fishery catch data and research survey indices of abundance through 2023, providing updated estimates of projections and reference points. Retrospective adjustments were not made to the model results because the retrospective pattern was minor.

This MT stock assessment estimated the spawning stock biomass (SSB) in 2023 to be 1,847 mt which is 3% of the biomass target (SSB_{MSY} proxy = 62,677 mt). The 2023 fully selected fishing mortality was estimated to be 0.31 which is 163% of the overfishing threshold proxy (F_{MSY}

proxy = 0.19). Based on these results, the stock status is overfished and overfishing is occurring. The stock is not currently in a rebuilding plan, and thus there is no $F_{REBUILD}$.

TERMS OF REFERENCE FINDINGS

The SSC recommends an OFL of 507 mt for FY 2025, 603 mt for FY 2026, and 769 mt for FY 2027 for the WGOM cod stock. The SSC recommends an ABC of 387 mt for FY 2025, 460 mt for FY 2026, and 586 mt for FY 2027. These OFLs and ABCs aim to prevent overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy Statement.

RATIONALE INCLUDING SIGNIFICANT SOURCES OF UNCERTAINTY

The SSC applied Option A of the Council's groundfish ABC control rule which states that the *ABC should be determined as the catch associated with 75% of FMSY*. There was recognition that while stock status based on the 2024 management track assessment indicates the stock is overfished and overfishing is occurring, this stock has not yet been added to the Northeast Multispecies (groundfish) Fishery Management Plan, and the supporting analysis required to define a rebuilding plan (i.e., definition of $F_{REBUILD}$ and a rebuilding timeline) has not been conducted. The SSC deemed it appropriate to use Option A of the Council's ABC Control Rule in this circumstance.

The recommended ABCs represent a reduction from recent catch in the stock area, with the ABCs over FY 2025-2027 representing a 40%, 30%, and 11% decrease respectively in catch compared to FY 2023 (662 mt). The SSC believes these reductions support the goal of preventing overfishing. The SSC discussed the option of holding catch for the first year under 75% F_{MSY} constant for three years, however recommended adhering to Option A of the ABC control rule with ABCs based on 75% F_{MSY} projections. The SSC is concerned with the higher magnitude of the ABC in the third year of projections but anticipates that specifications will be updated by the third year based on an updated MT stock assessment.

The SSC is concerned about this stock's poor condition (3% of the biomass target). The SSC anticipates that a rebuilding plan with an associated $F_{REBUILD}$ will be developed for the new WGOM Atlantic cod stock after May 2025 and that the newly defined $F_{REBUILD}$ will be used in future catch advice setting for this stock.

A key source of uncertainty for this stock is the spring 2023 datapoint from NOAA's Gulf of Maine Bottom Longline Survey, this value was ultimately excluded from the assessment due to concerns from the peer review panel about the high influence this datapoint had on assessment results. The lead analyst also shared an analysis that suggested uncertainty in the WGOM projections which may be overly optimistic.

ADDITIONAL COMMENTS AND RESEARCH RECOMMENDATIONS

Noting the reduction in potential catch under the recommended ABCs, the SSC is concerned about the socioeconomic impacts these ABCs will have on the fishery. The SSC recommends further work to define the appropriate approach to estimating short-term projections and reference points for this stock and continued evaluation of the appropriate use of the recruitment

time series to inform future expectations of stock productivity. The SSC raised concerns about how WHAM treats survey indices when the value represents a true zero and the impact this could have on assessment estimates. Currently, in instances where the index is a true zero, the model treats the data point as if the survey was missing (i.e., omits that data point) and concerns were raised that this approach may lead to overestimation of biomass. The SSC recommends work to address this issue in the model. Also, given there are several surveys informing this model, the SSC recommends exploration of approaches such as spatio-temporal models to inform an integrated model-based index of abundance. The SSC recommends that the NEFSC follow up on requests for swept area biomass made during the peer review process in future MT assessments.

SUMMARY OF RECOMMENDATIONS

1. The SSC recommends OFLs of 507 mt for FY 2025, 603 mt for FY 2026, and 769 mt for FY 2027 for the WGOM cod stock.
2. The SSC recommends ABCs of 387 mt for FY 2025, 460 mt for FY 2026, and 586 mt for FY 2027 for the WGOM cod stock.
3. The SSC recommends further research on the definition of short-term projections and reference points, exploration of the treatment of survey zeros in WHAM, exploration of an integrated model-based index of abundance, and estimates of swept area biomass for this stock.

Fishing Year	OFL (mt)	ABC (mt)
2025	507	387
2026	603	460
2027	769	586

EASTERN GULF OF MAINE COD

The SSC received presentations from NEFSC staff and the Groundfish PDT on the June 2024 management track stock assessment for Eastern Gulf of Maine (EGOM) cod, and possible ABC and OFL options. This was the first MT since the 2023 RT assessment. The RT assessment adopted WHAM and this MT assessment updated WHAM with fishery catch data and research survey indices of abundance through 2023, and corrected information associated with the Sentinel Survey abundance index. Retrospective adjustments were not made to the model results because the retrospective pattern was minor.

This MT stock assessment estimated the SSB in 2023 to be 267 mt which is 12% of the biomass target (SSB_{MSY} proxy = 2,184 mt). The 2023 fully selected fishing mortality was estimated to be 0.006 which is 2% of the overfishing threshold proxy (F_{MSY} proxy = 0.27). Based on these results, the stock status is overfished but is not undergoing overfishing. The stock is not currently in a rebuilding plan, and thus there is no $F_{REBUILD}$.

TERMS OF REFERENCE FINDINGS

The SSC recommends an OFL of 63 mt for FY 2025, 50 mt for FY 2026, and 39 mt for FY 2027 for the EGOM cod stock. The SSC recommends an ABC of 48 mt for FY 2025, 39 mt for FY 2026, and 30 mt for FY 2027. These OFLs and ABCs aim to prevent overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy Statement.

RATIONALE INCLUDING SIGNIFICANT SOURCES OF UNCERTAINTY

The SSC applied Option A of the Council's groundfish ABC control rule which states that the *ABC should be determined as the catch associated with 75% of FMSY*. There was recognition that while stock status based on the 2024 management track assessment indicates the stock is overfished, this stock has not yet been added to the Northeast Multispecies (groundfish) fishery management plan, and the supporting analysis required to define a rebuilding plan (i.e., definition of $F_{REBUILD}$ and a rebuilding timeline) have not yet been conducted. The SSC deemed it appropriate to use Option A of the Council's ABC Control Rule in this circumstance.

Inclusion of estimated discards from the lobster fishery was explored in the MT assessment, however these were eventually excluded due to concerns from the peer review panel about the approach used in estimation and the short time series of data available (i.e., 2020-2023). However, given the magnitude of effort by the lobster fishery in the EGOM stock area and the current estimated stock biomass of EGOM cod, lobster fishery bycatch is recognized as an important component of total catch for this stock. The absence of these data in the model represents a substantial source of uncertainty. There is ongoing work to generate estimates of lobster bycatch removals throughout the time series.

Given this recognized uncertainty, the SSC discussed using recent average catch as an ABC. However, multiple peer reviews have deemed this model acceptable to use for EGOM catch advice, so the SSC did not feel that the uncertainties associated with the lobster fleet removals justified a departure from Option A of the control rule. The ABC proposed by the SSC is considerably larger than recent removals, which have been less than 5 mt since 2018. The SSC was not presented with evidence indicating that removals would be expected to increase dramatically during 2025-2027 so the proposed ABC is not expected to be constraining. Greater Atlantic Regional Fisheries Office (GARFO) staff indicated that lobster bycatch removals would not count against the proposed ABC since this mortality source was not included in the stock assessment.

Historical removals attributed to the EGOM are expected to increase substantially when lobster bycatch is included; these data may be available for the 2026 stock assessment. The SSC notes that inclusion of this source of removals can be expected to change the scale of the stock and potentially the perception of spawning biomass and fishing mortality rate.

ADDITIONAL COMMENTS AND RESEARCH RECOMMENDATIONS

The SSC recommends research to characterize Atlantic cod discards from the lobster fleet, in particular methods to estimate discards over an extended time period (as compared to CAMS estimates) and that include bycatch in state waters, as well as further review of the adequacy of CAMS discard estimates from the lobster fishery. The SSC also supports the research

recommendations provided by NEFSC staff, including improved biological sampling of commercial and recreational catch and more appropriate consideration of true zeros in the survey data within WHAM. Further, from a socioeconomic perspective, it would be useful to understand the fishing community's participation in the groundfish fishery relative to the new stock areas.

SUMMARY OF RECOMMENDATIONS

1. The SSC recommends OFLs of 63 mt for FY 2025, 50 mt for FY 2026, and 39 mt for FY 2027 for the EGOM cod stock.
2. The SSC recommends ABCs of 48 mt for FY 2025, 39 mt for FY 2026, and 30 mt for FY 2027 for the EGOM cod stock.
3. The SSC recommends research to estimate cod discards from the lobster fishery, additional biological sampling of catch, and exploration of the treatment of survey zeros in WHAM.

Fishing Year	OFL (mt)	ABC (mt)
2025	63	48
2026	50	39
2027	39	30

SOUTHERN NEW ENGLAND COD

The SSC received presentations from NEFSC staff and the Groundfish PDT on the June 2024 management track stock assessment for Southern New England (SNE) cod, and possible ABC and OFL options. This was the first MT since the 2023 research track assessment. The RT assessment adopted the WHAM model, and this MT assessment updated this model with fishery catch data, fisheries independent data, and a recreational catch per unit effort index through 2023.

This MT stock assessment estimated the SSB in 2023 to be 289 mt which is 3% of the biomass target (SSB_{MSY} proxy = 11,258 mt). The 2023 fully selected fishing mortality was estimated to be 0.975 which is 806% of the overfishing threshold proxy (F_{MSY} proxy = 0.121). Based on these results, the stock is overfished and overfishing is occurring. The stock is not currently in a rebuilding plan, and thus there is no $F_{REBUILD}$.

TERMS OF REFERENCE FINDINGS

The SSC recommends an OFL of 29 mt for FY 2025, 47 mt for FY 2026, and 65 mt for FY 2027. The SSC recommends an ABC of 22 mt for FY 2025, 36 mt for FY 2026, and 36 mt for FY 2027. These OFLs and ABCs aim to prevent overfishing, are consistent with the Council's ABC control rules (Option A with modification to hold second year constant), and consider the Council's Risk Policy Statement.

RATIONALE INCLUDING SIGNIFICANT SOURCES OF UNCERTAINTY

The SSC applied Option A of the Council's groundfish ABC control rule which states that the *ABC should be determined as the catch associated with 75% of FMSY*, with a slight modification to hold the 2026 ABC constant during 2027. The additional precaution aims to address the uncertainties associated with recreational fishery data raised by both the MT Peer Review Panel and the Groundfish PDT. Recreational catch estimates are considered to have greater uncertainty than commercial landings and given the harvest for SNE cod is primarily recreational, the SSC recommended this additional precaution in the 2027 ABC specification. The SSC discussed holding the 2025 ABC constant across all years, but this was not preferred for several reasons: it further deviates from the Control Rule, provides less buffering against management uncertainty, and does not allow for flexibility if there are interactions between cod and other target species in either the commercial or recreational sector in this stock area. The SSC acknowledges that this ABC will lead to significant reductions from previous harvest levels in the SNE statistical reporting areas. The SSC anticipates that a MT assessment will be conducted before 2027; as such, this 36 mt ABC for 2027 will likely be revised. This catch advice provides precaution in the event a MT assessment is not completed per the current assessment schedule.

The Peer Review Panel of the 2024 MT identified several assessment uncertainties. One of the largest uncertainties is the absence of biological samples in recent years, during a time period where most removals have come from the recreational fishery. Additionally, there are only two indices included in the assessment model: the NEFSC spring survey and a recreational catch per unit effort (CPUE) index. The former has continued to see very low catch rates (2006, 2007, and 2021 having zero cod observed, and no data in 2020 or 2023), and the latter only includes vessel trip report (VTR) data and thus does not include other sources of recreational catch information (e.g., private angler information from the Marine Recreational Information Program). Recreational discard mortality, bridge year assumptions, uncertainty in recreational catch (compared to commercial landings), and VTR self-reported landings from wave one were additional assessment uncertainties identified by the panel. The SSC discussed concerns with the indices used in the assessment model. For the NEFSC spring survey, the SSC was concerned about how well this survey tracks trends in stock biomass. The CPUE index provides a fisheries dependent framework but given it does not account for all recreational catch sources, there was acknowledgement that it may not entirely capture the stock trends. The SSC again raised concern about how WHAM treats survey indices when the value represents a true zero and recommends further work to address this in the model.

ADDITIONAL COMMENTS AND RESEARCH RECOMMENDATIONS

The SSC recommends improved biological sampling of catch, particularly from the recreational fleet given its significant contribution to total catch for the SNE stock area. If age data becomes increasingly challenging to obtain and limits the performance of the age-structured assessment model, the SSC recommends evaluating the utility of length-based modeling approaches. It was also recommended that there be a broader discussion of different fisheries independent survey techniques that could be used to monitor the stock, perhaps even developing new surveys. Better understanding the species' availability to the trawl survey (e.g., movement dynamics for the stock) would also be helpful to inform future monitoring. The SSC was pleased to see the development of the CPUE index for this stock but noted that if catch limits become too low or economics and other factors drive the CPUE index estimates, the CPUE index may not continue

to represent stock trends. Better understanding of the economic impacts of any recreational fishery catch reductions, and the ability for the recreational industry to pivot to other recreational fisheries, was recommended for further research.

SUMMARY OF RECOMMENDATIONS

4. The SSC recommends OFLs of 29 mt for FY 2025, 47 mt for FY 2026, and 65 mt for FY 2027 for the SNE cod stock.
5. The SSC recommends ABCs of 22 mt for FY 2025, 36 mt for FY 2026, and 36 mt for FY 2027 for the SNE cod stock.
6. The SSC recommends additional sampling of biological catch of SNE cod and work to develop new indices of abundance, as well as continued evaluation of the representativeness of current indices of abundance for this stock over time.

Fishing Year	OFL (mt)	ABC (mt)
2025	29	22
2026	47	36
2027	65	36

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Appendix II

Calculation of Northeast Multispecies Annual Catch Limits
FY 2026 – FY 2027

This appendix documents the calculation of Northeast Multispecies (groundfish) overfishing limits (OFLs), acceptable biological catches (ABCs), and annual catch limits (ACLs) for FY2026 - FY2027 for the Atlantic cod stocks. The general approach for all stocks is to first determine the OFL and then determine the ABC. The ABC in all cases is consistent with the recommendations of the Scientific and Statistical Committee (SSC). The ABC is distributed to various components of the fishery, and then an adjustment is made to these “sub-ABCs” to determine the ACLs, sub-ACLs, or other sub-components.

The descriptions in this Appendix reflect the Council’s *Preferred Alternative* for specifications in Amendment 25 (Revised). For this action, the *Preferred Alternative* sets or updates specifications for several stocks, including:

- Eastern Gulf of Maine (EGOM) cod
- Western Gulf of Maine (WGOM) cod
- Georges Bank (GB) cod
- Southern New England (SNE) cod

The *Preferred Alternative* includes adjustments to the state waters and other fisheries sub-components for all stocks. GB cod is adjusted for U.S./CA TACs. This appendix also documents how catches are distributed to the sub-components of the fishery. These are listed for all stocks to keep a clear record of the distribution. Amendment 16 authorized changes to be made in a framework action and this summary documents several changes.

Determining OFL and ABC

Table 1 summarizes the SSC’s 2024 recommendations for FY2026-FY2027 specifications for the Atlantic cod stocks.

Table 1- Summary of Council recommended OFLs and ABCs (mt) for FY2026-FY2027 based on SSC recommendations in 2024. *GB cod specifications are only for FY2026.

Stock	<u>2026</u>		<u>2027</u>	
	OFL	ABC	OFL	ABC
Eastern Gulf of Maine cod	50	39	39	30
Western Gulf of Maine cod	603	460	769	586
Georges Bank cod*	433	331		
Southern New England cod	47	36	65	36

Distribution of ABCs

Because the Council wants the ability to consider a different adjustment for management uncertainty for different components of the fishery, ABCs were first distributed to the components prior to applying this adjustment. A brief description of the components follows.

Note that there are a few stock-specific instances (described in a later section) that may differ from this general overview.

ABC: Acceptable Biological Catch for the entire stock.

Canadian Share/Allowance: An amount from the stock that Canadian vessels are expected to harvest, as is the case for GB winter flounder, white hake, and Atlantic halibut (see details that follow in the next section). For GB cod, GB haddock, and GB yellowtail flounder, this is based on the Canadian allocation under the TMGC (but see the Eastern GB (EGB) cod discussion below).

U.S. ABC: That portion of the ABC available to U.S. fishermen after accounting for Canadian harvests.

State waters: Portion of the U.S. ABC expected to be harvested from state waters, outside of the federal management plan. This is not an allocation.

Other sub-components: Portion of the U.S. ABC expected to be harvested by unidentified non-groundfish fishery components. These are not attributed to specific components because individual amounts are small. In cases where there is no specific recreational allocation, unless otherwise specified, recreational catches are counted against this sub-component. There are a few stocks where this may not be the case, such as when most recreational catches are from state waters and the recreational catch is considered part of the state waters sub-component. These instances will be specifically identified. The southern windowpane flounder “other fisheries” sub-component is used to evaluate when an AM could be triggered for large-mesh non-groundfish fisheries (e.g., summer flounder and scup trawl fisheries).

Scallops: That portion of U.S. ABC allocated to the scallop fishery.

Groundfish: That portion of the U.S. ABC available to the groundfish fishery (including recreational and commercial vessels if there is a specific allocation). This ABC has several sub-components:

Commercial: The portion of the U.S. ABC available to commercial vessels; this is further sub-divided into sector and common-pool portions.

Recreational: The portion of the U.S. ABC available to recreational vessels, when a specific allocation is made.

MWT: Portion of the U.S. ABC available to herring mid-water trawl vessels. Currently only applies to the two haddock stocks.

Small-Mesh Fisheries: Portion of the U.S. ABC of GB yellowtail flounder for small-mesh fisheries.

Amendment 16 provides that the distribution to various sub-components can be modified in a framework or specification action. These adjustments are often made as more experience is gained with the ACL system adopted by Amendment 16. Changes can also be required if there are large changes in ABCs, particularly because the sub-components of the fishery are not subject to specific catch controls by the FMP and a specific percentage allocation has not been defined. This is the case for state waters and other sub-component catches. Unlike the case when a specific allocation has been specified, the PDT estimates the expected catch from these two components and then compares that amount to the ABC to determine the percentage that should be set aside to account for these catches.

Groundfish ABCs and ACLs are distributed to various components of the fishery. First, expected catch by Canadian vessels is deducted from the total ABC, and the amount remaining is the portion of the ABC available to U.S. vessels (U.S. ABC). Expected catch from state waters and the other sub-component is then deducted from the U.S. ABC¹. These sub-components are not subject to specific catch controls by the Groundfish FMP, although in many instances states do adjust their measures accordingly. As a result, the state waters and other sub-components are not allocations, and these components of the fishery are not subject to accountability measures if the catch limits are exceeded. Because the state waters and other sub-component values are based on expected catch, there is no downward adjustment for management uncertainty that applies to fisheries with specific allocations and accountability measures.

After the state and other sub-components are deducted, the remaining portion of the U.S. ABC is the amount available to the fishery components that receive an allocation (i.e., subject to accountability measures). Allocation is made first to non-groundfish fisheries (e.g., scallop, midwater trawl, small-mesh fisheries), and the portion of the U.S. ABC remaining is the commercial groundfish allocation.

Once the U.S. ABC is distributed to the various fishery components, sub-annual catch limits (sub-ACLs) are set by reducing the amount of the ABC distributed to each component to account for management uncertainty (i.e., the likelihood that management measures will result in a level of catch greater than the catch target). For each stock, management uncertainty is estimated using the following criteria: Enforceability and precision of management measures, adequacy of catch monitoring, latent effort, and catch of groundfish in non-groundfish fisheries.

Canadian Catch of Groundfish Stocks

Expected Canadian catch is considered for EGB cod, EGB haddock and GB yellowtail flounder, through joint management with Canada. In addition to the U.S./CA stocks, three additional stock assessments include Canadian catches: GB winter flounder, white hake, and Atlantic halibut. Only GB cod is being updated in this action.

GB Cod:

The revised specifications for GB cod for FY2026 are a placeholder. The U.S./Canada TACs were set for FY2025 only, to be revisited this year. However, the Transboundary Management

¹ For WGOM cod, SNE cod, and GOM haddock, the state waters and other sub-component are deducted from the commercial portion of the U.S. ABC (after allocating to the recreational fishery).

Guidance Committee meeting is scheduled to occur in October 2025, and therefore FY2026 TMGC recommendations and U.S./Canada TACs are not available. The placeholder specifications use the FY2026 total ABC, as recommended by the SSC in July 2024 (see Appendix I), as the U.S./Canada shared TAC and apply the 2026 country shares (68% Canada / 32% U.S.). This results in a total ABC of 331 mt and a U.S. ABC of 106 mt.

PDT Review of State Waters and Other Fisheries Sub-Components

Annual Catch Limits

The PDT completed the sub-component review for stocks with revised specifications (Table 2). The PDT confirmed its approach of using the three-year recent average (i.e., the average of data in the final year-end catch reports from GARFO from FY2021-FY2023) for determining state and other sub-components, in the absence of other information. Generally, the PDT compared the current other fisheries or state waters sub-component percentage (and associated value) to the updated three-year average catch (FY2021-FY2023) to develop recommendations, with one exception summarized in Table 2 and in the section that follows.

WGOM Cod Commercial Apportionment

The WGOM cod stock is a new stock unit defined by a sub-set of the statistical areas of the old GOM stock unit (513, 514, and 515) and of the old GB stock unit (521, 526, and 541). Under Phase 1 of the Council's Atlantic Cod Management Transition Plan, the Council chose to maintain existing potential sector contributions (PSCs) for the basis of allocating to the commercial fishery. This necessitates an apportionment of the WGOM cod ABC to the commercial groundfish fishery between the northern portion (statistical areas 513, 514, and 515) and the southern portion (statistical areas 521, 526, and 541). GOM PSCs are applied to the northern WGOM portion, and GB PSCs to the southern WGOM portion.

The WGOM cod ABC would be distributed by using the following methodology, in order:

1. Using the same methodology used in FW 59 to revise the apportionment between commercial and recreational, calculate the proportion of recreational catch to the total catch within the Western Gulf of Maine statistical areas over the fishing years 2001 through 2006 (see Appendix III).
2. The resulting proportion of recreational catch from the total WGOM cod ABC determines the recreational sub-ABC.
3. Set aside a portion of the remaining total WGOM cod ABC to the state and other subcomponents based on the average catch from each subcomponent over the most recent three years.
4. Calculate the proportion of commercial groundfish catch within the northern portion of the WGOM and the southern portion of the WGOM to the total catch within the WGOM statistical areas, respectively, over the fishing years 2010 through 2012, 2017, and 2022 through 2023.
5. Apply each proportional split, north and south, to the remaining WGOM cod ABC (less the recreational sub-ABC and the state and other sub-components) to

determine a northern and southern commercial groundfish sub-ABC for WGOM cod respectively (Table 4).

6. Multiply each resulting northern and southern commercial groundfish sub-ABC by the respective GOM (for northern portion) and GB (for southern portion) sector PSC, and the GOM and GB common pool PSC to calculate northern and southern WGOM cod sector sub-ABCs, and northern and southern WGOM cod common pool sub-ABCs, respectively.
7. Combine the northern and southern sector sub-ABCs to produce one WGOM cod sector sub-ABC, and incorporate a 5% management uncertainty buffer (MUB) to produce one WGOM sector sub-ACL.
8. Combine the northern and southern common pool sub-ABCs and incorporate a 5% MUB to produce one WGOM cod common pool sub-ACL.

The apportionment of the WGOM cod commercial groundfish sub-ABC between the north and south (step 4) is based on an area proportional split of 68% of commercial sub-ABC in the northern portions of the Western Gulf of Maine and 32% of commercial sub-ABC in the southern portions of the Western Gulf of Maine (See Appendix III for background). The resulting pounds are combined to create a WGOM sector sub-ACL (and subsequent ACEs), and common pool sub-ACL, which will apply to the whole of the WGOM stock area.

Summary

Resulting ABCs by percentage and values are displayed in Tables 3 and 5.

Table 2- Comparison by stock of the current sub-component values and the PDT's recommendation using the three-year (FY2021-FY2023) average or alternative approach and justification.						
	Sub-Component – Percentage of ABC					
	State waters (%)			Other (%)		
Stock	FY24	Recommendation	Justification	FY24	Recommendation	Justification
EGOM cod	NA	0.5% 0.2mt	Set at 0.5% to cover the FY2021-FY2023 average catch of 0.1mt.	NA	1% 0.5mt	Set at 1% to cover the FY2021-FY2023 average catch of 0.4mt.
WGOM cod (Percentage of commercial ABC)	NA	7% 20mt	Set at 7% to cover the FY2021-FY2023 average catch of 20.3mt.	NA	1.5% 4.2mt	Set at 1.5% to cover the FY2021-FY2023 average catch of 3.7mt.
GB cod	No state waters catch of this stock			NA	8% 6.6mt	Set at 8% to cover the FY2021-FY2023 average catch of 6.6mt.
SNE cod	NA	31% 3.1mt	Set at 31% to cover the FY2021-FY2023 average catch of 3.1mt.	NA	20% 2mt	Set at 20% to cover the FY2021-FY2023 average catch of 2mt.

Table 3- Distribution of ABC to fishery components by percentage. Sector PSCs are preliminary and may change based on final sector rosters.

Stock	Year	OFL	ABC	Canadian Share/ Catch	U.S. ABC	Percent of ABC							
						State Waters	Other sub-Components	Scallop	Groundfish	Comm Groundfish	Rec Groundfish	Sector PSC	MWT or Small-Mesh
EGOM Cod	2026	50	39		39	0.005	0.01		0.99	0.99		0.960733788	
	2027	39	30		30	0.005	0.01		0.99	0.99		0.960733788	
WGOM Cod	2026	603	460		460	0.07	0.015		na	0.725	0.275	See Table 6	
	2027	769	586		586	0.07	0.015		na	0.725	0.275	See Table 6	
GB Cod	2026	433	331	225	106	0	0.08			0.92		0.965441608	
SNE Cod	2025	47	36		36	0.17	0.09		0.74	0.265	0.735	0.965441608	
	2026	65	36		36	0.17	0.09		0.74	0.265	0.735	0.965441608	

Table 4- WGOM cod ABC apportionment. Sector PSCs are preliminary and may change based on final sector rosters.

Stock	Area	Year	Total WGOM Cod ABC	Recreational sub-ABC	Commercial sub-ABC (all)	State	Other	Apportionment	Commercial GF sub-ABC	Sector PSC
WGOM Cod	North	2026	460	127	334	23	5	68%	207.5	0.960733788175763
	South							32%	97.6	0.965441608172823
	North	2027	586	161	425	30	6	68%	264.3	0.960733788175763
	South							32%	124.4	0.965441608172823

Table 5- Distribution of sub-ABCs (mt) to fishery components.

Table 3—Distribution of sub-ABCs (mt) to fishery components.

Stock	Year	OFL	ABC	Canadian Share/ Catch	U.S. ABC	Sub-ABC values								
						State Waters	Other sub- Components	Scallops	Groundfish	Comm Groundfish	Rec Groundfish	Sectors	Non-Sector Groundfish	MWT or Small Mesh
EGOM Cod	2026	50	39		39	0.2	0.4		37	36.5		35.1	1.4	
	2027	39	30		30	0.2	0.3		28	28.1		27.0	1.1	
WGOM Cod	2026	603	460		460	23	5.0		407	289.8	118	278.9	10.9	
	2027	769	586		586	30	6.4		519	369.2	150	355.3	13.9	
GB Cod	2025	433	331	225	106		8.5		93	92.6		89.4	3.2	
SNE Cod	2026	47	36		36	6.1	3.2		25	6.7	18	6.5	0.2	
	2027	65	36		36	6.1	3.2		25	6.7	18	6.5	0.2	

ACLs

Once the U.S. ABC is distributed to the various fishery components, sub-annual catch limits (sub-ACLs) are set by reducing the amount of the ABC distributed to each component to account for management uncertainty (i.e., the likelihood that management measures will result in a level of catch greater than the catch target). For each stock, management uncertainty is estimated using the following criteria: Enforceability and precision of management measures, adequacy of catch monitoring, latent effort, and catch of groundfish in non-groundfish fisheries.

The following default management uncertainty buffers are used for groundfish stocks:

- 3% for stocks with no state waters catch;
- 7% for zero possession stocks;
- 7% for recreational allocations; and
- 5% for all other stocks/components of the fishery.

Stock specific sub-ACL adjustment values are shown in Table 6.

Review of Management Uncertainty Buffer

Management Uncertainty Buffer for Sectors

Amendment 23 includes changes to management uncertainty buffer for sectors under certain conditions².

PDT Discussion –

The PDT referred to the current process for evaluating MUBs which includes consideration of the following elements: 1) enforceability of management measures, 2) monitoring adequacy (including timeliness, completeness, and accuracy of monitoring data), 3) precision, 4) latent effort, and 5) other fishery catch.

The PDT recommends that the sector MUB for SNE cod remain in place and not be removed even under 100% coverage target. There is an exemption from ASM coverage for trips operating exclusively west of 71 degrees 30 minutes west longitude, which overlaps a large portion of the SNE cod stock area. Therefore, without a high level of monitoring coverage in the SNE area, the rationale for removing sector MUBs outlined in Amendment 23 does not apply to SNE cod.

For the remaining three cod stocks of EGOM, WGOM, and GB, the PDT recommends that sector MUBs be removed if the ASM coverage target is set at 100% for FY2025. Though there are some uncertainties as the Council transitions management to the new understanding of the cod stocks, the same sector provisions (accountability measures, reporting requirements) designed to keep catches below the ACLs that are in place under

² See Amendment 23, located here: <https://www.nefmc.org/library/amendment-23>

the current management system will apply under a management system with the new cod stock units. The PDT also notes the current realized ASM coverage in the upper 80% range is encouraging.

For the other allocated groundfish stocks, the PDT recommends that sector MUBs can be removed if the ASM coverage target is set at 100% for FY2025. As stated above, the sector provisions (accountability measures, reporting requirements) are designed to keep catches below the ACLs, and the PDT again notes the current realized ASM coverage in the upper 80% range. Under a provision set in Framework 66, the sector MUB for white hake would be removed if the ASM coverage target is set at 90% or higher for FY2025.

The Council recommended the sector MUB for SNE cod remain in place and not be removed even under 100% monitoring coverage target for FY2025.

Atlantic Cod Stocks

PDT Discussion –

The PDT discussed setting the management uncertainty buffers for the four new Atlantic cod stock units.

For the recreational sub-ACLs for Western Gulf of Maine (WGOM) cod and Southern New England (SNE) cod, the PDT recommends using a MUB of 7%.

For the sector and common pool sub-ACLs for all four cod stocks (WGOM, SNE, Eastern Gulf of Maine (EGOM) cod, and Georges Bank (GB) cod), the PDT recommends using a MUB of 5%.

For GB cod, the PDT considered whether to use 3% given the new GB cod stock is now entirely offshore. However, the PDT discussed the increased uncertainty pertaining to the Transboundary Management Guidance Committee (TMGC) this year due to the lack of agreement on Eastern GB cod for a shared total allowable catch (TAC). The lack of agreement necessitates making an assumption for Canadian removals, which is inherently uncertain. Further, the PDT notes the anticipation that the Council will US/CA TACs and specifications for GB haddock and GB cod, for only FY2025 and so there will be a need to revisit these stocks next year, at which time the PDT could reconsider the MUB for GB cod.

The Council recommended the following for management uncertainty buffers for the four Atlantic cod stocks:

- Recreational sub-ACLs for WGOM cod and SNE cod at 7%
- Commercial (sector and common pool) sub-ACLs for all four cod stocks (WGOM, SNE, EGOM, and GB cod at 5%
- For GB cod, a 5% MUB should be for FY2025 only and will be reevaluated for FY2026 and beyond

Table 6 – ACL adjustments.

Stock	ACL Percentages							
	State Waters	Other sub-Components	Scallops	Groundfish	Comm Groundfish	Rec Groundfish	Sectors	MWT or Small Mesh
EGOM Cod	1	1	1	0.95	0.95	0.95	0.95	1
WGOM Cod	1	1	1	0.95	0.95	0.93	0.95	1
GB Cod	1	1	1	0.95	0.95	0.95	0.95	1
SNE Cod	1	1	1	0.95	0.95	0.93	0.95	1

Incidental Catch TACs

Part of the commercial non-sector ACL is allocated to the incidental catch TACs that limit catches of stocks of concern in the Category B (regular) DAS program and certain SAPs. The incidental catch TACs in FW53 have been carried forward for most stocks (Table 7 and Table 8). Incidental catch TAC values for stocks of concern have remained consistent since 2010, though the list has been modified as the status of some stocks improved (see FW 44, FW47, FW50, FW53, and FW56). FW59 adjusted the GB cod incidental catch TAC to 1.68% of the Common Pool ACL, removing the allocation to the CAI HGH SAP, and adjusting the allocation to the Regular B DAS Program and Eastern U.S./CA Haddock SAP to 60% and 40% of the incidental catch TAC, respectively. This framework extends an incidental catch TAC of 1% to the new cod stocks of EGOM, WGOM, and SNE.

Table 7 – Incidental catch TACs for major stocks of concern (mt). TACs are for the fishing year. TACs shown are metric tons, live weight.

	Percentage of Common Pool ACL
EGOM cod	1%
WGOM cod	1%
GB cod	1.68%
SNE cod	1%

Table 8- Allocation of incidental catch TACs for major stocks of concern to Category B DAS programs (shown as percentage of the incidental catch TAC)

	Category B (regular) DAS Program	Eastern US/CA Haddock SAP
EGOM cod	100%	NA
WGOM cod	100%	NA
GB cod	60%	40%
SNE cod	100%	NA

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Appendix III

Development of Phase 1 Measures for Atlantic Cod
Management Transition Plan:
Bridge Approach for Sector Allocation

This appendix describes the development of the Council’s “bridge approach” for sector allocations for Phase 1 of the Atlantic cod management transition plan. The Groundfish Committee (Committee) and Council developed the bridge approach throughout Framework 69 development, including Committee tasking for the Groundfish Plan Development Team (PDT), consideration of PDT analyses, and Committee decision making. The Committee and Council intended the bridge approach as a short-term approach for Phase 1 of the transition plan in order to have necessary management measures in place for May 1, 2025, while Phase 2 of the transition plan will consider longer-term approaches to addressing sector allocation. Phase 1 measures were not implemented by May 1, 2025, due to delays in the regulatory process¹ and NOAA’s disapproval of Amendment 25². However, the Council’s intent and rationale for the short-term bridge approach still applies for Phase 1 measures, now with a target of May 1, 2026. This appendix provides illustrative examples to demonstrate other approaches that were considered and how these informed the Council’s final selected approach.

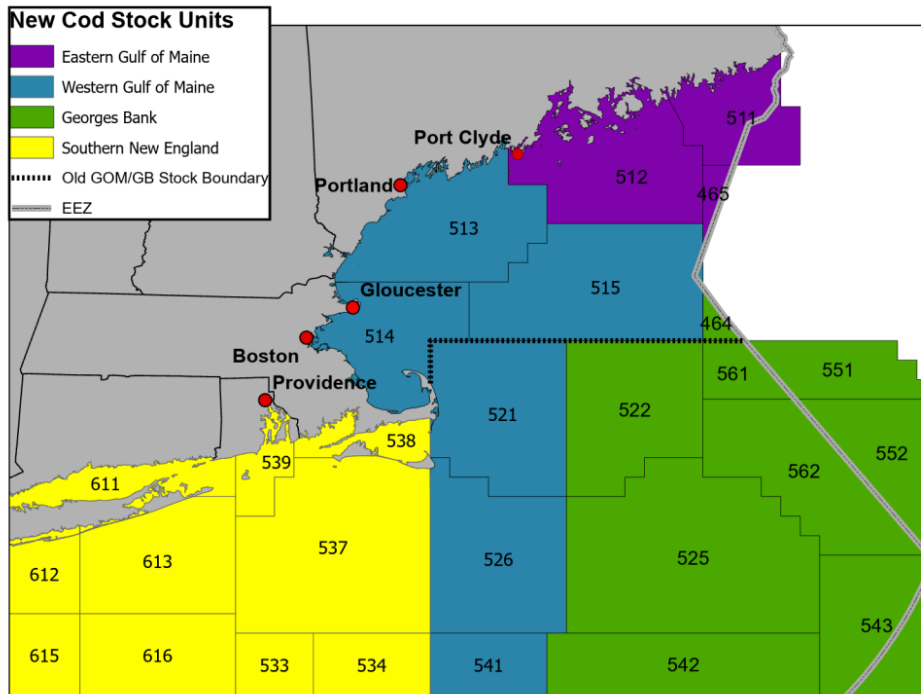
Council’s proposed approach:

Under Phase 1 of the Council’s Atlantic Cod Management Transition Plan, the Council’s proposed approach maintains existing potential sector contributions (PSCs) as the basis for allocating to the commercial fishery, applying the two existing cod PSCs to annual catch entitlements (ACEs) for the four proposed stocks. This approach necessitates an apportionment of the Western Gulf of Maine (WGOM) cod commercial sub-ABC, because the northern statistical areas of the WGOM (North) are based on GOM PSCs and the southern statistical areas of the WGOM (South) are based on GB PSCs (Figure 1). The Council selected a WGOM apportionment split of 68:32 (North:South), which is based on catch history from a subset of years that account for large differences in quotas between the GOM and GB stocks. This choice was intended to minimize the potential for historical commercial sub-ACLs to have an outsized effect on the relative catch in the two old stock areas.

¹ https://www.fisheries.noaa.gov/bulletin/emergency-measures-northeast-multispecies-fishery-fishing-year-2025?utm_medium=email&utm_source=govdelivery

² <https://d23h0vhsm26o6d.cloudfront.net/20250515-A25-Council-Decision-Letter-0648-XE237-v2-Signed.pdf>

Figure 1- Stock areas for the four new Atlantic cod stock units. Existing GOM/GB stock boundary shown for reference.



Development of sector PSC approach:

In November 2023, the Committee tasked the PDT with conducting analyses to inform development of the Atlantic cod management transition plan³. As part of the response to this tasking, the PDT prepared a “base case” scenario, which uses the same sector PSC qualifying years originally used in Amendment 16 and applies permit landings history from the statistical areas that comprise the four new cod stock units to re-calculate each limited access permit’s PSC for the four new cod stock areas (See March 14, 2024 PDT memo). Based on feedback from the public and industry, the Committee decided not to pursue the base case for Phase 1 of the transition plan as this was deemed too large of an allocation change at this time and warranted further consideration in the longer-term Phase 2. It chose to instead move forward with an approach that maintains the existing two cod PSCs.

At the time the base case was introduced to the Committee, 2024 quotas for the new cod stocks were not yet available. Below is an illustrative example to demonstrate how sector allocations under the base case would have compared to the method developed for FW69, *i.e.*, how do total

³ See November 13, 2023 Joint Groundfish Committee, Groundfish Advisory Panel, and Recreational Advisory Panel Meeting Summary: <https://www.nefmc.org/library/nov-13-2023-joint-groundfish-committee-advisory-panel-and-recreational-advisory-panel-meeting-summary>

cod allocations (mt) for each sector differ between the two methods, using the quotas originally developed in FW69.

Table 1: Illustrative example demonstrating the difference in the amount (mt) of cod that would have been allocated to each sector under the Base Case and FW 69 methods. The difference in the total cod allocated is shown as both actual and absolute values.

Sector Name	Base Case: 4 PSCs and 4 commercial sub-ABC's				FW 69 Method: 2 PSCs and 4 commercial sub-ABC's				Base Case vs FW69: Change in total cod	
	EGOM	WGOM	GB	SNE	EGOM	WGOM	GB	SNE	Difference	Absolute Difference
Fixed Gear Sector	0.76	21.14	2.58	0.14	0.33	9.98	8.04	0.46	-5.81	5.81
Maine Coast Community Sector	15.91	21.52	2.04	0.10	7.46	29.31	1.62	0.09	-1.10	1.10
Maine Permit Bank	0.25	1.58	0.19	0.01	0.55	2.14	0.10	0.01	0.77	0.77
Mooncusser Sector	0.48	33.13	1.16	0.30	2.96	20.97	9.21	0.53	-1.40	1.40
NEFS 2	4.90	46.81	8.43	0.51	12.79	55.29	7.41	0.42	15.26	15.26
NEFS 4	3.34	29.25	3.41	0.04	5.29	26.62	6.51	0.37	2.75	2.75
NEFS 5	0.00	0.83	0.18	0.45	0.16	0.95	0.35	0.02	0.01	0.01
NEFS 6	0.00	0.72	0.60	0.00	0.08	0.73	0.40	0.02	-0.08	0.08
NEFS 8	6.79	41.40	31.79	1.00	3.03	37.58	24.21	1.38	-14.78	14.78
NEFS 10	0.12	2.71	0.02	0.02	0.85	3.29	0.13	0.01	1.41	1.41
NEFS 11	1.62	15.64	0.02	0.03	5.38	20.18	0.30	0.02	8.55	8.55
NEFS 12	0.86	6.12	0.15	0.01	1.75	7.01	0.50	0.03	2.16	2.16
NEFS 13	0.71	7.10	14.32	0.68	0.26	9.75	8.05	0.46	-4.30	4.30
NH Permit Bank	0.05	1.51	0.00	0.00	0.54	2.01	0.00	0.00	1.00	1.00
Sustainable Harvest Sector 1	6.08	15.07	6.90	0.13	3.30	17.61	4.97	0.28	-2.02	2.02
Sustainable Harvest Sector 2	3.16	4.17	1.41	0.04	0.80	4.39	1.32	0.08	-2.19	2.19
Sustainable Harvest Sector 3	1.20	0.31	0.00	0.00	0.09	0.39	0.06	0.00	-0.97	0.97
Common Pool	1.06	7.79	2.21	0.83	1.68	8.61	2.21	0.13	0.73	0.73
Sum	47.3	256.8	75.4	4.3	47.3	256.8	75.4	4.3		65.29

Development of commercial allocation approach:

In March 2024, the Committee next tasked the PDT with developing methods for “prorating commercial sub-ACLs from the four new stocks to the two existing stocks.” The PDT provided a possible method (Option 1) that addressed the Committee’s tasking (which would result in quotas for GOM and GB cod) and identified for consideration an alternative method (Option 2) that would result in quotas for EGOM, WGOM, GB, and SNE cod (See June 5, 2024 PDT memo). Given a number of challenges identified with Option 1, the PDT recommended Option 2 as a better solution for preventing overfishing and achieving the Committee’s intent that the Phase 1 bridge approach does not reallocate PSCs. At their June 11th meeting, the Committee recommended moving forward with Option 2 as the approach for allocating to sectors. Allocating four stocks of cod from the two existing PSCs was considered the best way to “minimize disruptions to the fishery” during the cod transition⁴.

Applying the two existing cod PSCs to four cod stocks requires an apportionment of the WGOM, since a portion of the statistical areas belong to the existing GOM stock area and a portion to the existing GB area. The PDT identified several options for the basis of the apportionment, including historical catch, survey biomass, or a combination, and documented tradeoffs with

⁴ See June 11, 2025 Groundfish Committee Meeting Summary:
https://d23h0vhsm26o6d.cloudfront.net/240611_Groundfish_Committee_Meeting_Summary_FINAL.pdf

each. The PDT discussed, but did not further pursue, the idea to base the apportionment on historic quotas because past quotas for the GOM and GB stock areas have not been directly reflective of past fishing activity within the two portions of the WGOM area.

The 2024 cod assessments were conducted on four stocks. The results of these assessments indicated that the total amount of cod across all stock areas was approximately 50 percent lower than the 2024 quotas. This made comparisons between the previous and revised stock structures challenging.

Below is an illustrative example to demonstrate how sector allocations that were in place in 2024 under two stocks (“status quo”) would have compared to the method developed for FW69 for allocating four stocks, i.e., how do total cod allocations for each sector differ between the two methods, using the quotas in place in FY2024. To create this example, we calculated the percent of the total amount of cod that each of the four stocks contributed (per FW69), and applied that percentage to the total amount of the two cod stocks in FY2024. For instance, in FW69, the commercial sub-ABC of WGOM cod was 67 percent of the total amount of cod. This 67 percent was applied to the total amount of commercial sub-ABC in 2024 (702.6 mt) to result in the hypothetical total of 270 mt of WGOM cod, and then distributed between sectors based on PSCs using the method used in FW69.

Table 2: Illustrative example demonstrating the difference in the amount (mt) of cod that was allocated to sectors for 2 stocks in 2024 to the amount of cod that would have been allocated to each sector in 2024 under the 4-stock scenario developed in FW69. Allocations are calculated using the Fishing Year 2024 quota and sector rosters. The difference in the total cod allocated is shown as both actual and absolute values.

