Groundfish Specifications

Groundfish Plan Development Team

Scientific and Statistical Committee

August 25, 2022

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Council's Groundfish Control Rule

"These ABC control rules will be used in the absence of better information that may allow a more explicit determination of scientific uncertainty for a stock or stocks. If such information is available - that is, if scientific uncertainty can be characterized in a more accurate fashion -- it can be used by the SSC to determine ABCs, these ABC control rules can be modified in a future Council action (an amendment, framework, or specification package):

1. *ABC should be determined as the catch associated with 75% of FMSY.*
2. *If fishing at 75% of FMSY does not achieve the mandated rebuilding requirements for overfished stocks, ABC should be determined as the catch associated with the fishing mortality that meets rebuilding requirements (Frebuild).*
3. *For stocks that cannot rebuild to BMSY in the specified rebuilding period, even with no fishing, the ABC should be based on incidental bycatch, including a reduction in bycatch rate (i.e., the proportion of the stock caught as bycatch).*
4. *Interim ABCs should be determined for stocks with unknown status according to case-by- case recommendations from the SSC."*

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Southern New England/Mid-Atlantic Winter Flounder
Fishing Year 2023-Fishing Year 2025 OFLs and ABCs

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1. Southern New England/Mid-Atlantic Winter Flounder Terms of Reference

1A. Review information provided by the Council's Groundfish Plan Development Team (PDT) and the results of recent 2022 Southern New England/Mid-Atlantic (SNE/MA) winter flounder management track stock assessment.

1B. Recommend overfishing limits (OFLs) and ABCs for SNE/MA winter flounder for fishing years 2023, 2024, and 2025 that will prevent overfishing, meet the management objective to rebuild, are consistent with the Council's ABC control rule and rebuilding plan, and consider the Council's Risk Policy Statement.

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

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

- 2022 management track assessment – not overfished, no overfishing, rebuilt
- GARFO notified the Council on August 13, 2021 that SNE/MA winter flounder had not been making adequate rebuilding progress. Updated rebuilding plan expected in Framework Adjustment 65
- If NMFS revises the official stock status to be rebuilt, the Council could choose to end the rebuilding plan, rather than revise the existing plan.

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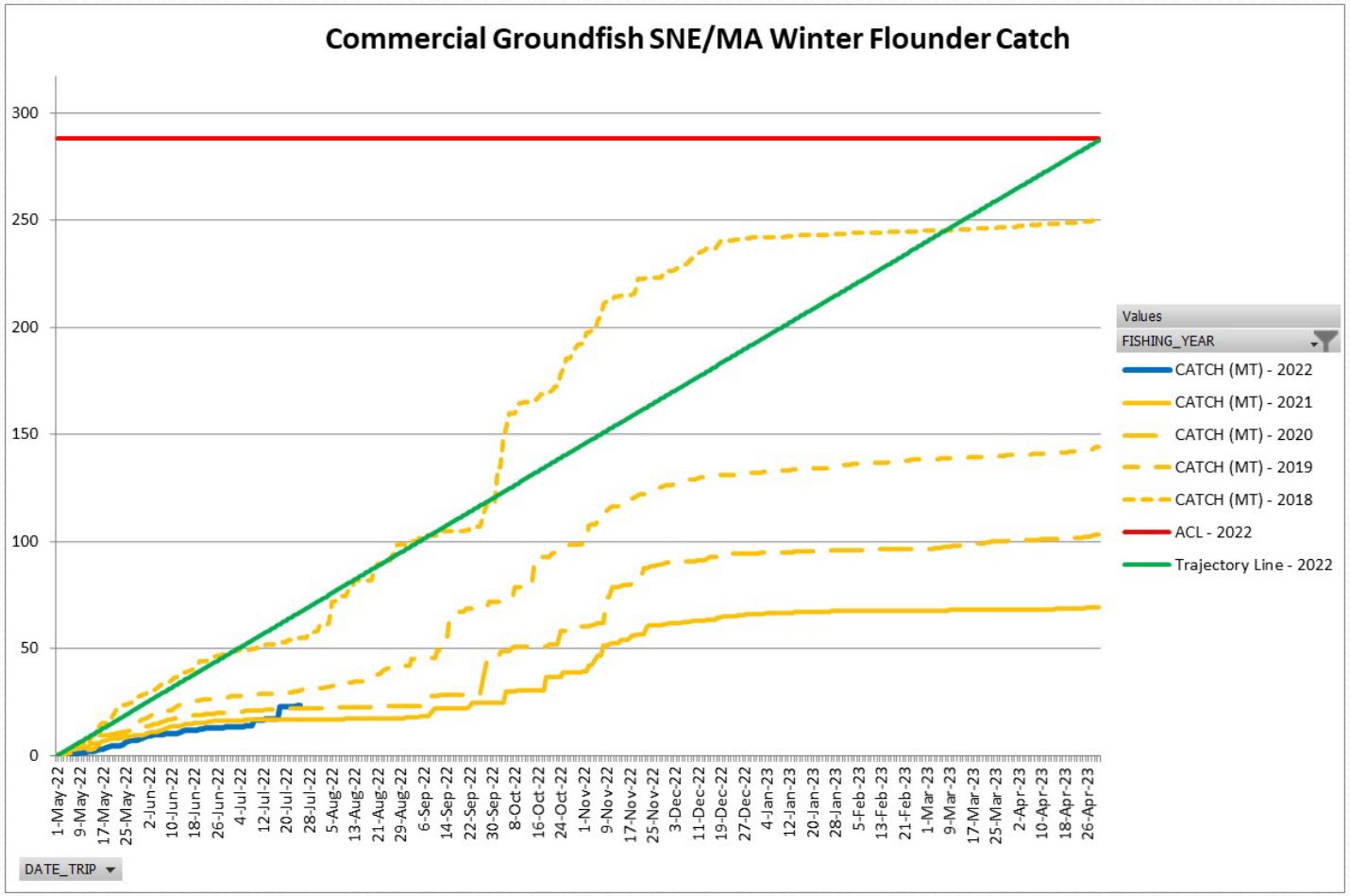
Figure 1- In-season utilization of SNE/MA winter flounder by the commercial (sectors and common pool) groundfish fishery.



Note: FY2021 catch has not been finalized.

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Recent Total Catches and Specifications

SNE/MA Winter Flounder Utilization

Fishing Year	Total ACL (mt)	Total Catch (mt)	Percent of Total ACL Caught (%)
2016	749	597.2	79.7
2017	749	550.5	73