Sector Name	FW69 Method: 2 PSC and 4 hypothetical commercial sub-ABC's					“Status Quo” 2 PSC and 2 actual (2024) commercial sub-ABC's			FW69 vs 2024 “Status Quo”: Change in total cod	
	EGOM	WGOM	GB	SNE	Total Cod	GOM	GB	Total Cod	Difference	Absolute Difference
Fixed Gear Sector	0.60	18.27	14.72	0.84	34.43	2.06	43.34	45.40	-10.97	10.97
Maine Coast Community Sector	13.66	53.66	2.96	0.17	70.44	46.73	8.71	55.44	15.00	15.00
Maine Permit Bank	1.01	3.92	0.19	0.01	5.12	3.44	0.55	3.99	1.13	1.13
Mooncusser Sector	5.42	38.38	16.86	0.96	61.63	18.54	49.64	68.18	-6.56	6.56
NEFS 2	23.41	101.22	13.56	0.77	138.96	80.09	39.92	120.01	18.95	18.95
NEFS 4	9.68	48.72	11.91	0.68	71.00	33.12	35.07	68.19	2.81	2.81
NEFS 5	0.28	1.74	0.63	0.04	2.69	0.97	1.86	2.84	-0.14	0.14
NEFS 6	0.15	1.34	0.74	0.04	2.27	0.50	2.17	2.67	-0.40	0.40
NEFS 8	5.55	68.80	44.33	2.53	121.20	18.98	130.51	149.49	-28.29	28.29
NEFS 10	1.56	6.01	0.24	0.01	7.83	5.33	0.71	6.04	1.79	1.79
NEFS 11	9.84	36.94	0.55	0.03	47.36	33.67	1.62	35.29	12.07	12.07
NEFS 12	3.21	12.84	0.92	0.05	17.02	10.97	2.71	13.68	3.34	3.34
NEFS 13	0.48	17.85	14.74	0.84	33.91	1.65	43.39	45.05	-11.14	11.14
NH Permit Bank	1.00	3.68	0.00	0.00	4.68	3.41	0.00	3.41	1.27	1.27
Sustainable Harvest Sector 1	6.04	32.23	9.10	0.52	47.90	20.67	26.80	47.47	0.42	0.42
Sustainable Harvest Sector 2	1.46	8.03	2.42	0.14	12.06	5.00	7.14	12.13	-0.08	0.08
Sustainable Harvest Sector 3	0.16	0.72	0.11	0.01	1.00	0.56	0.33	0.88	0.12	0.12
Common Pool	3.07	15.76	4.05	0.23	23.11	10.51	11.93	22.44	0.67	0.67
Sum	86.6	470.1	138.0	7.9	702.6	296.2	406.4	702.6		115.15

It is important to note that this comparison using 2024 quotas reflects a snapshot in time. The same analysis, applied to FY2022 quotas, has different results (see below), because the total

amount of quota and the balance between GOM and GB cod is different. The PDT found that the results also change if the proportions of the four stocks shift (not shown).

Table 3: Illustrative example demonstrating the difference in the amount (mt) of cod that was allocated to sectors for 2 stocks in 2022 to the amount of cod that would have been allocated to each sector in 2022 under the 4-stock scenario developed in FW69. Allocations are calculated using the Fishing Year 2022 quota and Fishing Year 2024 rosters. The difference in the total cod allocated is shown as both actual and absolute values.

Sector Name	FW69 Method: 2 PSC and 4 hypothetical commercial sub-ABC's					"Status Quo" 2 PSC and 2 actual (2022) commercial sub-ABC's			FW69 vs 2022 "Status Quo": Change in total cod	
	EGOM	WGOM	GB	SNE	Total Cod	GOM	GB	Total Cod	Difference	Absolute Difference
Fixed Gear Sector	0.46	14.07	11.33	0.65	26.51	1.98	27.38	29.36	-2.86	2.86
Maine Coast Community Sector	10.52	41.31	2.28	0.13	54.23	44.82	5.50	50.32	3.91	3.91
Maine Permit Bank	0.77	3.01	0.14	0.01	3.94	3.30	0.35	3.64	0.29	0.29
Mooncusser Sector	4.17	29.55	12.98	0.74	47.44	17.78	31.37	49.15	-1.71	1.71
NEFS 2	18.03	77.92	10.44	0.60	106.98	76.82	25.22	102.05	4.94	4.94
NEFS 4	7.45	37.51	9.17	0.52	54.66	31.76	22.16	53.93	0.73	0.73
NEFS 5	0.22	1.34	0.49	0.03	2.07	0.93	1.18	2.11	-0.04	0.04
NEFS 6	0.11	1.03	0.57	0.03	1.74	0.48	1.37	1.85	-0.10	0.10
NEFS 8	4.27	52.96	34.12	1.95	93.31	18.21	82.47	100.67	-7.37	7.37
NEFS 10	1.20	4.63	0.19	0.01	6.03	5.11	0.45	5.56	0.47	0.47
NEFS 11	7.58	28.44	0.42	0.02	36.46	32.30	1.02	33.32	3.14	3.14
NEFS 12	2.47	9.88	0.71	0.04	13.10	10.52	1.71	12.23	0.87	0.87
NEFS 13	0.37	13.74	11.35	0.65	26.10	1.58	27.42	29.00	-2.90	2.90
NH Permit Bank	0.77	2.84	0.00	0.00	3.60	3.27	0.00	3.27	0.33	0.33
Sustainable Harvest Sector 1	4.65	24.81	7.01	0.40	36.87	19.83	16.94	36.76	0.11	0.11
Sustainable Harvest Sector 2	1.12	6.19	1.87	0.11	9.28	4.79	4.51	9.30	-0.02	0.02
Sustainable Harvest Sector 3	0.13	0.56	0.09	0.00	0.77	0.53	0.21	0.74	0.03	0.03
Common Pool	2.36	12.13	3.12	0.18	17.79	10.08	7.54	17.62	0.18	0.18
Sum	66.7	361.9	106.3	6.1	540.9	284.1	256.8	540.9		29.99

The PDT looked at the same analysis conducted under different historic rosters and found that while there would be shifts to individual sectors, the summed absolute value change between rosters was not meaningful.

Development of WGOM apportionment method:

The Committee recommended basing WGOM apportionment on catch history.⁵ The PDT provided an analysis in response, demonstrating that using the average percentage split of commercial catches from fishing years 2010-2023 results in an apportionment of 55% North: 45% South (See September 5, 2024 PDT memo). The Committee was then interested in exploring an alternative apportionment based on catch that accounts for past quota differences and tasked the PDT with analyzing a 75:25 (North:South) split compared to a 55:45 split.⁶ The PDT analyzed these options and offered other options for the basis of the apportionment split from the Committee's motion (See October 23, 2024 PDT memo). The PDT provided an analysis

⁵ June 11, 2025 Groundfish Committee Meeting

⁶ See September 11, 2025 Groundfish Committee Meeting Summary: <https://www.nefmc.org/library/sep-11-2024-groundfish-committee-meeting-summary>

that showed how total cod allocations change by sector for a 55:45 vs 75:25 (North:South) apportionment split. One of the options the PDT provided was a modification of the Committee’s motion for 75:25, which bases the apportionment on a different subset of years to account for differences in quotas between GOM and GB. This option resulted in 68:32 (North:South) split, which the Committee and Council selected as preferred. The Committee also tasked the PDT with analyzing separate North WGOM and South WGOM sub-ACLs. The PDT provided analyses and considerations, and ultimately the Committee did not propose separate WGOM sub-ACLs.

In July and August 2025, the PDT expanded previous analyses to explore the changes in sector allocations under different methods, and using a constant “status quo” quota (*e.g.* the quotas from FY2024). The PDT provides the following examples of the analysis under different North:South splits for WGOM (68:32, 55:45, and 45:55).

Table 4: Illustrative example demonstrating the difference in the amount (mt) of cod that was allocated to sectors for 2 stocks in 2024 to the amount of cod that would have been allocated to each sector under the 4-stock scenario developed in FW69 using an apportionment ratio of 68:32 (North:South) for the WGOM stock. Allocations are calculated using the Fishing Year 2024 quota and sector rosters. The difference in the total cod allocated under each scenario is shown as both actual and absolute values.

Sector Name	68:32 FW69 Method: 2 PSC and 4 hypothetical commercial sub-ABC’s					“Status Quo” 2 PSC and 2 actual (2024) commercial sub-ABC’s			68:32 FW69 vs “Status Quo”: Change in total cod	
	EGOM	WGOM	GB	SNE	Total Cod	GOM	GB	Total Cod	Difference	Absolute Difference
Fixed Gear Sector	0.60	18.27	14.72	0.84	34.43	2.06	43.34	45.40	-10.97	10.97
Maine Coast Community Sector	13.66	53.66	2.96	0.17	70.44	46.73	8.71	55.44	15.00	15.00
Maine Permit Bank	1.01	3.92	0.19	0.01	5.12	3.44	0.55	3.99	1.13	1.13
Mooncusser Sector	5.42	38.38	16.86	0.96	61.63	18.54	49.64	68.18	-6.56	6.56
NEFS 2	23.41	101.22	13.56	0.77	138.96	80.09	39.92	120.01	18.95	18.95
NEFS 4	9.68	48.72	11.91	0.68	71.00	33.12	35.07	68.19	2.81	2.81
NEFS 5	0.28	1.74	0.63	0.04	2.69	0.97	1.86	2.84	-0.14	0.14
NEFS 6	0.15	1.34	0.74	0.04	2.27	0.50	2.17	2.67	-0.40	0.40
NEFS 8	5.55	68.80	44.33	2.53	121.20	18.98	130.51	149.49	-28.29	28.29
NEFS 10	1.56	6.01	0.24	0.01	7.83	5.33	0.71	6.04	1.79	1.79
NEFS 11	9.84	36.94	0.55	0.03	47.36	33.67	1.62	35.29	12.07	12.07
NEFS 12	3.21	12.84	0.92	0.05	17.02	10.97	2.71	13.68	3.34	3.34
NEFS 13	0.48	17.85	14.74	0.84	33.91	1.65	43.39	45.05	-11.14	11.14
NH Permit Bank	1.00	3.68	0.00	0.00	4.68	3.41	0.00	3.41	1.27	1.27
Sustainable Harvest Sector 1	6.04	32.23	9.10	0.52	47.90	20.67	26.80	47.47	0.42	0.42
Sustainable Harvest Sector 2	1.46	8.03	2.42	0.14	12.06	5.00	7.14	12.13	-0.08	0.08
Sustainable Harvest Sector 3	0.16	0.72	0.11	0.01	1.00	0.56	0.33	0.88	0.12	0.12
Common Pool	3.07	15.76	4.05	0.23	23.11	10.51	11.93	22.44	0.67	0.67
Sum	86.6	470.1	138.0	7.9	702.6	296.2	406.4	702.6		115.15

Table 5: Illustrative example demonstrating the difference in the amount (mt) of cod that was allocated to sectors for 2 stocks in 2024 to the amount of cod that would have been allocated to each sector under the 4-stock scenario developed in FW69 using an apportionment ratio of 55:45 (North:South) for the WGOM stock. Allocations are calculated using the Fishing Year 2024 quota and sector rosters. The difference in the total cod allocated under each scenario is shown as both actual and absolute values.

Sector Name	55:45 FW69 Method: 2 PSC and 4 hypothetical commercial sub-ABC's					"Status Quo" 2 PSC and 2 actual (2024) commercial sub-ABC's			55:45 FW69 vs "Status Quo": Change in total cod	
	EGOM	WGOM	GB	SNE	Total Cod	GOM	GB	Total Cod	Difference	Absolute Difference
Fixed Gear Sector	0.60	24.36	14.72	0.84	40.52	2.06	43.34	45.40	-4.88	4.88
Maine Coast Community Sector	13.66	45.32	2.96	0.17	62.11	46.73	8.71	55.44	6.67	6.67
Maine Permit Bank	1.01	3.29	0.19	0.01	4.49	3.44	0.55	3.99	0.50	0.50
Moonsusser Sector	5.42	42.02	16.86	0.96	65.27	18.54	49.64	68.18	-2.92	2.92
NEFS 2	23.41	90.70	13.56	0.77	128.44	80.09	39.92	120.01	8.43	8.43
NEFS 4	9.68	47.17	11.91	0.68	69.44	33.12	35.07	68.19	1.25	1.25
NEFS 5	0.28	1.82	0.63	0.04	2.77	0.97	1.86	2.84	-0.06	0.06
NEFS 6	0.15	1.56	0.74	0.04	2.49	0.50	2.17	2.67	-0.18	0.18
NEFS 8	5.55	84.50	44.33	2.53	136.91	18.98	130.51	149.49	-12.58	12.58
NEFS 10	1.56	5.02	0.24	0.01	6.84	5.33	0.71	6.04	0.79	0.79
NEFS 11	9.84	30.24	0.55	0.03	40.66	33.67	1.62	35.29	5.37	5.37
NEFS 12	3.21	10.98	0.92	0.05	15.16	10.97	2.71	13.68	1.49	1.49
NEFS 13	0.48	24.03	14.74	0.84	40.09	1.65	43.39	45.05	-4.95	4.95
NH Permit Bank	1.00	2.98	0.00	0.00	3.98	3.41	0.00	3.41	0.56	0.56
Sustainable Harvest Sector 1	6.04	32.00	9.10	0.52	47.66	20.67	26.80	47.47	0.19	0.19
Sustainable Harvest Sector 2	1.46	8.08	2.42	0.14	12.10	5.00	7.14	12.13	-0.03	0.03
Sustainable Harvest Sector 3	0.16	0.66	0.11	0.01	0.94	0.56	0.33	0.88	0.05	0.05
Common Pool	3.07	15.38	4.05	0.23	22.74	10.51	11.93	22.44	0.30	0.30
Sum	86.6	470.1	138.0	7.9	702.6	296.2	406.4	702.6		51.21

Table 6: Illustrative example demonstrating the difference in the amount (mt) of cod that was allocated to sectors for 2 stocks in 2024 to the amount of cod that would have been allocated to each sector under the 4-stock scenario developed in FW69 using an apportionment ratio of 45:55 (North:South) for the WGOM stock. Allocations are calculated using the Fishing Year 2024 quota and sector rosters. The difference in the total cod allocated under each scenario is shown as both actual and absolute values.

Sector Name	45:55 FW69 Method: 2 PSC and 4 hypothetical commercial sub-ABC's					"Status Quo" 2 PSC and 2 actual (2024) commercial sub-ABC's			45:55 FW69 vs "Status Quo": Change in total cod	
	EGOM	WGOM	GB	SNE	Total Cod	GOM	GB	Total Cod	Difference	Absolute Difference
Fixed Gear Sector	0.60	29.05	14.72	0.84	45.21	2.06	43.34	45.40	-0.19	0.19
Maine Coast Community Sector	13.66	38.92	2.96	0.17	55.70	46.73	8.71	55.44	0.26	0.26
Maine Permit Bank	1.01	2.80	0.19	0.01	4.01	3.44	0.55	3.99	0.02	0.02
Moonsusser Sector	5.42	44.82	16.86	0.96	68.07	18.54	49.64	68.18	-0.12	0.12
NEFS 2	23.41	82.60	13.56	0.77	120.35	80.09	39.92	120.01	0.33	0.33
NEFS 4	9.68	45.97	11.91	0.68	68.24	33.12	35.07	68.19	0.05	0.05
NEFS 5	0.28	1.88	0.63	0.04	2.83	0.97	1.86	2.84	-0.00	0.00
NEFS 6	0.15	1.74	0.74	0.04	2.66	0.50	2.17	2.67	-0.01	0.01
NEFS 8	5.55	96.59	44.33	2.53	148.99	18.98	130.51	149.49	-0.50	0.50
NEFS 10	1.56	4.26	0.24	0.01	6.07	5.33	0.71	6.04	0.03	0.03
NEFS 11	9.84	25.08	0.55	0.03	35.50	33.67	1.62	35.29	0.21	0.21
NEFS 12	3.21	9.56	0.92	0.05	13.74	10.97	2.71	13.68	0.06	0.06
NEFS 13	0.48	28.79	14.74	0.84	44.85	1.65	43.39	45.05	-0.20	0.20
NH Permit Bank	1.00	2.44	0.00	0.00	3.44	3.41	0.00	3.41	0.02	0.02
Sustainable Harvest Sector 1	6.04	31.82	9.10	0.52	47.48	20.67	26.80	47.47	0.01	0.01
Sustainable Harvest Sector 2	1.46	8.11	2.42	0.14	12.13	5.00	7.14	12.13	0.00	0.00
Sustainable Harvest Sector 3	0.16	0.61	0.11	0.01	0.89	0.56	0.33	0.88	0.00	0.00
Common Pool	3.07	15.09	4.05	0.23	22.45	10.51	11.93	22.44	0.01	0.01
Sum	86.6	470.1	138.0	7.9	702.6	296.2	406.4	702.6		2.03

As mentioned above, the results of these analysis change if compared to a different “status quo” year.



New England Fishery Management Council

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Eric Reid, *Chair* | Cate O'Keefe, PhD, *Executive Director*

Corrected 4/11/24

MEMORANDUM

DATE: March 14, 2024
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: Atlantic Cod Management Transition Plan Supporting Analysis - Update

The Groundfish Plan Development Team (PDT) met as a sub-group on February 23, 2024, and as a whole on March 7, and March 11, 2024, to continue discussing the Atlantic Cod Management Transition Plan analysis, including: 1) commercial and recreational fishery data, 2) the 'base case' scenario for calculating Potential Sector Contributions (PSCs) and re-assigning PSCs to new stock areas, and 3) a draft 'roadmap' of fishery management plan changes.

Background

At their November 13th, 2023 meeting, the Groundfish Committee (Committee) passed the following motion:

The Committee recommends that the PDT conduct the following analyses to inform Council decision-making with respect to the Atlantic cod transition plan:

- 1. Total cod catch (landings and discards) across the statistical areas that make up the two stock areas previously used for management (GOM and GB) and statistical areas that make up four stock areas identified through the cod stock structure work (EGOM, WGOM, Georges Bank and Southern New England).*
- 2. Total cod catch (landings and discards) from the previous Georges Bank stock area and the amount of catch (by weight and percentage of total) coming from statistical areas 521 and 526.*
- 3. Commercial/recreational split of cod catch across the four stock areas.*
- 4. Number of commercial vessels and homeport of vessels landing more than 1,000 pounds of cod per year.*

For each analysis above, the following timeframes should be analyzed:

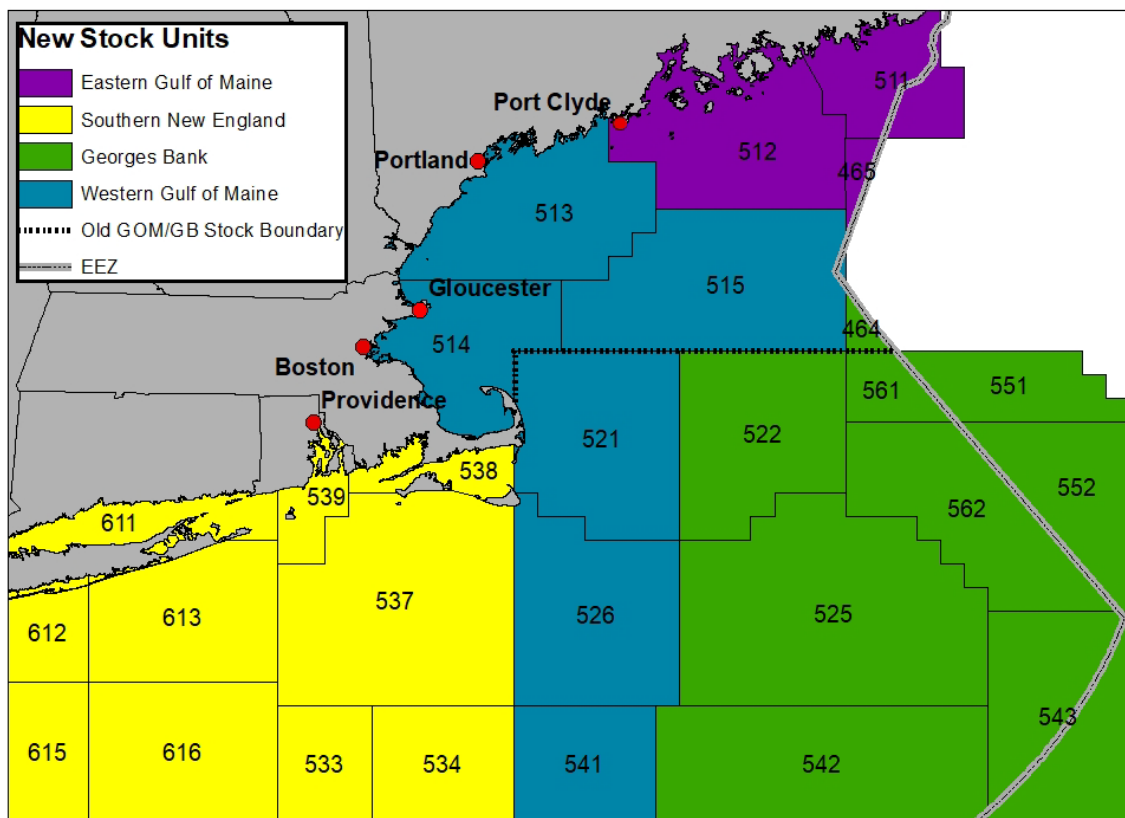
- 1. 1996-2006 (sector qualifying period following A16)*
- 2. 1996-2003 (pre-sector management time period)*
- 3. 2010-2022 (the sector time period)*

4. 2010-2015 (shorter sector time period)
5. 2001-2006 (the time period for calculating the recreational and commercial share of the GOM cod ACL)

The PDT previously provided an update on analysis in response to the motion.¹ This included initial considerations outlined for the analysis, and two appendices including Appendix 1 - Number of permits by port and states with landings of 1,000 pounds or more of cod, which addresses analysis #4 in the motion. The PDT also discussed plans to prepare a ‘base case’ scenario which will use the same permit landings history time period (1996-2006) used to determine PSCs in Amendment 16 to calculate the current PSCs to individual statistical areas and then, using these values, re-assign PSCs to the newly identified four stock areas.

Commercial and Recreational Fishery Data

The figure below provides the new stock unit boundaries for the four new cod stocks along with the previous GOM/GB stock boundary outlined for reference. Note that Canadian catch is only included in the GB cod assessment.



¹ 240119 GF PDT memo to CTME re Atlantic Cod Transition Plan Update:
https://d23h0vhsm26o6d.cloudfront.net/5_240119-GF-PDT-memo-to-CMTE-re-Atlantic-Cod-Transition-Plan-Update.pdf

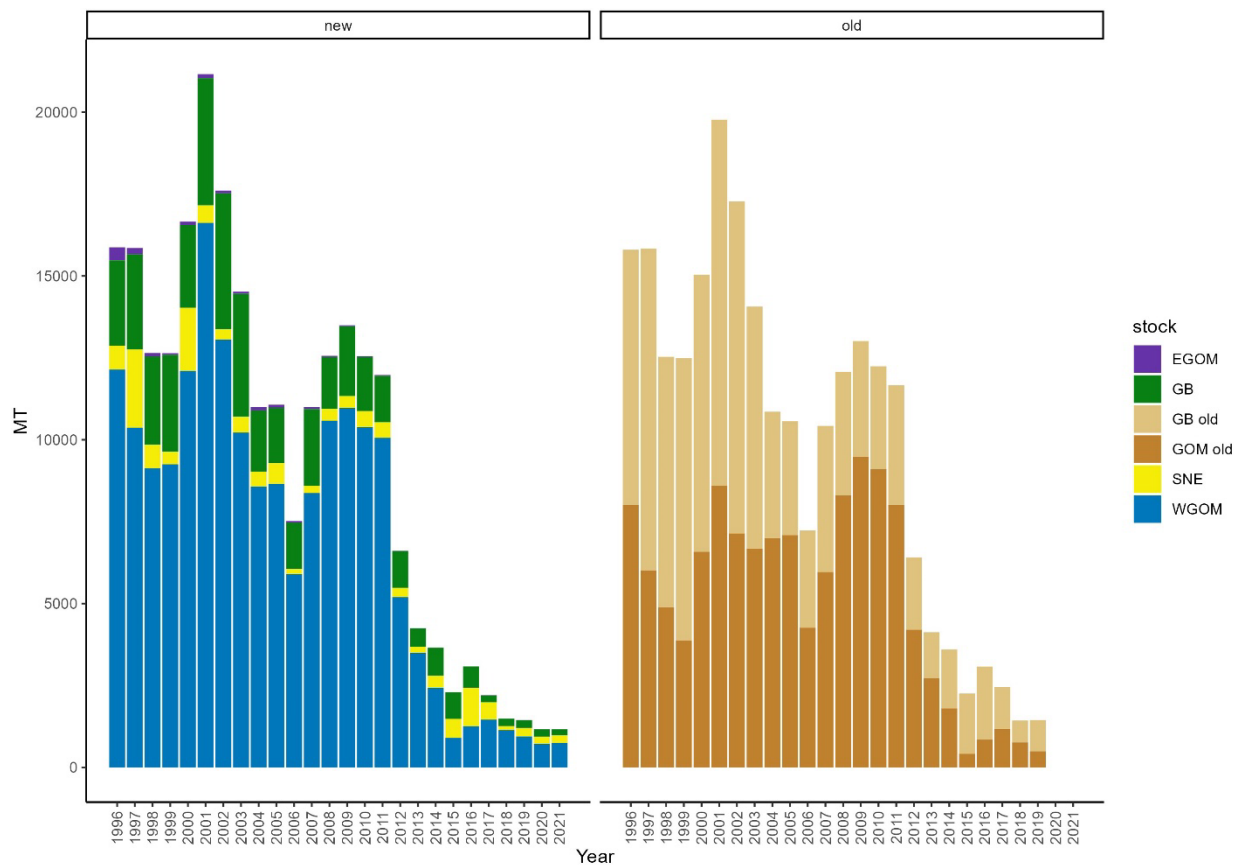
Analysis #1 - Total cod catch (landings and discards) across the statistical areas that make up the two stock areas previously used for management (GOM and GB) and statistical areas that make up four stock areas identified through the cod stock structure work (EGOM, WGOM, Georges Bank and Southern New England).

Data is compiled across the five timeframes outlined above and is included in Appendix 1.

Data on **total** catch across the current two stock areas is from the 2021 GOM and GB cod management track assessments with a terminal year of 2019. Data on **total** catch in the newly identified four stock areas (EGOM, WGOM, GB, and SNE) is from the Atlantic Cod Research Track Working Group Report with a terminal year of 2021.

The PDT notes that for this analysis, timeframe #3 ends with 2019, rather than 2022, for the existing GOM and GB stocks, to be consistent with the data used in the 2021 management track assessments, and 2021 for the four new stocks, to be consistent with the data used in the research track assessment. The 2024 management track assessments will use a terminal year of 2023, and these analyses could be updated at that time.

Total cod catch in the four new stock areas (left) and two old stock areas (right).

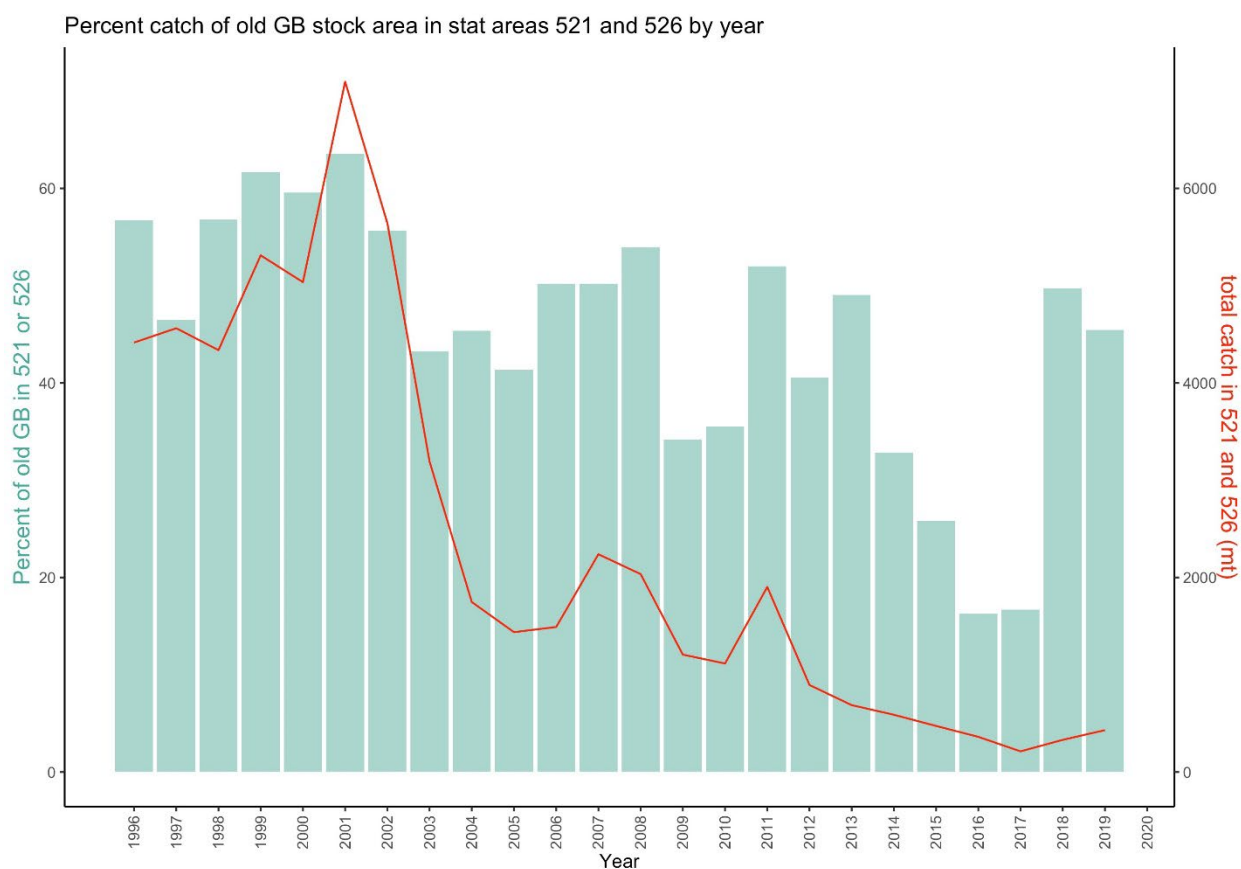


Analysis #2 - Total cod catch (landings and discards) from the previous Georges Bank stock area and the amount of catch (by weight and percentage of total) coming from statistical areas 521 and 526.

Data is compiled across the five timeframes outlined above and is included in Appendix 1.

Data on total catch from the previous GB stock area is from the 2021 GB management track assessment with a terminal year of 2019. Data on catch from statistical areas 521 and 526 is from the Atlantic Cod Research Track Working Group Report and MRIP.

The PDT notes that for this analysis, timeframe #3 ends with 2019, rather than 2022, to be consistent with the data used in the 2021 management track assessment.

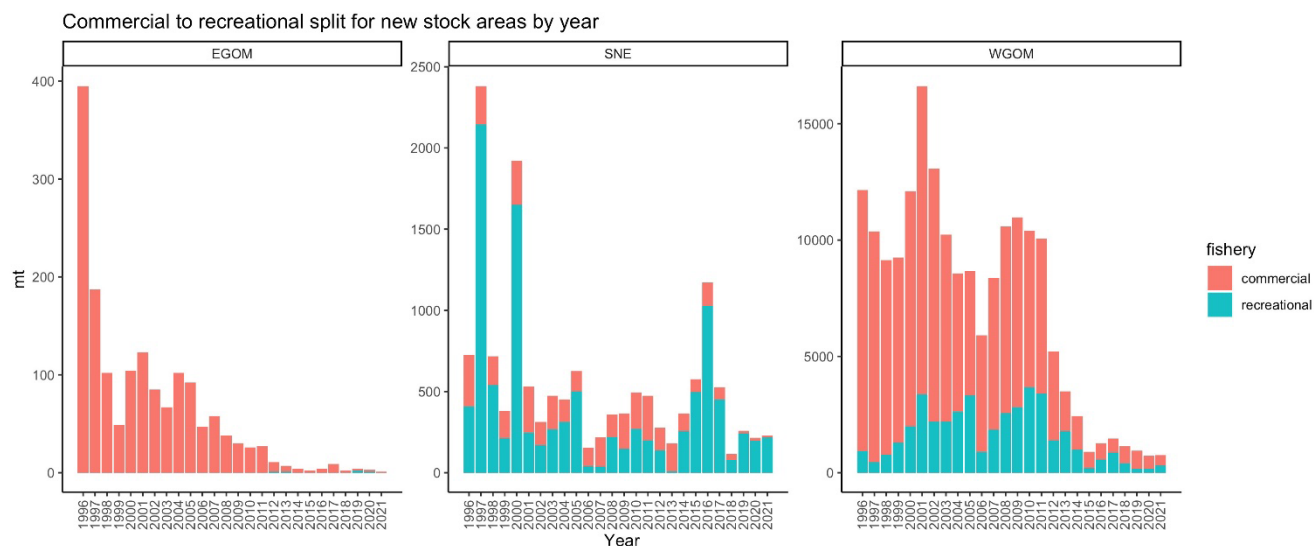


Analysis # 3 - Commercial/recreational split of cod catch across the four stock areas.

Data is compiled across the five timeframes outlined above and is included in Appendix 1.

Data on commercial and recreational catch across the four stock areas is from the Atlantic Cod Research Track Working Group Report with a terminal year of 2021.

The PDT notes that for this analysis, timeframe #3 ends with 2021, rather than 2022, to be consistent with the data used in the research track assessment. The 2024 management track assessments will use a terminal year of 2023, and these analyses could be updated at that time.



‘Base Case’ Scenario for PSC Calculations Reassigned to New Stock Areas

The PDT prepared a ‘base case’ scenario which uses the same permit landings history time period (1996-2006) used to determine PSCs in Amendment 16 for calculating the current PSCs to individual statistical areas and then re-assigned to the newly identified four stock areas. The ‘base case’ scenario for PSC calculations is included in Appendix 2.

The PSC calculations are based on landings only. The PDT previously noted that not all permits use landings history from 1996-2006 to calculate the PSC for each stock, as outlined in Amendment 16. For permits committed to one of two existing sectors as of March 1, 2008, the PSC for GB cod is based on the landings history for the period 1996-2001. The PSCs calculated in the ‘base case’ scenario are not what the existing PSCs are based on because the existing PSCs include the grandfathered cod landings, while these PSCs are all FY96-FY06.

Draft 'Roadmap' of Fishery Management Plan Changes

The PDT developed a draft outline of changes to the fishery management plan that includes the necessary steps and legal deadlines related to updating the management of Atlantic cod. This outlines the process moving forward and is intended to help provide guidance when determining which rulemaking process(es) to undertake in the future. The roadmap is included in the meeting materials for the March 19, 2024 Joint Recreational Advisory Panel/Groundfish Advisory Panel Meeting and March 20, 2024 Groundfish Committee Meeting².

² <https://www.nefmc.org/calendar/mar-20-2024-groundfish-committee-meeting>

Corrected 4/11/24

Analysis #1 –Total cod catch (landings and discards) across the statistical areas that make up the two stock areas previously used for management (GOM and GB) and statistical areas that make up four stock areas identified through the cod stock structure work (EGOM, WGOM, Georges Bank and Southern New England).

Data sources: 2021 GOM and GB cod management track assessments, Atlantic Cod Research Track Working Group Report

All Years

Year	GOM (old)	GB (old)	EGOM	WGOM	GB	SNE
1996	8014	7785	395	12147	2604	727
1997	6015	9822	187	10374	2909	2382
1998	4894	7640	102	9133	2696	716
1999	3878	8614	49	9254	2959	380
2000	6581	8458	104	12106	2529	1921
2001	8600	11171	123	16623	3883	531
2002	7142	10134	85	13060	4150	313
2003	6686	7381	67	10223	3757	475
2004	7005	3854	102	8575	1869	451
2005	7088	3480	92	8658	1692	627
2006	4264	2970	47	5903	1415	153
2007	5966	4459	58	8376	2344	218
2008	8303	3773	38	10584	1583	358
2009	9485	3529	30	10971	2128	365
2010	9100	3144	26	10384	1652	494
2011	8007	3659	27	10063	1415	474
2012	4204	2209	11	5202	1124	276
2013	2723	1403	7	3499	565	182
2014	1806	1795	5	2434	855	364
2015	420	1838	2	906	812	576
2016	850	2227	4	1259	650	1172
2017	1177	1277	9	1463	207	527
2018	766	666	3	1143	230	116
2019	497	948	4	945	239	258
2020			3	723	227	214
2021			1	750	185	229

Appendix 1 – Commercial and Recreational Fishery Data

1996-2006

Year	GOM (old)	GB (old)	EGOM	WGOM	GB	SNE
1996	8014	7785	395	12147	2604	727
1997	6015	9822	187	10374	2909	2382
1998	4894	7640	102	9133	2696	716
1999	3878	8614	49	9254	2959	380
2000	6581	8458	104	12106	2529	1921
2001	8600	11171	123	16623	3883	531
2002	7142	10134	85	13060	4150	313
2003	6686	7381	67	10223	3757	475
2004	7005	3854	102	8575	1869	451
2005	7088	3480	92	8658	1692	627
2006	4264	2970	47	5903	1415	153
mean	6378.818	7391.727	123	10550.55	2769.364	788.5384
median	6686	7785	102	10223	2696	530.7436
SD	1492.776	2791.51	98.03877	2846.986	898.5209	702.2428
min	3878	2970	47	5903	1415	153.0398
max	8600	11171	395	16623	4150	2381.539

1996-2003

Year	GOM (old)	GB (old)	EGOM	WGOM	GB	SNE
1996	8014	7785	395	12147	2604	727
1997	6015	9822	187	10374	2909	2382
1998	4894	7640	102	9133	2696	716
1999	3878	8614	49	9254	2959	380
2000	6581	8458	104	12106	2529	1921
2001	8600	11171	123	16623	3883	531
2002	7142	10134	85	13060	4150	313
2003	6686	7381	67	10223	3757	475
mean	6476.25	8875.625	139	11615	3185.875	930.4166
median	6633.5	8536	103	11240	2934	623.1294
SD	1551.053	1359.668	111.413	2475.727	641.4133	777.0104
min	3878	7381	49	9133	2529	312.6566
max	8600	11171	395	16623	4150	2381.539

Appendix 1 – Commercial and Recreational Fishery Data

2010-2021

Year	GOM (old)	GB (old)	EGOM	WGOM	GB	SNE
2010	9100	3144	26	10384	1652	494
2011	8007	3659	27	10063	1415	474
2012	4204	2209	11	5202	1124	276
2013	2723	1403	7	3499	565	182
2014	1806	1795	5	2434	855	364
2015	420	1838	2	906	812	576
2016	850	2227	4	1259	650	1172
2017	1177	1277	9	1463	207	527
2018	766	666	3	1143	230	116
2019	497	948	4	945	239	258
2020			3	723	227	214
2021			1	750	185	229
mean	2955	1916.6	8.5	3230.917	680.0833	406.8277
median	1491.5	1816.5	4.5	1361	607.5	319.9197
SD	3181.016	938.1032	8.888194	3527.615	505.8982	283.7127
min	420	666	1	723	185	115.9216
max	9100	3659	27	10384	1652	1171.794

2010-2015

Year	GOM (old)	GB (old)	EGOM	WGOM	GB	SNE
2010	9100	3144	26	10384	1652	494
2011	8007	3659	27	10063	1415	474
2012	4204	2209	11	5202	1124	276
2013	2723	1403	7	3499	565	182
2014	1806	1795	5	2434	855	364
2015	420	1838	2	906	812	576
mean	4376.667	2341.333	13	5414.667	1070.5	394.3674
median	3463.5	2023.5	9	4350.5	989.5	418.8394
SD	3478.999	875.2514	10.86278	3980.672	407.0571	147.7807
min	420	1403	2	906	565	182.2941
max	9100	3659	27	10384	1652	575.9924

Appendix 1 – Commercial and Recreational Fishery Data

2001-2006

Year	GOM (old)	GB (old)	EGOM	WGOM	GB	SNE
2001	8600	11171	123	16623	3883	531
2002	7142	10134	85	13060	4150	313
2003	6686	7381	67	10223	3757	475
2004	7005	3854	102	8575	1869	451
2005	7088	3480	92	8658	1692	627
2006	4264	2970	47	5903	1415	153
mean	6797.5	6498.333	86	10507	2794.333	424.9117
median	7046.5	5617.5	88.5	9440.5	2813	463.003
SD	1408.985	3588.397	26.6233	3804.002	1258.864	168.3917
min	4264	2970	47	5903	1415	153.0398
max	8600	11171	123	16623	4150	627.0244

Appendix 1 – Commercial and Recreational Fishery Data

Analysis #2 - Total cod catch (landings and discards) from the previous Georges Bank stock area and the amount of catch (by weight and percentage of total) coming from statistical areas 521 and 526.

Data sources: 2021 GB cod management track assessment, Atlantic Cod Research Track Working Group Report, MRIP

All years

Year	GB (old)	521_526	%_521_526
1996	7785	4415	56.7%
1997	9822	4562	46.4%
1998	7640	4337	56.8%
1999	8614	5311	61.7%
2000	8458	5036	59.5%
2001	11171	7096	63.5%
2002	10134	5643	55.7%
2003	7381	3192	43.2%
2004	3854	1748	45.4%
2005	3480	1438	41.3%
2006	2970	1491	50.2%
2007	4459	2239	50.2%
2008	3773	2035	53.9%
2009	3529	1207	34.2%
2010	3144	1116	35.5%
2011	3659	1903	52.0%
2012	2209	895	40.5%
2013	1403	688	49.0%
2014	1795	589	32.8%
2015	1838	474	25.8%
2016	2227	362	16.3%
2017	1277	213	16.7%
2018	666	331	49.7%
2019	948	431	45.5%

Appendix 1 – Commercial and Recreational Fishery Data

1996-2006

Year	GB (old)	521_526	%_521_526
1996	7785	4415	56.7%
1997	9822	4562	46.4%
1998	7640	4337	56.8%
1999	8614	5311	61.7%
2000	8458	5036	59.5%
2001	11171	7096	63.5%
2002	10134	5643	55.7%
2003	7381	3192	43.2%
2004	3854	1748	45.4%
2005	3480	1438	41.3%
2006	2970	1491	50.2%
mean	7391.727	4024.455	0.527685
median	7785	4415	0.556838
SD	2791.51	1850.812	0.077699
min	2970	1438	0.413218
max	11171	7096	0.635216

1996-2003

Year	GB (old)	521_526	%_521_526
1996	7785	4415	56.7%
1997	9822	4562	46.4%
1998	7640	4337	56.8%
1999	8614	5311	61.7%
2000	8458	5036	59.5%
2001	11171	7096	63.5%
2002	10134	5643	55.7%
2003	7381	3192	43.2%
mean	8875.625	4949	0.554467
median	8536	4799	0.567393
SD	1359.668	1141.827	0.07109
min	7381	3192	0.432462
max	11171	7096	0.635216

Appendix 1 – Commercial and Recreational Fishery Data

2010-2019

Year	GB (old)	521_526	%_521_526
2010	3144	1116	35.5%
2011	3659	1903	52.0%
2012	2209	895	40.5%
2013	1403	688	49.0%
2014	1795	589	32.8%
2015	1838	474	25.8%
2016	2227	362	16.3%
2017	1277	213	16.7%
2018	666	331	49.7%
2019	948	431	45.5%
mean	1916.6	700.2	0.36376
median	1816.5	531.5	0.380061
SD	938.1032	503.5171	0.133346
min	666	213	0.162551
max	3659	1903	0.520087

2010-2015

Year	GB (old)	521_526	%_521_526
2010	3144	1116	35.5%
2011	3659	1903	52.0%
2012	2209	895	40.5%
2013	1403	688	49.0%
2014	1795	589	32.8%
2015	1838	474	25.8%
mean	2341.333	944.1667	0.392768
median	2023.5	791.5	0.380061
SD	875.2514	522.3269	0.09969
min	1403	474	0.257889
max	3659	1903	0.520087

Appendix 1 – Commercial and Recreational Fishery Data

2001-2006

Year	GB (old)	521_526	%_521_526
2001	11171	7096	63.5%
2002	10134	5643	55.7%
2003	7381	3192	43.2%
2004	3854	1748	45.4%
2005	3480	1438	41.3%
2006	2970	1491	50.2%
mean	6498.333	3434.667	0.498885
median	5617.5	2470	0.477787
SD	3588.397	2406.256	0.08457
min	2970	1438	0.413218
max	11171	7096	0.635216

Appendix 1 – Commercial and Recreational Fishery Data

Analysis # 3 - Commercial/recreational split of cod catch across the four stock areas.

Data sources: Atlantic Cod Research Track Working Group Report

All Years

Year	Commercial			Recreational			% Commercial		
	EGOM	WGOM	SNE	EGOM	WGOM	SNE	EGOM	WGOM	SNE
1996	395	11221	319	0	926	408	100.0%	92.4%	43.9%
1997	187	9918	238	0	456	2144	100.0%	95.6%	10.0%
1998	102	8360	177	0	773	539	100.0%	91.5%	24.7%
1999	49	7957	168	0	1297	212	100.0%	86.0%	44.2%
2000	104	10108	272	0	1998	1649	100.0%	83.5%	14.2%
2001	123	13250	284	0	3373	247	100.0%	79.7%	53.5%
2002	85	10858	143	0	2202	170	100.0%	83.1%	45.7%
2003	67	8023	208	0	2200	267	100.0%	78.5%	43.8%
2004	102	5955	139	0	2620	312	100.0%	69.4%	30.8%
2005	92	5333	126	0	3325	501	100.0%	61.6%	20.1%
2006	47	5002	112	0	901	41	100.0%	84.7%	73.2%
2007	58	6528	179	0	1848	39	100.0%	77.9%	82.1%
2008	38	8021	138	0	2563	220	100.0%	75.8%	38.5%
2009	30	8149	217	0	2822	148	100.0%	74.3%	59.5%
2010	26	6708	224	0	3676	270	100.0%	64.6%	45.3%
2011	27	6662	275	0	3401	199	100.0%	66.2%	58.0%
2012	10	3807	137	1	1395	139	90.9%	73.2%	49.6%
2013	6	1709	174	1	1790	8	85.7%	48.8%	95.6%
2014	4	1447	107	0	987	257	100.0%	59.4%	29.4%
2015	2	703	79	0	203	497	100.0%	77.6%	13.7%
2016	4	691	144	0	568	1028	100.0%	54.9%	12.3%
2017	9	596	75	0	867	452	100.0%	40.7%	14.2%
2018	2	743	37	0	400	79	100.0%	65.0%	31.9%
2019	2	783	15	2	162	243	50.0%	82.9%	5.8%
2020	2	548	17	1	175	197	66.7%	75.8%	7.9%
2021	1	444	12	0	306	217	100.0%	59.2%	5.2%

Appendix 1 – Commercial and Recreational Fishery Data

1996-2006

	Commercial			Recreational			% Commercial		
Year	EGOM	WGOM	SNE	EGOM	WGOM	SNE	EGOM	WGOM	SNE
1996	395	11221	319	0	926	408	100.0%	92.4%	43.9%
1997	187	9918	238	0	456	2144	100.0%	95.6%	10.0%
1998	102	8360	177	0	773	539	100.0%	91.5%	24.7%
1999	49	7957	168	0	1297	212	100.0%	86.0%	44.2%
2000	104	10108	272	0	1998	1649	100.0%	83.5%	14.2%
2001	123	13250	284	0	3373	247	100.0%	79.7%	53.5%
2002	85	10858	143	0	2202	170	100.0%	83.1%	45.7%
2003	67	8023	208	0	2200	267	100.0%	78.5%	43.8%
2004	102	5955	139	0	2620	312	100.0%	69.4%	30.8%
2005	92	5333	126	0	3325	501	100.0%	61.6%	20.1%
2006	47	5002	112	0	901	41	100.0%	84.7%	73.2%
mean	123	8725.909	198.7273	0	1824.636	590	1	0.823731	0.367309
median	102	8360	177	0	1998	312	1	0.834958	0.437895
SD	98.03877	2623.86	70.45153	0	1025.311	670.8196	0	0.100031	0.187838
min	47	5002	112	0	456	41	1	0.615962	0.099916
max	395	13250	319	0	3373	2144	1	0.956044	0.732026

1996-2003

	Commercial			Recreational			% Commercial		
Year	EGOM	WGOM	SNE	EGOM	WGOM	SNE	EGOM	WGOM	SNE
1996	395	11221	319	0	926	408	100.0%	92.4%	43.9%
1997	187	9918	238	0	456	2144	100.0%	95.6%	10.0%
1998	102	8360	177	0	773	539	100.0%	91.5%	24.7%
1999	49	7957	168	0	1297	212	100.0%	86.0%	44.2%
2000	104	10108	272	0	1998	1649	100.0%	83.5%	14.2%
2001	123	13250	284	0	3373	247	100.0%	79.7%	53.5%
2002	85	10858	143	0	2202	170	100.0%	83.1%	45.7%
2003	67	8023	208	0	2200	267	100.0%	78.5%	43.8%
2004	102	5955	139	0	2620	312	100.0%	69.4%	30.8%
2005	92	5333	126	0	3325	501	100.0%	61.6%	20.1%
2006	47	5002	112	0	901	41	100.0%	84.7%	73.2%
mean	123	8725.909	198.7273	0	1824.636	590	1	0.823731	0.367309
median	102	8360	177	0	1998	312	1	0.834958	0.437895
SD	98.03877	2623.86	70.45153	0	1025.311	670.8196	0	0.100031	0.187838
min	47	5002	112	0	456	41	1	0.615962	0.099916
max	395	13250	319	0	3373	2144	1	0.956044	0.732026

Appendix 1 – Commercial and Recreational Fishery Data

2010-2021

	Commercial			Recreational			% Commercial		
Year	EGOM	WGOM	SNE	EGOM	WGOM	SNE	EGOM	WGOM	SNE
2010	26	6708	224	0	3676	270	100.0%	64.6%	45.3%
2011	27	6662	275	0	3401	199	100.0%	66.2%	58.0%
2012	10	3807	137	1	1395	139	90.9%	73.2%	49.6%
2013	6	1709	174	1	1790	8	85.7%	48.8%	95.6%
2014	4	1447	107	0	987	257	100.0%	59.4%	29.4%
2015	2	703	79	0	203	497	100.0%	77.6%	13.7%
2016	4	691	144	0	568	1028	100.0%	54.9%	12.3%
2017	9	596	75	0	867	452	100.0%	40.7%	14.2%
2018	2	743	37	0	400	79	100.0%	65.0%	31.9%
2019	2	783	15	2	162	243	50.0%	82.9%	5.8%
2020	2	548	17	1	175	197	66.7%	75.8%	7.9%
2021	1	444	12	0	306	217	100.0%	59.2%	5.2%
mean	7.916667	2070.083	108	0.416667	1160.833	298.8333	0.911075	0.640293	0.307606
median	4	763	93	0	717.5	230	1	0.648019	0.218136
SD	9.139906	2344.312	85.78832	0.668558	1223.248	267.2424	0.163733	0.123132	0.273347
min	1	444	12	0	162	8	0.5	0.407382	0.052402
max	27	6708	275	2	3676	1028	1	0.828571	0.956044

2010-2015

	Commercial			Recreational			% Commercial		
Year	EGOM	WGOM	SNE	EGOM	WGOM	SNE	EGOM	WGOM	SNE
2010	26	6708	224	0	3676	270	100.0%	64.6%	45.3%
2011	27	6662	275	0	3401	199	100.0%	66.2%	58.0%
2012	10	3807	137	1	1395	139	90.9%	73.2%	49.6%
2013	6	1709	174	1	1790	8	85.7%	48.8%	95.6%
2014	4	1447	107	0	987	257	100.0%	59.4%	29.4%
2015	2	703	79	0	203	497	100.0%	77.6%	13.7%
mean	12.5	3506	166	0.333333	1908.667	228.3333	0.961039	0.649786	0.48619
median	8	2758	155.5	0	1592.5	228	1	0.654012	0.474909
SD	11.16692	2669.428	73.75636	0.516398	1370.199	162.5591	0.062554	0.101887	0.279124
min	2	703	79	0	203	8	0.857143	0.488425	0.137153
max	27	6708	275	1	3676	497	1	0.775938	0.956044

Appendix 1 – Commercial and Recreational Fishery Data

2001-2006

Year	Commercial			Recreational			% Commercial		
	EGOM	WGOM	SNE	EGOM	WGOM	SNE	EGOM	WGOM	SNE
2001	123	13250	284	0	3373	247	100.0%	79.7%	53.5%
2002	85	10858	143	0	2202	170	100.0%	83.1%	45.7%
2003	67	8023	208	0	2200	267	100.0%	78.5%	43.8%
2004	102	5955	139	0	2620	312	100.0%	69.4%	30.8%
2005	92	5333	126	0	3325	501	100.0%	61.6%	20.1%
2006	47	5002	112	0	901	41	100.0%	84.7%	73.2%
mean	86	8070.167	168.6667	0	2436.833	256.3333	1	0.761845	0.445132
median	88.5	6989	141	0	2411	257	1	0.790944	0.447382
SD	26.6233	3346.179	65.45125	0	913.1067	152.9597	0	0.089154	0.183802
min	47	5002	112	0	901	41	1	0.615962	0.200957
max	123	13250	284	0	3373	501	1	0.847366	0.732026

FY24 Percent PSCs by Sector

New Cod Management Areas				
Base Case: Using FY96-06 Cod Landings History				
Sector	CODGOME_ 2024	CODGOMW 2024	CODGB 2024	CODSNE 2024
FGS	1.6%	8.7%	2.0%	2.8%
MCCS	33.6%	8.5%	2.7%	2.4%
MOON	1.1%	12.4%	1.7%	7.2%
MPB	0.5%	0.6%	0.3%	0.1%
NEFS 2	7.2%	15.5%	6.9%	9.2%
NEFS 4	7.1%	10.2%	4.5%	0.8%
NEFS 5	0.0%	0.3%	0.3%	10.5%
NEFS 6	3.1%	2.6%	3.9%	1.9%
NEFS 8	5.6%	7.5%	20.6%	14.5%
NEFS 10	1.1%	1.7%	0.2%	0.5%
NEFS 11	3.4%	6.1%	0.0%	0.7%
NEFS 12	1.0%	2.0%	0.0%	0.2%
NEFS 13	1.5%	3.5%	22.1%	16.2%
NHPB	0.1%	0.6%	0.0%	0.0%
SHS1	11.2%	5.5%	9.4%	2.1%
SHS2	8.9%	2.1%	3.0%	1.0%
SHS3	10.6%	8.9%	19.8%	9.1%
CP	2.2%	3.2%	2.6%	20.6%
Total	100.0%	100.0%	100.0%	100.0%

Existing Cod Management Areas			
Based on Existing Landings Histories			
Sector	GOMCOD 2024	GBCOD 2024	Count of MRIs
FGS	0.6%	11.6%	61
MCCS	15.8%	2.3%	106
MOON	6.4%	12.2%	50
MPB	1.2%	0.1%	11
NEFS 2	24.0%	6.4%	113
NEFS 4	11.2%	7.4%	57
NEFS 5	0.3%	0.5%	18
NEFS 6	2.7%	3.0%	19
NEFS 8	2.7%	15.5%	67
NEFS 10	2.5%	0.5%	29
NEFS 11	11.4%	0.4%	41
NEFS 12	3.0%	0.5%	19
NEFS 13	0.6%	12.4%	67
NHPB	1.2%	0.0%	4
SHS1	5.9%	6.8%	50
SHS2	1.9%	2.6%	24
SHS3	4.8%	15.0%	44
CP	3.8%	2.8%	483
Total	100.0%	100.0%	1263

Historical Cod Landed, FY96-FY06									
Current Active MRIs Only									
	CODGOME	CODGOMW	CODGB	CODSNE	Grand Total		GOMCOD	GBCOD	Grand Total
Live MT	1,374.4	76,242.5	28,297.0	1,272.3	107,186.1	Live MT	39,053.7	68,132.4	107,186.1
Percent of Total	1.3%	71.1%	26.4%	1.2%	100.0%	Percent of Total	36.4%	63.6%	100.0%

Source: dealer, VTR, and MRI databases
Run dates: 1/24/24 and 2/2/24
Greater Atlantic Regional Fisheries Office
March 8, 2024



New England Fishery Management Council

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Eric Reid, *Chair* | Cate O'Keefe, PhD, *Executive Director*

MEMORANDUM

DATE: June 5, 2024
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: Atlantic Cod Management Transition Plan – Options for Prorating Catch Limits and Analysis Update

The Groundfish Plan Development Team (PDT) met as a sub-group on April 11, and May 15, 2024, and as a whole on June 3, 2024, to continue discussing the Atlantic Cod Management Transition Plan analysis, including: 1) developing options for prorating commercial and recreational sub-ACLs from the four new stocks to the two existing stocks, 2) commercial and recreational fishery data, and 3) an updated 'base case' scenario for calculating Potential Sector Contributions (PSCs) and re-assigning PSCs to new stock areas.

Background

At their March 20, 2024, meeting, the Groundfish Committee (Committee) passed the following motions:

Task the PDT to consider methods to prorate commercial sub-ACLs from the four new stocks to the two existing stocks. As a part of this, calculate in the new WGOM area what percentage of commercial cod catch, separated by sector vs common pool when appropriate, came from stat areas 521, 526, and 541 from a) 1996-2006, b) 2010-2021, c) 2001-2006.

Move to task the PDT with first developing the option to consider new management units for the recreational fishery and second exploring options for how to prorate recreational sub-ACLs from the four new stocks to the two existing stocks. As a part of this, calculate in the new WGOM what percentage of recreational cod catch came from SRA 521, 526, and 541 during a) 2001-2006 and b) 2010-2021.*

* In April, the Council passed a motion outlining its initial approach for the Atlantic cod management transition plan which removed recreational management units and recreational/commercial allocation splits from Phase 1 (measures for May 1, 2025).

In this memorandum, the PDT provides a possible method (Option 1) that responds to the tasking from the Committee, as well as fishery data in response to these requests (provided later in the memorandum along with other fishery data analysis).

However, as the PDT worked on developing this method, it developed an alternative (Option 2) that the PDT believes would be a better solution. This alternative would result in quotas being set, monitored, and managed for four areas that match the four new stock units used in the assessments: Western Gulf of Maine (WGOM), Eastern Gulf of Maine (EGOM), Georges Bank (GB) and Southern New England (SNE). It would not revise the existing Potential Sector Contributions (PSCs) for the previous two units Gulf of Maine (GOM) cod and Georges Bank (GB) cod. The PDT believes this alternative achieves the Committee's goal for a bridge method that does not reallocate PSCs, while still preventing overfishing.

Options for Setting Commercial Fishery Sub-ACLs

1) Option 1: Set quotas for two stocks

- Set quotas for and allocate two stocks in two areas, GOM and GB, for all commercial and recreational fishing.
- Apportion WGOM, and combine the northern portion of the WGOM stock (statistical areas 513, 514, and 515) with EGOM (statistical areas 511, 512, and 465) to make a GOM cod TAC; and the southern portion of the WGOM stock (statistical areas 521, 526, and 541) with GB (statistical areas 646, 522, 525, 542, 543, 551, 552, 561, and 562) and SNE (statistical areas 533, 534, 537, 538, 539, 611, 612, 613, 615, and 616) to make a GB cod TAC.
- Sector and common pool allocations would be calculated using existing GOM and GB PSCs.
- Sets up GOM and GB TACs as proxies for the quotas for four new stocks.
- The Magnuson Stevens Act would still require ACLs to be established for each cod stock in the FMP (EGOM, WGOM, GB, SNE), and to be monitored to ensure overfishing would not be allowed.
- This option is less transparent for industry and would require more backend accounting. There would be two sets of numbers, the GOM and GB TACs allocated to the fishery, and the EGOM, WGOM, GB, SNE ACLs that cannot be exceeded.
- In-season monitoring and management would be necessary to ensure the four ACLs are not exceeded
 - e.g. "No more than x amount of the GOM TAC can be caught in EGOM," similar to EGB management
 - If GARFO is monitoring the four new stock ACLs in the background, sectors/sector managers would likely also need to monitor and manage their catch in the four areas matching the four new cod stocks in the FMP.
 - The regulatory authority for the common pool is not flexible enough to allow for the management of two sets of numbers. The Regional Administrator has only two authorities to take in-season action to manage the common pool, with specific requirements that must be reached before they can be carried out:

- A requirement to implement a closure of the common pool if catch reaches 90 percent of a Trimester Total Allowable Catch for a stock (derived from the common pool sub-ACL for that stock); and
- An authority to adjust trip limits should catch of a particular stock in the common pool be projected to exceed or underharvest the common pool sub-ACL for that stock.

2) Option 2: Set quota for four stocks

- Set quotas for and allocate four stocks in four areas (EGOM, WGOM, GB, SNE), consistent with the new stock units and assessments.
- Allocations of those stocks to sectors and the common pool would use the existing GOM and GB PSCs.
 - EGOM allocations would be calculated using GOM PSCs.
 - WGOM would be apportioned between North (statistical areas 513, 514, and 515) and South (statistical areas 521, 526, and 541). GOM PSCs would be used to allocate a portion of the North TAC and GB PSCs would be used to allocate a portion of the South TAC to each sector and common pool. The resulting pounds would be combined to create a WGOM sector ACEs and common pool sub-ACL, which can be fished throughout the WGOM area.
 - GB allocations would be based on GB PSCs.
 - Under the new stock areas, statistical area 464 moves from the current GOM area to the new GB. Historically, there has been minimal fishing effort in this area relative to overall catch. While it is possible to implement an apportionment (similar to the division between North and South WGOM), the PDT recommends not trying to account for this relatively small change.
 - SNE allocations would be based on GB PSCs.
- Easier to manage and ensure that ACLs are not exceeded while also more straightforward for industry to track, because the quotas for the four stocks would be the only numbers that are monitored and managed for accountability. No background calculation would be needed as in Option 1.
- Accountability measures would need to be described for the 4 stocks. This would not necessarily require new AMs, but analysis would need to describe how current AMs for GOM and GB would be appropriate for the four stocks.
- For the common pool, we would need to determine how to divide the common pool sub-ACL into trimester TACs, which could simply rely on the current division used for GOM and GB, as appropriate, or be further refined. Trimester TAC areas would need to be identified for EGOM and SNE and confirmed for WGOM and GB.

Amendment 18 accumulation limits - The PDT notes an issue raised previously related to the accumulation limits set by Amendment 18. Amendment 18 limited the average of all allocated groundfish stocks PSCs that may be held by an entity to no more than 15.5 percent. At the current 15 groundfish stocks, the total PSC across all stocks used by an individual or entity must be equal to or less than 232.5. The amendment specified that if additional groundfish stocks are

allocated (or unallocated) to sectors, the number would change by 15.5 per stock. The PDT interprets that this would only need to be addressed if reassigning PSCs to the four new stock units. The PDT will continue to consider the requirements and implications of Amendment 18 and how they impact increasing the management units of Atlantic cod.

Sub-component analysis – The PDT will need to develop a basis for establishing sub-components for the four new cod stock units. This could be based on catch by statistical area, which is available via CAMS.

The PDT also briefly discussed an option that would require combining the catch limits for all four new cod stocks, and then apportioning out to the two previous stocks. This was deemed to be incredibly problematic for preventing overfishing and therefore was not pursued further.

Option 1

Stocks		ABC	Recreational	Commercial	GF Commercial	GF Commercial (ACE based on PSC)	
				State/other commercial estimates		Sectors	Common Pool
EGOM		From assessment	0% of ABC	sub-component analysis, based on catch by stat area (via CAMS)	GF comm GOM TAC	GOM PSC	GOM PSC
WGOM	NWGOM	% of WGOM from assessment	37.5% of ABC				
	SWGOM	% of WGOM from assessment	0% of ABC		GF comm GB TAC	GB PSC	GB PSC
GB		From assessment	0% of ABC				
SNE		From assessment	catch target or % of ABC				

Option 2

Stocks		ABC	Recreational	Commercial	GF Commercial	GF Commercial (ACE based on PSC)		ACEs combine into WGOM allocation
				State/other commercial estimates		Sectors	Common Pool	
EGOM		From assessment	0% of ABC	sub-component analysis, based on catch by stat area (via CAMS)	ABC minus recreational and subs-components	GOM PSC	GOM PSC	
WGOM	NWGOM	% of WGOM from assessment	37.5% of ABC			GOM PSC	GOM PSC	
	SWGOM	% of WGOM from assessment	0% of ABC			GB PSC	GB PSC	
GB		From assessment	0% of ABC			GB PSC	GB PSC	
SNE		From assessment	catch target or % of ABC			GB PSC	GB PSC	

What information should the apportionment be based on?

The PDT also discussed different options for apportioning the North and South portions of WGOM, regardless of the proration approach taken, based on either:

- 1) Recent historic catch
- 2) Survey biomass
- 3) Combination of recent catch history and survey biomass (a weighting scheme)

The PDT discussed that a combination approach may be too complex to develop under the timeline. For a recent catch history approach, the PDT recommends consideration of the most recent ten years.

The PDT considered the tradeoffs between recent historic catch and survey biomass approaches

- Recent historic catch: Historic catch influenced by differences in ACLs between the GOM and GB stock areas
- Survey biomass: Survey strata don't align well with statistical areas of 521, 526

The PDT noted they could see what spatial allocation method is being developed for Eastern GB cod and Eastern GB haddock management units and use the same or similar method. This method will be peer reviewed.

Use of Atlantic Cod Management Strategy Evaluation (MSE) for testing options for prorating catch

The PDT discussed how the Atlantic Cod MSE framework that has been developed to simulate the updated understanding of cod stock structure could be used to test different options for prorating catch. This MSE framework was recently peer reviewed by a sub-panel of the SSC¹ and determined to be a good tool to use to meet the goal of the Council to understand the tradeoffs that they might expect from different configurations of management units for Atlantic cod and for setting catch advice for management units that have different boundaries than the stock assessment units. The PDT plans to work with the MSE project team to set up the management procedures (how the model emulates difference management scenarios) and then utilize the MSE to test proration options as these are identified and once outcomes of the June management track assessments and SSC recommendations are known. The MSE can be used to explore the different proration options outlined above, as well as different methods for apportioning out WGOM catch regardless of the proration option.

Options for Prorating Recreational Fishery Sub-ACLs

The PDT recommends that proration of recreational fishery sub-ACLs is not necessary under either Option 1 or Option 2. This is due to very low recreational catches of cod in statistical areas

¹ See [Mar. 27, 2024 SSC Sub-panel Webinar - Calendar - NEFMC](https://d23h0vhsm26o6d.cloudfront.net/2b.-240412-SSC-subpanel-memo-re-cod-MSE.pdf) and sub-panel report: <https://d23h0vhsm26o6d.cloudfront.net/2b.-240412-SSC-subpanel-memo-re-cod-MSE.pdf>

521, 526, and 541 (Southern WGOM), the areas switching from the current Georges Bank stock unit to the new Western Gulf of Maine stock unit (see Appendix 2). When combined with no recreational catch data from the new GB stock area and very low catches in EGOM, this in effect means that the new SNE stock unit = the old GB unit and the Northern portion of the new WGOM stock unit = the old GOM stock unit.

Setting recreational measures - Under Option 1, it is unclear whether WGOM/EGOM would have the same set of measures, and SNE/GB the same. Under Option 2, it would be appropriate to have recreational measures for each stock area based on the existing recreational effort and new stock quotas.

The PDT reiterates a previous summary of the recreational data availability in the four Atlantic cod stock areas:

- EGOM: Marine Recreational Information Program (MRIP) data is highly variable with low precision and is generally insufficient for management.
- WGOM: There is generally high precision and ample MRIP data available for management.
- SNE: There is variable precision in MRIP data, and it is moderately sufficient for management. Most of the removals from this area have been from the recreational (not commercial) sector. However, a bioeconomic model for the new SNE cod stock area cannot be developed in time for this action.
- GB: The new GB cod stock area is entirely offshore and therefore has no MRIP sites associated with it. MRIP cannot be used to determine recreational catch. However, there does not appear to have been a recreational fishery active in the new GB cod stock area since the mid-2000s.

The PDT considered an SNE cod recreational catch target approach for FY2025-2027 vs allocation to the recreational fishery because of the magnitude of recreational catch in the new SNE stock area (in the most recent five-year period, recreational catch averages 87 percent of total catch)².

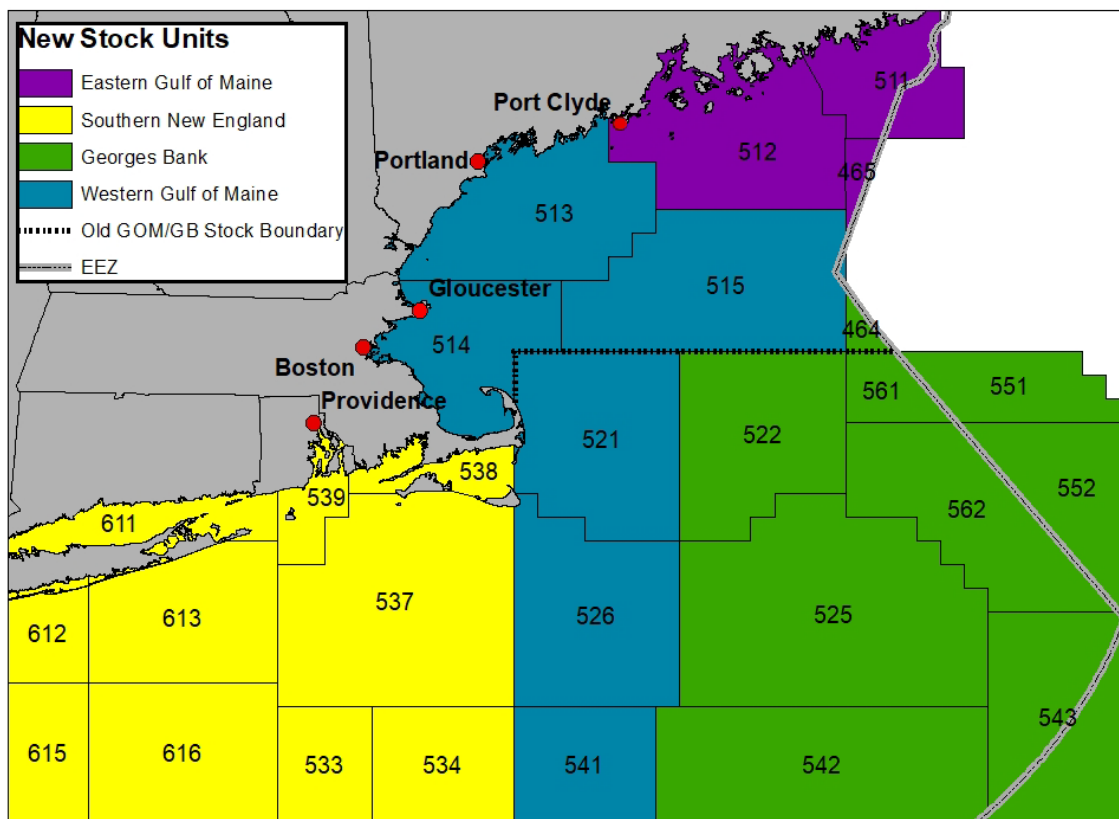
As noted previously, the recreational estimates of cod catch for recent years may change in the future, depending on the findings from the final Marine Recreational Information Program (MRIP) study Evaluating Measurement Error in the MRIP Fishing Effort Survey³. The earliest these updated estimates would be available is 2026. Any forthcoming amendment or framework on Atlantic cod management may want to build in a review of the final allocation between the commercial and recreational sectors that is triggered by the publication of the final MRIP report.

² See '240314 GF PDT memo to CTME re Atlantic Cod Transition Plan Update', Appendix 1: https://d23h0vhs26o6d.cloudfront.net/4a_240314-GF-PDT-memo-to-CTME-re-Atlantic-Cod-Transition-Plan-Update_with-appendices_revised-240411.pdf

³ <https://www.fisheries.noaa.gov/recreational-fishing-data/fishing-effort-survey-research-and-improvements#:~:text=%22Evaluating%20Measurement%20Error%20in%20the,was%20published%20in%20August%202023>

Commercial and Recreational Fishery Data

The figure below provides the new stock unit boundaries for the four new cod stocks along with the previous GOM/GB stock boundary outlined for reference. Note that Canadian catch is only included in the GB cod assessment.



Analysis #1 - Percentage of commercial cod catch in the new WGOM stock area from statistical areas 521, 526, and 541 from a) 1996-2006, b) 2010-2021, c) 2001-2006.

Data is compiled across the three timeframes outlined above and is included in Appendix 1.

Data on total and commercial catch from the WGOM stock area and catch from statistical areas 521, 526, and 541 is from the Atlantic Cod Research Track Working Group Report with a terminal year of 2021.

The PDT notes that for this analysis, timeframe *b* ends with 2021, rather than 2022, to be consistent with the data used in the research track assessment. The 2024 management track assessments will use a terminal year of 2023, and these analyses could be updated at that time.

Figure 1. Percentage of total cod catch in the WGOM stock area from statistical areas 521, 526, and 541.

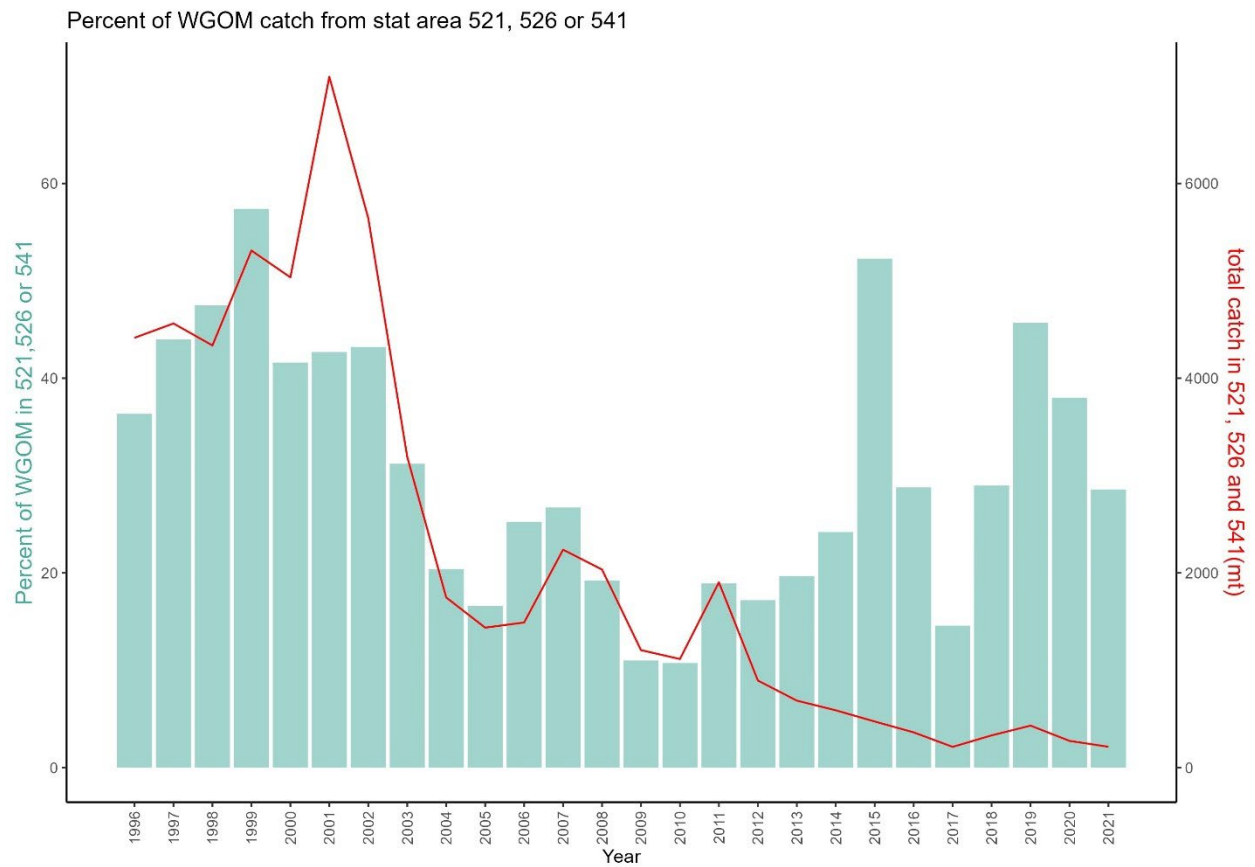
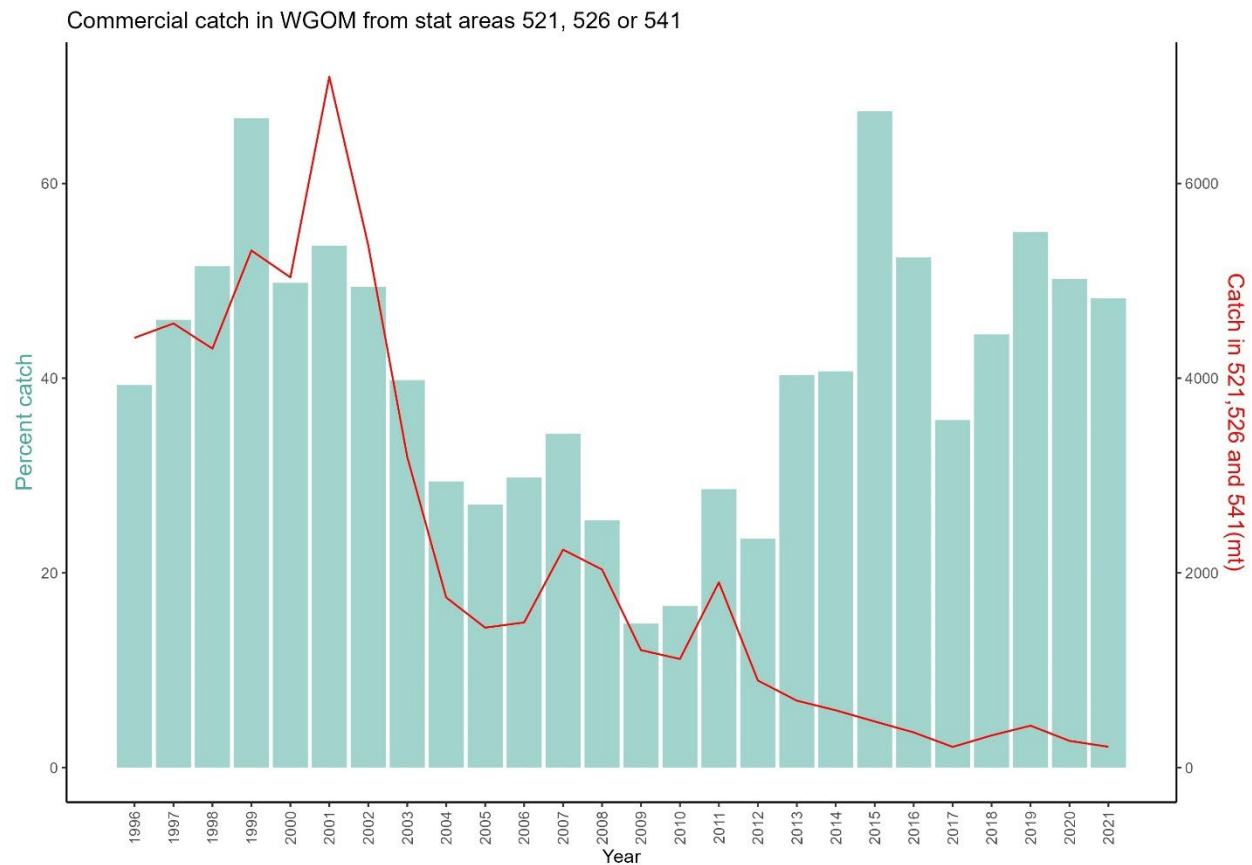


Figure 2. Percentage of commercial cod catch in the WGOM stock area from statistical areas 521, 526, and 541.



Analysis #2 - Percentage of recreational cod catch in the new WGOM stock area from statistical area 521, 526, and 541 during a) 2001-2006 and b) 2010-2021.

Data is compiled across the two timeframes outlined above and is included in Appendix 2.

Data on recreational catch from the WGOM stock area is from the Atlantic Cod Research Track Working Group Report with a terminal year of 2021. Data on catch from statistical areas 521 and 526 is from the Atlantic Cod Research Track Working Group Report and MRIP. Note that because MRIP data is collected by intercept location, there is no recreational catch data available for the offshore statistical area of 541.

Across the time series, there are very little recreational catches reported from statistical areas 521 and 526 in MRIP. From 2001-2021, catches have only been reported in 2002 and 2021 (Appendix 2).

Analysis #3 - Commercial cod catch by landing port from stat areas 521, 526, and 541 from 1996 – 2019.

The Committee also passed the following motion at their March 20th meeting:

Task the PDT to develop analysis that shows percent of commercial cod catch by landing port from stat areas 521, 526 & 541 in 4-5 years stanzas from 1996 – 2019.

The PDT included this information by calendar year and fishing year (Appendix 3).

Updated Base Case Scenario for PSC Calculations Reassigned to New Stock Areas

The PDT previously prepared a ‘base case’ scenario which uses the same permit landings history time period (1996-2006) used to determine PSCs in Amendment 16 for calculating the current PSCs to individual statistical areas and then re-assigned to the newly identified four stock areas, to illustrate how PSC calculations might look if reassigned to the four new stock areas.⁴

The PSC calculations are based on landings only. The PDT previously noted that not all permits use landings history from 1996-2006 to calculate the PSC for each stock, as outlined in Amendment 16. For permits committed to one of two existing sectors as of March 1, 2008, the PSC for GB cod is based on the landings history for the period 1996-2001. The PSCs calculated in the ‘base case’ scenario are not what the existing PSCs are based on because the existing PSCs include the grandfathered cod landings, while the ‘base case’ PSCs are all FY96-FY06. The PDT sought further guidance for how to account for the subset of permits when reassigning PSCs for GB cod.

Based on the following motion passed by the Committee at their March 20th meeting, the PDT updated the ‘base case’ scenario to account for the subset of permits which have PSCs for GB cod based on a different landings history of 1996-2001.

Task the PDT to rerun base case scenario using A16 qualifying time periods accounting for the permits committed to one of two existing sectors as of March 1, 2008 for which their PSC for GB cod is based on the landings history for the period 1996-2001, to calculate PSCs for these grandfathered Moratorium Right Identifiers MRIs for the statistical areas under the current GB stock and reassign to stat areas under the three new stocks.

The updated base case scenario PSC calculations and a description of how these were calculated can be found in Appendix 4.

⁴ See ‘240314 GF PDT memo to CTME re Atlantic Cod Transition Plan Update’, Appendix 2: https://d23h0vhs26o6d.cloudfront.net/4a_240314-GF-PDT-memo-to-CTME-re-Atlantic-Cod-Transition-Plan-Update_with-appendices_revised-240411.pdf

Appendix 1 – Total and Commercial WGOM Cod Catch in 521, 526, and 541

Total WGOM Cod Catch (mt) in SRAs 521, 526, and 541

Source: Atlantic Cod Research Track Working Group Report

Table 1. Total WGOM cod catch (mt) in SRAs 521, 526, and 541, by calendar year, 1996-2021

Year	WGOM	521.526.541	%521.526.541
1996	12147	4415	36.3%
1997	10374	4562	44.0%
1998	9133	4337	47.5%
1999	9254	5311	57.4%
2000	12106	5036	41.6%
2001	16623	7096	42.7%
2002	13060	5643	43.2%
2003	10223	3192	31.2%
2004	8575	1748	20.4%
2005	8658	1438	16.6%
2006	5903	1491	25.3%
2007	8376	2239	26.7%
2008	10584	2035	19.2%
2009	10971	1207	11.0%
2010	10384	1116	10.7%
2011	10063	1903	18.9%
2012	5202	895	17.2%
2013	3499	688	19.7%
2014	2434	589	24.2%
2015	906	474	52.3%
2016	1259	362	28.8%
2017	1463	213	14.6%
2018	1143	331	29.0%
2019	945	431	45.7%
2020	723	275	38.0%
2021	750	214	28.6%
Most recent 5-year			
avg			31.2%
Most recent 10-year			
avg			29.8%

Table 2. Total WGOM cod catch (mt) in SRAs 521, 526, and 541, by calendar year, 1996-2006

Year	WGOM	521.526.541	%521.526.541
1996	12147	4415	36.3%
1997	10374	4562	44.0%
1998	9133	4337	47.5%
1999	9254	5311	57.4%
2000	12106	5036	41.6%
2001	16623	7096	42.7%
2002	13060	5643	43.2%
2003	10223	3192	31.2%
2004	8575	1748	20.4%
2005	8658	1438	16.6%
2006	5903	1491	25.3%
mean	10550.5	4024.47	0.369245
median	10223	4415	0.415993
SD	2847.056	1850.953	0.123695
min	5903	1438	0.166102
max	16623	7096	0.573915

Table 3. Total WGOM cod catch (mt) in SRAs 521, 526, and 541, by calendar year, 2010-2021

Year	WGOM	521.526.541	%521.526.541
2010	10384	1116	10.7%
2011	10063	1903	18.9%
2012	5202	895	17.2%
2013	3499	688	19.7%
2014	2434	589	24.2%
2015	906	474	52.3%
2016	1259	362	28.8%
2017	1463	213	14.6%
2018	1143	331	29.0%
2019	945	431	45.7%
2020	723	275	38.0%
2021	750	214	28.6%
mean	3230.811	624.3397	0.272993
median	1361	453	0.263848
SD	3527.542	488.9369	0.126454
min	723	213	0.107431
max	10384	1903	0.52279

Table 4. Total WGOM cod catch (mt) in SRAs 521, 526, and 541, 2001-2006

Year	WGOM	521.526.541	%521.526.541
2001	16623	7096	42.7%
2002	13060	5643	43.2%
2003	10223	3192	31.2%
2004	8575	1748	20.4%
2005	8658	1438	16.6%
2006	5903	1491	25.3%
mean	10506.87	3434.675	0.298951
median	9440	2470	0.282371
SD	3804.104	2406.452	0.112363
min	5903	1438	0.166102
max	16623	7096	0.432127

Appendix 1 – Total and Commercial WGOM Cod Catch in 521, 526, and 541

Commercial WGOM Cod Catch (mt) in SRAs 521, 526, and 541

Source: Atlantic Cod Research Track Working Group Report

Table 5. Commercial WGOM cod catch (mt) in SRAs 521, 526, and 541, by calendar year, 1996-2021

Year	WGOM	521.526.541	%521.526.541
1996	11221	4415	39.3%
1997	9918	4562	46.0%
1998	8360	4304	51.5%
1999	7957	5311	66.7%
2000	10108	5036	49.8%
2001	13250	7096	53.6%
2002	10858	5364	49.4%
2003	8023	3192	39.8%
2004	5955	1748	29.4%
2005	5333	1438	27.0%
2006	5002	1491	29.8%
2007	6528	2239	34.3%
2008	8021	2035	25.4%
2009	8149	1207	14.8%
2010	6708	1116	16.6%
2011	6662	1903	28.6%
2012	3807	895	23.5%
2013	1709	688	40.3%
2014	1447	589	40.7%
2015	703	474	67.4%
2016	691	362	52.4%
2017	596	213	35.8%
2018	743	331	44.6%
2019	783	431	55.1%
2020	548	275	50.1%
*2021	444	214	48.2%
Most recent 5-year average			
			46.8%
Most recent 10-year average			
			45.8%

*There are recreational catches in 521/526 for 2021, but not yet converted from numbers of fish to weight. This number for commercial catch will change slightly when updated.

Table 6. Commercial WGOM cod catch (mt) in SRAs 521, 526, and 541, by calendar year, 1996-2006

Year	WGOM	521.526.541	%521.526.541
1996	11221	4415	39.3%
1997	9918	4562	46.0%
1998	8360	4304	51.5%
1999	7957	5311	66.7%
2000	10108	5036	49.8%
2001	13250	7096	53.6%
2002	10858	5364	49.4%
2003	8023	3192	39.8%
2004	5955	1748	29.4%
2005	5333	1438	27.0%
2006	5002	1491	29.8%
mean	8725.909	3996.111	0.438418
median	8360	4415	0.459995
SD	2623.86	1827.72	0.121547
min	5002	1438	0.269649
max	13250	7096	0.667475

Table 7. Commercial WGOM cod catch (mt) in SRAs 521, 526, and 541, by calendar year, 2010-2021

Year	WGOM	521.526.541	%521.526.541
2010	6708	1116	16.6%
2011	6662	1903	28.6%
2012	3807	895	23.5%
2013	1709	688	40.3%
2014	1447	589	40.7%
2015	703	474	67.4%
2016	691	362	52.4%
2017	596	213	35.8%
2018	743	331	44.6%
2019	783	431	55.1%
2020	548	275	50.1%
*2021	444	214	48.2%
mean	2070.083	624.3397	0.419475
median	763	453	0.4264
SD	2344.312	488.9369	0.142936
min	444	213	0.1663
max	6708	1903	0.674044

*There are recreational catches in 521/526 for 2021, but not yet converted from numbers of fish to weight. This number for commercial catch will change slightly when updated.

Table 8. Commercial WGOM cod catch (mt) in SRAs 521, 526, and 541, by calendar year, 2001-2006

Year	WGOM	521.526.541	%521.526.541
2001	16623	7096	42.7%
2002	13060	5643	43.2%
2003	10223	3192	31.2%
2004	8575	1748	20.4%
2005	8658	1438	16.6%
2006	5903	1491	25.3%
mean	10506.87	3434.675	0.298951
median	9440	2470	0.282371
SD	3804.104	2406.452	0.112363
min	5903	1438	0.166102
max	16623	7096	0.432127

Table 1. Recreational cod catch in statistical areas 521 and 526, numbers of fish, by calendar year.
Source: MRIP

Recreational Catch of Gulf of Maine Winter Spawners (SRA 521, 526), MRIP Numbers of Fish						
	Harvest (A+B1)	PSE	Released (B2)	PSE	Total Catch (A+B1+B2)	PSE
2001	0		0		0	
2002	64,744	66*	41,736	58*	106,481	061*
2003	0		0		0	
2004	0		0		0	
2005	0		0		0	
2006	0		0		0	
2007	0		0		0	
2008	0		0		0	
2009	0		0		0	
2010	0		0		0	
2011	0		0		0	
2012	0		0		0	
2013	0		0		0	
2014	0		0		0	
2015	0		0		0	
2016	0		0		0	
2017	0		0		0	
2018	0		0		0	
2019	0		0		0	
2020	0		0		0	
2021	17,306	100*	0		17,306	100*

*MRIP does not support use of estimates when the PSE > 50.

Table 2. Recreational WGOM cod catch (mt) in SRAs 521 and 526, by calendar year.

Year	WGOM	521.526	%521.526
1996	926	0	0.0%
1997	456	0	0.0%
1998	773	33	4.3%
1999	1297	0	0.0%
2000	1998	0	0.0%
2001	3373	0	0.0%
2002	2202	279	12.7%
2003	2200	0	0.0%
2004	2620	0	0.0%
2005	3325	0	0.0%
2006	901	0	0.0%
2007	1848	0	0.0%
2008	2563	0	0.0%
2009	2822	0	0.0%
2010	3676	0	0.0%
2011	3401	0	0.0%
2012	1395	0	0.0%
2013	1790	0	0.0%
2014	987	0	0.0%
2015	203	0	0.0%
2016	568	0	0.0%
2017	867	0	0.0%
2018	400	0	0.0%
2019	162	0	0.0%
2020	175	0	0.0%
*2021	306	0	0.0%

Most recent 5-year

avg 0.0%

Most recent 10-year

avg 0.0%

*There are recreational catches in 521/526 for 2021, but not yet converted from numbers of fish to weight. This number for recreational catch will change slightly when updated.

Table 1. Percentage of Commercial Cod Landings (lbs.) by Landing Port from Statistical Areas 521, 526, and 541, fishing year groupings. All ports comprising <1% of landings are grouped into "OTHER".
Source: CAMS (4/11/2024)

fishing_years	port_name	port_landings	port_percent
1996-2000	BOSTON	3,852,673	8.6%
1996-2000	CHATHAM	17,670,817	39.4%
1996-2000	GLOUCESTER	3,387,595	7.5%
1996-2000	HARWICHPORT	4,598,389	10.2%
1996-2000	NEW BEDFORD	11,118,955	24.8%
1996-2000	OTHER	3,108,795	6.9%
1996-2000	PORTLAND	1,132,284	2.5%
2001-2005	BOSTON	1,297,695	4.2%
2001-2005	CHATHAM	9,390,302	30.7%
2001-2005	GLOUCESTER	3,159,167	10.3%
2001-2005	HARWICHPORT	2,378,402	7.8%
2001-2005	NEW BEDFORD	11,245,855	36.8%
2001-2005	OTHER	1,536,144	5.0%
2001-2005	PORTLAND	1,035,534	3.4%
2001-2005	SCITUATE	548,656	1.8%
2006-2010	BOSTON	1,690,868	12.7%
2006-2010	CHATHAM	3,977,819	29.8%
2006-2010	GLOUCESTER	1,499,700	11.2%
2006-2010	NEW BEDFORD	5,511,078	41.3%
2006-2010	OTHER	407,510	3.1%
2006-2010	PORTLAND	261,882	2.0%
2011-2015	BOSTON	1,601,350	20.8%
2011-2015	CHATHAM	832,820	10.8%
2011-2015	GLOUCESTER	1,339,520	17.4%
2011-2015	NEW BEDFORD	3,649,238	47.5%
2011-2015	OTHER	177,462	2.3%
2011-2015	PORTLAND	88,683	1.2%
2016-2019	BOSTON	624,937	26.6%
2016-2019	CHATHAM	203,296	8.7%
2016-2019	GLOUCESTER	521,502	22.2%
2016-2019	HARWICHPORT	42,077	1.8%
2016-2019	NEW BEDFORD	905,795	38.6%
2016-2019	OTHER	48,905	2.1%

Appendix 3 – Cod catch by port WGOM 521, 526 & 541

Figure 1. Percentage of Commercial Cod Landings (lbs.) by Landing Port from Statistical Areas 521, 526, and 541, fishing year groupings. All ports comprising <1% of landings are grouped into "OTHER".

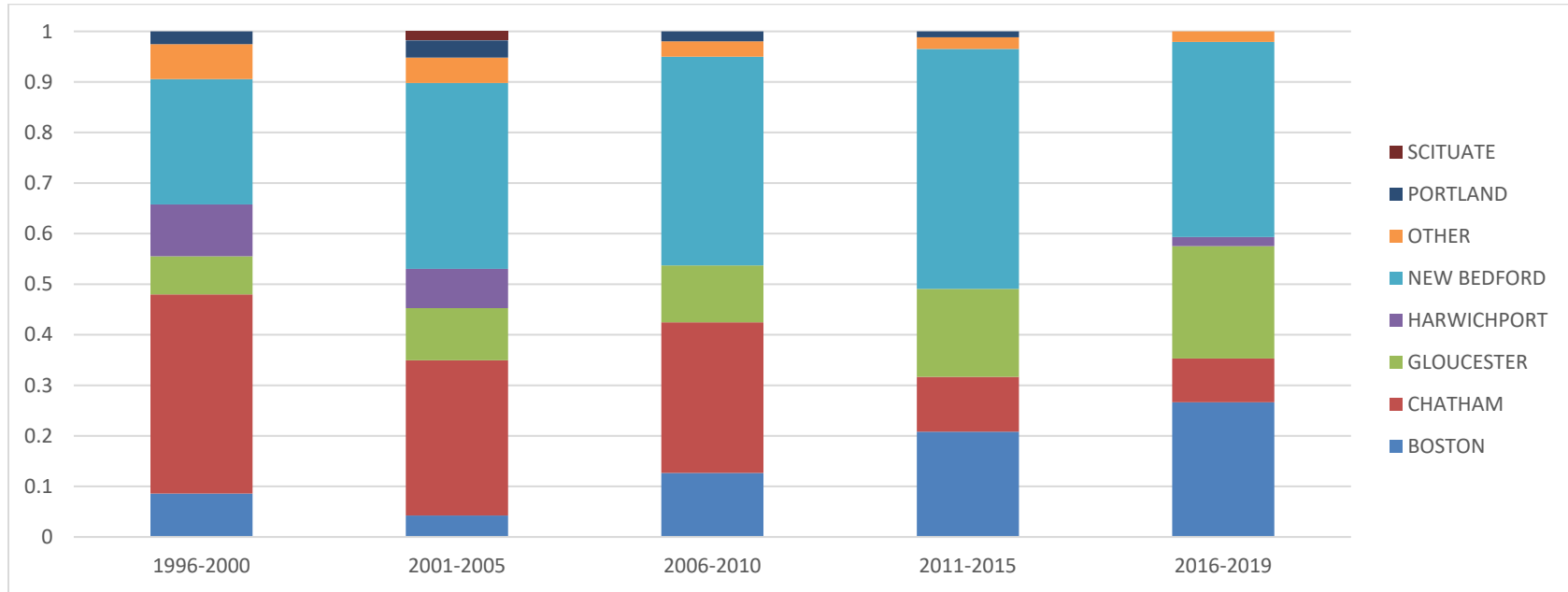
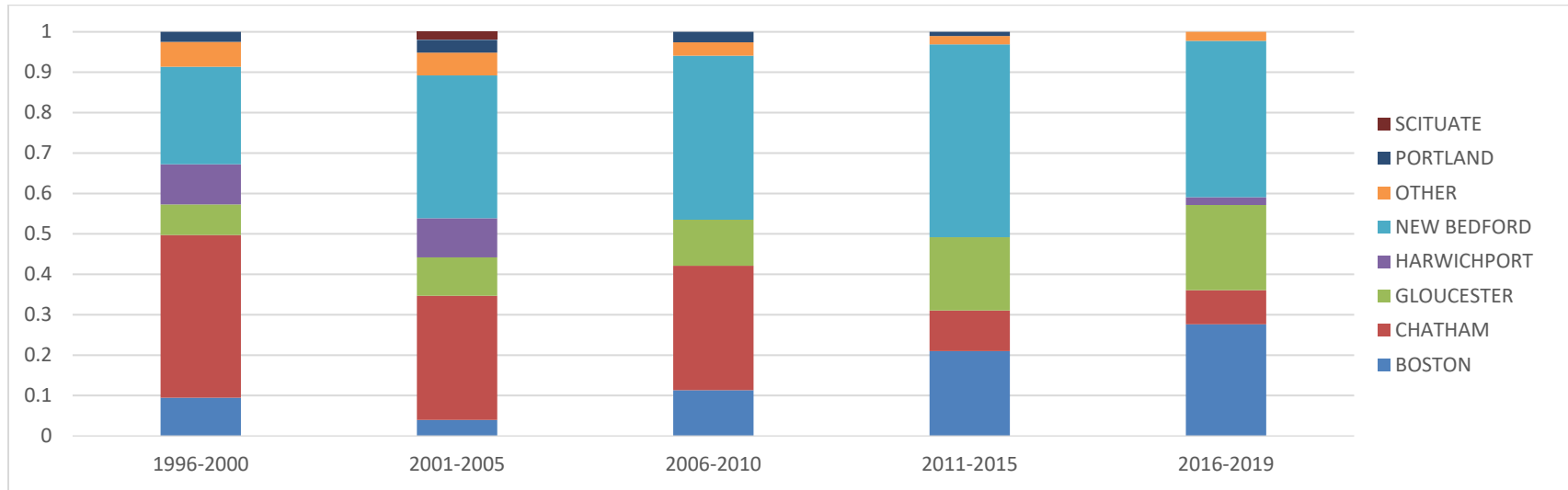


Table 2. Percentage of Commercial Cod Landings (lbs.) by Landing Port from Stat Areas 521, 526, and 541, calendar year groupings. All ports comprising <1%] of landings are grouped into "OTHER".
Source: CAMS (4/11/2024)

calendar_years	port_name	port_landings	port_percent
1996-2000	BOSTON	4,048,182	9.5%
1996-2000	CHATHAM	17,192,788	40.2%
1996-2000	GLOUCESTER	3,244,250	7.6%
1996-2000	HARWICHPORT	4,232,049	9.9%
1996-2000	NEW BEDFORD	10,308,891	24.1%
1996-2000	OTHER	2,636,321	6.2%
1996-2000	PORTLAND	1,062,228	2.5%
2001-2005	BOSTON	1,343,229	4.0%
2001-2005	CHATHAM	10,362,402	30.7%
2001-2005	GLOUCESTER	3,201,887	9.5%
2001-2005	HARWICHPORT	3,267,339	9.7%
2001-2005	NEW BEDFORD	11,934,692	35.4%
2001-2005	OTHER	1,903,193	5.6%
2001-2005	PORTLAND	1,063,795	3.2%
2001-2005	SCITUATE	669,327	2.0%
2006-2010	BOSTON	1,478,235	11.3%
2006-2010	CHATHAM	4,020,552	30.8%
2006-2010	GLOUCESTER	1,483,081	11.4%
2006-2010	NEW BEDFORD	5,301,737	40.6%
2006-2010	OTHER	431,362	3.3%
2006-2010	PORTLAND	337,969	2.6%
2011-2015	BOSTON	1,750,812	21.0%
2011-2015	CHATHAM	836,129	10.0%
2011-2015	GLOUCESTER	1,507,484	18.1%
2011-2015	NEW BEDFORD	3,977,088	47.7%
2011-2015	OTHER	171,812	2.1%
2011-2015	PORTLAND	85,776	1.0%
2016-2019	BOSTON	677,272	27.6%
2016-2019	CHATHAM	207,174	8.5%
2016-2019	GLOUCESTER	516,479	21.1%
2016-2019	HARWICHPORT	46,978	1.9%
2016-2019	NEW BEDFORD	948,791	38.7%
2016-2019	OTHER	54,850	2.2%

Appendix 3 – Cod catch by port WGOM 521, 526 & 541

Figure 2. Percentage of Commercial Cod Landings (lbs.) by Landing Port from Stat Areas 521, 526, and 541, calendar year groupings. All ports comprising <1% of landings are grouped into "OTHER".



FY24 Percent PSCs by FY23 Sector

New Cod Management Areas Based on Existing Landings Histories Including "Grandfathered" MRIs				
Sector	CODGOME_ 2024	CODGOMW 2024	CODGB 2024	CODSNE 2024
FGS	1.6%	9.2%	2.7%	3.5%
MCCS	33.6%	8.5%	2.7%	2.4%
MOON	1.1%	12.9%	1.5%	7.1%
MPB	0.5%	0.6%	0.3%	0.1%
NEFS 2	7.2%	15.3%	6.9%	9.1%
NEFS 4	7.1%	10.4%	4.5%	0.7%
NEFS 5	0.0%	0.3%	0.3%	10.5%
NEFS 6	3.1%	2.6%	3.9%	1.9%
NEFS 8	5.6%	7.5%	20.5%	14.4%
NEFS 10	1.1%	1.6%	0.2%	0.5%
NEFS 11	3.4%	6.1%	0.0%	0.7%
NEFS 12	1.0%	2.0%	0.0%	0.2%
NEFS 13	1.5%	3.3%	22.0%	16.1%
NHPB	0.1%	0.6%	0.0%	0.0%
SHS1	11.2%	5.5%	9.3%	2.1%
SHS2	8.9%	2.0%	3.0%	1.0%
SHS3	10.6%	8.5%	19.7%	9.0%
CP	2.2%	3.2%	2.6%	20.5%
Total	100.0%	100.0%	100.0%	100.0%

Existing Cod Management Areas Based on Existing Landings Histories Including "Grandfathered" MRIs			
Sector	GOMCOD 2024	GBCOD 2024	Count of MRIs
FGS	0.6%	11.6%	61
MCCS	15.8%	2.3%	106
MOON	6.4%	12.2%	50
MPB	1.2%	0.1%	11
NEFS 2	24.0%	6.4%	113
NEFS 4	11.2%	7.4%	57
NEFS 5	0.3%	0.5%	18
NEFS 6	2.7%	3.0%	19
NEFS 8	2.7%	15.5%	67
NEFS 10	2.5%	0.5%	29
NEFS 11	11.4%	0.4%	41
NEFS 12	3.0%	0.5%	19
NEFS 13	0.6%	12.4%	67
NHPB	1.2%	0.0%	4
SHS1	5.9%	6.8%	50
SHS2	1.9%	2.6%	24
SHS3	4.8%	15.0%	44
CP	3.8%	2.8%	484
Total	100.0%	100.0%	1264

Historical Cod Landed, FY96-FY06									
Current Active MRIs Only									
	CODGOME	CODGOMW	CODGB	CODSNE	Grand Total		GOMCOD	GBCOD	Grand Total
Live MT	1,374.4	76,242.5	28,297.0	1,272.3	107,186.1	Live MT	39,053.7	68,132.4	107,186.1
Percent of Total	1.3%	71.1%	26.4%	1.2%	100.0%	Percent of Total	36.4%	63.6%	100.0%

These are FY24 MRI PSCs using FY23 sector membership
Source: dealer, VTR, and MRI databases
Run dates: 1/24/24 and 4/8/24
Greater Atlantic Regional Fisheries Office
April 9, 2024

Description of calculating updated PSCs:

- EGOM - This area contains no grandfathered MRIs. The PSCs were all calculated using FY96-FY06 cod landings. These are the same as the previous 'base case' values
- SNE – The entire stock area is comprised of statistical areas affecting grandfathered MRIs. These PSCs are calculated in the same way as the current GB PSCs are - the grandfathered MRIs get their FY96-01 proportion of cod landed, and the other MRIs get their FY96-06 proportions reduced to reflect the grandfathered MRIs.
- WGOM - The northern part of this area (stat areas 513, 514, 515, "NWGOM") does not include the area for grandfathered MRIs. The southern part (stat areas 521, 526, 541 "SWGOM") contains statistical areas with grandfathered MRIs. PSCs were calculated as follows:
 - PSCs are first calculated for each sub-area.
 - NWGOM PSCs are all calculated by taking the FY96-06 proportion of cod landings from that area, the same as the 'base case'.
 - SWGOM PSCs are calculated the same way as the old GB PSCs. The grandfathered MRIs received their FY96-01 proportions of cod landed and the others received their FY96-06 proportions, adjusted to ensure all of the PSCs sum up to one.
 - The PSCs are then weighted by each sub-area's FY96-06 cod landings (k_{all}) to calculate the entire WGOM PSC. The formula is:

$$PSC_{WGOM} = \frac{PSC_{NWGOM} * k_{all\ NWGOM} + PSC_{SWGOM} * k_{all\ SWGOM}}{k_{all\ NWGOM} + k_{all\ SWGOM}}$$

The two sub-areas are nearly evenly weighted. The $k_{all\ NWGOM} = 37,633.38$ mt and the $k_{all\ SWGOM} = 38,609.15$ mt.

- GB - Stat area 464 does not include the area for grandfathered MRIs. The rest of the stock area has grandfathered MRIs. The PSCs are calculated in the same way as WGOM.
 - The area 464 PSC is each MRI's proportion of total FY96-06 cod landings from stat area 464.
 - For the rest of GB (GB-464), each grandfathered MRI's PSC is its proportion of the total FY96-01 cod landings, with non-grandfathered PSCs being the proportion of FY96-06 cod landings adjusted so that all the PSCs the sum to one.
 - The GB PSC is then the average of the stat area 464 PSC and the rest-of-CODGB PSC, weighted by each sub-area's FY96-06 cod k_{all} :

$$PSC_{GB} = \frac{PSC_{464} * k_{all\ 464} + PSC_{GB-464} * k_{all\ GB-464}}{k_{all\ 464} + k_{all\ GB-464}}$$

The statistical area 464 cod $k_{all} = 46.09$ mt and the rest of GB cod $k_{all} = 28,250.89$ mt.



New England Fishery Management Council

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Rick Bellavance, *Acting Chair* | Cate O'Keefe, PhD, *Executive Director*

Updated 9/12/24

MEMORANDUM

DATE: September 5, 2024
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: Atlantic cod fishery data analysis for Framework 69

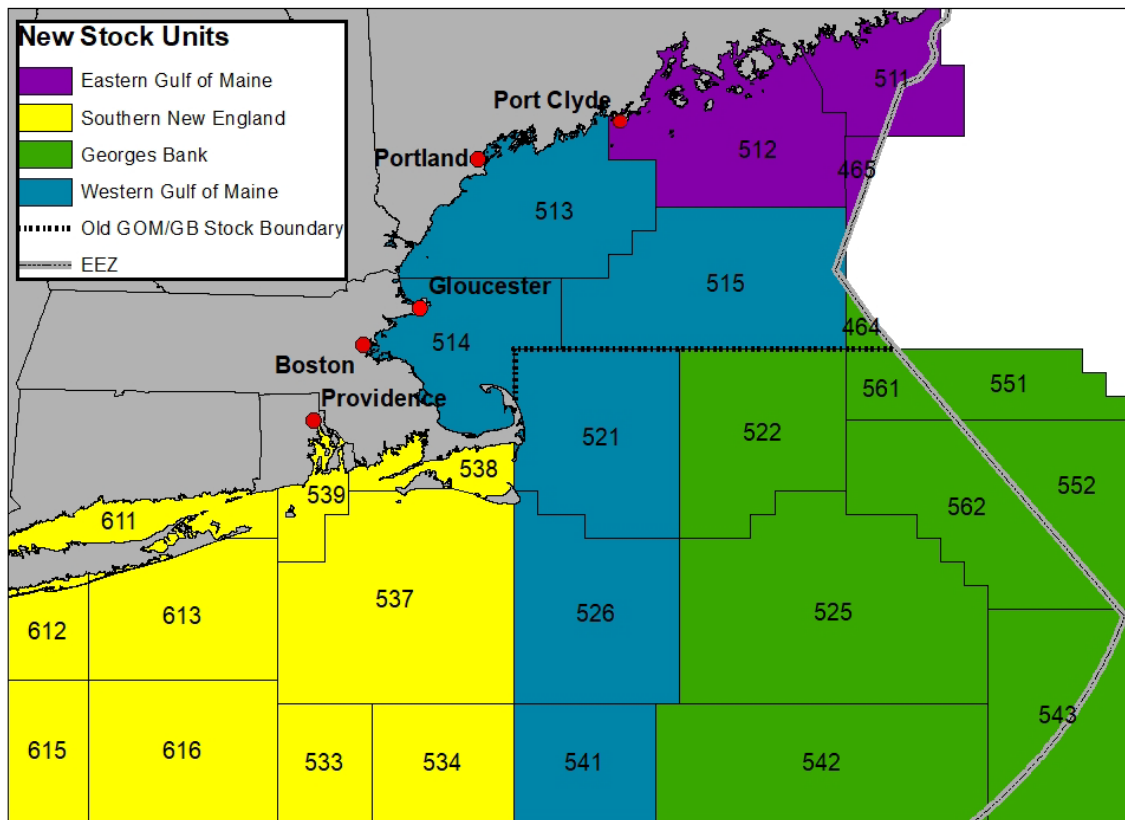
The Groundfish Plan Development Team (PDT) met as a sub-group on August 13, 2024, and as a whole on August 29, 2024, to continue discussing the Atlantic Cod Management Transition Plan analysis to support development of Phase 1 cod measures in Framework Adjustment 69.

Background

At their June 11, 2024, meeting, the Groundfish Committee tasked the PDT with additional analysis to support decision making and development of the “bridge approach” for setting catch advice for cod stocks for FY2025-FY2027 through Framework 69. The PDT addresses several of these tasking motions below.

Commercial and Recreational Fishery Data

The figure below provides the new stock unit boundaries for the four new cod stocks along with the previous GOM/GB stock boundary outlined for reference. Note that Canadian catch is only included in the GB cod assessment.



Analysis #1 – Cod catches by statistical area

The Committee passed the following motion at their June 11th meeting:

Task the Plan Development Team (PDT), for the purpose of (1) apportioning the North and South portions of WGOM and (2) determining recreational and commercial catches by statistical areas, to use recent years catch data (Fishing Year 2010 to 2022 broken down by fishing year).

The PDT provides **commercial** catches by statistical area annually from **FY2010-2023**, for each new stock area and for WGOM split into Northern (SRAs 513-515) and Southern (SRAs 521/526/541) in **Attachment 1**. Recreational catches are provided for the WGOM statistical areas in Attachment 2; however, these estimates are provided as numbers of fish, as recreational weight estimates for the new stock areas are under development.

The PDT calculated the percentage of catch in the Northern and Southern portions of WGOM using commercial catches only. This would have the recreational allocation be taken off the top prior to splitting the WGOM into North and South. **The PDT recommends for WGOM allocating to the recreational fishery first, using the percentage resulting from updating the FW59 methodology (see Analysis #2) as this simplifies the process of splitting WGOM into**

North and South, which is for the commercial fishery only for applying current potential sector contributions (PSCs). This is also more consistent with how the original GOM recreational allocation was made.

Table 1- Percentage of WGOM cod catch in the North (SRAs 513-515) and South (SRAs 521, 526, and 541).

Fishing Year	Percentage in NWGOM	Percentage in SWGOM
2010	0.748	0.252
2011	0.701	0.299
2012	0.786	0.214
2013	0.483	0.517
2014	0.583	0.417
2015	0.245	0.755
2016	0.510	0.490
2017	0.514	0.486
2018	0.401	0.599
2019	0.494	0.506
2020	0.487	0.513
2021	0.447	0.553
2022	0.778	0.222
2023	0.525	0.475
Average 2010-2023	0.550	0.450
5-year average (2019-2023)	0.546	0.454
3-year average (2021-2023)	0.583	0.417

Analysis #2– Recreational/commercial allocation split for WGOM area

The Committee passed the following motion at their June 11th meeting:

Move to task the Groundfish Plan Development Team with calculating as an option for a recreational sub-ACL for the WGOM stock, using the same method that was used to calculate the existing 37.5% (see Framework Adjustment 59) but using statistical areas that align with the new WGOM stock area.

The PDT examined the following table from Framework 59:

Table 2- Gulf of Maine Cod Preliminary Evaluation of Rec/Com Allocation Using New MRIP Landings and Discards, and Updated Commercial Landings and Discards (2019 Assessment Update).

Year	Rec Landings (A+B1)	Rec Discard Mortality (1,000's of fish)	Com Landings	Com Discard Mortality	Total Mortality	Rec Share
2001	975	207	1,168	591	2,941	0.402
2002	626	182	882	410	2,100	0.385
2003	532	153	844	417	1,946	0.352
2004	606	188	766	546	2,105	0.377
2005	742	270	832	225	2,070	0.489
2006	212	127	733	299	1,371	0.247
						0.375

The PDT updated this recreational/commercial allocation calculation for the entire WGOM stock area using the same method in Framework 59 with data from the WGOM cod 2024 Management Track Assessment (data provided in Attachment 3).

Table 3- Western Gulf of Maine Cod Preliminary Evaluation of Rec/Com Allocation (2024 Assessment).

Year	Rec Catch	Comm Catch	Total Catch	Rec Share
	(1,000's of fish)			
2001	1,203	4,328	5,531	0.217
2002	898	3,128	4,025	0.223
2003	700	2,119	2,819	0.248
2004	812	1,515	2,328	0.349
2005	1,039	1,434	2,473	0.420
2006	352	1,490	1,842	0.191
				0.275

This results in a WGOM cod recreational sub-ACL percentage of 27.5%. **The PDT recommends using the updated 27.5% for the WGOM recreational sub-ACL calculation.**

Analysis #3– For-hire VTR data in WGOM

The Committee also passed the following motion at their June 11th meeting:

Task the Plan Development Team to analyze VTR data for the for-hire fleet in the WGOM stock area by statistical reporting area for fishing years 2010 through 2022.

The PDT provides for-hire VTR data in the WGOM stock area in Attachment 4. The PDT emphasizes the utility of VTR data for providing context and verifying trends in recreational for-hire activity, and cautions against overinterpreting or using the data directly. There is no well-defined way to verify any of the for-hire information provided on the VTRs. While the effort estimates provided on the VTRs (i.e., number of passengers) are incorporated into the MRIP for-hire effort estimates, catch on for-hire trips is estimated by MRIP intercept sampling of anglers on those trips and not the actual catch data provided on the VTRs. Thus, the VTR catch data is not used in either the assessments or catch/management advice.

Setting aside these caveats, there is additional for-hire effort seen in VTRs than what is seen in MRIP. For example, for-hire VTRs report catches in statistical area 521 in all years from FY2010-2022, while MRIP only has catch in FY2021 and FY2022 (see Attachment 2). However, the overall trends in WGOM for-hire activity from VTR reporting appear similar to what is seen in MRIP. The majority of catch comes from SRAs 513 and 514, with very little catch in 515, or any of the southern WGOM statistical areas (521, 526, and 541).

Table 4- For-hire VTR data for WGOM statistical areas, averages across FY2010-2022.

**Averages
FY2010-
2022**

Stat Area	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod	Total Mortality of Cod	Percentage
513	52	45	2449	1656	27095	5902	32997	73.7	8.0	81.8	49%
514	73	54	1588	1033	25209	3726	28934	68.6	5.1	73.7	44%
515	5	4	46	44	1512	1645	1783	4.1	0.4	4.5	3%
521	14	7	125	29	1291	93	1384	3.5	0.1	3.6	2%
526	6	2	58	7	1100	54	1154	3.0	0.1	3.1	2%
541	2	2	2	2	7.5	2.2	10	0.02	0.00	0.02	0.01%
TOTALS								153	14	167	

Commercial Cod Catch by Statistical Area

FY10 - FY23, in Metric Tons

	EGOM				WGOM North					WGOM South					WGOM	GB								SNE							Total
Fishing Year	Statistical Areas																														
	465/511	465/511/ 512	512	Total	513	514	515	Total	521	521/526	526	Total	Total	464	522	522/525/ 542/543	525/542/ 543	561	561/562	562	Total	537	538/539	611	613	533/534/612 /614+	Total	Grand Total			
2010	0.2		17.1	17.2	868.7	2,593.1	192.9	3,654.6	1,231.1		0.6	1,231.6	4,886.3	1.9	703.7		304.2	208.5		31.6	1,249.9	34.8	127.5	6.0	3.0	1.3	172.7	6,326.2			
2011	0.5		29.5	30.0	1,002.3	2,979.7	217.9	4,199.8	1,782.6		5.1	1,787.7	5,987.5	2.1	952.6		144.2	111.8		17.2	1,227.9	22.1	77.9	0.8	2.6	3.2	106.7	7,352.2			
2012		9.4		9.4	494.3	1,450.2	103.6	2,048.1	555.5		1.0	556.6	2,604.6	3.2	725.2		25.8	27.9		7.4	789.6	29.3	98.6	1.3	2.4	0.4	132.1	3,535.8			
2013	1.7		4.5	6.2	186.7	442.9	81.5	711.1	761.2		0.9	762.1	1,473.3	2.2	603.6		37.6	20.3		3.1	666.7	11.3	84.3	0.8	1.7	0.4	98.5	2,244.7			
2014	0.7		3.1	3.8	189.0	326.1	119.2	634.3	447.2		6.4	453.6	1,087.9	0.7	759.7		39.1	64.5		4.0	867.9	12.8	28.9	0.2	3.6	1.5	47.0	2,006.5			
2015	0.2		1.9	2.1	36.9	95.1	37.2	169.2	516.8		3.8	520.6	689.8	1.2	864.9		18.2	73.8		6.5	964.5	14.3	100.5	2.3	5.7	0.9	123.8	1,780.2			
2016	0.6		3.4	4.0	46.9	155.7	47.9	250.6	240.0		1.2	241.2	491.8	2.0	187.1		6.7	70.7		5.7	272.3	10.4	42.5	1.1	3.5	0.2	57.7	825.7			
2017	0.2		2.6	2.8	48.9	162.9	52.1	263.8	248.3		0.8	249.1	512.9	0.9	137.3		1.8	41.0		1.7	182.6	3.9	17.9	0.2	0.2	0.2	22.5	720.9			
2018	0.4		3.8	4.2	67.7	174.2	66.8	308.7	459.7		2.0	461.6	770.3	0.7	246.4		5.6	103.4		3.1	359.2	4.4	9.2	0.1	3.8	0.0	17.5	1,151.3			
2019	0.4		2.2	2.6	85.4	141.0	56.5	282.9	289.4		0.2	289.6	572.5	0.3	167.3		0.5	61.1		3.0	232.2	0.5	3.4	0.1	0.3	0.2	4.6	812.0			
2020	0.2		1.2	1.4	48.7	119.1	53.5	221.4	232.0		0.9	232.8	454.2	0.4	122.7		1.3	57.9		0.1	182.4	0.7	3.5	0.1	1.2	0.1	5.7	643.7			
2021		1.3		1.3	65.7	118.6	48.4	232.7		288.3		288.3	521.0	0.7	118.7		0.9		54.4		174.8	0.3	1.3	0.2	0.3	0.2	2.3	699.2			
2022	1.1		0.8	1.9	89.7	127.8	34.1	251.6	71.7		0.0	71.7	323.3	0.6		45.9			28.4		74.9	0.7	2.1	0.5	0.3	0.1	3.7	403.8			
2023	0.1		0.3	0.4	66.0	150.2	30.2	246.4		223.1		223.1	469.5	0.6	59.1			13.7		0.0	73.4	0.6	3.3	0.3	0.4	0.2	4.8	548.1			

Area based on VTR-reported area if available, else area calculated from VTR lat/lon, else imputed

Areas grouped due to confidentiality

Commercial groundfish trips only

CAMS landing and estimated discard data as of 8/12/24

Greater Atlantic Regional Fisheries Office

August 12, 2024

Attachment 2 - WGOM recreational cod catch by statistical area

WGOM Recreational Landings (A+B1), numbers of fish

Fishing Year	513	514	521	526
2010	167,005	689,091		
2011	262,907	697,069		
2012	144,347	486,447		
2013	296,790	543,095		
2014	136,157	251,913		
2015	5,978	4,683		
2016	15,895	54,238		
2017	32,044	47,697		
2018	411	4,966		
2019	11,454	4,735		
2020	3,239	1,644		
2021	9,138	53,438	17,306	
2022	3,051	26,614		
2023	10,370	16,066		
2024		31		
	1,098,786	2,881,727	17,306	0

Total WGOM Recreational Mortality (A+B1+(B2 x.165)), numbers of fish

Fishing Year	513	514	521	526
2010	221,131	999,663		
2011	368,768	863,070		
2012	219,289	574,452		
2013	365,138	771,167		
2014	194,349	384,731		
2015	125,432	56,919		
2016	110,083	243,186		
2017	114,008	331,990		
2018	93,112	104,836		
2019	54,351	37,406		
2020	35,576	60,211		
2021	47,676	98,456	17,306	
2022	26,601	82,291	178	
2023	53,820	60,524		
2024	76	630		
	2,029,410	4,669,532	17,484	0

WGOM Recreational Discard Mortality (B2 x .165), numbers of fish

Fishing Year	513	514	521	526
2010	54,126	310,573		
2011	105,862	166,000		
2012	74,943	88,005		
2013	68,348	228,072		
2014	58,191	132,818		
2015	119,454	52,236		
2016	94,188	188,948		
2017	81,964	284,293		
2018	92,702	99,870		
2019	42,897	32,671		
2020	32,337	58,567		
2021	38,538	45,019		
2022	23,550	55,677	178	
2023	43,449	44,458		
2024	76	600		
	930,624	1,787,805	178	0

Percentage of WGOM Recreational Mortality by Year

Fishing Year	513	514	521	526
2010	18.11	81.89		
2011	29.94	70.06		
2012	27.63	72.37		
2013	32.13	67.87		
2014	33.56	66.44		
2015	68.79	31.21		
2016	31.16	68.84		
2017	25.56	74.44		
2018	47.04	52.96		
2019	59.23	40.77		
2020	37.14	62.86		
2021	29.17	60.24	10.59	
2022	24.39	75.45	0.16	
2023	47.07	52.93		
2024	10.71	89.29		
	30.18	69.45	0.26	

Source: MRIP

Attachment 3 - WGOM commercial and recreational cod catch

WGOM Commercial Cod Catch

Year	Age0	Age1	Age2	Age3	Age4	Age5	Age6	Age7	Age8	Age9+	Total	1,000s
2001	6	0	570763	2088188	939056	504812	130562	64288	11325	18998	4327997	4328
2002	505	35074	116572	880436	1290572	414241	245089	92082	31298	21830	3127699	3128
2003	38584	23322	142386	163213	595226	802230	212692	85022	30881	25540	2119094	2119
2004	2554	80623	83098	515153	184823	307141	222881	60306	32998	25765	1515342	1515
2005	6021	15502	133868	108669	709881	88520	213279	100566	29050	28582	1433939	1434
2006	801	23557	57969	589829	275697	385899	25520	71628	34949	24013	1489861	1490

WGOM Recreational Cod Catch

Year	Age0	Age1	Age2	Age3	Age4	Age5	Age6	Age7	Age8	Age9+	Total	1,000s
2001	56	2104	178298	594211	238829	130207	37120	16463	1785	3615	1202685	1203
2002	235	21121	41536	309208	380467	96168	32464	11215	2990	2174	897578	898
2003	287	14279	77085	68738	222318	222346	46361	24782	11773	12181	700150	700
2004	0	27271	57720	324625	98644	146529	87150	25632	18429	26158	812159	812
2005	0	9066	165904	106786	476964	34803	114531	85768	29427	15982	1039231	1039
2006	176	16352	30740	147895	55079	70489	4331	13206	8160	5338	351767	352

Source: 2024 Management Track Assessment

Table 1. For-hire VTR Activity in Statistical Area 513

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	75	69	3,467	2,664	103,760	8,548	112,308	282.4	11.6	294.0
2011	70	62	3,107	2,253	59,025	7,032	66,057	160.6	9.6	170.2
2012	65	59	3,341	2,360	58,645	5,815	64,460	159.6	7.9	167.5
2013	69	62	3,313	2,365	79,014	7,684	86,698	215.0	10.5	225.5
2014	65	60	2,878	1,983	34,810	5,626	40,436	94.7	7.7	102.4
2015	54	40	2,162	1,194	173	4,195	4,368	0.5	5.7	6.2
2016	45	38	2,229	1,505	5,312	9,354	14,666	14.5	12.7	27.2
2017	43	35	2,089	1,293	335	9,443	9,778	0.9	12.8	13.8
2018	46	40	1,945	1,300	437	5,289	5,726	1.2	7.2	8.4
2019	42	36	1,953	1,335	1,548	5,158	6,706	4.2	7.0	11.2
2020	38	31	1,657	783	2,152	1,547	3,699	5.9	2.1	8.0
2021	35	27	1,901	1,151	3,218	2,796	6,014	8.8	3.8	12.6
2022	33	27	1,800	1,347	3,807	4,246	8,053	10.4	5.8	16.1
Avg	52	45	2,449	1,656	27,095	5,902	32,997	73.7	8.0	81.8

Table 2. For-hire VTR Activity in Statistical Area 514

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	115	102	2,730	2,182	90,487	8,078	98,565	246.3	11.0	257.3
2011	110	93	2,580	2,172	86,847	8,891	95,738	236.4	12.1	248.5
2012	94	78	2,180	1,848	54,230	3,372	57,602	147.6	4.6	152.2
2013	85	75	1,800	1,589	58,144	3,548	61,692	158.2	4.8	163.1
2014	80	62	1,587	1,287	27,680	1,871	29,551	75.3	2.5	77.9
2015	58	29	1,076	474	17	1,860	1,877	0.0	2.5	2.6
2016	58	40	1,292	750	2,808	3,997	6,805	7.6	5.4	13.1
2017	58	44	1,246	667	985	3,180	4,165	2.7	4.3	7.0
2018	59	39	1,054	554	368	3,007	3,375	1.0	4.1	5.1
2019	50	32	850	475	1,599	1,915	3,514	4.4	2.6	7.0
2020	58	34	1,289	426	1,700	1,739	3,439	4.6	2.4	7.0
2021	61	34	1,462	505	1,531	3,017	4,548	4.2	4.1	8.3
2022	64	40	1,501	503	1,315	3,960	5,275	3.6	5.4	9.0
Avg	73	54	1,588	1,033	25,209	3,726	28,934	68.6	5.1	73.7

Table 3. For-hire VTR Activity in Statistical Area 515

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	3	3	72	72	10,124	354	10,478	27.6	0.5	28.0
2011	8	8	46	46	3,476	230	3,706	9.5	0.3	9.8
2012	5	5	51	51	1,281	112	1,393	3.5	0.2	3.6
2013	4	4	14	14	1,171	70	1,241	3.2	0.1	3.3
2014	9	9	38	37	2,939	91	3,030	8.0	0.1	8.1
2015	8	5	41	37	-	374	374	-	0.5	0.5
2016	4	3	59	57	593	793	1,386	1.6	1.1	2.7
2017	8	6	38	34	-	372	372	-	0.5	0.5
2018	5	4	41	36	6	289	295	0.0	0.4	0.4
2019	< 3	< 3	65	59	21	353	374	0.1	0.5	0.5
2020	< 3	< 3	57	52	5	156	161	0.0	0.2	0.2
2021	< 3	< 3	48	43	-	246	246	-	0.3	0.3
2022	3	< 3	33	31	38	90	128	0.1	0.1	0.2
Avg	5	4	46	44	1,512	1,645	1,783	4.1	0.4	4.5

Table 4. For-hire VTR Activity in Statistical Area 521

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	23	8	132	40	6,774	182	6,956	18.4	0.2	18.7
2011	22	9	108	25	1,469	112	1,581	4.0	0.2	4.2
2012	17	7	90	23	424	60	484	1.2	0.1	1.2
2013	14	7	75	22	468	51	519	1.3	0.1	1.3
2014	16	5	110	17	318	58	376	0.9	0.1	0.9
2015	13	7	95	32	624	88	712	1.7	0.1	1.8
2016	11	7	55	42	2,623	281	2,904	7.1	0.4	7.5
2017	12	7	73	24	1,594	100	1,694	4.3	0.1	4.5
2018	10	6	100	21	340	42	382	0.9	0.1	1.0
2019	11	6	171	33	524	51	575	1.4	0.1	1.5
2020	10	6	180	26	466	52	518	1.3	0.1	1.3
2021	11	6	192	35	768	90	858	2.1	0.1	2.2
2022	10	4	240	32	386	43	429	1.1	0.1	1.1
Avg	14	7	125	29	1,291	93	1,384	3.5	0.1	3.6

Table 5. For-hire VTR Activity in Statistical Area 526

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	3	< 3	20	7	2,878	85	2,963	7.8	0.1	7.9
2011	8	< 3	19	7	2,192	39	2,231	6.0	0.1	6.0
2012	4	< 3	18	5	893	8	901	2.4	0.0	2.4
2013	< 3	-	< 3	-	-	-	-	-	-	-
2014	< 3	-	< 3	-	-	-	-	-	-	-
2015	< 3	< 3	24	5	1,339	34	1,373	3.6	0.0	3.7
2016	-	-	-	-	-	-	-	-	-	-
2017	4	3	49	20	2,260	107	2,367	6.2	0.1	6.3
2018	8	7	63	16	1,745	163	1,908	4.7	0.2	5.0
2019	11	< 3	109	10	403	105	508	1.1	0.1	1.2
2020	11	3	209	11	870	68	938	2.4	0.1	2.5
2021	11	3	150	12	1,046	24	1,070	2.8	0.0	2.9
2022	11	3	96	4	680	64	744	1.9	0.1	1.9
Avg	6	2	58	7	1,100	54	1,154	3.0	0.1	3.1

Table 6. For-hire VTR Activity in Statistical Area 541

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	< 3	< 3	< 3	< 3	20	7	27	0.1	0.0	0.1
2011	4	3	4	3	33	9	42	0.1	0.0	0.1
2012	< 3	-	< 3	-	-	-	-	-	-	-
2013	< 3	< 3	< 3	< 3	45	12	57	0.1	0.0	0.1
2014	-	-	-	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-	-	-
2021	< 3	-	< 3	-	-	-	-	-	-	-
2022	< 3	-	< 3	-	-	-	-	-	-	-
Avg	2	2	2	2	8	2	10	0.0	0.0	0.02



New England Fishery Management Council

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Rick Bellavance, *Chair* | Cate O'Keefe, PhD, *Executive Director*

MEMORANDUM

DATE: October 23, 2024
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: WGOM cod commercial allocation

The Groundfish Plan Development Team (PDT) met as a sub-group on October 4 and 16, 2024, and as a whole on October 18, 2024, to discuss analysis to support development of Framework 69 cod measures for Phase 1 of the Atlantic Cod Management Transition Plan. This memorandum focuses on the Groundfish Committee (Committee) tasking analysis for Western Gulf of Maine (WGOM) cod commercial allocation.

Background

At their September 11, 2024, meeting, the Committee tasked the PDT with the following motion:

Under Framework Adjustment 69, the GF Committee directs the Plan Development Team to develop an Option 3 for setting quotas for cod (as part of phase 1 “bridge plan” for the Atlantic Cod Transition Plan) that apportions the WGOM cod ACL following this approach:

- 1. Recreational Sub-ACL off the top*
- 2. Split the Commercial Sub-ACL:
2a) 75/25 NWGOM / SWGOM FY2010-2012 and 2022 (rationale spreadsheet)¹ and
2b) Recent historical catch avg FY2010-2023 (55/45) for NWGOM / SWGOM*
- 3. Allocate the NWGOM to GOM PSC's. Resulting ACE can only be used in 513, 514, 515*
- 4. Allocate the SWGOM to GB PSC's. Resulting ACE can only be used in 521, 526, 541*

¹ See Attachment 1.

5. *Permit holders with GB PSC will receive 3 ACE allocations: GB, SWGOM, SNE.*
Permit holders with GOM PSC will receive 2 ACE allocations: EGOM, NWGOM

To fully analyze the scope of the motion, the PDT approached this analysis in two parts: 1) options for WGOM North and South apportionment (what percentage to use for split) and 2) options for WGOM sector allocation (one combined WGOM sector sub-annual catch limits (ACL) or separate Northern WGOM and Southern WGOM sub-ACLs).

1. *WGOM North and South Apportionment*

The PDT reviewed the previous Committee tasking to use recent historical catches as the basis for apportioning the Northern portion of WGOM (SWGOM) and the Southern portion of WGOM (SWGOM), which results in a split of 55% North / 45% South (see Attachment 2, Analysis #1). The PDT then discussed the Committee option put forward of 75% North / 25% South and reviewed the rationale provided. The PDT notes that the Committee option uses sector sub-ACLs rather than commercial sub-ACLs, and so recalculated this analysis to reflect commercial sub-ACL values for consistency, which resulted in minor changes (see similarly Option 1 below).

Additionally, the PDT discussed what analysis could be provided to show how sector annual catch entitlements (ACEs) would change, based on an apportionment of 55:45 vs. 75:25. Table 1 provides the total ACE amounts for each sector for WGOM cod under the two apportionment ratios and calculates the percent difference in ACE between the two options that the sectors would receive.

Table 1- Preliminary sector ACE amounts for WGOM cod under an apportionment of 55% North / 45% South and 75% North / 25 % South.

Sector Name	55% North - 45% South (PDT Option 2)			Change (55% vs 75%)				75% North - 25% South (Committee Option 3)		
	WGOM Cod Total	WGOM Cod North	WGOM Cod South	% Change Total	Abs Change Total	Abs Change North	Abs Change South	WGOM Cod Total	WGOM Cod North	WGOM Cod South
FGS	12.6	0.9	11.7	-38%	-4.9	0.3	-5.2	7.8	1.3	6.5
MCCS	23.5	21.2	2.4	28%	6.6	7.7	-1.0	30.2	28.8	1.3
MPB	1.7	1.6	0.1	29%	0.5	0.6	-0.1	2.2	2.1	0.1
Mooncusser	21.8	8.4	13.4	-13%	-2.9	3.1	-6.0	18.9	11.4	7.4
NEFS 2	47.0	36.3	10.8	18%	8.4	13.2	-4.8	55.4	49.5	6.0
NEFS 4	24.5	15.0	9.5	5%	1.2	5.4	-4.2	25.7	20.4	5.3
NEFS 5	0.9	0.4	0.5	-7%	-0.1	0.2	-0.2	0.9	0.6	0.3
NEFS 6	0.8	0.2	0.6	-22%	-0.2	0.1	-0.3	0.6	0.3	0.3
NEFS 8	43.8	8.6	35.2	-29%	-12.5	3.1	-15.7	31.3	11.7	19.6
NEFS 10	2.6	2.4	0.2	30%	0.8	0.9	-0.1	3.4	3.3	0.1
NEFS 11	15.7	15.2	0.4	34%	5.3	5.5	-0.2	21.0	20.8	0.2
NEFS 12	5.7	5.0	0.7	26%	1.5	1.8	-0.3	7.2	6.8	0.4
NEFS 13	12.5	0.7	11.7	-40%	-4.9	0.3	-5.2	7.5	1.0	6.5
NHPB	1.5	1.5	0.0	36%	0.6	0.6	-0.0	2.1	2.1	0.0
SHS 1	16.6	9.4	7.2	1%	0.2	3.4	-3.2	16.8	12.8	4.0
SHS 2	4.2	2.3	1.9	-1%	-0.0	0.8	-0.9	4.2	3.1	1.1
SHS 3	0.3	0.3	0.1	15%	0.1	0.1	-0.0	0.4	0.3	0.0
Common Pool	8.0	4.8	3.2	4%	0.3	1.7	-1.4	8.3	6.5	1.8
Sector Total	235.9	129.4	106.5	-0%	-0.3	47.0	-47.3	235.6	176.4	59.2

Based on final 2024 rosters
Values in metric tons

The PDT interprets the intent of the Committee motion as a desire to account for historic differences in quotas and fishing opportunities between Gulf of Maine (GOM) and Georges

Bank (GB) and discussed exploring other possible criteria to address the intent. The following outlines the different permutations of the apportionment split that the PDT evaluated and offers for consideration. In each option, the green cells are the driving criteria of the permutation considered, and the gray text is the data that was not included in the calculation.

Option 1 - Remove years where the commercial sub-ACL of one stock is more than twice the other stock.

This option closely resembles the Committee motion, though adds an additional two years to the period of analysis. Years were removed from the analysis if the commercial sub-ACL of one stock was more than twice the other stock. This option aims to minimize the potential for the commercial sub-ACL to have an outsized effect on the relative catch in the two stock areas. Removing years where the size of either stock is more than twice the other stock minimizes the potential for stock size to have an outsized effect on the relative catch in the two stock areas

Table 2 – Average percentage of NWGOM and SWGOM catch when one stock’s commercial sub-ACL is less than twice the other.

Fishing Year	Commercial sub-ACL		% GB to GOM sub-ACLs	NWGOM % of total WGOM catch	SWGOM % of total WGOM catch
	GOM	GB			
2010	4,567	3,430	75%	75%	25%
2011	4,825	4,301	89%	70%	30%
2012	3,699	4,605	124%	79%	21%
2013	830	1,807	218%	48%	52%
2014	830	1,769	213%	58%	42%
2015	207	1,787	863%	25%	75%
2016	280	608	217%	51%	49%
2017	280	528	188%	51%	49%
2018	369	1,194	324%	40%	60%
2019	360	1,568	435%	49%	51%
2020	275	1,073	390%	49%	51%
2021	270	1,093	404%	45%	55%
2022	270	244	90%	78%	22%
2023	278	375	135%	52%	48%
Average				68%	32%

Option 2 - Remove years where the difference between utilization of the commercial sub-ACL is greater than 25%.

This option provides another way to account for differences in quotas and fishing opportunities by basing criteria on historical utilization. It minimizes the potential for either stock being more constraining than the other to have an outsized effect on the relative catch in the two stock areas.

Table 3 - Average percentage of NWGOM and SWGOM catch when the difference in utilization is less than 25%. SWGOM catch and % of SWGOM catch vs GB catch shown for context.

Fishing Year	Commercial sub-ACL		Commercial Catch		Utilization of Commercial sub-ACL		Difference between Utilization	NWGOM % of total WGOM catch	SWGOM % of total WGOM catch	SWGOM Catch	% SWGOM catch vs GB catch
	GOM	GB	GOM	GB	GOM	GB					
2010	4,567	3,430	3,843	2,830	84%	83%	2%	75%	25%	1,231.6	44%
2011	4,825	4,301	4,461	3,277	92%	76%	16%	70%	30%	1,787.7	55%
2012	3,699	4,605	2,211	1,622	60%	35%	25%	79%	21%	556.6	34%
2013	830	1,807	741	1,573	89%	87%	2%	48%	52%	762.1	48%
2014	830	1,769	663	1,386	80%	78%	2%	58%	42%	453.6	33%
2015	207	1,787	186	1,637	90%	92%	2%	25%	75%	520.6	32%
2016	280	608	267	597	95%	98%	3%	51%	49%	241.2	40%
2017	280	528	269	446	96%	84%	11%	51%	49%	249.1	56%
2018	369	1,194	315	838	85%	70%	15%	40%	60%	461.6	55%
2019	360	1,568	287	532	80%	34%	46%	49%	51%	289.6	54%
2020	275	1,073	225	425	82%	40%	42%	49%	51%	232.8	55%
2021	270	1,093	235	471	87%	43%	44%	45%	55%	288.3	61%
2022	270	244	259	152	96%	62%	33%	78%	22%	71.7	47%
2023	278	375	248	301	89%	80%	9%	52%	48%	223.1	74%
Average								55%	45%		

Option 3 - Remove fishing year 2014, when sectors had GOM cod trip limit for part of the year.

Removing 2014 excludes the effect of the GOM cod trip limit from skewing the catch ratio between the two stock areas. Rather than representing a lower GOM ACL in 2014, the trip limit had more complex effects on catch. Further, because it was implemented mid-year for only a portion of the year, the effect is not easily interpreted without completely removing 2014. Only Options 2 and 5 include 2014 in their analyses, but the PDT did assess removing 2014 from those options and found that it does not affect the resulting split shown in the tables.

Table 4 - Average percentage of NWGOM and SWGOM catch when 2014 is removed.

Fishing Year	NWGOM % of total WGOM catch	SWGOM % of total WGOM catch
2010	75%	25%
2011	70%	30%
2012	79%	21%
2013	48%	52%
2014	58%	42%
2015	25%	75%
2016	51%	49%
2017	51%	49%
2018	40%	60%
2019	49%	51%
2020	49%	51%
2021	45%	55%
2022	78%	22%
2023	52%	48%
Average	55%	45%

Option 4 - Remove all but most recent 5 fishing years

This option proposes to use the most recent 5 years which in acknowledgement of Committee concerns around minimizing disruption to current fishing trends and statements around reflecting the current state of ecological dynamics on the water. Using a longer time span encompasses multiple interacting management and ecological changes.

Table 5 - Average percentage of NWGOM and SWGOM catch using the most recent 5 years.

Fishing Year	NWGOM % of total WGOM catch	SWGOM % of total WGOM catch
2010	75%	25%
2011	70%	30%
2012	79%	21%
2013	48%	52%
2014	58%	42%
2015	25%	75%
2016	51%	49%
2017	51%	49%
2018	40%	60%
2019	49%	51%
2020	49%	51%
2021	45%	55%
2022	78%	22%
2023	52%	48%
Average	55%	45%

Option 5 - Remove outlier years

This option considers differences in commercial sub-ACLs and utilization by removing the highest and lowest utilization percentages for each of the two stocks, GB and GOM, and the most extreme ratio between commercial sub-ACLs. Removing outliers is a simplistic way to focus on trends while minimizing the effect of non-representative years.

Table 6 - Average percentage of NWGOM and SWGOM catch when outliers of utilization and sub-ACLs are removed.

Fishing Year	% GB to GOM sub-ACLs	Utilization of Commercial sub-ACL		NWGOM % of total WGOM catch	SWGOM % of total WGOM catch
		GOM	GB		
2010	75%	84%	83%	75%	25%
2011	89%	92%	76%	70%	30%
2012	124%	60%	35%	79%	21%
2013	218%	89%	87%	48%	52%
2014	213%	80%	78%	58%	42%
2015	863%	90%	92%	25%	75%
2016	217%	95%	98%	51%	49%
2017	188%	96%	84%	51%	49%
2018	324%	85%	70%	40%	60%
2019	435%	80%	34%	49%	51%
2020	390%	82%	40%	49%	51%
2021	404%	87%	43%	45%	55%
2022	90%	96%	62%	78%	22%
2023	135%	89%	80%	52%	48%
Average				57%	43%

Summary

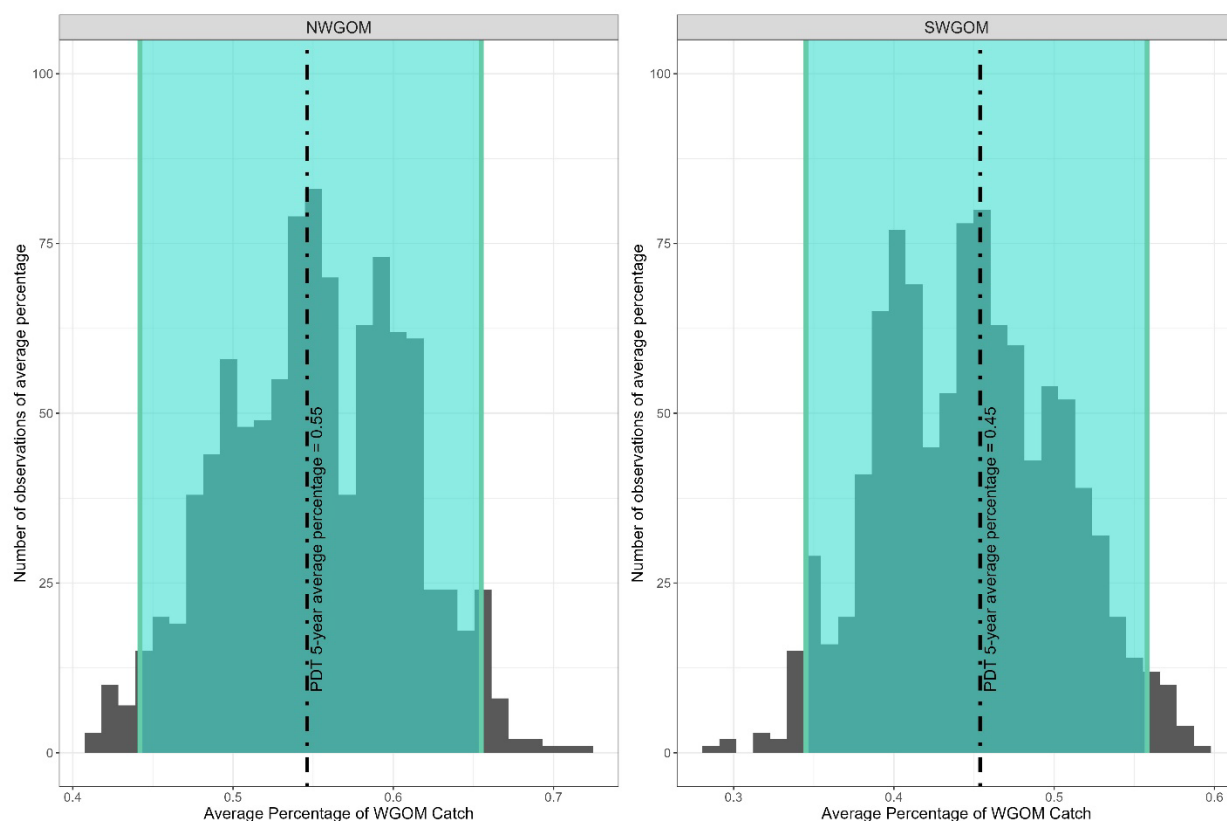
Table 7 coalesces the results of the five options into a summary table alongside the original PDT proposal split of 55:45 and the Committee motion of 75:25. Of the options explored by the PDT, the PDT notes that the majority tends towards 55% North / 45% South. The average of all the PDT options (Options 0-5) is 57.5% North/ 42.5% South.

Table 7 – Average percent of NWGOM and SWGOM catch across all permutations

	NWGOM	SWGOM
Option 0: PDT original proposal	55%	45%
Option 1: quotas	68%	32%
Option 2: utilization	55%	45%
Option 3: FY2014	55%	45%
Option 4: recent 5 FYs	55%	45%
Option 5: outliers	57%	43%
Committee Motion	75%	25%

Further permutations were explored through a bootstrap analysis which performs naïve random option draws from the data. In this exercise, 1,000 new independent datasets are created by randomly selecting 5 years from the 14-year period (FY2010-2023). The average percentage of NWGOM and SWGOM catch of the total WGOM catch was calculated for each new data set, generating 1,000 averages for each portion of WGOM. Figure 1 illustrates the distribution of those average for each area and suggests that the central tendency of this data is towards the 55:45 split, depicted by the black dotted line on the plot. Implementing options near the tails of the distribution will likely produce a change from the observed central tendency of the data.

Figure 1 - Distribution of average percentage of total WGOM catch by area. The black dotted line represents Option 0 or the original PDT proposal of 55:45 split.



The PDT has several concerns about a NWGOM:SWGOM apportionment that is strongly skewed towards one area (i.e., 75% North / 25% South):

1. Not consistent with fishing activity in recent years

Based on the analyses above, skewing the WGOM split strongly in favor of one area over another is counter to current fishery operations and would be inconsistent with a stated rationale of minimizing disruptions to the current fishery.

2. Biological consideration of two WGOM populations (spring and winter spawners)

There are long term biological concerns, particularly around extirpating distinct spawning groups, about potentially focusing fishing activity within the WGOM on one population over

the other. Shifting quota to a larger northern proportion could shift more relative effort/catch onto the stock that only spawns in the north (spring spawners), which seems to be in poorer condition.² This concern is further heightened with a choice of implementing separate Northern WGOM and Southern WGOM sector sub-ACLs (section #2 below). While the outcome of the 2023 Research Track Assessment and subsequent management track assessments is four assessment models and a WGOM stock that combines two biological populations (winter and spring spawners), it is hoped that future work will allow a more refined assessment of the two populations in the WGOM.

3. Equity, access for vessels fishing in SWGOM

Based on the quantitative analyses presented above, it is not clear that Committee option of a 75:25 split of the WGOM ACL between NWGOM and SWGOM ACEs is consistent with the equitability requirement of National Standard 4 or National Standard 8 requirement to minimize adverse effects on communities and to provide for sustained participation of such communities. Table 8 and Table 9 provide a history of port-level revenue and active vessels over the 2010-2023 fishing years. All major groundfish ports show a declining trend for both revenue and vessels. The decline is not as sharp for Boston/Scituate compared to some of the other major ports, such as Gloucester, New Bedford, and Portland.

² See WGOM cod 2024 Management Track Assessment:
https://d23h0vhsm26o6d.cloudfront.net/2.a.v_2024_COD_WGM_Presentation_SSC.pdf

Table 8 – Port-level groundfish and non-groundfish revenue (millions of 2023 USD) from groundfish trips.

Port	Metric	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
BOSTON/SCITUATE, MA	GF Rev	16.52	17.84	16.79	14.30	15.04	13.83	11.39	13.25	15.50	14.62	15.43	13.83	11.3	12.32
	NGF Rev	3.53	3.90	3.32	3.27	3.46	3.68	3.56	3.82	3.66	3.37	2.66	4.26	3.13	3.27
	Total Rev	20.05	21.73	20.11	17.57	18.50	17.51	14.96	17.07	19.16	17.99	18.09	18.09	14.43	15.58
CHATHAM, MA	GF Rev	2.96	3.20	1.31	1.00	0.67	0.68	0.28	0.57	0.44	0.34	0.16	0.2	0.06	0.12
	NGF Rev	3.11	4.66	3.49	2.72	5.06	2.83	4.10	4.05	5.06	3.41	4.14	2.06	2.23	2.24
	Total Rev	6.07	7.87	4.80	3.71	5.73	3.52	4.37	4.62	5.50	3.75	4.3	2.26	2.29	2.35
GLOUCESTER, MA	GF Rev	37.81	39.52	27.69	19.73	18.80	18.87	21.61	21.14	21.82	21.94	21.09	19.67	14.14	12.64
	NGF Rev	6.16	7.12	5.48	4.58	5.11	4.95	5.79	6.23	5.29	4.54	4.08	5.57	3.95	4.14
	Total Rev	43.97	46.65	33.16	24.31	23.90	23.82	27.40	27.37	27.11	26.48	25.18	25.24	18.09	16.78
NEW BEDFORD, MA	GF Rev	39.15	39.66	28.30	25.10	26.99	24.33	19.58	13.63	13.99	14.08	22.76	19.11	16.78	13.11
	NGF Rev	6.99	10.87	8.58	7.43	8.24	7.41	8.66	6.21	5.16	4.37	6.04	7.2	7.45	5.9
	Total Rev	46.14	50.53	36.88	32.53	35.23	31.75	28.23	19.84	19.16	18.45	28.8	26.31	24.23	19.01
PORTLAND, ME	GF Rev	C	6.42	8.11	7.26	8.18	6.51	4.73	3.68	3.40	2.51	1.81	1.62	2.9	2.51
	NGF Rev	C	1.02	1.04	0.84	0.73	0.78	0.57	0.78	0.71	0.79	0.33	0.49	1.03	0.52
	Total Rev	C	7.44	9.16	8.10	8.91	7.29	5.30	4.46	4.11	3.30	2.14	2.11	3.93	3.03
NH (All Ports)	GF Rev	4.11	5.65	4.46	2.63	1.87	0.86	0.85	0.85	1.15	1.01	1.43	1.16	0.55	0.27
	NGF Rev	0.51	0.79	0.87	0.49	0.86	0.79	0.58	0.75	0.82	0.77	0.49	0.44	0.31	0.25
	Total Rev	4.62	6.44	5.33	3.12	2.73	1.65	1.43	1.60	1.97	1.78	1.92	1.61	0.86	0.53
POINT JUDITH, RI	GF Rev	2.14	2.54	2.22	2.89	2.37	2.53	1.55	1.16	0.79	0.41	0.21	0.16	0.08	0.02
	NGF Rev	3.63	5.31	4.06	3.72	4.37	2.37	1.81	1.46	1.60	1.54	1.6	1.1	1.25	0.85
	Total Rev	5.77	7.86	6.28	6.61	6.74	4.90	3.37	2.62	2.39	1.95	1.81	1.26	1.33	0.87

Table 9 - Number of vessels landing a groundfish trip by port.

State/Port	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
BOSTON/SCITUATE, MA	38	39	35	29	30	28	30	25	32	32	28	29	27	27
CHATHAM, MA	33	29	27	27	19	25	25	29	27	26	24	21	16	22
GLOUCESTER, MA	123	110	98	85	74	69	67	65	63	60	60	53	55	52
NEW BEDFORD, MA	90	90	85	65	61	73	59	52	28	32	39	29	27	25
PORTLAND, ME	C	42	44	33	33	28	28	23	29	25	28	24	26	27
NH (All Ports)	31	31	28	24	17	15	16	17	18	17	15	11	6	6
POINT JUDITH, RI	50	43	50	50	48	47	43	35	31	24	23	13	14	11

2. Separate WGOM Sector Sub-ACLs

The PDT discussed the idea of establishing separate Northern WGOM and Southern WGOM sector sub-ACLs and offers the following points for consideration:

- Biologically, there is not a need to split WGOM into northern and southern portions, given the scale of the assessment is the entire WGOM area unless the goal is to implement controls to help protect spring versus winter spawning components. Having separate WGOM and SWGOM sub-ACLs could be used as a tool to help accomplish spawning component protection. However, the committee option (75:25) would likely put more relative pressure on the spring spawners which are in poorer condition.
- Maintaining a single WGOM sub-ACL would have management measures spatially align with the assessment scale. In the longer term, the Council may consider adjustments to management units as part of Phase 2 of the Atlantic Cod Management Transition Plan.
- Splitting the WGOM area further could mean less precision in catch data. However, target at-sea monitoring (ASM) coverage of 100% should make this less of a concern.
- Separate sub-ACLs reduces flexibility for vessels and businesses to adapt to changing conditions or to optimize the use of allocation portfolios.
- While GOM lease prices have been higher than GB cod in the past, historic ACE lease prices for GOM cod and GB cod are unlikely to be informative for predicting ACE lease prices for WGOM or NWGOM/SWGOM. These historical prices related not only to cod ACLs at those times, but other economic factors including fuel prices, landed value of stocks, bycatch rates of cod relative to other stocks landed, and global markets. Comparing projected FY 2025 ACLs to recent fishery landings amounts and prices, as well as current fuel costs, is more likely provide a useful estimate of future ACE lease prices (Table 10 and Table 11).
- The concerns highlighted are magnified if the apportionment is skewed towards one area over another (i.e., 75% North / 25% South).

The PDT emphasizes that the regulatory system is not nimble enough to revise the codified management measures mid-year due to the timing requirements of Council actions and rulemaking. It should be expected that whichever way the Council chooses to allocate WGOM (one combined sub-ACL or separate for North and South) will remain for the entire fishing year 2025 and at least through 2026, given time needed to analyze and consider changes in a future framework action. If there is an interest in setting up a system that could be changed mid-way through the year (to go from separate sub-ACLs to one combined), that could be considered as a sector provision in operations plans, rather than the separation being mandated by regulation via the Framework.

Moratorium Right Identifier (MRI) analysis

To understand the scope of potential shifts in effort between the North and South, the PDT identified the number of MRIs that have only GOM potential sector contribution (PSC) or only GB PSC and thus would now have access to an area they would not have previously, as well as their relative contributions represented by those PSCs.

Figure 2 shows the total Atlantic cod catch (landings and discards) in pounds for Sector MRIs fishing from 2021 to 2024. MRIs have been split into three groups based on their potential sector contributions for the GOM and GB stock areas in that year. The "both" group includes MRIs whose GOM and GB-specific PSCs each made up at least 5% of their combined cod PSC (GOM + GB PSCs). If one of their area-specific PSCs fell below this threshold, the MRI was assigned to the other area. For example, if an MRI has a PSC of 0.1% in the GOM and 1% in GB, their smallest PSC is 9% of their total ($0.1/1.1$), so they are assigned to the "both" category. If their GOM PSC was instead 0.01%, it would be only 1% of their total PSC, so they would be assigned to the GB-only category.

Between 2021 and 2024, there has been notable catch of cod within statistical areas 515 and 521 by MRIs that only have GB PSCs, while MRIs with only GOM PSC have almost exclusively caught cod within statistical areas 513 and 514 (Figure 2); though there is some catch attributable to statistical area 521 by GOM MRIs. The PDT acknowledges the potential for a shift in effort from the South to the North based on the existing fishery behavior identified in the analysis, but also finds that this is not exclusively a unilateral shift and there is also potential for a shift from the North to the South. Additionally, this does provide evidence that MRIs with only GB PSC have historically participated in the GOM ACE lease market in order to potentially land and discard Atlantic cod within statistical area 515, which is the old GOM stock area and would now be the northern portion of the WGOM stock area.

The PDT notes that this statistical area of 515 is more offshore in nature and there is the potential that vessels with GB PSCs only were leasing cod to target other groundfish stocks within the Gulf of Maine. As such, the PDT is also evaluating the number of MRIs that may only have GB PSC for Atlantic cod but also have a GOM PSC for other groundfish stocks. Preliminary analysis suggests that Pollock, Haddock, and Monkfish represent the highest revenue species on the majority of GOM trips operating under MRIs that have little or no GOM cod PSC.

Table 10 - Average species landings (lbs.) and revenue within the WGOM broadstock area, declared groundfish trips, averages over fishing years 2019-2023.

Cod BSA	SPECIES	Species BSAs Included	AVG_LIVE_POUNDS	AVG_LANDED_POUNDS	AVG_REVENUE	REVENUE_PERCENT
WGOM	Non-Groundfish*	N/A	19,589,658	11,541,981	\$13,061,522	26.4%
		GB (partial); GOM				
WGOM	Haddock	(partial)	10,456,217	9,169,720	\$12,605,306	25.4%
WGOM	Pollock	N/A	6,182,027	5,472,802	\$6,781,577	13.7%
WGOM	Redfish	N/A	9,059,687	9,057,192	\$5,372,163	10.8%
WGOM	White Hake	N/A	3,258,242	2,456,394	\$3,962,200	8.0%
WGOM	Witch Flounder	N/A	1,431,906	1,431,585	\$2,217,929	4.5%
WGOM	Cod	WGOM	999,055	853,661	\$2,200,952	4.4%
WGOM	American Plaice	N/A	1,353,325	1,353,175	\$2,180,109	4.4%
		GOM (partial); SNE/MA				
WGOM	Winter Flounder	(partial)	267,047	266,817	\$537,626	1.1%
		CC/GOM (partial);				
WGOM	Yellowtail Flounder	SNE/MA (partial)	467,772	467,461	\$401,180	0.8%
WGOM	Atlantic Halibut	N/A	39,837	34,757	\$223,607	0.5%

Table 11 - Average species landings (lbs) and revenue within the GB broadstock area, declared groundfish trips, averages over fishing years 2019-2023.

Cod BSA	SPECIES	Species BSAs Included	AVG_LIVE_POUNDS	AVG_LANDED_POUNDS	AVG_REVENUE	REVENUE_PERCENT
GB	Haddock	GB (partial)	4,250,490	3,727,540	\$4,534,206	32.0%
GB	Non-Groundfish*	N/A	3,418,111	2,091,834	\$4,084,412	28.8%
GB	Winter Flounder	GB	536,283	536,230	\$1,317,689	9.3%
GB	Pollock	N/A	1,057,298	936,893	\$1,130,130	8.0%
GB	Redfish	N/A	1,222,503	1,221,226	\$783,826	5.5%
GB	Witch Flounder	N/A	390,628	390,214	\$628,746	4.4%
GB	American Plaice	N/A	405,229	405,224	\$618,852	4.4%
GB	Cod	GB	318,065	271,753	\$617,725	4.4%
GB	White Hake	N/A	366,941	274,327	\$388,746	2.7%
GB	Atlantic Halibut	N/A	9,550	8,343	\$54,395	0.4%
GB	Yellowtail Flounder	GB	4,173	4,076	\$6,134	0.0%

Figure 2 - Map of total cod catch (landings and discards) in pounds represented by tile colors from 2021-2024 for all MRIs by group. Left: MRIs with both GB and GOM PSC, middle: MRIs with GB PSC only, right: MRIs with GOM PSC only. The color scale is capped at the 90th percentile of total catch. Old GOM and GB stock units are shown by blue and pink statistical areas, respectively.

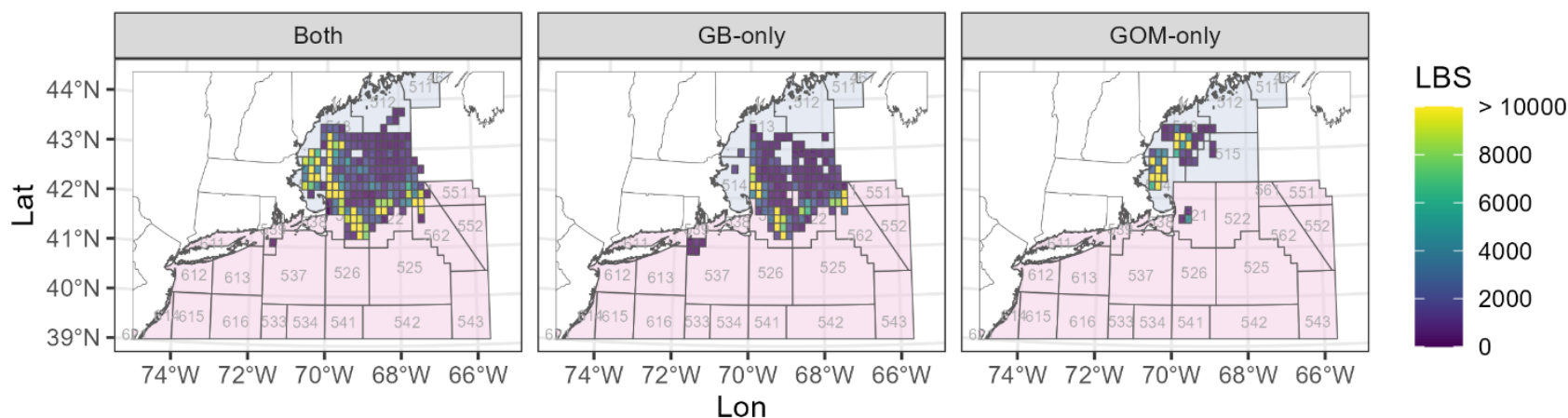
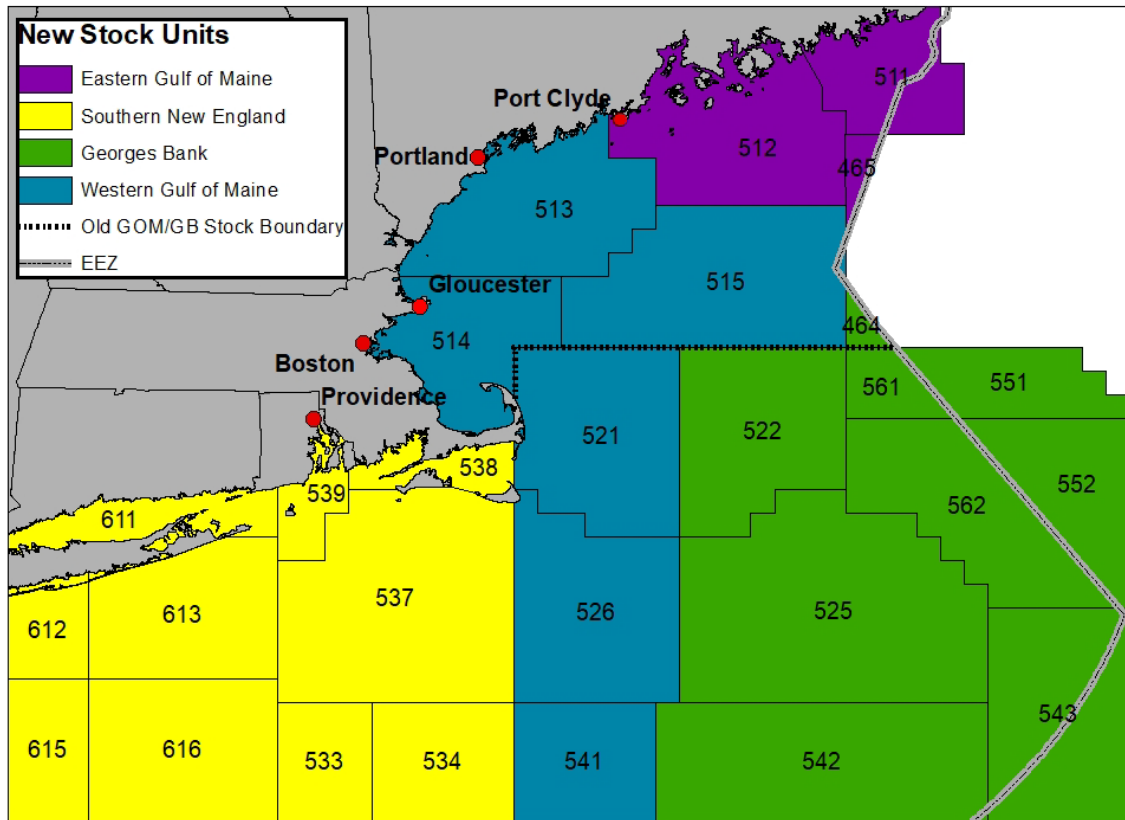


Figure 3 - New stock unit boundaries for the four new cod stocks along with the previous GOM/GB stock boundary outlined for reference. Note that Canadian catch is only included in the GB cod assessment



Attachment 1

Committee motion rationale spreadsheet

				GB / GOM Sub-ACL differences			Table 1 from PDT memo		
				With EGB included 2014-2023					
				% GB to GOM			% of historical catch		
							NWGOM SWGOM		
COMMERCIAL SUB-ACL	COMMERCIAL SUB-ACL	COMMERCIAL SUB-ACL	COMMERCIAL SUB-ACL						
GOM	GBW	GBE							
2010	4,327	3,302		76%	1	X	2010	75%	25%
2011	4,721	4,208		89%	1	X	2011	70%	30%
2012	3,619	4,524		125%	1	X	2012	79%	21%
2013	812	1,776		219%	2	X	2013	48%	52%
2014	810	1,735	145	232%	2	X	2014	58%	42%
2015	201	1,748	121	930%	9	X	2015	25%	76%
2016	271	596	135	270%	3	X	2016	51%	49%
2017	271	521	143	245%	2	X	2017	51%	49%
2018	358	1,170	251	397%	4	X	2018	40%	60%
2019	350	1,514	182	485%	5	X	2019	49%	51%
2020	267	1,041	183	458%	5	X	2020	49%	51%
2021	262	1,045	182	468%	5	X	2021	45%	55%
2022	261	238	156	149%	1	X	2022	78%	22%
2023	267	364	131	185%	2	X	2023	53%	47%

9 Year Average of 4X

The Provision to allow ACE Conversion from GBE to GBW Cod began in FY 2014



New England Fishery Management Council

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Rick Bellavance, *Acting Chair* | Cate O'Keefe, PhD, *Executive Director*

Updated 9/12/24

MEMORANDUM

DATE: September 5, 2024
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: Atlantic cod fishery data analysis for Framework 69

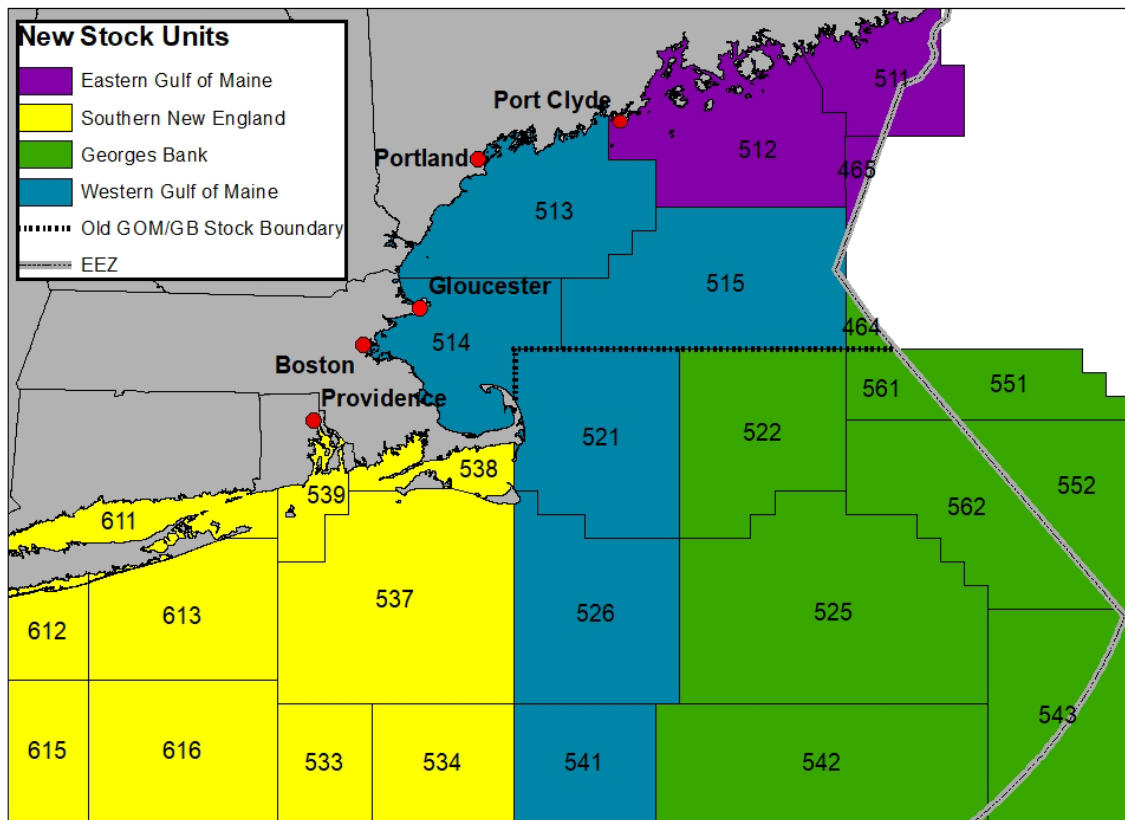
The Groundfish Plan Development Team (PDT) met as a sub-group on August 13, 2024, and as a whole on August 29, 2024, to continue discussing the Atlantic Cod Management Transition Plan analysis to support development of Phase 1 cod measures in Framework Adjustment 69.

Background

At their June 11, 2024, meeting, the Groundfish Committee tasked the PDT with additional analysis to support decision making and development of the “bridge approach” for setting catch advice for cod stocks for FY2025-FY2027 through Framework 69. The PDT addresses several of these tasking motions below.

Commercial and Recreational Fishery Data

The figure below provides the new stock unit boundaries for the four new cod stocks along with the previous GOM/GB stock boundary outlined for reference. Note that Canadian catch is only included in the GB cod assessment.



Analysis #1 – Cod catches by statistical area

The Committee passed the following motion at their June 11th meeting:

Task the Plan Development Team (PDT), for the purpose of (1) apportioning the North and South portions of WGOM and (2) determining recreational and commercial catches by statistical areas, to use recent years catch data (Fishing Year 2010 to 2022 broken down by fishing year).

The PDT provides **commercial** catches by statistical area annually from **FY2010-2023**, for each new stock area and for WGOM split into Northern (SRAs 513-515) and Southern (SRAs 521/526/541) in **Attachment 1**. Recreational catches are provided for the WGOM statistical areas in Attachment 2; however, these estimates are provided as numbers of fish, as recreational weight estimates for the new stock areas are under development.

The PDT calculated the percentage of catch in the Northern and Southern portions of WGOM using commercial catches only. This would have the recreational allocation be taken off the top prior to splitting the WGOM into North and South. **The PDT recommends for WGOM allocating to the recreational fishery first, using the percentage resulting from updating the FW59 methodology (see Analysis #2) as this simplifies the process of splitting WGOM into**

North and South, which is for the commercial fishery only for applying current potential sector contributions (PSCs). This is also more consistent with how the original GOM recreational allocation was made.

Table 1- Percentage of WGOM cod catch in the North (SRAs 513-515) and South (SRAs 521, 526, and 541).

Fishing Year	Percentage in NWGOM	Percentage in SWGOM
2010	0.748	0.252
2011	0.701	0.299
2012	0.786	0.214
2013	0.483	0.517
2014	0.583	0.417
2015	0.245	0.755
2016	0.510	0.490
2017	0.514	0.486
2018	0.401	0.599
2019	0.494	0.506
2020	0.487	0.513
2021	0.447	0.553
2022	0.778	0.222
2023	0.525	0.475
Average 2010-2023	0.550	0.450
5-year average (2019-2023)	0.546	0.454
3-year average (2021-2023)	0.583	0.417

Analysis #2– Recreational/commercial allocation split for WGOM area

The Committee passed the following motion at their June 11th meeting:

Move to task the Groundfish Plan Development Team with calculating as an option for a recreational sub-ACL for the WGOM stock, using the same method that was used to calculate the existing 37.5% (see Framework Adjustment 59) but using statistical areas that align with the new WGOM stock area.

The PDT examined the following table from Framework 59:

Table 2- Gulf of Maine Cod Preliminary Evaluation of Rec/Com Allocation Using New MRIP Landings and Discards, and Updated Commercial Landings and Discards (2019 Assessment Update).

Year	Rec Landings (A+B1)	Rec Discard Mortality (1,000's of fish)	Com Landings	Com Discard Mortality	Total Mortality	Rec Share
2001	975	207	1,168	591	2,941	0.402
2002	626	182	882	410	2,100	0.385
2003	532	153	844	417	1,946	0.352
2004	606	188	766	546	2,105	0.377
2005	742	270	832	225	2,070	0.489
2006	212	127	733	299	1,371	0.247
						0.375

The PDT updated this recreational/commercial allocation calculation for the entire WGOM stock area using the same method in Framework 59 with data from the WGOM cod 2024 Management Track Assessment (data provided in Attachment 3).

Table 3- Western Gulf of Maine Cod Preliminary Evaluation of Rec/Com Allocation (2024 Assessment).

Year	Rec Catch	Comm Catch	Total Catch	Rec Share
	(1,000's of fish)			
2001	1,203	4,328	5,531	0.217
2002	898	3,128	4,025	0.223
2003	700	2,119	2,819	0.248
2004	812	1,515	2,328	0.349
2005	1,039	1,434	2,473	0.420
2006	352	1,490	1,842	0.191
				0.275

This results in a WGOM cod recreational sub-ACL percentage of 27.5%. **The PDT recommends using the updated 27.5% for the WGOM recreational sub-ACL calculation.**

Analysis #3– For-hire VTR data in WGOM

The Committee also passed the following motion at their June 11th meeting:

Task the Plan Development Team to analyze VTR data for the for-hire fleet in the WGOM stock area by statistical reporting area for fishing years 2010 through 2022.

The PDT provides for-hire VTR data in the WGOM stock area in Attachment 4. The PDT emphasizes the utility of VTR data for providing context and verifying trends in recreational for-hire activity, and cautions against overinterpreting or using the data directly. There is no well-defined way to verify any of the for-hire information provided on the VTRs. While the effort estimates provided on the VTRs (i.e., number of passengers) are incorporated into the MRIP for-hire effort estimates, catch on for-hire trips is estimated by MRIP intercept sampling of anglers on those trips and not the actual catch data provided on the VTRs. Thus, the VTR catch data is not used in either the assessments or catch/management advice.

Setting aside these caveats, there is additional for-hire effort seen in VTRs than what is seen in MRIP. For example, for-hire VTRs report catches in statistical area 521 in all years from FY2010-2022, while MRIP only has catch in FY2021 and FY2022 (see Attachment 2). However, the overall trends in WGOM for-hire activity from VTR reporting appear similar to what is seen in MRIP. The majority of catch comes from SRAs 513 and 514, with very little catch in 515, or any of the southern WGOM statistical areas (521, 526, and 541).

Table 4- For-hire VTR data for WGOM statistical areas, averages across FY2010-2022.

**Averages
FY2010-
2022**

Stat Area	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod	Total Mortality of Cod	Percentage
513	52	45	2449	1656	27095	5902	32997	73.7	8.0	81.8	49%
514	73	54	1588	1033	25209	3726	28934	68.6	5.1	73.7	44%
515	5	4	46	44	1512	1645	1783	4.1	0.4	4.5	3%
521	14	7	125	29	1291	93	1384	3.5	0.1	3.6	2%
526	6	2	58	7	1100	54	1154	3.0	0.1	3.1	2%
541	2	2	2	2	7.5	2.2	10	0.02	0.00	0.02	0.01%
TOTALS								153	14	167	

Commercial Cod Catch by Statistical Area

FY10 - FY23, in Metric Tons

	EGOM				WGOM North					WGOM South					WGOM	GB								SNE							Total
Fishing Year	Statistical Areas																														
	465/511	465/511/ 512	512	Total	513	514	515	Total	521	521/526	526	Total	Total	464	522	522/525/ 542/543	525/542/ 543	561	561/562	562	Total	537	538/539	611	613	533/534/612 /614+	Total	Grand Total			
2010	0.2		17.1	17.2	868.7	2,593.1	192.9	3,654.6	1,231.1		0.6	1,231.6	4,886.3	1.9	703.7		304.2	208.5		31.6	1,249.9	34.8	127.5	6.0	3.0	1.3	172.7	6,326.2			
2011	0.5		29.5	30.0	1,002.3	2,979.7	217.9	4,199.8	1,782.6		5.1	1,787.7	5,987.5	2.1	952.6		144.2	111.8		17.2	1,227.9	22.1	77.9	0.8	2.6	3.2	106.7	7,352.2			
2012		9.4		9.4	494.3	1,450.2	103.6	2,048.1	555.5		1.0	556.6	2,604.6	3.2	725.2		25.8	27.9		7.4	789.6	29.3	98.6	1.3	2.4	0.4	132.1	3,535.8			
2013	1.7		4.5	6.2	186.7	442.9	81.5	711.1	761.2		0.9	762.1	1,473.3	2.2	603.6		37.6	20.3		3.1	666.7	11.3	84.3	0.8	1.7	0.4	98.5	2,244.7			
2014	0.7		3.1	3.8	189.0	326.1	119.2	634.3	447.2		6.4	453.6	1,087.9	0.7	759.7		39.1	64.5		4.0	867.9	12.8	28.9	0.2	3.6	1.5	47.0	2,006.5			
2015	0.2		1.9	2.1	36.9	95.1	37.2	169.2	516.8		3.8	520.6	689.8	1.2	864.9		18.2	73.8		6.5	964.5	14.3	100.5	2.3	5.7	0.9	123.8	1,780.2			
2016	0.6		3.4	4.0	46.9	155.7	47.9	250.6	240.0		1.2	241.2	491.8	2.0	187.1		6.7	70.7		5.7	272.3	10.4	42.5	1.1	3.5	0.2	57.7	825.7			
2017	0.2		2.6	2.8	48.9	162.9	52.1	263.8	248.3		0.8	249.1	512.9	0.9	137.3		1.8	41.0		1.7	182.6	3.9	17.9	0.2	0.2	0.2	22.5	720.9			
2018	0.4		3.8	4.2	67.7	174.2	66.8	308.7	459.7		2.0	461.6	770.3	0.7	246.4		5.6	103.4		3.1	359.2	4.4	9.2	0.1	3.8	0.0	17.5	1,151.3			
2019	0.4		2.2	2.6	85.4	141.0	56.5	282.9	289.4		0.2	289.6	572.5	0.3	167.3		0.5	61.1		3.0	232.2	0.5	3.4	0.1	0.3	0.2	4.6	812.0			
2020	0.2		1.2	1.4	48.7	119.1	53.5	221.4	232.0		0.9	232.8	454.2	0.4	122.7		1.3	57.9		0.1	182.4	0.7	3.5	0.1	1.2	0.1	5.7	643.7			
2021		1.3		1.3	65.7	118.6	48.4	232.7		288.3		288.3	521.0	0.7	118.7		0.9		54.4		174.8	0.3	1.3	0.2	0.3	0.2	2.3	699.2			
2022	1.1		0.8	1.9	89.7	127.8	34.1	251.6	71.7		0.0	71.7	323.3	0.6		45.9			28.4		74.9	0.7	2.1	0.5	0.3	0.1	3.7	403.8			
2023	0.1		0.3	0.4	66.0	150.2	30.2	246.4		223.1		223.1	469.5	0.6	59.1			13.7		0.0	73.4	0.6	3.3	0.3	0.4	0.2	4.8	548.1			

Area based on VTR-reported area if available, else area calculated from VTR lat/lon, else imputed

Areas grouped due to confidentiality

Commercial groundfish trips only

CAMS landing and estimated discard data as of 8/12/24

Greater Atlantic Regional Fisheries Office

August 12, 2024

Attachment 2 - WGOM recreational cod catch by statistical area

WGOM Recreational Landings (A+B1), numbers of fish

Fishing Year	513	514	521	526
2010	167,005	689,091		
2011	262,907	697,069		
2012	144,347	486,447		
2013	296,790	543,095		
2014	136,157	251,913		
2015	5,978	4,683		
2016	15,895	54,238		
2017	32,044	47,697		
2018	411	4,966		
2019	11,454	4,735		
2020	3,239	1,644		
2021	9,138	53,438	17,306	
2022	3,051	26,614		
2023	10,370	16,066		
2024		31		
	1,098,786	2,881,727	17,306	0

Total WGOM Recreational Mortality (A+B1+(B2 x .165)), numbers of fish

Fishing Year	513	514	521	526
2010	221,131	999,663		
2011	368,768	863,070		
2012	219,289	574,452		
2013	365,138	771,167		
2014	194,349	384,731		
2015	125,432	56,919		
2016	110,083	243,186		
2017	114,008	331,990		
2018	93,112	104,836		
2019	54,351	37,406		
2020	35,576	60,211		
2021	47,676	98,456	17,306	
2022	26,601	82,291	178	
2023	53,820	60,524		
2024	76	630		
	2,029,410	4,669,532	17,484	0

WGOM Recreational Discard Mortality (B2 x .165), numbers of fish

Fishing Year	513	514	521	526
2010	54,126	310,573		
2011	105,862	166,000		
2012	74,943	88,005		
2013	68,348	228,072		
2014	58,191	132,818		
2015	119,454	52,236		
2016	94,188	188,948		
2017	81,964	284,293		
2018	92,702	99,870		
2019	42,897	32,671		
2020	32,337	58,567		
2021	38,538	45,019		
2022	23,550	55,677	178	
2023	43,449	44,458		
2024	76	600		
	930,624	1,787,805	178	0

Percentage of WGOM Recreational Mortality by Year

Fishing Year	513	514	521	526
2010	18.11	81.89		
2011	29.94	70.06		
2012	27.63	72.37		
2013	32.13	67.87		
2014	33.56	66.44		
2015	68.79	31.21		
2016	31.16	68.84		
2017	25.56	74.44		
2018	47.04	52.96		
2019	59.23	40.77		
2020	37.14	62.86		
2021	29.17	60.24	10.59	
2022	24.39	75.45	0.16	
2023	47.07	52.93		
2024	10.71	89.29		
	30.18	69.45	0.26	

Source: MRIP

Attachment 3 - WGOM commercial and recreational cod catch

WGOM Commercial Cod Catch

Year	Age0	Age1	Age2	Age3	Age4	Age5	Age6	Age7	Age8	Age9+	Total	1,000s
2001	6	0	570763	2088188	939056	504812	130562	64288	11325	18998	4327997	4328
2002	505	35074	116572	880436	1290572	414241	245089	92082	31298	21830	3127699	3128
2003	38584	23322	142386	163213	595226	802230	212692	85022	30881	25540	2119094	2119
2004	2554	80623	83098	515153	184823	307141	222881	60306	32998	25765	1515342	1515
2005	6021	15502	133868	108669	709881	88520	213279	100566	29050	28582	1433939	1434
2006	801	23557	57969	589829	275697	385899	25520	71628	34949	24013	1489861	1490

WGOM Recreational Cod Catch

Year	Age0	Age1	Age2	Age3	Age4	Age5	Age6	Age7	Age8	Age9+	Total	1,000s
2001	56	2104	178298	594211	238829	130207	37120	16463	1785	3615	1202685	1203
2002	235	21121	41536	309208	380467	96168	32464	11215	2990	2174	897578	898
2003	287	14279	77085	68738	222318	222346	46361	24782	11773	12181	700150	700
2004	0	27271	57720	324625	98644	146529	87150	25632	18429	26158	812159	812
2005	0	9066	165904	106786	476964	34803	114531	85768	29427	15982	1039231	1039
2006	176	16352	30740	147895	55079	70489	4331	13206	8160	5338	351767	352

Source: 2024 Management Track Assessment

Table 1. For-hire VTR Activity in Statistical Area 513

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	75	69	3,467	2,664	103,760	8,548	112,308	282.4	11.6	294.0
2011	70	62	3,107	2,253	59,025	7,032	66,057	160.6	9.6	170.2
2012	65	59	3,341	2,360	58,645	5,815	64,460	159.6	7.9	167.5
2013	69	62	3,313	2,365	79,014	7,684	86,698	215.0	10.5	225.5
2014	65	60	2,878	1,983	34,810	5,626	40,436	94.7	7.7	102.4
2015	54	40	2,162	1,194	173	4,195	4,368	0.5	5.7	6.2
2016	45	38	2,229	1,505	5,312	9,354	14,666	14.5	12.7	27.2
2017	43	35	2,089	1,293	335	9,443	9,778	0.9	12.8	13.8
2018	46	40	1,945	1,300	437	5,289	5,726	1.2	7.2	8.4
2019	42	36	1,953	1,335	1,548	5,158	6,706	4.2	7.0	11.2
2020	38	31	1,657	783	2,152	1,547	3,699	5.9	2.1	8.0
2021	35	27	1,901	1,151	3,218	2,796	6,014	8.8	3.8	12.6
2022	33	27	1,800	1,347	3,807	4,246	8,053	10.4	5.8	16.1
Avg	52	45	2,449	1,656	27,095	5,902	32,997	73.7	8.0	81.8

Table 2. For-hire VTR Activity in Statistical Area 514

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	115	102	2,730	2,182	90,487	8,078	98,565	246.3	11.0	257.3
2011	110	93	2,580	2,172	86,847	8,891	95,738	236.4	12.1	248.5
2012	94	78	2,180	1,848	54,230	3,372	57,602	147.6	4.6	152.2
2013	85	75	1,800	1,589	58,144	3,548	61,692	158.2	4.8	163.1
2014	80	62	1,587	1,287	27,680	1,871	29,551	75.3	2.5	77.9
2015	58	29	1,076	474	17	1,860	1,877	0.0	2.5	2.6
2016	58	40	1,292	750	2,808	3,997	6,805	7.6	5.4	13.1
2017	58	44	1,246	667	985	3,180	4,165	2.7	4.3	7.0
2018	59	39	1,054	554	368	3,007	3,375	1.0	4.1	5.1
2019	50	32	850	475	1,599	1,915	3,514	4.4	2.6	7.0
2020	58	34	1,289	426	1,700	1,739	3,439	4.6	2.4	7.0
2021	61	34	1,462	505	1,531	3,017	4,548	4.2	4.1	8.3
2022	64	40	1,501	503	1,315	3,960	5,275	3.6	5.4	9.0
Avg	73	54	1,588	1,033	25,209	3,726	28,934	68.6	5.1	73.7

Table 3. For-hire VTR Activity in Statistical Area 515

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	3	3	72	72	10,124	354	10,478	27.6	0.5	28.0
2011	8	8	46	46	3,476	230	3,706	9.5	0.3	9.8
2012	5	5	51	51	1,281	112	1,393	3.5	0.2	3.6
2013	4	4	14	14	1,171	70	1,241	3.2	0.1	3.3
2014	9	9	38	37	2,939	91	3,030	8.0	0.1	8.1
2015	8	5	41	37	-	374	374	-	0.5	0.5
2016	4	3	59	57	593	793	1,386	1.6	1.1	2.7
2017	8	6	38	34	-	372	372	-	0.5	0.5
2018	5	4	41	36	6	289	295	0.0	0.4	0.4
2019	< 3	< 3	65	59	21	353	374	0.1	0.5	0.5
2020	< 3	< 3	57	52	5	156	161	0.0	0.2	0.2
2021	< 3	< 3	48	43	-	246	246	-	0.3	0.3
2022	3	< 3	33	31	38	90	128	0.1	0.1	0.2
Avg	5	4	46	44	1,512	1,645	1,783	4.1	0.4	4.5

Table 4. For-hire VTR Activity in Statistical Area 521

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	23	8	132	40	6,774	182	6,956	18.4	0.2	18.7
2011	22	9	108	25	1,469	112	1,581	4.0	0.2	4.2
2012	17	7	90	23	424	60	484	1.2	0.1	1.2
2013	14	7	75	22	468	51	519	1.3	0.1	1.3
2014	16	5	110	17	318	58	376	0.9	0.1	0.9
2015	13	7	95	32	624	88	712	1.7	0.1	1.8
2016	11	7	55	42	2,623	281	2,904	7.1	0.4	7.5
2017	12	7	73	24	1,594	100	1,694	4.3	0.1	4.5
2018	10	6	100	21	340	42	382	0.9	0.1	1.0
2019	11	6	171	33	524	51	575	1.4	0.1	1.5
2020	10	6	180	26	466	52	518	1.3	0.1	1.3
2021	11	6	192	35	768	90	858	2.1	0.1	2.2
2022	10	4	240	32	386	43	429	1.1	0.1	1.1
Avg	14	7	125	29	1,291	93	1,384	3.5	0.1	3.6

Table 5. For-hire VTR Activity in Statistical Area 526

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	3	< 3	20	7	2,878	85	2,963	7.8	0.1	7.9
2011	8	< 3	19	7	2,192	39	2,231	6.0	0.1	6.0
2012	4	< 3	18	5	893	8	901	2.4	0.0	2.4
2013	< 3	-	< 3	-	-	-	-	-	-	-
2014	< 3	-	< 3	-	-	-	-	-	-	-
2015	< 3	< 3	24	5	1,339	34	1,373	3.6	0.0	3.7
2016	-	-	-	-	-	-	-	-	-	-
2017	4	3	49	20	2,260	107	2,367	6.2	0.1	6.3
2018	8	7	63	16	1,745	163	1,908	4.7	0.2	5.0
2019	11	< 3	109	10	403	105	508	1.1	0.1	1.2
2020	11	3	209	11	870	68	938	2.4	0.1	2.5
2021	11	3	150	12	1,046	24	1,070	2.8	0.0	2.9
2022	11	3	96	4	680	64	744	1.9	0.1	1.9
Avg	6	2	58	7	1,100	54	1,154	3.0	0.1	3.1

Table 6. For-hire VTR Activity in Statistical Area 541

Fishing Year	Total Number of Vessels Reporting Trips	Number of Vessels Reporting Trips with Cod Catch	Total Number of Reported Trips	Number of Reported Trips with Cod Catch	Harvest of Cod	Discard Mortality of Cod (numbers of fish)	Total Mortality of Cod	Harvest of Cod	Discard Mortality of Cod (mt)	Total Mortality of Cod
2010	< 3	< 3	< 3	< 3	20	7	27	0.1	0.0	0.1
2011	4	3	4	3	33	9	42	0.1	0.0	0.1
2012	< 3	-	< 3	-	-	-	-	-	-	-
2013	< 3	< 3	< 3	< 3	45	12	57	0.1	0.0	0.1
2014	-	-	-	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-	-	-	-
2018	-	-	-	-	-	-	-	-	-	-
2019	-	-	-	-	-	-	-	-	-	-
2020	-	-	-	-	-	-	-	-	-	-
2021	< 3	-	< 3	-	-	-	-	-	-	-
2022	< 3	-	< 3	-	-	-	-	-	-	-
Avg	2	2	2	2	8	2	10	0.0	0.0	0.02

Amendment 25 (Revised)
to the
Northeast Multispecies Fishery Management Plan

Appendix IV

Development of Phase 1 Measures for Atlantic Cod
Management Transition Plan:
Common Pool and Recreational Measures



New England Fishery Management Council

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Rick Bellavance, *Chair* | Cate O'Keefe, PhD, *Executive Director*

MEMORANDUM

DATE: October 23, 2024
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: Common pool trimester TAC distributions and areas for cod stocks

The Groundfish Plan Development Team (PDT) met as a sub-group on October 4 and 16, 2024, and as a whole on October 18, 2024, to discuss analysis to support development of Framework 69 cod measures for Phase 1 of the Atlantic Cod Management Transition Plan. This memorandum focuses on the Committee tasking analysis to develop common pool trimester total allowable catch (TAC) distributions and areas for the new cod stocks.

Background

At their June 11, 2024, meeting, the Groundfish Committee tasked the PDT with the following motion:

The Groundfish Committee tasks the Plan Development Team (PDT) to determine the appropriate trimester TAC areas and trimester TAC distributions that may be needed for common pool management to adequately prevent overfishing of four stocks under Option 2 (4 stock TACs) (see Groundfish PDT memo to Committee dated June 5, 2024).

1. Trimester TAC Distributions

The PDT followed the methodology established in Amendment 16 to use the most recent five-year period to determine trimester TAC distributions.

For each stock, the PDT examined the percentage of common pool catch by trimester over FY2019-2023. The PDT also looked at total catch, trip count, and permit count for context.

Table 1- Common pool percent catch by trimester, total catch (lbs), trip count, and permit count for FY2019-2023 by cod stock.

Fishing Year	Stock	Percent Trimester 1	Percent Trimester 2	Percent Trimester 3	Total Catch (lbs)	Trip Count	Permit Count
2019	EGOM Cod	91.76	0	8.24	1.7	28	5
2020		99.58	0	0.42	19.25	36	8
2021		100	0	0	0.78	23	5
2022		77.44	22.55	0	2266.36	54	11
2023		91.79	0	8.21	2.8	39	12
AVG		92	5	3			
2023	GB Cod	0	0	100	NA*	2	1
2019	SNE Cod	14.01	49.46	36.53	3184.57	122	34
2020		40.64	32.66	26.7	5444.34	203	35
2021		34.24	32.1	33.66	2996.03	179	36
2022		27.58	23.82	48.61	5707.01	250	33
2023		63.49	14.53	21.98	8996.07	276	36
AVG		36	31	33			
2019	WGOM Cod	55.01	26.33	18.67	10235.33	353	59
2020		60.57	19.01	20.42	7057.79	310	55
2021		49.61	18.55	31.84	9084.19	225	37
2022		36.9	26.64	36.46	18541.69	227	32
2023		69.25	20	10.74	27642.54	256	38
AVG		54	22	24			

*NA due to confidentiality

Note the very low number of trips for the Georges Bank (GB) area. There were also relatively low number of trips from few permits in the Eastern Gulf of Maine (EGOM) area. The PDT took a closer look at the four years with very low catch in EGOM. With the exception of a few pounds in 2020, all of the values contributing to those low values come from estimated discards, and are the result of low sub-trip Kall values x broadstock discard rate x discard mortality rate.

For GB cod, the PDT recommends an alternative approach of distributing the trimester TACs evenly, to avoid setting any trimester TAC percentages at 0%.

Table 2- Proposed common pool trimester TAC distributions.

Stock	Trimester 1	Trimester 2	Trimester 3
EGOM Cod	92%	5%	3%
GB Cod	33%	33%	34%
SNE Cod	36%	31%	33%
WGOM Cod	54%	22%	24%

2. Trimester TAC Areas

The PDT followed the Amendment 16 methodology for determining the trimester TAC closure areas as the statistical areas that make up 90% of catches for each cod stock. This analysis uses commercial (common pool and sector) catches. The PDT examined catches in the most recent five years (FY2019-2023).

In Table 2 below, the statistical areas highlighted in bold contribute to 90% of commercial cod catches on average over the five-year period for each stock area. Greyed out areas contribute to the remainder. See Attachment for more detail.

The PDT recommends defining trimester TAC areas based on the statistical areas contributing to 90% of commercial catches in recent years (those highlighted in bold).

For cod stocks, trimester TAC areas would close to all gear types.

Table 3- Average percent contribution of commercial catches over the five-year period by statistical area and the number of years contributing towards 90% of commercial catches, for each cod stock.

Stock	Stat Area	Average Percent	Years in Top 90%
EGOM	512	77.2	5
EGOM	511	13.4	1
EGOM	465	9.4	3
GB	522	69.8	5
GB	561	28.7	5
GB	562	0.6	0
GB	464	0.5	0
GB	525	0.3	0
GB	542	0.0	0
GB	543	0.0	0
SNE	539	62.7	5
SNE	537	13.8	5
SNE	613	11.9	5
SNE	611	6.8	3
SNE	612	3.9	0
SNE	538	0.6	0
SNE	614	0.2	0
SNE	615	0.1	0
SNE	622	0.1	0
SNE	533	0.0	0
WGOM	521	45.3	5
WGOM	514	29.0	5
WGOM	513	16.0	5
WGOM	515	9.6	2
WGOM	526	0.0	0

Table 4- Proposed trimester TAC areas that would close when 90% of trimester TAC reached. Closures would apply to all gear types.

Stock	Statistical Areas
EGOM	465, 511, 512
GB	522, 561
SNE	537, 539, 613
WGOM	513, 514, 521

Differential Days-At-Sea

Prior to Amendment 16, differential days-at-sea (DAS) was used as an effort control, whereby vessels fishing in certain areas were charged a higher ratio of DAS. As part of the transition to

sectors under Amendment 16 (2010), differential DAS was maintained in the FMP as a common pool accountability measure for 2010 and 2011, and replaced by the trimester TAC system in 2012. Framework 44 (2010) provided the Regional Administrator with the authority to implement differential DAS counting in 2012 and beyond, to prevent overharvest or underharvest of groundfish stocks by the common pool. Each stock has a prescribed differential DAS area, in which DAS would be counted at a different ratio if adjusted.

Rather than attempt to adapt the existing authority to implement differential DAS to include the four new cod stocks, the PDT recommends the removal of this provision entirely. It has not been used since the transition to the Trimester TAC system, which is used to prevent overharvest of groundfish stocks by the vessels fishing under the provisions of the common pool. Instead, the Regional Administrator adjusts common pool possession limits to prevent over- and underharvest of groundfish stocks.

Common Pool Trip Limits

The PDT notes that common pool trip limits for various permit categories for the cod stocks will need to be developed as part of Framework 69. This follow-up work is expected to be completed in November.

Attachment

Commercial cod catches by area

Statistical areas highlighted in bold contribute to 90% of commercial cod catches for each stock area in a given year. Greyed out areas contribute to the remainder.

Fishing Year	Stock	Area	Percent Catch	Cumulative Catch
2019	CODEGOM	512	83.79	83.79
2019	CODEGOM	465	9.55	93.34
2019	CODEGOM	511	6.66	100
2020	CODEGOM	512	84.89	84.89
2020	CODEGOM	465	14.73	99.62
2020	CODEGOM	511	0.38	100
2021	CODEGOM	512	97.95	97.95
2021	CODEGOM	465	1.36	99.31
2021	CODEGOM	511	0.69	100
2022	CODEGOM	511	54.48	54.48
2022	CODEGOM	512	42.61	97.09
2022	CODEGOM	465	2.91	100
2023	CODEGOM	512	76.91	76.91
2023	CODEGOM	465	18.34	95.25
2023	CODEGOM	511	4.75	100
2019	CODGBT	522	72.07	72.07
2019	CODGBT	561	26.31	98.38
2019	CODGBT	562	1.29	99.67
2019	CODGBT	525	0.22	99.89
2019	CODGBT	464	0.11	100
2019	CODGBT	543	0	100
2020	CODGBT	522	67.25	67.25
2020	CODGBT	561	31.75	99
2020	CODGBT	525	0.71	99.71
2020	CODGBT	464	0.22	99.93
2020	CODGBT	562	0.07	100
2020	CODGBT	543	0	100
2021	CODGBT	522	67.76	67.76
2021	CODGBT	561	29.41	97.17
2021	CODGBT	562	1.9	99.07
2021	CODGBT	525	0.47	99.54
2021	CODGBT	464	0.42	99.96
2021	CODGBT	542	0.04	100
2022	CODGBT	522	61.2	61.2
2022	CODGBT	561	37.21	98.41
2022	CODGBT	464	0.84	99.25
2022	CODGBT	562	0.69	99.94

Attachment

2022	CODGBT	525	0.06	100
2022	CODGBT	542	0	100
2023	CODGBT	522	80.48	80.48
2023	CODGBT	561	18.61	99.09
2023	CODGBT	464	0.88	99.97
2023	CODGBT	562	0.03	100
2023	CODGBT	525	0	100
2023	CODGBT	542	0	100
2019	CODSNE	539	74.36	74.36
2019	CODSNE	537	11.66	86.02
2019	CODSNE	613	6.76	92.78
2019	CODSNE	612	4.2	96.98
2019	CODSNE	611	2.66	99.64
2019	CODSNE	614	0.28	99.92
2019	CODSNE	538	0.08	100
2019	CODSNE	533	0	100
2019	CODSNE	615	0	100
2019	CODSNE	622	0	100
2020	CODSNE	539	61.39	61.39
2020	CODSNE	613	21.08	82.47
2020	CODSNE	537	12.87	95.34
2020	CODSNE	611	2.08	97.42
2020	CODSNE	612	1.2	98.62
2020	CODSNE	615	0.54	99.16
2020	CODSNE	622	0.5	99.66
2020	CODSNE	538	0.33	99.99
2020	CODSNE	533	0.01	100
2020	CODSNE	614	0	100
2021	CODSNE	539	55.85	55.85
2021	CODSNE	613	15	70.85
2021	CODSNE	537	14.67	85.52
2021	CODSNE	611	7.02	92.54
2021	CODSNE	612	6.88	99.42
2021	CODSNE	614	0.58	100
2021	CODSNE	538	0	100
2021	CODSNE	615	0	100
2021	CODSNE	622	0	100
2021	CODSNE	533	0	100
2022	CODSNE	539	55.48	55.48
2022	CODSNE	537	17.84	73.32
2022	CODSNE	611	14.92	88.24
2022	CODSNE	613	7.44	95.68
2022	CODSNE	612	3.8	99.48
2022	CODSNE	538	0.52	100

Attachment

2022	CODSNE	614	0	100
2022	CODSNE	615	0	100
2022	CODSNE	622	0	100
2022	CODSNE	533	0	100
2023	CODSNE	539	66.32	66.32
2023	CODSNE	537	11.74	78.06
2023	CODSNE	613	9.13	87.19
2023	CODSNE	611	7.33	94.52
2023	CODSNE	612	3.56	98.08
2023	CODSNE	538	1.92	100
2023	CODSNE	614	0	100
2023	CODSNE	615	0	100
2023	CODSNE	622	0	100
2023	CODSNE	533	0	100
2019	CODWGOM	521	50.61	50.61
2019	CODWGOM	514	24.63	75.24
2019	CODWGOM	513	14.92	90.16
2019	CODWGOM	515	9.82	99.98
2019	CODWGOM	526	0.02	100
2020	CODWGOM	521	51.07	51.07
2020	CODWGOM	514	26.22	77.29
2020	CODWGOM	515	11.79	89.08
2020	CODWGOM	513	10.73	99.81
2020	CODWGOM	526	0.19	100
2021	CODWGOM	521	55.34	55.34
2021	CODWGOM	514	22.77	78.11
2021	CODWGOM	513	12.61	90.72
2021	CODWGOM	515	9.28	100
2021	CODWGOM	526	0	100



New England Fishery Management Council

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Rick Bellavance, *Chair* | Cate O'Keefe, PhD, *Executive Director*

MEMORANDUM

DATE: November 18, 2024
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: Follow-up on common pool measures for cod stocks

The Groundfish Plan Development Team (PDT) met as a sub-group on November 1, 2024, and as a whole on November 13, 2024, to discuss follow-up analysis to develop common pool measures for the new cod stocks. This includes both follow-up analysis for developing common trimester TAC distributions and areas and analysis to develop default common pool trip limits.

Background

At their October 29th, 2024, meeting, the Groundfish Committee tasked the PDT with the following motion:

The Groundfish Committee tasks the PDT to provide additional information and analysis to inform further refinement of the common pool trimester TAC closure areas for the cod stocks.

1. Trimester TAC Distributions

The PDT investigated the higher common pool catches reported for 2022 for the Eastern Gulf of Maine (EGOM) area¹. The source of the higher landings (~2000 lbs) in common pool in EGOM for 2022 was due to a VTR mis-attributing catch to statistical area 511 (in EGOM), rather than the Western Gulf of Maine (WGOM). This has been corrected and is reflected below in Table 1. As a result, this changes the trimester percentages of catch over the most recent five years for EGOM and WGOM.

¹ See Table 1 in "241023 Memo GF PDT to CMTE re common pool trimester TAC analysis for cod stocks": https://d23h0vhsm26o6d.cloudfront.net/4d_241023-GF-PDT-memo-to-CMTE-re-cod-common-pool-trimester-TAC-analysis-FW69_with-attachment.pdf

Table 1- Common pool percent catch by trimester, total catch (lbs), trip count, and permit count for FY2019-2023 by cod stock.

Fishing Year	Stock ID	Trimester 1 Percent	Trimester 2 Percent	Trimester 3 Percent	Total Catch (lbs)	Number of Trips	Number of Permits
2019	EGOM	91.8	0.0	8.2	1.7	28	5
2020	EGOM	99.6	0.0	0.4	19.3	36	8
2021	EGOM	100.0	0.0	0.0	0.8	23	5
2022	EGOM	94.3	4.1	1.6	3.2	54	11
2023	EGOM	90.1	0.0	9.9	2.6	40	13
AVG		95	1	4			
2023	GB	0.0	0.0	100.0	NA*	2	1
2019	SNE	14.0	49.5	36.5	3184.6	122	34
2020	SNE	40.6	32.7	26.7	5444.3	203	35
2021	SNE	34.2	32.1	33.7	2996.0	179	36
2022	SNE	27.6	23.8	48.6	5707.0	250	33
2023	SNE	63.5	14.5	22.0	8995.7	277	36
AVG		36	31	33			
2019	WGOM	55.0	26.3	18.7	10235.3	353	59
2020	WGOM	60.6	19.0	20.4	7057.8	310	55
2021	WGOM	49.6	18.6	31.8	9084.2	225	37
2022	WGOM	41.3	26.2	32.5	20807.9	239	32
2023	WGOM	69.3	20.0	10.7	27642.5	256	37
AVG		55	22	23			

*NA due to confidentiality

For EGOM, the PDT suggests 80%, 10%, 10%, to set at a minimum level for each trimester. This revised trimester TAC distribution will facilitate catch similar to historical levels in trimester 1. Given that underages from one trimester roll into the next, it is expected that the remaining trimester TAC amounts in trimesters 2 and 3 will be sufficient for bycatch levels of cod in the EGOM.

Table 2- Proposed common pool trimester TAC distributions.

Stock	Trimester 1	Trimester 2	Trimester 3
EGOM Cod	80%	10%	10%
GB Cod	33%	33%	34%
SNE Cod	36%	31%	33%
WGOM Cod	55%	22%	23%

2. Trimester TAC Areas

As described in the October 23rd memo², the PDT followed the Amendment 16 methodology for determining the trimester TAC closure areas as the statistical areas that make up 90% of catches for each cod stock. This analysis uses commercial (common pool and sector) catches. The PDT examined catches in the most recent five years (FY2019-2023).

The PDT provides additional information on common pool catches by statistical area in response to the Committee’s tasking in Attachment 1. The PDT also updated the previous analysis to reflect the data correction for EGOM, which results in a different proposal for trimester TAC closure areas for EGOM than what was previously included. **The PDT continues to recommend defining trimester TAC areas based on the statistical areas contributing to 90% of commercial catches in recent years** (Table 3). This accounts for commercial activity as a whole, and avoids a situation where the trimester TAC areas do not adequately cover areas where relevant stocks of cod are available. In this case, continued catch by the common pool in open water could result in trimester or sub-ACL overages.

Table 3- Average percent contribution of total commercial catches over the five-year period (FY2019-2023) by statistical area and the number of years contributing towards 90% of commercial catches, for each cod stock.

Total 2019-2023 Cod Catch By Area			
Stock	Area	Average Percent of Total Catch	Years in Top 90%
EGOM	512	87.0	5
EGOM	465	10.1	3
EGOM	511	2.9	0
EGOM	467	0.0	0

² “241023 Memo GF PDT to CMTE re common pool trimester TAC analysis for cod stocks”: https://d23h0vhs26o6d.cloudfront.net/4d_241023-GF-PDT-memo-to-CMTE-re-cod-common-pool-trimester-TAC-analysis-FW69_with-attachment.pdf

GB	522	69.8	5
GB	561	28.7	5
GB	562	0.8	0
GB	464	0.5	0
GB	525	0.3	0
GB	542	0.0	0
GB	543	0.0	0
SNE	539	62.7	5
SNE	537	13.7	5
SNE	613	11.9	4
SNE	611	6.8	3
SNE	612	3.9	0
SNE	538	0.6	0
SNE	614	0.2	0
SNE	615	0.1	0
SNE	622	0.1	0
SNE	533	0.0	0
SNE	534	0.0	0
SNE	616	0.0	0
SNE	621	0.0	0
WGOM	521	45.3	5
WGOM	514	29.1	5
WGOM	513	16.0	5
WGOM	515	9.6	2
WGOM	526	0.0	0
WGOM	541	0.0	0

Table 4- Proposed trimester TAC areas that would close when 90% of trimester TAC reached. Closures would apply to all gear types.

Stock	Statistical Areas
EGOM	512
GB	522, 561
SNE	537, 539, 613
WGOM	513, 514, 521

3. Default Common Pool Trip Limits

Default common pool trip limits for the new cod stocks need to be developed as part of Framework 69. The PDT makes the following recommendations for default trip limits for the different common pool permit categories (Days-At-Sea (DAS), Handgear A (HA), Handgear B (HB), and Small Vessel Category), as well as recommendations for updates to the process used by the Regional Administrator to adjust common pool trip limits.

1. Trip limit recommendations

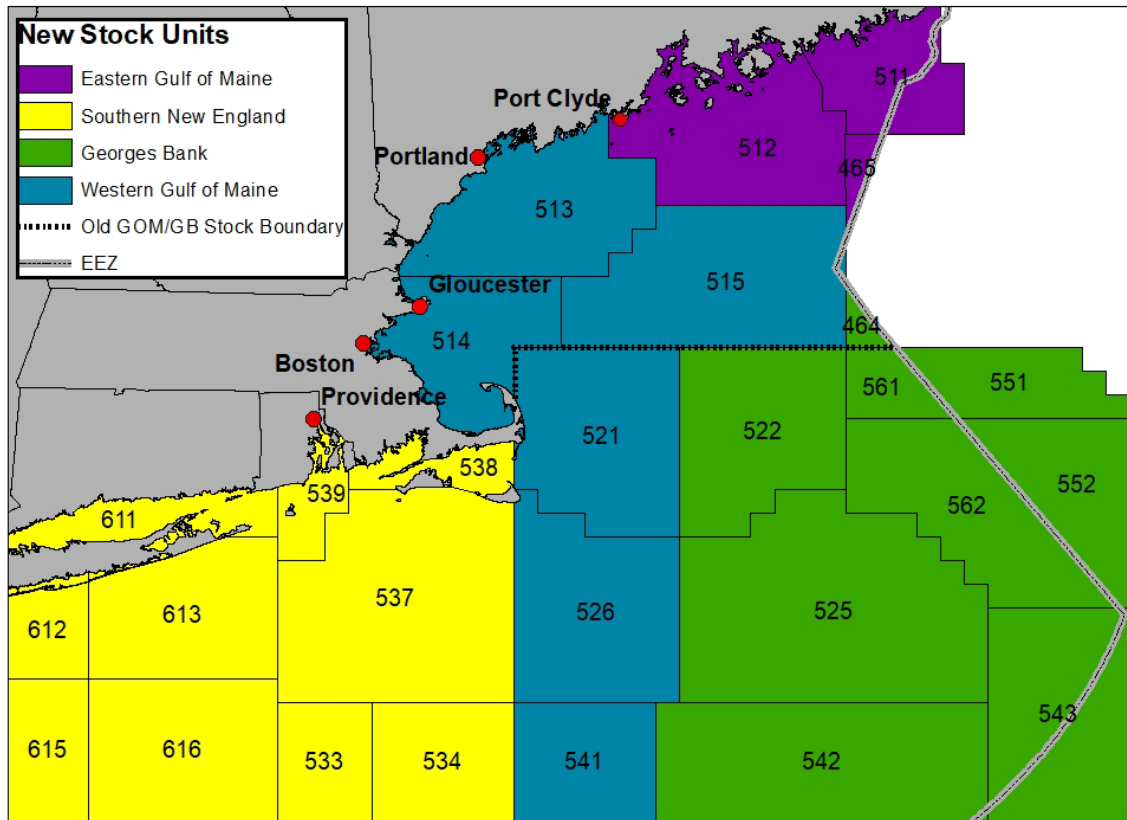
- EGOM: Sub-ACL estimated to be 1.6 mt
 - Average per trip landings were 42 lb
 - **Suggest 25 lb per DAS/50 lb per trip OR 50 lb per trip as DAS permit limits**
 - Supports a reasonable amount of cod bycatch consistent with historical landings
- GB: Sub-ACL estimated to be 2.1 mt
 - Extremely minimal effort on GB cod in recent years, only 2023 w/ <3 trips by < 3 vessels
 - Propose matching EGOM limit this year to support small amount of bycatch **(25 lb per DAS/50 lb per trip OR 50 lb per trip as DAS permit limits)**
- SNE: Sub-ACL estimated to be 0.12 mt
 - **0 lb trip limit/possession prohibited**
 - The common pool sub-ACL for SNE cod is insufficient to maintain any amount of landings; even at 25 lb per trip, it would take <11 trips to exceed the sub-ACL.
- WGOM: Sub-ACL estimated to be 8.2 mt
 - This is slightly reduced relative to the 9.8 mt sub-ACL for GOM cod in FY 2024. However, WGOM should see higher effort relative to GOM given the inclusion of former GB statistical areas with active fishing in previous years.
 - A trip limit analysis was conducted for trips in FY2018 to present in WGOM stat area that followed the methods used to set initial FY 2024 catch limits and described below:
 - During any part of the time period, trips exceeding the proposed possession limit were adjusted down to land the proposed limit. During time periods when the possession limit was less than the proposed limit, if the landing was greater than or equal to 80% of the then possession limit the trip was assumed to be constrained by the possession limit. In this case the trip landings were adjusted up to the proposed possession limit. Trip landings of less than 80% of the then possession limit were not adjusted.
 - For trips in statistical areas in "old" GOM, GOM trip limits at the time of the trip were used, likewise for trips in GB.
 - The highest 12-month rolling sum for adjusted landings was between Aug 2022-Jul 2023.
 - The analysis was run for 3 daily/trip proposed possession limit scenarios for landings: 50/100 lbs, 100/200 lbs, and 150/300 lbs
 - Under 50/100 lb limit estimates are 13,295 lbs (6.0 mt)
 - Under 100/200 lb limits estimates are 16,320 lbs (7.4 mt)

- Under 150/300 lb limits, estimates are 19,379 lbs (8.8 mt)
Note: this estimate is above the proposed sub-ACL of 8.2 mt. Therefore, the PDT does not recommend considering further.
- When examining discards in the WGOM stat areas, there were some higher values (~2000 lbs over 12 months), but these numbers were driven primarily by high discards in FY2018. Since FY 2020, cumulative discards over 12-month periods ranged from 50lbs to 750 lbs.
- From this analysis, **the PDT recommends the Committee consider one of two options for daily/trip proposed possession limit:**
 - 50 lb per DAS/100 lb per trip
 - 100 lb per DAS/200 lb per trip

2. HA, HB, and Small Vessel recommendations

- HA should remain tied to the DAS limit (i.e. if the A DAS limit is 50 lb per DAS, then the HA limit would be 50 lb per trip), and the 300 lb cap should remain.
- HB should be set at 25 lb per trip (consistent with past years) for FY2025, except for stocks with a trip limit at 0. Instead of a proportional system for determining this limit, the RA should have the authority to set limits for HB up to 75 lb per trip (the current maximum in the proportional method), consistent with the methodology used for other permits (the "in-house" analysis provided above).
- For the Small Vessel Category, regulations should be clarified regarding the 300 lb combined trip limit for cod, yellowtail, and haddock and that small vessel category vessels are also subject to limits for those stocks below 300 lb (i.e. if the A DAS limit for cod is 50 lb per DAS, then Small Vessel Category will have a limit of 50 lb per trip on cod nested within its overall 300 lb limit for the cod, haddock, and yellowtail flounder). The Council could consider, in a future action, whether the 300 lb combined limit for these three stocks is still appropriate for the small vessel category.

Figure 1- New stock unit boundaries for the four new cod stocks along with the previous GOM/GB stock boundary outlined for reference. Note that Canadian catch is only included in the GB cod assessment.



Average percent contribution of common pool catches over the five-year period (FY2019-2023) by statistical area and the number of years contributing towards 90% of catches, for each cod stock.

Common Pool Only 2019-2023 Cod Catch By Area			
Stock	Area	Average Percent of Total Catch	Years in Top 90%
EGOM	512	95.2	5
EGOM	511	4.8	1
EGOM	465	0.0	0
EGOM	467	0.0	0
GB	561	100.0	1
GB	464	0.0	0
GB	522	0.0	0
GB	525	0.0	0
GB	542	0.0	0
GB	543	0.0	0
GB	562	0.0	0
SNE	539	50.9	5
SNE	613	21.5	5
SNE	611	9.9	3
SNE	537	9.3	3
SNE	612	7.4	2
SNE	538	0.6	0
SNE	615	0.3	0
SNE	614	0.2	0
SNE	533	0.0	0
SNE	534	0.0	0
SNE	616	0.0	0
SNE	621	0.0	0
SNE	622	0.0	0
WGOM	514	64.3	5
WGOM	513	17.0	3
WGOM	521	13.9	4
WGOM	515	4.8	1
WGOM	526	0.0	0
WGOM	541	0.0	0

Average percent contribution of sector catches over the five-year period (FY2019-2023) by statistical area and the number of years contributing towards 90% of catches, for each cod stock.

Sector Only 2019-2023 Cod Catch By Area			
Stock	Area	Average Percent of Total Catch	Years in Top 90%
EGOM	512	87.0	5
EGOM	465	10.1	3
EGOM	511	2.9	0
EGOM	467	0.0	0
GB	522	69.8	5
GB	561	28.6	5
GB	562	0.8	0
GB	464	0.5	0
GB	525	0.3	0
GB	542	0.0	0
GB	543	0.0	0
SNE	539	67.1	5
SNE	537	28.4	5
SNE	613	2.0	0
SNE	611	1.8	0
SNE	538	0.4	0
SNE	622	0.2	0
SNE	614	0.1	0
SNE	612	0.0	0
SNE	533	0.0	0
SNE	534	0.0	0
SNE	615	0.0	0
SNE	616	0.0	0
SNE	621	0.0	0
WGOM	521	45.7	5
WGOM	514	28.6	5
WGOM	513	16.1	5
WGOM	515	9.6	2
WGOM	526	0.0	0
WGOM	541	0.0	0

Percent contribution of total commercial catches annually from FY2019-2023 by statistical area, for each cod stock.

FY	STOCK_ID	AREA	PERC_TOT	SUM_TOT
2019	EGOM	512	83.8	83.8
2019	EGOM	465	9.6	93.3
2019	EGOM	511	6.7	100.0
2019	EGOM	467	0.0	100.0
2020	EGOM	512	84.9	84.9
2020	EGOM	465	14.7	99.6
2020	EGOM	511	0.4	100.0
2020	EGOM	467	0.0	100.0
2021	EGOM	512	98.0	98.0
2021	EGOM	465	1.4	99.3
2021	EGOM	511	0.7	100.0
2021	EGOM	467	0.0	100.0
2022	EGOM	512	91.3	91.3
2022	EGOM	465	6.2	97.6
2022	EGOM	511	2.4	100.0
2022	EGOM	467	0.0	100.0
2023	EGOM	512	77.0	77.0
2023	EGOM	465	18.4	95.4
2023	EGOM	511	4.6	100.0
2023	EGOM	467	0.0	100.0
2019	GB	522	72.1	72.1
2019	GB	561	26.3	98.4
2019	GB	562	1.3	99.7
2019	GB	525	0.2	99.9
2019	GB	464	0.1	100.0
2019	GB	543	0.0	100.0
2019	GB	542	0.0	100.0
2020	GB	522	67.3	67.3
2020	GB	561	31.8	99.0
2020	GB	525	0.7	99.7
2020	GB	464	0.2	99.9
2020	GB	562	0.1	100.0
2020	GB	543	0.0	100.0
2020	GB	542	0.0	100.0
2021	GB	522	67.8	67.8
2021	GB	561	29.4	97.2
2021	GB	562	1.9	99.1

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2021	GB	525	0.5	99.5
2021	GB	464	0.4	100.0
2021	GB	542	0.0	100.0
2021	GB	543	0.0	100.0
2022	GB	522	61.2	61.2
2022	GB	561	37.2	98.4
2022	GB	464	0.8	99.3
2022	GB	562	0.7	99.9
2022	GB	525	0.1	100.0
2022	GB	543	0.0	100.0
2022	GB	542	0.0	100.0
2023	GB	522	80.5	80.5
2023	GB	561	18.6	99.1
2023	GB	464	0.9	100.0
2023	GB	562	0.0	100.0
2023	GB	525	0.0	100.0
2023	GB	543	0.0	100.0
2023	GB	542	0.0	100.0
2019	SNE	539	74.4	74.4
2019	SNE	537	11.7	86.0
2019	SNE	613	6.8	92.8
2019	SNE	612	4.2	97.0
2019	SNE	611	2.7	99.6
2019	SNE	614	0.3	99.9
2019	SNE	538	0.1	100.0
2019	SNE	615	0.0	100.0
2019	SNE	534	0.0	100.0
2019	SNE	616	0.0	100.0
2019	SNE	622	0.0	100.0
2019	SNE	533	0.0	100.0
2019	SNE	621	0.0	100.0
2020	SNE	539	61.4	61.4
2020	SNE	613	21.1	82.5
2020	SNE	537	12.9	95.3
2020	SNE	611	2.1	97.4
2020	SNE	612	1.2	98.6
2020	SNE	615	0.5	99.2
2020	SNE	622	0.5	99.7
2020	SNE	538	0.3	100.0
2020	SNE	533	0.0	100.0
2020	SNE	534	0.0	100.0
2020	SNE	616	0.0	100.0
2020	SNE	614	0.0	100.0

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2020	SNE	621	0.0	100.0
2021	SNE	539	55.9	55.9
2021	SNE	613	15.0	70.9
2021	SNE	537	14.7	85.5
2021	SNE	611	7.0	92.5
2021	SNE	612	6.9	99.4
2021	SNE	614	0.6	100.0
2021	SNE	538	0.0	100.0
2021	SNE	615	0.0	100.0
2021	SNE	534	0.0	100.0
2021	SNE	616	0.0	100.0
2021	SNE	622	0.0	100.0
2021	SNE	533	0.0	100.0
2021	SNE	621	0.0	100.0
2022	SNE	539	55.5	55.5
2022	SNE	537	17.8	73.4
2022	SNE	611	14.9	88.3
2022	SNE	613	7.4	95.7
2022	SNE	612	3.8	99.5
2022	SNE	538	0.5	100.0
2022	SNE	615	0.0	100.0
2022	SNE	534	0.0	100.0
2022	SNE	616	0.0	100.0
2022	SNE	622	0.0	100.0
2022	SNE	614	0.0	100.0
2022	SNE	533	0.0	100.0
2022	SNE	621	0.0	100.0
2023	SNE	539	66.3	66.3
2023	SNE	537	11.7	78.0
2023	SNE	613	9.1	87.2
2023	SNE	611	7.3	94.5
2023	SNE	612	3.6	98.1
2023	SNE	538	1.9	100.0
2023	SNE	615	0.0	100.0
2023	SNE	534	0.0	100.0
2023	SNE	616	0.0	100.0
2023	SNE	622	0.0	100.0
2023	SNE	614	0.0	100.0
2023	SNE	533	0.0	100.0
2023	SNE	621	0.0	100.0
2019	WGOM	521	50.6	50.6
2019	WGOM	514	24.6	75.2
2019	WGOM	513	14.9	90.2

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2019	WGOM	515	9.8	100.0
2019	WGOM	526	0.0	100.0
2019	WGOM	541	0.0	100.0
2020	WGOM	521	51.1	51.1
2020	WGOM	514	26.2	77.3
2020	WGOM	515	11.8	89.1
2020	WGOM	513	10.7	99.8
2020	WGOM	526	0.2	100.0
2020	WGOM	541	0.0	100.0
2021	WGOM	521	55.3	55.3
2021	WGOM	514	22.8	78.1
2021	WGOM	513	12.6	90.7
2021	WGOM	515	9.3	100.0
2021	WGOM	526	0.0	100.0
2021	WGOM	541	0.0	100.0
2022	WGOM	514	39.7	39.7
2022	WGOM	513	27.7	67.4
2022	WGOM	521	22.1	89.5
2022	WGOM	515	10.5	100.0
2022	WGOM	526	0.0	100.0
2022	WGOM	541	0.0	100.0
2023	WGOM	521	47.5	47.5
2023	WGOM	514	32.0	79.5
2023	WGOM	513	14.1	93.6
2023	WGOM	515	6.4	100.0
2023	WGOM	526	0.0	100.0
2023	WGOM	541	0.0	100.0

Percent contribution of common pool catches annually from FY2019-2023 by statistical area, for each cod stock.

FY	STOCK_ID	AREA	PERC_TOT	SUM_TOT
2019	EGOM	512	100.0	100.0
2019	EGOM	465	0.0	100.0
2019	EGOM	511	0.0	100.0
2019	EGOM	467	0.0	100.0
2020	EGOM	512	100.0	100.0
2020	EGOM	465	0.0	100.0
2020	EGOM	511	0.0	100.0
2020	EGOM	467	0.0	100.0

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2021	EGOM	512	100.0	100.0
2021	EGOM	465	0.0	100.0
2021	EGOM	511	0.0	100.0
2021	EGOM	467	0.0	100.0
2022	EGOM	512	77.1	77.1
2022	EGOM	511	22.9	100.0
2022	EGOM	465	0.0	100.0
2022	EGOM	467	0.0	100.0
2023	EGOM	512	98.9	98.9
2023	EGOM	511	1.2	100.0
2023	EGOM	465	0.0	100.0
2023	EGOM	467	0.0	100.0
2019	GB	522	0.0	0.0
2019	GB	525	0.0	0.0
2019	GB	543	0.0	0.0
2019	GB	464	0.0	0.0
2019	GB	561	0.0	0.0
2019	GB	542	0.0	0.0
2019	GB	562	0.0	0.0
2020	GB	522	0.0	0.0
2020	GB	525	0.0	0.0
2020	GB	543	0.0	0.0
2020	GB	464	0.0	0.0
2020	GB	561	0.0	0.0
2020	GB	542	0.0	0.0
2020	GB	562	0.0	0.0
2021	GB	522	0.0	0.0
2021	GB	525	0.0	0.0
2021	GB	543	0.0	0.0
2021	GB	464	0.0	0.0
2021	GB	561	0.0	0.0
2021	GB	542	0.0	0.0
2021	GB	562	0.0	0.0
2022	GB	522	0.0	0.0
2022	GB	525	0.0	0.0
2022	GB	543	0.0	0.0
2022	GB	464	0.0	0.0
2022	GB	561	0.0	0.0
2022	GB	542	0.0	0.0
2022	GB	562	0.0	0.0
2023	GB	561	100.0	100.0
2023	GB	522	0.0	100.0
2023	GB	525	0.0	100.0

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2023	GB	543	0.0	100.0
2023	GB	464	0.0	100.0
2023	GB	542	0.0	100.0
2023	GB	562	0.0	100.0
2019	SNE	539	49.4	49.4
2019	SNE	613	19.1	68.4
2019	SNE	612	13.2	81.6
2019	SNE	537	10.3	91.8
2019	SNE	611	8.2	100.0
2019	SNE	615	0.0	100.0
2019	SNE	534	0.0	100.0
2019	SNE	616	0.0	100.0
2019	SNE	538	0.0	100.0
2019	SNE	622	0.0	100.0
2019	SNE	614	0.0	100.0
2019	SNE	533	0.0	100.0
2019	SNE	621	0.0	100.0
2020	SNE	613	44.3	44.3
2020	SNE	539	35.2	79.5
2020	SNE	537	11.5	91.0
2020	SNE	611	4.2	95.2
2020	SNE	612	2.8	98.0
2020	SNE	615	1.3	99.3
2020	SNE	538	0.8	100.0
2020	SNE	534	0.0	100.0
2020	SNE	616	0.0	100.0
2020	SNE	622	0.0	100.0
2020	SNE	614	0.0	100.0
2020	SNE	533	0.0	100.0
2020	SNE	621	0.0	100.0
2021	SNE	539	40.0	40.0
2021	SNE	613	23.2	63.2
2021	SNE	537	13.1	76.3
2021	SNE	612	11.5	87.8
2021	SNE	611	11.3	99.0
2021	SNE	614	1.0	100.0
2021	SNE	615	0.0	100.0
2021	SNE	534	0.0	100.0
2021	SNE	616	0.0	100.0
2021	SNE	538	0.0	100.0
2021	SNE	622	0.0	100.0
2021	SNE	533	0.0	100.0
2021	SNE	621	0.0	100.0

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2022	SNE	539	58.8	58.8
2022	SNE	611	17.9	76.6
2022	SNE	613	10.6	87.2
2022	SNE	537	7.4	94.6
2022	SNE	612	5.4	100.0
2022	SNE	615	0.0	100.0
2022	SNE	534	0.0	100.0
2022	SNE	616	0.0	100.0
2022	SNE	538	0.0	100.0
2022	SNE	622	0.0	100.0
2022	SNE	614	0.0	100.0
2022	SNE	533	0.0	100.0
2022	SNE	621	0.0	100.0
2023	SNE	539	70.9	70.9
2023	SNE	613	10.3	81.2
2023	SNE	611	8.7	89.8
2023	SNE	612	4.2	94.0
2023	SNE	537	3.7	97.7
2023	SNE	538	2.3	100.0
2023	SNE	615	0.0	100.0
2023	SNE	534	0.0	100.0
2023	SNE	616	0.0	100.0
2023	SNE	622	0.0	100.0
2023	SNE	614	0.0	100.0
2023	SNE	533	0.0	100.0
2023	SNE	621	0.0	100.0
2019	WGOM	514	54.6	54.6
2019	WGOM	513	41.1	95.7
2019	WGOM	521	4.3	100.0
2019	WGOM	526	0.0	100.0
2019	WGOM	541	0.0	100.0
2019	WGOM	515	0.0	100.0
2020	WGOM	514	58.9	58.9
2020	WGOM	521	20.5	79.4
2020	WGOM	513	18.5	97.9
2020	WGOM	515	2.1	100.0
2020	WGOM	526	0.0	100.0
2020	WGOM	541	0.0	100.0
2021	WGOM	514	78.9	78.9
2021	WGOM	521	20.5	99.3
2021	WGOM	513	0.7	100.0
2021	WGOM	526	0.0	100.0
2021	WGOM	541	0.0	100.0

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2021	WGOM	515	0.0	100.0
2022	WGOM	514	66.7	66.7
2022	WGOM	513	15.0	81.7
2022	WGOM	521	11.6	93.3
2022	WGOM	515	6.7	100.0
2022	WGOM	526	0.0	100.0
2022	WGOM	541	0.0	100.0
2023	WGOM	514	62.4	62.4
2023	WGOM	515	14.9	77.4
2023	WGOM	521	12.8	90.1
2023	WGOM	513	9.9	100.0
2023	WGOM	526	0.0	100.0
2023	WGOM	541	0.0	100.0

Percent contribution of sector catches annually from FY2019-2023 by statistical area, for each cod stock.

FY	STOCK_ID	AREA	PERC_TOT	SUM_TOT
2019	EGOM	512	83.8	83.8
2019	EGOM	465	9.6	93.3
2019	EGOM	511	6.7	100.0
2019	EGOM	467	0.0	100.0
2020	EGOM	512	84.8	84.8
2020	EGOM	465	14.8	99.6
2020	EGOM	511	0.4	100.0
2020	EGOM	467	0.0	100.0
2021	EGOM	512	98.0	98.0
2021	EGOM	465	1.4	99.3
2021	EGOM	511	0.7	100.0
2021	EGOM	467	0.0	100.0
2022	EGOM	512	91.4	91.4
2022	EGOM	465	6.3	97.6
2022	EGOM	511	2.4	100.0
2022	EGOM	467	0.0	100.0
2023	EGOM	512	77.0	77.0
2023	EGOM	465	18.5	95.4
2023	EGOM	511	4.6	100.0
2023	EGOM	467	0.0	100.0
2019	GB	522	72.1	72.1
2019	GB	561	26.3	98.4
2019	GB	562	1.3	99.7
2019	GB	525	0.2	99.9

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2019	GB	464	0.1	100.0
2019	GB	543	0.0	100.0
2019	GB	542	0.0	100.0
2020	GB	522	67.3	67.3
2020	GB	561	31.8	99.0
2020	GB	525	0.7	99.7
2020	GB	464	0.2	99.9
2020	GB	562	0.1	100.0
2020	GB	543	0.0	100.0
2020	GB	542	0.0	100.0
2021	GB	522	67.8	67.8
2021	GB	561	29.4	97.2
2021	GB	562	1.9	99.1
2021	GB	525	0.5	99.5
2021	GB	464	0.4	100.0
2021	GB	542	0.0	100.0
2021	GB	543	0.0	100.0
2022	GB	522	61.2	61.2
2022	GB	561	37.2	98.4
2022	GB	464	0.8	99.3
2022	GB	562	0.7	99.9
2022	GB	525	0.1	100.0
2022	GB	543	0.0	100.0
2022	GB	542	0.0	100.0
2023	GB	522	80.7	80.7
2023	GB	561	18.4	99.1
2023	GB	464	0.9	100.0
2023	GB	562	0.0	100.0
2023	GB	525	0.0	100.0
2023	GB	543	0.0	100.0
2023	GB	542	0.0	100.0
2019	SNE	539	85.7	85.7
2019	SNE	537	12.3	98.0
2019	SNE	613	1.2	99.2
2019	SNE	614	0.4	99.6
2019	SNE	611	0.2	99.8
2019	SNE	612	0.1	99.9
2019	SNE	538	0.1	100.0
2019	SNE	615	0.0	100.0
2019	SNE	534	0.0	100.0
2019	SNE	616	0.0	100.0
2019	SNE	622	0.0	100.0
2019	SNE	533	0.0	100.0

Attachment 1

2019	SNE	621	0.0	100.0
2020	SNE	539	81.6	81.6
2020	SNE	537	13.9	95.5
2020	SNE	613	3.2	98.7
2020	SNE	622	0.9	99.6
2020	SNE	611	0.4	100.0
2020	SNE	533	0.0	100.0
2020	SNE	615	0.0	100.0
2020	SNE	534	0.0	100.0
2020	SNE	616	0.0	100.0
2020	SNE	538	0.0	100.0
2020	SNE	614	0.0	100.0
2020	SNE	612	0.0	100.0
2020	SNE	621	0.0	100.0
2021	SNE	539	79.6	79.6
2021	SNE	537	17.0	96.7
2021	SNE	613	2.7	99.4
2021	SNE	611	0.6	100.0
2021	SNE	538	0.0	100.0
2021	SNE	615	0.0	100.0
2021	SNE	534	0.0	100.0
2021	SNE	616	0.0	100.0
2021	SNE	622	0.0	100.0
2021	SNE	614	0.0	100.0
2021	SNE	533	0.0	100.0
2021	SNE	612	0.0	100.0
2021	SNE	621	0.0	100.0
2022	SNE	539	47.9	47.9
2022	SNE	537	42.4	90.4
2022	SNE	611	7.9	98.3
2022	SNE	538	1.7	100.0
2022	SNE	615	0.0	100.0
2022	SNE	534	0.0	100.0
2022	SNE	616	0.0	100.0
2022	SNE	622	0.0	100.0
2022	SNE	614	0.0	100.0
2022	SNE	533	0.0	100.0
2022	SNE	612	0.0	100.0
2022	SNE	621	0.0	100.0
2022	SNE	613	0.0	100.0
2023	SNE	537	56.5	56.5
2023	SNE	539	40.7	97.2
2023	SNE	613	2.8	100.0

Attachment 1

2023	SNE	611	0.0	100.0
2023	SNE	615	0.0	100.0
2023	SNE	534	0.0	100.0
2023	SNE	616	0.0	100.0
2023	SNE	538	0.0	100.0
2023	SNE	622	0.0	100.0
2023	SNE	614	0.0	100.0
2023	SNE	533	0.0	100.0
2023	SNE	612	0.0	100.0
2023	SNE	621	0.0	100.0
2019	WGOM	521	51.0	51.0
2019	WGOM	514	24.4	75.4
2019	WGOM	513	14.7	90.1
2019	WGOM	515	9.9	100.0
2019	WGOM	526	0.0	100.0
2019	WGOM	541	0.0	100.0
2020	WGOM	521	51.3	51.3
2020	WGOM	514	26.0	77.3
2020	WGOM	515	11.9	89.1
2020	WGOM	513	10.7	99.8
2020	WGOM	526	0.2	100.0
2020	WGOM	541	0.0	100.0
2021	WGOM	521	55.6	55.6
2021	WGOM	514	22.3	77.9
2021	WGOM	513	12.7	90.6
2021	WGOM	515	9.4	100.0
2021	WGOM	526	0.0	100.0
2021	WGOM	541	0.0	100.0
2022	WGOM	514	38.9	38.9
2022	WGOM	513	28.0	67.0
2022	WGOM	521	22.4	89.4
2022	WGOM	515	10.6	100.0
2022	WGOM	526	0.0	100.0
2022	WGOM	541	0.0	100.0
2023	WGOM	521	48.4	48.4
2023	WGOM	514	31.2	79.6
2023	WGOM	513	14.2	93.8
2023	WGOM	515	6.2	100.0
2023	WGOM	526	0.0	100.0
2023	WGOM	541	0.0	100.0



New England Fishery Management Council

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Rick Bellavance, *Chair* | Cate O'Keefe, PhD, *Executive Director*

MEMORANDUM

DATE: October 24, 2024
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: SNE cod recreational sub-ACL and AMs

The Groundfish Plan Development Team (PDT) met as a sub-group on October 16, 2024, and as a whole on October 23, 2024, to discuss analysis to support development of Framework 69 cod measures for Phase 1 of the Atlantic Cod Management Transition Plan. This memorandum focuses on Committee tasking to develop a recreational sub-ACL and accountability measures (AMs) for Southern New England (SNE) cod.

Background

At their September 11, 2024 meeting, the Groundfish Committee passed the following motion:

The Committee recommends to the Council to create a recreational sub-ACL for SNE cod, using recent PDT analysis of recreational/commercial catches for most recent ten years, and appropriate accountability measures.

The rationale was that, following the Committee and Council development of the initial cod management transition plan, the outcome of the management track assessment and SSC recommendations for SNE cod became available. The result of these is a very low FY2025 ABC for SNE cod of 22 mt. There are great concerns about maintaining the catch target approach that has been used for the “old GB cod” stock. Without a recreational sub-ACL, if the ACL is exceeded, the commercial fishery would face accountability measures (pound-for-pound payback) even if the ACL overage is due to recreational fishery.

SNE cod OFL and ABC recommendations from the SSC

Fishing Year	OFL (mt)	ABC (mt)
2025	29	22
2026	47	36
2027	65	36

1. SNE cod recreational sub-ACL

The PDT initially discussed establishing a SNE cod recreational sub-ACL following a similar method as Western Gulf of Maine (WGOM) cod in using a recent percentage split in catch between the commercial and recreational groundfish fisheries. However, given high uncertainty and inter-annual variability in recreational catch estimates for SNE cod, the PDT offers a different approach for determining the SNE cod recreational sub-ACL that would focus on first determining an amount to be set aside for the commercial fisheries (including the commercial groundfish fishery and state and other commercial sub-components). The commercial component catch is more certain and consistent. The PDT recommends using the most recent five years.

Total commercial catches of SNE cod across the groundfish fishery, other sub-component fisheries, and state sub-component fisheries from FY2019-2023 have averaged ~10 mt. Commercial catches of SNE cod have remained consistent over the five-year period, with slight declines in more recent years.

Table 1- SNE cod commercial catch (mt) over FY2019-2023.

Fishing Year	Commercial Groundfish Fishery Catch (mt)	Other Commercial Sub-components Catch (mt)	State Commercial Sub-components Catch (mt)	Total Commercial Catch (mt)
2019	4.6	2.5	3.2	10.3
2020	5.7	1.6	5.8	13.1
2021	2.3	2.2	4	8.4
2022	3.7	2.4	3.4	9.4
2023	4.8	1.5	1.9	8.1
Average	4.2	1.9	3.8	9.9

The Committee could consider whether reductions in catch would be expected from any of the commercial fishery components. However, given these low catch amounts in recent years of 4.2 mt in the commercial groundfish fishery, 1.9 mt in other commercial fisheries, and 3.8 mt in state commercial fisheries, it is not clear if it is reasonable to expect further reductions or if these fisheries are already operating at bycatch levels for cod.

To determine the recreational sub-ACL, the ABC would be divided into a commercial sub-ABC and a recreational sub-ABC, with the commercial sub-ABC sufficient to cover the expected catch for the commercial groundfish fishery (plus the management uncertainty buffer) and the state and other sub-components. The recreational sub-ABC would have a management buffer applied to calculate the recreational sub-ACL.

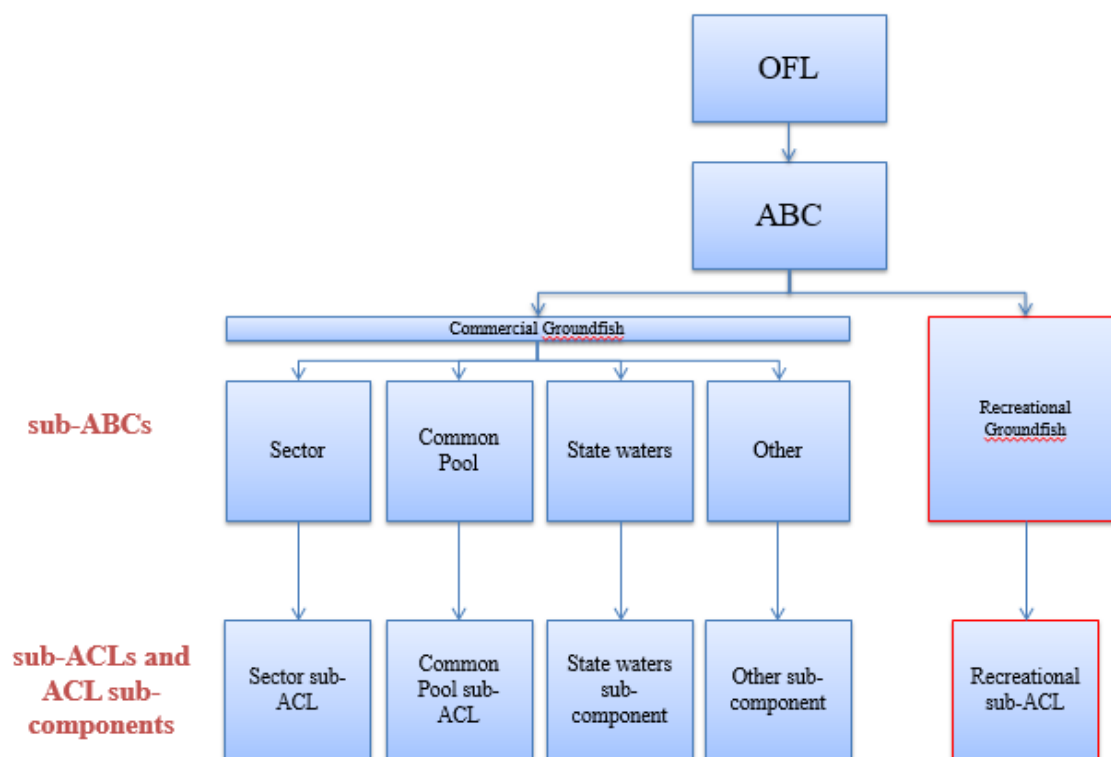


Table 2- Possible SNE cod sub-ABCs, sub-ACLs, and sub-components for FY2025.

ABC	22 mt			
Sub-ABC	Commercial			Recreational
	10.1 mt (46% of ABC)			11.9 mt (54% of ABC)
	Commercial Groundfish	State Waters	Other	
	4.4 mt	1.9	3.8	
Management Uncertainty Buffer	5%	0%	0%	7%
Sub-ACL/ sub-component	4.2 mt	1.9 mt	3.8 mt	11 mt

For comparison, the PDT provides the split between recreational and commercial catch (by weight) over the same most recent five-year period.

Table 3- SNE cod recreational catch, commercial catch, and recreational proportion of catch (2024 Assessment), using similar method for recreational/commercial allocation as WGOM.

Year	Recreational Catch (mt)	Commercial Catch (mt)	Recreational Proportion
2019	244	14	0.946
2020	202	13	0.940
2021	217	10	0.956
2022	126	16	0.887
2023	263	16	0.943
Average	210.4	13.8	0.934

Under a FY2025 ABC of 22mt using the resulting percentage in the table above for the recreational sub-ACL, this split would put the total commercial fishery catch amount (including commercial groundfish fishery, and state and other commercial sub-components) at less than 1.5mt.

The PDT emphasizes that whichever approach is taken to determine the SNE cod recreational sub-ACL should be considered temporary, as it is anticipated that MRIP estimates will be revised in the near future and the Council will be revisiting recreational/commercial allocations. Similar to the scallop sub-ACL for SNE/MA yellowtail flounder, it may be appropriate to reassess the percentage split between commercial and recreational if the total ABC for SNE changes, to ensure that sufficient quota is being set aside for the commercial fishery, without unnecessarily restricting the recreational fishery.

2. Accountability measures

The PDT discussed one approach for the AMs for a SNE cod recreational sub-ACL would be to follow what is done for WGOM (formerly GOM) cod and GOM haddock with reactive and proactive AMs.

Reactive AMs

- If catches exceed the sub-ACL, NMFS determines the measures necessary to prevent exceeding the sub-ACL in future years following consultation with the Council
- Final measures are to be published no later than January.
- The three-year average of recreational harvest is compared to the three-year average of the recreational sub-ACL and if necessary, AMs are to be implemented in the year immediately following.
- The recreational AM is either/or adjustments to season, adjustments to minimum size, or adjustments to bag limits.
- Separate AMs can be determined for the private boat and party/charter components of the recreational fishery – that is, the AMs may be different for these two components.

Proactive AMs

- Can be adjusted by the Regional Administrator to ensure the recreational fishery will achieve, but not exceed, its sub-ACL.
- Changes are typically made prior to the start of the fishing year.
- The Regional Administrator consults with the Council, or the Council's designee, and tells the Council, or its designee, what recreational measures are under consideration for the upcoming fishing year.
- If time allows, the Council also provides the Recreational Advisory Panel an opportunity to meet and discuss the proposed management measures.
- These AMs require development in consultation with the Council, because the appropriate suite of measures (e.g., bag limit, minimum fish size, and season) depends on the sub-ACL specified.

3. Recreational measures

The PDT recommends that recreational measures for SNE cod be included in Framework 69. While recreational catch estimates under the new stock units are still under development, the “old GB cod” recreational catch estimates are a reasonable stand in for SNE cod as these catches occurred almost entirely in Southern New England. Given the magnitude of recent recreational catches relative to the FY2025 ABC of 22 mt, it is anticipated that recreational measures for FY2025 will be set at zero possession. There is high uncertainty as to how incidental encounter rates with cod might look like under a closure of the SNE recreational cod fishery. The PDT recognizes there will be large negative impacts for the recreational fishery operating in Southern New England.

Table 4- Recreational fishery catches for “old GB cod”.

<i>Fishing Year</i>	<i>Federal Waters Recreational Catch</i>	<i>State Waters Recreational Catch</i>	<i>All Recreational Catch</i>
2019	88.9	11.0	99.9
2020	152.6	141.8	294.4
2021	191.8	44.2	236.0
2022	128.3	28.8	157.1
2023	206.9	81.3	288.2

Amendment 25 (Revised)
to the
Northeast Multispecies Fishery Management Plan

Appendix V
Risk Policy Matrices for Atlantic Cod Stocks

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM	State-space Assessment Model	No/Yes	N/A for new stock	N/A for new stock	N/A for new stock	N/A for new stock	N/A for groundfish
Iconic New England species. Multispecies groundfish fishery with commercial and recreational catches. A recently established stock unit to reflect new understanding of cod stock structure. Most recent management track assessment for the new stock identifies that it is overfished and overfishing is not occurring. Uncertainties in the assessment include the lack of inclusion of the discard estimates from lobster pots, and lack of biological data of fishery landings. This is the first management track assessment for this stock.				MSY/OY	AMs	Discards	State Waters
				N/A for new stock	Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.	N/A for new stock	N/A for new stock
Availability of Biological and Assessment Data		Updated data since last assessment: survey (NEFSC fall survey, NEFSC spring survey, ME/NH Inshore Bottom Trawl fall and spring survey, Eastern Gulf of Maine Sentinel Survey, and Age-0 index from the fall ME/NH Inshore Bottom Trawl survey) and fisheries (commercial and recreational catches) data					
Recent Performance Against Harvest Control Rule		N/A for new stock					
Current Management Program		Multispecies groundfish fishery with commercial and recreational components. Amendment 25 aims to add the new stock to the fishery management plan and Framework 69 will establish status determination criteria and set specifications for the new stock. The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. State waters and the other sub-component would round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.					
Variability in Catch/Revenues?		N/A for the new stock					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.					
% Food, % Recreational		The commercial (sector and common pool) sub-ACLs are equal to 95% of the remaining ABC after the state waters and other sub-components are subtracted from the total ABC. Under Framework 69 there is no recreational sub-ACL.					
Fishing Communities		Commercial - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. For EGOM cod specifically, the top ports by average commercial cod landings over fishing years 2019-2023 included Port Clyde, ME and Gloucester, MA making up 20.8% and 19.8% of cod landed at these ports respectively. Other ports that landed cod make up the remaining 59.3% of average cod landed, but could consist of one or more ports that makes of less than 10% of the landings or ports with greater than 10% of the landings but cannot be shown due to data confidentiality. Recreational - When expanding out to the top 20 communities in recreational engagement in the Northeast (all recreational fishing) Recreational Engagement Indicators (2009-2020), New England communities include: Newburyport, MA and Barnstable, MA. Other ports of interest with relatively high engagement (i.e., ranking somewhere outside the top 20) in the last five years include Gloucester, MA, Waterford, CT, East Lyme/Niantic, CT, and Old Saybrook, CT.					
Other Economic/Social Factors		ACE lease prices are not yet available for this new stock. However, in over fishing years 2019-2023, the average landed amount of cod within the EGOM broadstock area was 2,259 pounds generating an average revenue of \$7,090. This made up only 0.4% of the revenue landed by species in the EGOM broadstock area; the main generators of revenue in the area were haddock, white hake, non-groundfish species, and pollock.					
Major Sources of Scientific Uncertainty		From the 2024 Management Track Assessment: lack of inclusion of cod dead discards from EGOM lobster pots, lack of biological data in recent years for commercial and recreational landings, lack of survey data thereby being treated as missing within the WHAM model.					
Major Sources of Management Uncertainty		Atlantic Cod Management Transition Plan. Phase 2 of the Atlantic Cod Transition Plan will consider if the management units need to align with the stock boundaries. The default management uncertainty buffer of 5% is applied to the commercial fishery.					
How is the probability of overfishing addressed?		Not yet applicable for this new stock					
What is the consequence of overfishing?		Reduction in biomass, yield, and net economic benefits over long-term.					
How are expected net benefits to the Nation currently measured/evaluated?		Yield (mt and \$)					
Interactions with Other Fisheries/Stocks, Bycatch Issues		Cod is frequently caught with other abundant groundfish stocks (e.g., haddock and pollock) in the multi-species fishery. The low catch limit on cod can lead to reduce catches of other stocks.					

FMP
STOCK(S)
LAST ASSESSMENT

NORTHEAST MULTISPECIES (GROUND FISH)
Eastern Gulf of Maine Cod
Management Track, June 2024

Ecosystem Considerations: Trophic Interactions	Cod are generalists and transition from pelagic prey during their early life stages to benthic prey in their later life stages. Specifically larval and pelagic juveniles feed on mainly copepods, mysid shrimp, and hermit crab larvae, while benthic juvenile cod will feed primarily on crustaceans. Small adults will feed on smaller fish like sand lance and silver hake, with prey size increasing as a function of adult size.
Ecosystem Considerations: Habitat	EGOM cod comprises a stock area that was previously part of the GOM cod stock unit. GOM cod habitat vulnerability was assessed in Omnibus Habitat Amendment 2. The current spatial distribution of the stock is considerably less than its historical range within the Gulf of Maine. The EGOM stock area includes the Eastern Maine and the Jeffreys Bank Habitat Management Areas which are closed year-round to bottom-tending mobile gears.
Ecosystem Considerations: Climate	Atlantic cod is considered moderately vulnerable to climate change (high climate exposure risk and moderate biological sensitivity) and are projected to be negatively affected by climate change due to reduced recruitment and suitable habitat. Temperature specifically has an important role in recruitment, growth, and survival.
Other Important Considerations/Notes	Phase 1 of the Atlantic Cod Transition Plan is ongoing and aims to establish Amendment 25 and Framework 69 for implementation by May 1, 2025. Phase 2 is scheduled to occur beyond FY2025.

FMP **NORTHEAST MULTISPECIES (GROUNDFISH)**
 STOCK(S) **Western Gulf of Maine Cod**
 LAST ASSESSMENT **Management Track, June 2024**

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM	State-space Assessment Model	Yes/Yes	N/A for new stock	N/A for new stock	N/A for new stock	N/A for new stock	N/A for groundfish
Iconic New England species. Multispecies groundfish fishery with commercial and recreational catches. A recently established stock unit to reflect new understanding of cod stock structure. Most recent management track assessment for the new stock identifies that it is overfished and overfishing is occurring. Uncertainties in the assessment include inclusion of the 2023 spring BLLS survey data, and limited data differentiating the spring and winter spawners within the stock. This is the first management track assessment for this stock.				MSY/OY	AMs	Discards	State Waters
				N/A for new stock	Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.	N/A for new stock	N/A for new stock
Availability of Biological and Assessment Data		Updated data since last assessment: survey indices (NEFSC fall survey and spring survey with Albatross and Bigelow time series treated separately, MADMF spring survey, ME/NH spring survey, spring Bottom Longline Survey (BLLS), fall BLLS and spring Industry Based Survey (IBS); data from the spring BLLS excluded the 2023 terminal year value) and fisheries (commercial and recreational catches) data					
Recent Performance Against Harvest Control Rule		N/A for new stock					
Current Management Program		Multispecies groundfish fishery with commercial and recreational components. Amendment 25 aims to add the new stock to the fishery management plan and Framework 69 will establish status determination criteria and set specifications for the new stock. The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. The recreational fishery (private and for-hire) also has a sub-ACL. The recreational fishery is managed with bag limits, seasons, and fish size restrictions. State waters and the other sub-component would round out the final components of the total ACL. Decisions under the Transition Plan and FW69 regarding the recreational sub-ACLs include whether to allocate them based on the Northern area of the stock, or the total WGOM area. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.					
Variability in Catch/Revenues?		N/A for the new stock					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.					
% Food, % Recreational		A portion of the ABC will be allocated to the commercial and recreational fisheries. The recreational fishery sub-ACL will be determined as either 37.5% of each years ABC for the northern portion only of the stock unit area reduced by a management uncertainty buffer, or as a percentage of each years ABC for the entire WGOM stock area reduced by a management uncertainty buffer. The commercial groundfish fishery ACLs (sectors and common pool) is reduced by commercial state waters and other commercial fisheries sub-components and management uncertainty buffers.					
Fishing Communities		<i>Commercial</i> - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. For WGOM cod specifically, the top ports by average commercial cod landings over fishing years 2019-2023 included ports in Gloucester, New Bedford, and Boston, MA making up 38.2%, 26.8%, and 19.0% of cod landed at these ports respectively. <i>Recreational</i> - When expanding out to the top 20 communities in recreational engagement in the Northeast (all recreational fishing) Recreational Engagement Indicators (2009-2020), New England communities include: Newburyport, MA and Barnstable, MA. Other ports of interest with relatively high engagement (i.e., ranking somewhere outside the top 20) in the last five years include Gloucester, MA, Waterford, CT, East Lyme/Niantic, CT, and Old Saybrook, CT.					
Other Economic/Social Factors		ACE lease prices are not yet available for this new stock. However, in over fishing years 2019-2023, the average landed amount of cod within the WGOM broadstock area was 853,661 pounds generating an average revenue of \$2,200,952. This made up only 4.4% of the revenue landed by species in the WGOM broadstock area; the main generators of revenue in the area were non-groundfish species, haddock, pollock, and redfish.					
Major Sources of Scientific Uncertainty		From 2024 Management Track Assessment: Sensitivity of estimates of SSB and F to the inclusion of the spring 2023 BLLS index; limited data between the WGOM winter spawners and WGOM spring spawners which were combined in the research track and management track assessments; overly optimistic projections from the research track model					
Major Sources of Management Uncertainty		Atlantic Cod Management Transition Plan. Phase 2 of the Atlantic Cod Management Transition Plan will consider if the management units need to align with the stock boundaries. The default management uncertainty buffer of 5% is applied to the commercial fishery. A management uncertainty buffer of 7% is used for the recreational fishery. Decisions under the Transition Plan and FW69 regarding the commercial sub-ACLs include whether and how to portion them out based on the Northern and Southern areas of the stock unit, in order to allocated based on existing GOM and GB Potential Sector Contributions (PSCs) respectively.					
How is the probability of overfishing addressed?		Not yet applicable for this new stock					
What is the consequence of overfishing?		Reduction in biomass, yield, and net economic benefits over long-term.					

FMP	NORTHEAST MULTISPECIES (GROUNDFISH)
STOCK(S)	Western Gulf of Maine Cod
LAST ASSESSMENT	Management Track, June 2024

How are expected net benefits to the Nation currently measured/evaluated?	Yield (mt and \$)
Interactions with Other Fisheries/Stocks, Bycatch Issues	Cod is frequently caught with other abundant groundfish stocks (e.g., haddock and pollock) in the multi-species fishery. The low catch limit on cod can lead to reduce catches of other stocks.
Ecosystem Considerations: Trophic Interactions	Cod are generalists and transition from pelagic prey during their early life stages to benthic prey in their later life stages. Specifically larval and pelagic juveniles feed on mainly copepods, mysid shrimp, and hermit crab larvae, while benthic juvenile cod will feed primarily on crustaceans. Small adults will feed on smaller fish like sand lance and silver hake, with prey size increasing as a function of adult size. Fishermen have noted that the two groups of cod typically have different diets, with cod on Stellwagen Bank feeding primarily on sand lance, while those on Jeffreys Ledge mainly feed on herring and shrimp. There has been a decline in many cod predators (Atlantic halibut, large hakes, large cod) but it is unclear if the declines in predators are due to the decline in cod.
Ecosystem Considerations: Habitat	WGOM stock comprises a stock area that was previously part of the GOM cod and GB cod stock units. GOM cod habitat vulnerability was assessed in Omnibus Habitat Amendment 2. The current spatial distribution of the stock is considerably less than its historical range within the Gulf of Maine. Year-round and seasonal closures are in place in the GOM including the WGOM habitat / groundfish closure areas and the Cashes Ledge habitat/groundfish closure areas to protect cod and increase successful cod spawning. The WGOM stock area also includes the Great South Channel Habitat Management Area, which is closed year-round to bottom-tending mobile gear.
Ecosystem Considerations: Climate	Atlantic cod is considered moderately vulnerable to climate change (high climate exposure risk and moderate biological sensitivity) and are projected to be negatively affected by climate change due to reduced recruitment and suitable habitat. Temperature specifically has an important role in recruitment, growth, and survival.
Other Important Considerations/Notes	Phase 1 of the Atlantic Cod Transition Plan is ongoing and aims to establish Amendment 25 and Framework 69 for implementation by May 1, 2025. Phase 2 is scheduled to occur beyond FY2025.

FMP **NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S) **Georges Bank Cod**
LAST ASSESSMENT **Management Track, June 2024**

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM	State-space Assessment Model	No/Yes	N/A	N/A for the new GB cod stock	N/A for the new GB cod stock	N/A for the new GB cod stock	N/A for groundfish
Iconic New England species. Multispecies groundfish fishery with commercial catches. Recently underwent changes to the stock unit to reflect new understanding of cod stock structure. Most recent management track assessment for the new stock identifies that it is overfished and overfishing is not occurring. Uncertainties in the assessment result from recruitment, insufficient port sampling, gaps in survey. This is the first management track assessment for this stock. Co-caught with other abundant species, such as haddock and pollock. Transboundary EGB cod management unit co-managed by the U.S. and Canada.				MSY/OY	AMs	Discards	State Waters
				N/A for the new GB cod stock	Commercial: In-season closures, reactive lb-lb payback Recreational: Stricter management measures in following years	N/A for the new GB cod stock	0 mt for the new GB cod stock
Availability of Biological and Assessment Data		Used in Assessment: US landings and discards, Canadian landings, Canadian discards from scallop and groundfish vessels, bottom trawl surveys (NMFS Spring, NMFS fall), and Canadian DFO spring survey					
Recent Performance Against Harvest Control Rule		N/A for the new GB cod stock					
Current Management Program		Multispecies groundfish fishery with commercial component. Amendment 25 aims to add the new stock to the fishery management plan and Framework 69 will establish status determination criteria and set specifications for the new stock. The total ABC would be reduced by the amount of the Canadian quota and an estimate of catch expected from non-groundfish commercial fisheries. Components of the fishery that receive an allocation have a sub-ACL set by reducing their portion of the ABC to account for management uncertainty and are subject to accountability measures (AMs) if they exceed their respective catch limit during the fishing year. The amount allocated to the commercial fishery would be divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. The other sub-component would round out the final component of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs. Eastern GB cod is jointly managed with Canada under the United States/Canada Resource Sharing Understanding. Each year, the Transboundary Management Guidance Committee (TMGC) recommends a shared quota for Eastern GB cod based on the most recent stock information and the TMGC's harvest strategy. The shared quotas are allocated between the United States and Canada based on a formula that considers historical catch (10-percent weighting) and the current resource distribution (90-percent weighting).					
Variability in Catch/Revenues?		N/A for the new stock					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.					
% Food, % Recreational		The commercial (sector and common pool) sub-ACLs are equal to 95% of the remaining ABC after the other sub-components are subtracted from the total US ABC. There is no recreational sub-ACL.					
Fishing Communities		<i>Commercial</i> - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. For GB cod specifically, the top ports by average commercial cod landings over fishing years 2019-2023 included New Bedford, MA and Gloucester, MA making up 76.2% and 12.9% of cod landed at these ports respectively.					
Other Economic/Social Factors		ACE lease prices are not yet available for this new stock. However, over fishing years 2019-2023, the average landed amount of cod within the GB broadstock area was 271,753 pounds generating an average revenue of \$617,725. This made up only 4.4% of the revenue landed by species in the GB broadstock area; the main generators of revenue in the area were haddock, non-groundfish species, winter flounder, and pollock.					
Major Sources of Scientific Uncertainty		From the 2024 Management Track assessment: recruitment, insufficient port sampling, gaps in survey, and age truncation in the NEFSC fall index terminal years.					
Major Sources of Management Uncertainty		Atlantic Cod Management Transition Plan. Phase 2 of the Atlantic Cod Management Transition Plan will consider if the management units need to align with the stock boundaries. The default management uncertainty buffer of 5% is applied to the commercial fishery. Additionally uncertainties exist around the current timing of the Canadian DFO assessment occurring annually while the US GB cod assessment occurs every two years.					
How is the probability of overfishing addressed?		Not yet applicable for this new stock					
What is the consequence of overfishing?		Reduction in biomass, yield, and net economic benefits over long-term. Any US fishery overage of the EGB cod U.S. TAC is subtracted from the following year's U.S. TAC					
How are expected net benefits to the Nation currently measured/evaluated?		Yield (mt and \$)					

FMP
STOCK(S)
LAST ASSESSMENT

NORTHEAST MULTISPECIES (GROUNDFISH)
Georges Bank Cod
Management Track, June 2024

Interactions with Other Fisheries/Stocks, Bycatch Issues	The TMGC recommends TACs for the U.S./Canada shared resources for GB cod (and haddock and yellowtail flounder). Cod is frequently caught with other abundant groundfish stocks (e.g., haddock and pollock) in the multi-species fishery. The low catch limit on cod can lead to reduced catches of other stocks.
Ecosystem Considerations: Trophic Interactions	Cod are generalists. The GB cod diet has changed over the last three decades, reflecting changes in the relative abundance of different prey. There has been a decline in many cod predators (Atlantic halibut, large hakes, large cod) but it is unclear if the declines in predators are due to the decline in cod.
Ecosystem Considerations: Habitat	GB cod stock unit has been revised under the new stock structure. GB cod habitat vulnerability was assessed in Omnibus Habitat Amendment 2. The range of GB cod has contracted over time, and their current center of distribution has moved north. Closures in place in the GB area include the GB Dedicated Habitat Research Area, Closed Area II Habitat and Groundfish Closures, and two Seasonal Spawning Closures (CAI and CAII).
Ecosystem Considerations: Climate	Atlantic cod is considered moderately vulnerable to climate change (high climate exposure risk and moderate biological sensitivity) and are projected to be negatively affected by climate change due to reduced recruitment and suitable habitat. Temperature specifically has an important role in recruitment, growth, and survival.
Other Important Considerations/Notes	Phase 1 of the Atlantic Cod Management Transition Plan is ongoing and aims to establish Amendment 25 and Framework 69 for implementation by May 1, 2025. Phase 2 is scheduled to occur beyond FY2025. Changes to the US/CA transboundary management process effective this year such that the joint assessment (TRAC) no longer occurs. In its place, a spatial apportionment method will be applied to the domestic full GB cod assessment to determine advice in the Eastern GB management area.

FMP **NORTHEAST MULTISPECIES (GROUNDFISH)**
 STOCK(S) **Southern New England Cod**
 LAST ASSESSMENT **Management Track, June 2024**

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM	State-space Assessment Model	Yes/Yes	N/A for new stock	N/A for new stock	N/A for new stock	N/A for new stock	N/A for groundfish
Iconic New England species. Multispecies groundfish fishery with commercial and recreational catches. A recently established stock unit to reflect new understanding of cod stock structure. Most recent management track assessment for the new stock identifies that it is overfished and overfishing is occurring. Uncertainties in the assessment include the lack of biological samples, and indices that track relative abundance. This is the first management track assessment for this stock.				MSY/OY	AMs	Discards	State Waters
				N/A for new stock	Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.	N/A for new stock	N/A for new stock
Availability of Biological and Assessment Data		Updated data since last assessment: two indices of abundance (NEFSC spring survey and a recreational catch per unit effort time series from party/charter fleet) and fisheries (commercial and recreational catches) data					
Recent Performance Against Harvest Control Rule		N/A for new stock					
Current Management Program		Multispecies groundfish fishery with commercial and recreational components. Amendment 25 aims to add the new stock to the fishery management plan and Framework 69 will establish status determination criteria and set specifications for the new stock. The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. A decision to be made under the Transition Plan and FW69 includes if the recreational fishery would receive a catch target or a sub-ACL. State waters and the other sub-component in either case would round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.					
Variability in Catch/Revenues?		N/A for new stock					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.					
% Food, % Recreational		There would either be a recreational catch target or a recreational fishery sub-ACL as a percentage of each years ABC reduced by a management uncertainty buffer. The remainder of the ABC would be allocated to the commercial fisheries.					
Fishing Communities		<i>Commercial</i> - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. For SNE cod specifically, the top ports by average commercial cod landings over fishing years 2019-2023 included Point Judith, RI and Montauk, NY making up 48.0% and 29.1% of cod landed at these ports respectively. <i>Recreational</i> - When expanding out to the top 20 communities in recreational engagement in the Northeast (all recreational fishing) Recreational Engagement Indicators (2009-2020), New England communities include: Newburyport, MA and Barnstable, MA. Other ports of interest with relatively high engagement (i.e., ranking somewhere outside the top 20) in the last five years include Gloucester, MA, Waterford, CT, East Lyme/Niantic, CT, and Old Saybrook, CT.					
Other Economic/Social Factors		The vast majority of catches are from the recreational fishery (average 93% over CY2019-2023). For the commercial fishery, ACE lease prices are not yet available for this new stock. However, in over fishing years 2019-2023, the average landed amount of cod was 6,324 pounds generating an average revenue of \$16,923. This made up only 0.5% of the revenue landed by species in the SNE broadstock area; the main generators of revenue in the area were non-groundfish species, and winter flounder.					
Major Sources of Scientific Uncertainty		From the 2024 Management Track Assessment: lack of biological samples and indices that track abundance.					
Major Sources of Management Uncertainty		Phase 2 of the Atlantic Cod Transition Plan will consider if the management units need to align with the stock boundaries. The default management uncertainty buffer of 5% is applied to the commercial fishery. A management uncertainty buffer of 7% is used for the recreational fishery should a recreational sub-ACL be established.					
How is the probability of overfishing addressed?		Not yet applicable for this new stock					
What is the consequence of overfishing?		Reduction in biomass, yield, and net economic benefits over long-term.					
How are expected net benefits to the Nation currently measured/evaluated?		Yield (mt and \$)					

FMP
STOCK(S)
LAST ASSESSMENT

NORTHEAST MULTISPECIES (GROUNDFISH)
Southern New England Cod
Management Track, June 2024

Interactions with Other Fisheries/Stocks, Bycatch Issues	Cod is frequently caught with other abundant groundfish stocks (e.g., haddock and pollock) in the multi-species fishery. The low catch limit on cod can lead to reduce catches of other stocks.
Ecosystem Considerations: Trophic Interactions	Cod are generalists and transition from pelagic prey during their early life stages to benthic prey in their later life stages. Specifically larval and pelagic juveniles feed on mainly copepods, mysid shrimp, and hermit crab larvae, while benthic juvenile cod will feed primarily on crustaceans. Small adults will feed on smaller fish like sand lance and silver hake, with prey size increasing as a function of adult size.
Ecosystem Considerations: Habitat	SNE cod comprises a stock area that was previously part of the GB cod stock unit. GB cod habitat vulnerability was assessed in Omnibus Habitat Amendment 2. The range of GB cod has contracted over time, and their current center of distribution has moved north. There are no closures in the SNE area. There is the Southern New England Habitat Area of Particular Concern (HAPC) which includes the area around Cox Ledge.
Ecosystem Considerations: Climate	Atlantic cod is considered moderately vulnerable to climate change (high climate exposure risk and moderate biological sensitivity) and are projected to be negatively affected by climate change due to reduced recruitment and suitable habitat. Temperature specifically has an important role in recruitment, growth, and survival.
Other Important Considerations/Notes	Phase 1 of the Atlantic Cod Transition Plan is ongoing and aims to establish Amendment 25 and Framework 69 for implementation by May 1, 2025. Phase 2 is scheduled to occur beyond FY2025.

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
Empirical, 2024	Averages estimates of biomass from the bottom trawl surveys and applies exploitation rate	Unknown/Yes	Yes 2006-2032	Unknown	2024 ABC (US/CA TAC) 168 mt; US ABC/TAC 71 mt, CA TAC 97 mt	68 mt (US) in FY 2024	N/A for groundfish
Low survey values, stock biomass, and fishery catches, poor productivity. Transboundary stock co-managed by the U.S. and Canada. This is the first U.S. Management Track Assessment of this stock in response to the dissolution of the TRAC Assessment process, which updates the Limiter approach. Stock is currently undergoing a research track assessment (along with all yellowtail flounder stocks) to develop an analytical method.				MSY/OY	AMs	Discards	State Waters
				Unknown	In season closures and lb-lb payback for commercial groundfish vessels; gear requirements for Atlantic sea scallop fishery; gear requirements for small-mesh fisheries	8 mt (US) in FY2022	0 mt
Availability of Biological and Assessment Data		Updated data since last assessment: surveys (2023 NMFS fall, 2024 NMFS spring survey and DFO spring 2024 survey) and fisheries (U.S. and Canadian commercial catches) data					
Recent Performance Against Harvest Control Rule		Percent of US ACL caught: 8.3% in FY2020, 39.3% in FY2021, 7.1% in FY2022					
Current Management Program		The Total ACL is divided between several sub-ACLs. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. The Atlantic sea scallop fishery and small-mesh fisheries receive sub-ACLs for GB yellowtail flounder. Landings and discards from all fisheries count against the applicable sub-ACL, which are monitored throughout the year. If an overage occurs in the Atlantic sea scallop or small-mesh fisheries, an accountability measure is triggered for a subsequent fishing year. The scallop fishery cannot possess GB yellowtail flounder. GB yellowtail flounder is jointly managed with Canada under the United States/Canada Resource Sharing Understanding. Each year, the Transboundary Management Guidance Committee (TMGC) and Steering Committee (SC) recommends a shared quota for GB yellowtail flounder based on the most recent stock information and the TMGC's harvest strategy. The shared quotas are allocated between the United States and Canada based on a formula that considers historical catch (10-percent weighting) and the current resource distribution (90-percent weighting).					
Variability in Catch/Revenues?		Commercial Groundfish Revenue for GB yellowtail flounder (2022\$): <\$0.1 million in FY2020; <\$0.1 million in FY2021; <\$0.1 million in FY2022; <\$0.1 million 5-year average GB yellowtail flounder ex-vessel price/lb (2022\$/lb): \$1.51/lb in FY2020; \$1.53/lb in FY2021; \$1.73/lb in FY2022; \$1.89/lb 5-year average Total groundfish landings: 50.96 million pounds in FY2020; 37.04 million pounds in FY2021; 33.47 million pounds in FY2022 GB yellowtail flounder total catch (landings + discards): 9.7 mt in FY2020, 30.7 mt in FY2021, 8.4 mt in FY2022 GB yellowtail flounder commercial groundfish fishery catch: 6.4 mt in FY2020, 0.8 mt in FY2021, 0.5 mt in FY2022 GB yellowtail flounder scallop fishery catch: 1.5 mt in FY2020, 29.1 mt in FY2021, 7.8 mt in FY2022 GB yellowtail flounder small mesh fishery catch: 1.8 mt in FY2020, 0.8 mt in FY2021, 0.1 mt in FY2022					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.					
% Food, % Recreational		82% of the US ABC is allocated to the commercial groundfish fishery.					
Fishing Communities		Commercial - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett, RI; and Portland, ME.					
Other Economic/Social Factors		ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2018-2022: In recent years, inter-sector ACE lease trades for GB yellowtail flounder are not associated with prices greater than \$0.00.					
Major Sources of Scientific Uncertainty		Lack of an analytic assessment model and low catches in the fishery-independent surveys make estimates in growth difficult					
Major Sources of Management Uncertainty		Management uncertainty buffers are set at 3% for commercial groundfish fishery and Atlantic sea scallops and at 7% for small-mesh fisheries.					
How is the probability of overfishing addressed?		Because a stock assessment model framework is lacking, no historical estimates of biomass, fishing mortality rate, or recruitment can be calculated. Status determination relative to reference points is not possible because reference points cannot be defined. In the absence of an assessment model, an empirical approach based on survey catches indicates stock condition is poor, given a declining trend in survey biomass. 2024 stock assessment results for GB yellowtail flounder continue to indicate low stock biomass and poor productivity. Recent catches remain well below the quota. NMFS determined that the stock status for GB yellowtail flounder is overfished, with overfishing unknown.					
What is the consequence of overfishing?		Reduction in biomass, yield, and net economic benefits over long-term. Quota overages in the sector or common pool fisheries trigger accountability measures within season or in subsequent fishing years or fishing trimesters (common pool only). The measures are designed to correct the problems that caused the quota to be exceeded. For the Atlantic sea scallop fishery and small-mesh fisheries, an overage can lead to gear-restrictions in the GB yellowtail flounder stock area in a year following the overage. Any US fishery overage of the U.S. TAC is subtracted from the following year's U.S. TAC.					
How are expected net benefits to the Nation currently measured/evaluated?		Yield (mt and \$)					
Interactions with Other Fisheries/Stocks, Bycatch Issues		The Atlantic sea scallop fishery and small-mesh fisheries each receive a sub-ACL of GB yellowtail flounder (16% and 2% of the US ABC, respectively).					

FMP **NORTHEAST MULTISPECIES (GROUND FISH)**
STOCK(S) **Georges Bank Yellowtail Flounder**
LAST ASSESSMENT **Management Track, July 2024**

Ecosystem Considerations: Trophic Interactions	Amphipods and polychaetes are the main prey of yellowtail flounder, with occasional consumption of other benthic invertebrates and small fish (Johnson et al., 1999; Klein-MacPhee, 2002). Predators include Spiny Dogfish, Atlantic Cod, several skate species, and several other benthic piscivores (Johnson et al., 1999; Klein-MacPhee, 2002) NOAA/NEFSC Northeast Vulnerability Assessment
Ecosystem Considerations: Habitat	Closures in place in the GB area include the GB Dedicated Habitat Research Area, Closed Area II, and and two Seasonal Spawning Closures (CAI and CAII).
Ecosystem Considerations: Climate	Yellowtail flounder is considered to have a low vulnerability to climate change (high climate exposure risk and low biological sensitivity), yet high distributional vulnerability driven by temperature. "The effect of climate change on Yellowtail Flounder on the Northeast U.S. Shelf is very likely to be negative (>95% certainty in expert scores). Recruitment of the southern stock has decreased and this has been linked to warming. The species has also shifted northward in recent years as temperatures have warmed. Decreasing productivity and northward shifts will lead to negative consequences for Yellowtail Flounder in the coming years." NOAA/NEFSC Northeast Vulnerability Assessment
Other Important Considerations/Notes	Use of the GB Yellowtail Flounder Limiter approach to develop catch advice. The result of the Limiter in 2024 produces catch advice of 200 mt. The Limiter approach was designed to have three independent surveys serve as the basis for average biomass for a year. This is the first assessment since 2019 that all three surveys were available. The NEFSC survey biomass estimates are adjusted for length based catchability and day/night effects (Miller et al 2021). These adjustments are not available for the DFO survey. Changes to the US/CA transboundary management process effective this year such that the joint assessment (TRAC) no longer occurs. In its place, GB yellowtail flounder will be assessed only by the US. A Research Track Stock Assessment for all three yellowtail flounder stocks is presently underway.

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
Empirical area swept, 2023	Averages estimates of biomass from the bottom trawl surveys and applies exploitation rate	Unknown/Yes	Yes 2019-2043	Unknown in FY2024	1,256 mt in FY2024	1,196 mt in FY2024	N/A for groundfish
Overfished and unknown if overfishing is occurring. The stock shows signs of improvement but remains in poor condition relative to historical levels. Catch data continues to be a major source of uncertainty due to a criminal misreporting case in the past along with the inability to incorporate age structure data into the assessment and track cohorts through time. Seasonal catchability coefficients have been used in the three most recent assessments, and further work tuning an ASAP model is ongoing in an effort to transition to an age-based assessment in a future research track assessment.				MSY/OY	AMs	Discards	State Waters
				MSY = N/A	Inseason closures and lb-lb for commercial groundfish fishery	65.8 mt in FY2022	6.2 mt in FY2022
Availability of Biological and Assessment Data		Updated data since last assessment: survey (2023 NEFSC fall survey and 2024 NEFSC spring survey - no surveys in 2020, and spring 2023 survey is treated as missing) and fisheries (commercial catches, and 2022 and 2023 discard estimates) data					
Recent Performance Against Harvest Control Rule		Percent of total ACL caught: 87.3% in FY2019, 66.8% in FY2020, 63.1% in FY2021, and 60% in FY2022					
Current Management Program		The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. State waters and the other sub-component round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.					
Variability in Catch/Revenues?		<i>Commercial Groundfish Revenue for witch flounder (2022\$):</i> \$3.2 million in FY2019, \$3.4 million in FY2020, \$3.2 million in FY2021, and \$2.6 million in FY2022; \$3.1 million 5-year average <i>Witch flounder ex-vessel price/lb (2022\$/lb):</i> \$2.02/lb in FY2019, \$1.79/lb in FY2020, \$1.73/lb in FY2021 and \$1.55/lb in FY2022; \$1.80/lb 5-year average <i>Total groundfish landings:</i> 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022 <i>Witch flounder catch (landings + discards):</i> 827.3 mt in FY2019, 944.9 mt in FY2020, 892.0 mt in FY2021, and 847.8 mt in FY2022					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.					
% Food, % Recreational		96% of the total ACL was allocated to the commercial groundfish fishery in FY2024. There is no recreational sub-ACL.					
Fishing Communities		<i>Commercial</i> - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME.					
Other Economic/Social Factors		<i>ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2019-2023:</i> Declining trend in estimated ACE lease prices between FY2019-2022, beginning around \$.50 - \$.60 per pound for 2019 fishing year and further declining between FY2020-2022. However, lease prices increased to between \$.10 and \$.15 during the 2023 fishing year, driven by high utilization rates.					
Major Sources of Scientific Uncertainty		No analytical model or biomass reference points. From the 2024 Management Track Assessment: Uncertainty in the catch has increased due to criminal convictions in a case involving catch misreporting. Uncertainty in the catch creates additional uncertainty surrounding the exploitation rate estimate. Since 2019, the average survey biomass has declined despite catches being below the catch advice from the 2019 assessment. Although not directly impacting the empirical approach assessment, the low commercial landings sampling in recent years impacts the ability to estimate numbers of fish landed at age and to track cohorts through time.					
Major Sources of Management Uncertainty		The default management uncertainty buffer of 5% is applied to the commercial groundfish fishery. Uncertainty in the catch in recent years due to catch misreporting from a criminal case in the past.					
How is the probability of overfishing addressed?		Witch flounder overfishing status is unknown. Because an analytical assessment model framework is lacking, no historical estimates of biomass, fishing mortality rate, or recruitment can be calculated. Status determination relative to reference points is not possible because reference points cannot be defined. In the absence of an assessment model, the area-swept empirical approach indicates that stock condition remains poor. Fishery landings and survey catch by age shows a slight expansion of the age structure but overall the number of older fish in the population remains low. NEFSC relative indices of abundance and biomass remain below their time series average. The assessments acknowledges the decline in exploitable biomass from 2020 to 2022 and a subsequent increase in 2023 and 2024. NMFS determined that the stock status for witch flounder will remain overfished, with overfishing unknown. At the last assessment in 2019 the SSC recommended a constant ABC for the specification setting period based on the average exploitation rate from 2007 – 2015 and recent three-year average exploitable biomass.					
What is the consequence of overfishing?		Reduction in biomass, yield, and net economic benefits over long-term.					
How are expected net benefits to the Nation currently measured/evaluated?		Yield (mt and \$)					
Interactions with Other Fisheries/Stocks, Bycatch Issues		No sub-ACLs outside Sector and Common pool commercial sub-ACLs. Other catches in the State and Other sub-components.					
Ecosystem Considerations: Trophic Interactions		Polychaetes are by far the most important food source of witch flounder (from the 1973-2005 NEFSC food habits data). The close association with soft substrate may be the result of their preference for polychaete prey.					
Ecosystem Considerations: Habitat		Witch flounder are very closely tied to mud/silt, muddy-sand, and clay substrate and rarely occur on any other bottom type. Witch flounder spawn from March to November, with peak spawning occurring in summer. The general trend is for spawning to occur progressively later from south to north. In the Gulf of Maine-Georges Bank region, spawning occurs from April to November, and peaks from May to August. Spawning occurs in dense aggregations that are associated with areas of cold water.					
Ecosystem Considerations: Climate		Witch flounder are considered highly vulnerable to climate change (high climate exposure risk and high biological sensitivity).					
Other Important Considerations/Notes		The empirical approach does not incorporate age structure information. Consideration of incoming recruitment is critical for catch advice that supports stock rebuilding. Based on the surveys, there is no sign of a strong incoming year class.					

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM, 2023	State Space Model	No/No	No	17,768 mt in FY2024	Total ABC 13,958 mt and US ABC 7,058 mt in FY2024	6,571 mt in FY2024	N/A for groundfish
Multispecies groundfish fishery, frequently caught with less abundant species like cod. Surges in stock abundance and quotas are driven by strong year classes, creating a boom and bust cycle. The current assessment shows the stock leaving the boom phase with the largest year class from 2013 no longer contributing to biomass or catch. Turning off lognormal adjustment in the model results in a large difference in scale. Transboundary EGB haddock management unit co-managed by the U.S. and Canada.				MSY/OY	AMS	Discards	State Waters
				MSY = 5,766 mt	Inseason closures and lb-lb for commercial groundfish fishery; lb-lb payback for midwater trawl fishery	99.6 mt in FY2023	0.0 mt in FY2023
Availability of Biological and Assessment Data		Updated data since last assessment: survey (NEFSC spring and fall survey - no surveys in 2020 and 2023 spring survey treated as missing; DFO survey (with some years missing due to incomplete coverage) and fisheries (commercial catches - US and Canadian) data					
Recent Performance Against Harvest Control Rule		Percent of total ACL caught: 9.6% in FY2019, 5.2% in FY2020, 4.0% in FY2021, 3.1% in FY2022, and 24.6% in FY2023					
Current Management Program		For GB haddock, the total ABC is reduced by the amount of the Canadian quota for the Eastern GB management unit. The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. The herring mid-water trawl fleet receives a sub-ACL. State waters and the other sub-components round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs. Eastern GB haddock is jointly managed with Canada under the United States/Canada Resource Sharing Understanding. Each year, the Transboundary Management Guidance Committee (TMGC) and Steering Committee (SC) recommends a shared quota for Eastern GB haddock based on the most recent stock information and the TMGC's harvest strategy. The shared quotas are allocated between the United States and Canada based on a formula that considers historical catch (10-percent weighting) and the current resource distribution (90-percent weighting).					
Variability in Catch/Revenues?		<i>Commercial Groundfish Revenue for EGB haddock (2022\$):</i> \$1.4 million in FY2019, \$1.1 million in FY2020, \$1.3 million in FY2021, \$0.6 million in FY 2022, \$1.1 million 5-year average; <i>WGB haddock (2022\$):</i> \$10.3 million in FY2019, \$14.0 million in FY2020, \$7.9 million in FY2021, \$7.2 million in FY 2022, \$9.7 million 5-year average <i>EGB haddock ex-vessel price/lb (2022\$/lb):</i> \$1.08/lb in FY2019, \$1.09/lb in FY2020; \$1.51/lb in FY2021, \$1.27/lb in FY2022, \$1.18/lb 5-year average; <i>WGB haddock (2022\$/lb):</i> \$1.21/lb in FY2019, \$1.23/lb in FY2020; \$1.56/lb in FY2021, \$1.81/lb in FY2022, \$1.31/lb 5-year average <i>Total groundfish landings:</i> 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022 <i>Total GB haddock catch (landings + discards):</i> 5,323.4 mt in FY2019, 6,513.3 mt in FY2020, 3,119.7 mt in FY2021, and 2,358.1 mt in FY2022 WGB haddock makes up the majority of catches.					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.					
% Food, % Recreational		95% of the US ABC is allocated to the commercial groundfish fishery. The commercial groundfish fishery ACLs (sectors and common pool) is reduced by other commercial fisheries sub-components and management uncertainty buffers. There is no recreational sub-ACL.					
Fishing Communities		<i>Commercial</i> - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME.					
Other Economic/Social Factors		<i>ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2019-2023:</i> ACE lease prices have been \$0, which is logical given the low utilization rate.					
Major Sources of Scientific Uncertainty		Sources of uncertainty include dynamics in the plus group, future recruitment, and future assumptions. The 2013 year class is no longer a main contributor to catch or biomass, while the 2020 year class accounts for 47% of the SSB.					
Major Sources of Management Uncertainty		The default management uncertainty buffer of 5% is applied to the commercial fishery. A management uncertainty buffer of 7% is used for the herring mid-water trawl fishery.					
How is the probability of overfishing addressed?		In FY2023-2025, catch advice was set consistent with the groundfish control rule and was based on 75%FMSY. In October 2024, the TMGC met and agreed upon a recommended shared TAC of 7,410 mt that is below the proposed OFL and therefore under a 50% probability of overfishing.					
What is the consequence of overfishing?		Reduction in biomass, yield, and net economic benefits over long-term.					
How are expected net benefits to the Nation currently measured/evaluated?		Yield (mt and \$)					
Interactions with Other Fisheries/Stocks, Bycatch Issues		The herring midwater trawl fleet receives a sub-ACL of 1-2% (currently 2%) of the US ABC for GB haddock. Haddock is frequently caught with less abundant groundfish species like cod.					
Ecosystem Considerations: Trophic Interactions		Haddock have a varied diet consisting of polychaetes, crustaceans, mollusks, echinoderms, and fish. Fish are more important for larger individuals.					
Ecosystem Considerations: Habitat		Haddock are found in moderate depths in Georges Bank. Haddock prefer gravel, pebbles, clay, broken shells, and smooth hard sand, particularly smooth areas between rocky patches (Klein-MacPhee 2002). These habitat types are common on Georges Bank, and less prevalent in the Gulf of Maine, which helps explain the increased abundance of haddock on Georges Bank (Brodziak 2005). Haddock do not make extensive migrations, but prefer deeper waters in the winter and tend to move shoreward in summer. Closures in place in the GB area include the GB Dedicated Habitat Research Area, Closed Area II, and a seasonal closure area.					
Ecosystem Considerations: Climate		Haddock are considered to have low vulnerability to climate change (high climate exposure risk and low biological sensitivity).					
Other Important Considerations/Notes		The assessment continues to predict weights at age for catch and SSB from a Gaussian Markov Random Field (GMRF) model based on the research track Peer Review Panel. The GMRF weights at age predict a slight increase in SSB in 2024-2027. The current assessment estimates the stock has left a boom phase and is heading for a bust cycle. Without bias correction, reported model estimates are medians rather than means. Because of the large estimates of process error, particularly for recruitment, there is a large difference in scale. Additionally, without bias correction in the assessment, the misalignment between the domestic stock unit and the transboundary Eastern Georges Bank management unit is another point of uncertainty in the scale of the estimated population and catch advice.					

FMP **NORTHEAST MULTISPECIES (GROUNDFISH)**
STOCK(S) **Gulf of Maine Haddock**
LAST ASSESSMENT **2024 Fall Management Track Assessment**

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM, 2023	State Space Model	No/No	No	2,651 mt in FY2024	2,406 mt in FY2024	2,194 mt in FY2024	N/A for groundfish
Multispecies groundfish fishery with commercial and recreational components. This is the first management track assessment since the transition from ASAP to WHAM in the 2023 State-space Research Track assessment. Past assessments noted declining biomass and substantial increases in F; strong year classes from 2020 and 2021 and increased growth rates in recent cohorts have stabilized the downward projectory. Major uncertainties surround the survivability of these strong year classes and the recent projections of SSB and F.				MSY/OY	AMs	Discards	State Waters
				MSY = 2,045 mt	Inseason closures and lb-lb for commercial groundfish fishery; stricter management measures in following years for recreational fishery; lb-lb payback for midwater trawl fishery	202.1 mt in FY2023	1.7 mt in FY2023
Availability of Biological and Assessment Data		Updated data since last assessment: survey (spring and fall bottom longline survey; NEFSC spring and fall bottom trawl survey - no surveys in 2020 and 2023 spring survey treated as missing) and fisheries (commercial and recreational catches) data					
Recent Performance Against Harvest Control Rule		Percent of total ACL caught: 5.2% in FY2019, 28.6% in FY2020, 27.7% in FY2021, 30.9% in FY2022, and 73.5% in FY2023.					
Current Management Program		The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. The recreational fishery (private and for-hire) also has a sub-ACL. The recreational fishery is managed with bag limits, seasons, and fish size restrictions. The herring mid-water trawl fleet receives a sub-ACL. State waters and the other sub-component round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.					
Variability in Catch/Revenues?		Commercial Groundfish Revenue for GOM haddock (2022\$): \$9.3 million in FY2019, \$10.7 million in FY2020, \$11.5 million in FY2021, \$8.7 million in FY2022; \$9.5 million 5-year average GOM haddock ex-vessel price/lb (2022\$/lb): \$1.39/lb in FY2019, \$1.38/lb in FY2020; \$1.75/lb in FY2021, \$1.62/lb in FY2022; \$1.49/lb 5-year average Total groundfish landings: 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022 GOM haddock catch (landings + discards): 4,152.3 mt in FY2019, 5,320.5 mt in FY2020, 4,392.1 mt in FY2021, and 3,354.4 mt in FY2022					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.					
% Food, % Recreational		The recreational fishery sub-ACL = 33.9% of each years ABC reduced by a management uncertainty buffer. 66.1% of the ABC is allocated to the commercial fisheries. The commercial groundfish fishery ACLs (sectors and common pool) is reduced by commercial state waters and other commercial fisheries sub-components and management uncertainty buffers.					
Fishing Communities		Commercial - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. Recreational - When expanding out to the top 20 communities in recreational engagement in the Northeast (all recreational fishing) Recreational Engagement Indicators (2009-2020), New England communities include: Newburyport, MA and Barnstable, MA. Other ports of interest with relatively high engagement (i.e., ranking somewhere outside the top 20) in the last five years include Gloucester, MA, Waterford, CT, East Lyme/Niantic, CT, and Old Saybrook, CT.					
Other Economic/Social Factors		ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2019-2023: ACE lease prices for GOM haddock had been \$0 until FY2023 when they rose dramatically to \$0.50 - \$1.00/lb, in response to the decline in ACL.					
Major Sources of Scientific Uncertainty		Two sources of uncertainty include the survivability of the 2020 and 2021 year classes and whether they will be able to contribute to the population biomass in the short-term, and overly optimistic SSB projections causing projections of F to be biased low.					
Major Sources of Management Uncertainty		The default management uncertainty buffer of 5% is applied to the commercial fishery. A management uncertainty buffer of 7% is used for the recreational fishery and for the herring mid-water trawl fishery.					
How is the probability of overfishing addressed?		FY2023-2025 catch advice was set consistent with the groundfish control rule and was based on 75%FMSY.					
What is the consequence of overfishing?		Reduction in biomass, yield, and net economic benefits over long-term.					
How are expected net benefits to the Nation currently measured/evaluated?		Yield (mt and \$)					
Interactions with Other Fisheries/Stocks, Bycatch Issues		The herring midwater trawl fleet receives a sub-ACL of GOM haddock that is 1% of the ABC. Haddock is frequently caught with less abundant groundfish species like cod.					
Ecosystem Considerations: Trophic Interactions		Haddock have a varied diet consisting of polychaetes, crustaceans, mollusks, echinoderms, and fish. Fish are more important for larger individuals.					
Ecosystem Considerations: Habitat		Haddock are found in relatively shallow inshore waters in the Gulf of Maine. Haddock prefer gravel, pebbles, clay, broken shells, and smooth hard sand, particularly smooth areas between rocky patches (Klein-MacPhee 2002). These habitat types are common on Georges Bank, and less prevalent in the Gulf of Maine, which helps explain the increased abundance of haddock on Georges Bank (Brodziak 2005). Haddock do not make extensive migrations, but prefer deeper waters in the winter and tend to move shoreward in summer. Closures in place in the GOM area include year round closures (Western GOM and Cashes Ledge) and seasonal closure areas designed to protect spawning cod.					
Ecosystem Considerations: Climate		Haddock are considered to have low vulnerability to climate change (high climate exposure risk and low biological sensitivity).					
Other Important Considerations/Notes		The WHAM model resulted in increases to historical SSB though recent estimates are similar between the two models. The new assessment model includes the Bottom Longline Survey as an index of abundance. The strong year classes from 2020 and 2021 have stabilized the stock and growth rates of recent cohorts have increased. An alternative age-composition likelihood was tested but not adopted due to diagnostic issues.					

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
WHAM, 2023	State Space Model	No/No	No, rebuilt in 2019.	7,091 mt in FY2024	5,520 mt in FY2024	5,192 mt in FY2024	N/A for groundfish
A large source of uncertainty remains in the fishery age compositions and weight-at-age estimates from 2018-2023 due to the exclusion of the data from the model as a consequence of inadvertent groupings of data, increased bias towards the small market category, and lack of time to re-estimate landings-at-age and -length. Increased port sampling would improve data processing for commercial catch age composition.				MSY/OY	AMs	Discards	State Waters
				MSY: 5,090 mt	Inseason closures and lb-lb for commercial groundfish fishery	81.4 mt in FY2023	4.6 mt in FY2023
Availability of Biological and Assessment Data		Updated data since last assessment : survey indices (NMFS spring and fall - no 2020 surveys and 2023 spring treated as missing) and commercial landings and discards.					
Recent Performance Against Harvest Control Rule		Percent of total ACL caught: 56.8% in FY2019, 21% in FY2020, 25.9% in FY2021, 33.6% in FY2022, and 26.2% in FY2023.					
Current Management Program		The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. State waters and the other sub-component round out the final components of the total ACL. Landings and discards from all fisheries count against the applicable sub-ACL or sub-component, which are monitored throughout the year. If an average occurs, an accountability measure can be triggered under certain conditions.					
Variability in Catch/Revenues?		<i>Commercial Groundfish Revenue for American plaice (2022\$):</i> \$3.5 million in FY2019, \$2.3 million in FY2020, \$2.7 million in FY2021, \$2.6 million in FY2022; \$3.3 million 5-year average <i>American plaice ex-vessel price/lb ((2022\$/lb):</i> \$2.00/lb in FY2019, \$1.89/lb in FY2020; \$1.88/lb in FY2021, \$1.43/lb in FY2022; \$1.97/lb 5-year average <i>Total groundfish landings:</i> 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022 <i>American plaice catch (landings + discards):</i> 870.9 mt in FY2019, 629.3 mt in FY2020, 709.8 mt in FY2021, and 902.8 mt in FY2022 Catch of plaice is relatively consistent throughout the year (little to no seasonality to catch).					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.					
% Food, % Recreational		95% of the total ACL is allocated to the commercial groundfish fishery. There is no recreational sub-ACL.					
Fishing Communities		<i>Commercial</i> - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME.					
Other Economic/Social Factors		<i>ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2019-2023:</i> Exploitation of the stock has been low in recent years and catch is below the sub-ACL. Trends in ACE lease prices have followed utilization trends.					
Major Sources of Scientific Uncertainty		Fishery age compositions and weight-at-age estimates from 2018-2023 are the largest source of uncertainty , which are excluded from the model. The 2022 management assessment identified declining weight-at-age trends in its terminal years. This assessment concluded that the declining trends were due to inadvertent inclusion of the electronic monitoring maximum retention data with the portside sampling program for estimating the small/peewee market category, and biasing the category towards smaller fish which were heavily sampled in the maximum retention program compounded by reduced portside sampling during this period.					
Major Sources of Management Uncertainty		The default management uncertainty buffer of 5% is applied to the commercial groundfish fishery.					
How is the probability of overfishing addressed?		FY2023-2025 catch advice was set consistent with the groundfish control rule and was based on 75%FMSY.					
What is the consequence of overfishing?		Reduction in biomass, yield, and net economic benefits over long-term.					
How are expected net benefits to the Nation currently measured/evaluated?		Yield (mt and \$)					
Interactions with Other Fisheries/Stocks, Bycatch Issues		No sub-ACLs. A research recommendation made by the 2022 research track working group was to include GOM scallop fishery discards as that fishery expands.					
Ecosystem Considerations: Trophic Interactions		Juvenile plaice eat small shrimps, crustaceans, and polychaetes. Adult American plaice are opportunistic predators on small bottom-dwelling organisms such as echinoderms (brittle stars), bivalves, polychaetes, and small crustaceans. Atlantic cod are the dominant predator of plaice <35 cm. Adult plaice are preyed upon by larger predatory fish and Greenland shark, monkfish, spiny dogfish, and grey seals.					
Ecosystem Considerations: Habitat		Juvenile and adult American plaice are mostly sedentary on soft bottom substrate, but make short migrations for food and spawning.					
Ecosystem Considerations: Climate		American plaice are considered to have low vulnerability to climate change (low biological sensitivity, high climate exposure). Warming may decrease productivity and cause reductions in available habitat.					
Other Important Considerations/Notes		American plaice are managed as a single stock in the Gulf of Maine and Georges Bank regions. The spring and fall survey time series were updated to incorporate tow-specific area swept measurements and commercial discards for 2022 and 2023 were available through the Catch Accounting and Monitoring system (CAMS), a first for this management track assessment. A lognormal adjustment for biological reference points was implemented to align their settings with guidance for setting process and observation error adjustments. This adjustment increased F slightly, and decreased reference points for SSB and yield, but overall had little impact on model fit, diagnostics, and results. Investigations into age-specific fall distributions of plaice could improve the assessment as noted by the fit to the Bigelow fall survey age composition indicating potential age-varying interactions with the survey gear.					

FMP **NORTHEAST MULTISPECIES (GROUNDFISH)**
 STOCK(S) **Pollock**
 LAST ASSESSMENT **2024 Fall Management Track Assessment**

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
ASAP, 2023	Statistical Age-Structured Model. Two models: (1) dome-shaped and (2) flat-topped survey selectivity	No/No	No	12,208 mt in FY2024	13,940 mt in FY2024	12,184 mt in FY2024	N/A for groundfish
One of the greatest sources of uncertainty in the pollock assessment is selectivity. The base model indicates a large cryptic biomass that neither the surveys or fishery can confirm, and projections differ depending on the assumed selectivity shape especially at older ages. For example, increasing the assessment plus age group under the dome-shaped selectivity assumption increased the variability in population estimates.				MSY/OY	AMs	Discards	State Waters
				base model: 10,370 mt flat sel sensitivity: 8,531 mt	In-season closures and lb-lb for commercial groundfish fishery	856.1 mt in FY2023	540.0 mt in FY2023
Availability of Biological and Assessment Data		Updated data since last assessment: commercial and recreational fishery catch data, survey indices of abundance (NEFSC spring and fall survey - no 2020 surveys and 2023 spring survey was excluded due to lack of coverage)					
Recent Performance Against Harvest Control Rule		Percent of total ACL caught: 9.3% in FY2019, 21.5% in FY2020, 20.3% in FY 2021 , 35.4% in FY2022, and 32.5% in FY2023.					
Current Management Program		The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. State waters and the other sub-component round out the final components of the total ACL. Pollock is targeted by recreational anglers but there is no recreational ACL for pollock. Landings and discards from all fisheries count against the applicable sub-ACL or sub-component, which are monitored throughout the year. If an overage occurs, an accountability measure can be triggered under certain conditions.					
Variability in Catch/Revenues?		Commercial Groundfish Revenue for pollock (2022\$): \$6.3 million in FY2019, \$9.4 million in FY2020, \$9.3 million in FY2021, \$8.4 million in FY2022; \$7.9 million 5-year average Pollock ex-vessel price/lb (2022\$/lb): \$1.07/lb in FY2019, \$1.26/lb in FY2020; \$1.60/lb in FY2021, \$1.22/lb in FY2022; \$1.21/lb 5-year average Total groundfish landings: 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022 Pollock catch (landings + discards): 3,569.6 mt in FY2019, 5,626.6 mt in FY2020, 4,272.9 mt in FY2021, and 5,684.1 mt in FY2022 A relatively equivalent amount of pollock is caught during each quarter of the fishing year (no seasonality to catch).					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.					
% Food, % Recreational		95% of the total ACL is allocated to the commercial groundfish fishery. There is no recreational sub-ACL.					
Fishing Communities		<i>Commercial</i> - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME. <i>Recreational</i> - When expanding out to the top 20 communities in recreational engagement in the Northeast (all recreational fishing) Recreational Engagement Indicators (2009-2020), New England communities include: Newburyport, MA and Barnstable, MA. Other ports of interest with relatively high engagement (i.e., ranking somewhere outside the top 20) in the last five years include Gloucester, MA, Waterford, CT, East Lyme/Niantic, CT, and Old Saybrook, CT.					
Other Economic/Social Factors		ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2019-2023: Utilization by the commercial groundfish fishery has been similar over time. ACE lease prices for pollock have been close to zero, which is logical given the recent low utilization rate.					
Major Sources of Scientific Uncertainty		A better understanding of survey selectivity would improve the pollock assessment.					
Major Sources of Management Uncertainty		A base model (dome-shaped survey selectivity) is used for providing management advice and a flat sel sensitivity model (flat-topped survey selectivity) is used to demonstrate the sensitivity of assessment results to survey selectivity assumptions. The dome-shaped survey and fishery selectivity curves implies the existence of a large cryptic biomass, but assuming flat-topped selectivity leads to lower SSB estimates and higher F estimates. Projection results differ based on the selectivity used.					
How is the probability of overfishing addressed?		Pollock is not undergoing overfishing and is not in a rebuilding plan. FY2023-2025 catch advice was set consistent with the groundfish control rule and was based on 75%FMSY.					
What is the consequence of overfishing?		Quota overages in the sector or common pool fisheries trigger accountability measures within season or in subsequent fishing years or fishing trimesters (common pool only).					
How are expected net benefits to the Nation currently measured/evaluated?		Yield (mt and \$)					
Interactions with Other Fisheries/Stocks, Bycatch Issues		There are no sub-ACLs of pollock in non-groundfish fisheries. An extremely limited amount of pollock (<0.5 mt) is caught in non-groundfish fisheries.					
Ecosystem Considerations: Trophic Interactions		A variety of fish eat juvenile pollock. Spiny dogfish, monkfish, and other pollock prey on adults.					
Ecosystem Considerations: Habitat		Atlantic pollock are found in the Northwest Atlantic Ocean and are most common on the western Scotian Shelf and in the Gulf of Maine. Small juveniles (harbor pollock) migrate inshore and inhabit rocky subtidal and intertidal zones. Pollock undergo a series of inshore-offshore migrations linked to temperature until around year 2, then move offshore and remain offshore through the adult stage.					
Ecosystem Considerations: Climate		Pollock are considered to be moderately vulnerable to climate change (high climate exposure risk, moderate biological sensitivity).					
Other Important Considerations/Notes		The combined commercial and rec fleets into a single fleet from the previous management track assessment was carried through and updated in this assessment. Four potentially new changes were explored in response to the 2022 peer review panel: increasing the assessment plus age group, evaluating the fishery selectivity time blocks, splitting the Albatross and Bigelow bottom trawl survey time series, and evaluating the inclusion of the spring and fall bottom longline survey. Splitting the bottom trawl survey time series improved fits to survey data and survey catchability estimates. Six fishery selectivity blocks were included in the assessment to align with past management actions and resulted in a better AIC score without sacrificing model convergence or retrospective pattern. The plus age group remains at age 9 after exploration, and the bottom longline survey was ultimately excluded from the model due to low sample sizes.					

FMP		NORTHEAST MULTISPECIES (GROUNDFISH)					
STOCK(S)		Atlantic Halibut					
LAST ASSESSMENT		2024 Fall Management Track Assessment					
Assessment Model, Terminal Year	Description of Assessment Model	Overfishing? Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
First Second Derivative, 2023	Index-based	Unknown/Yes	Yes, by 2055	Unknown	124 mt in FY2024 / U.S. ABC 78 mt in FY2024	58 mt in FY2024	N/A
Long-lived, slow-growing, flatfish species. Inclusion of Canadian landings. Questions around stock structure.				MSY/OY	AMs	Discards	State Waters
				N/A	If ACL and buffer for an unallocated stock is exceeded, groundfish vessels (common pool & sector) are subject to an area closure/ gear restriction in a future year and no possession.	16.5 mt in FY2023	14.0 mt in FY2023
Availability of Biological and Assessment Data		Updated data since last assessment: commercial fishery catch data, commercial and NEFSC Fall survey indices of abundance (Fall survey 2018 & 2019 treated as NA, fall 2020 value calculated based on average of 2019 and 2020), Canadian landings					
Recent Performance Against Harvest Control Rule		Percent of total ACL caught: 102.9% in FY2019, 64.6% in FY2020, 56.3% in FY2021, 46.2% in FY2022, and 64.8% in FY2023.					
Current Management Program		The expected Canadian catch is reduced from the total ABC to determine a US ABC. <i>Federal</i> - 1 legal-sized fish per trip. If ACL and buffer for an unallocated stock is exceeded, groundfish vessels (common pool & sector) are subject to an area closure/ gear restriction in a future year and no possession for federally permitted vessels. <i>State of Maine</i> - fish tag program and seasonal restrictions.					
Catch, Revenues, and Variability		<i>Commercial groundfish revenue from Atlantic halibut (2022\$)</i> : \$0.4 million in FY2019, \$0.4 million in FY2020, \$0.4 million in FY2021, \$0.3 million in FY2022; \$0.4 million 5-year average <i>Atlantic halibut ex-vessel price/lb (2022\$/lb)</i> : \$7.38/lb in FY2019, \$6.79/lb in FY2020; \$7.86/lb in FY2021, \$7.49/lb in FY2022; \$7.49/lb 5-year average <i>Total groundfish landings</i> : 42.82 million pounds in FY2019, 50.96 million pounds in FY2020, 37.04 million pounds in FY2021, 33.47 million pounds in FY 2022 <i>Atlantic halibut catch (landings + discards)</i> : 102.9 mt in FY2019, 65.8 mt in FY2020, 54.6 mt in FY2021, and 44.9 mt in FY2022					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2022: 802 commercial groundfish permitted vessels, with 562 reporting landings. 62 dealers reported buying groundfish. 78 dealers reported buying any species on groundfish trips.					
% Food, % Recreational		93% of the ACL is for commercial fisheries. No recreational sub-ACL.					
Fishing Communities		<i>Commercial</i> - The top 5 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2022) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett/Point Judith, RI; and Portland, ME.					
Other Economic/Social Factors		Utilization by the commercial groundfish fishery has been similar across the fishing year. Halibut is a non-allocated stock.					
Major Sources of Scientific Uncertainty		Fall 2018 and 2019 treated as NA in the model, fall 2020 survey missing but imputed with the average of indices from 2019 and 2021.					
Major Sources of Management Uncertainty		7% management uncertainty buffer applied. Canadian catch has decreased since 2020, but still remains higher than US catch.					
How is the probability of overfishing addressed?		The OFL is unknown. AMs can be triggered if catch limits are exceeded. Catch advice was set using an ABC that was held constant through FY2023 and 2025, consistent with the groundfish control rule.					
What is the consequence of overfishing?		Reduction in stock biomass over the long-term.					
How are expected net benefits to the Nation currently measured/evaluated?		Yield (mt and \$)					
Interactions with Other Fisheries/Stocks, Bycatch Issues		Incidentally caught in the commercial groundfish fishery. Only around 50% of the ACL was utilized in 2022.					
Ecosystem Considerations: Trophic Interactions		Diet changes ontogenetically; fish <30 cm eat mainly invertebrates such as annelids and crustaceans (Cargnelli et al., 1999; Klein-MacPhee, 2002). The ratio of invertebrates to bony fish declines until halibut >80 cm eat fish almost exclusively (Cargnelli et al., 1999; Klein-MacPhee, 2002). Greenland Shark, seals, monkfish (Goosefish), and spiny dogfish are common predators of halibut (Cargnelli et al., 1999; Klein-MacPhee, 2002).					
Ecosystem Considerations: Habitat		They prefer sand, gravel, or clay substrates at depths up to 1000 m (Miller et al. 1991; Scott & Scott 1988). Along the coastal Gulf of Maine, halibut move to deeper water in winter and shallower water in summer (Collette & Klein-MacPhee 2002).					
Ecosystem Considerations: Climate		Halibut are considered to be highly vulnerable to climate change (high climate exposure risk, high biological sensitivity). Nye et al. (2009) found Atlantic Halibut distributions shifting northward in recent years.					
Other Important Considerations/Notes		The 2024 assessment explored treatments of zero values from Fall 2018 and 2019 bottom trawl survey resulted in retaining values as NA in the model. Scenarios exploring including Canadian discards in the model concluded that there was minimal impact on the projected catch advice.					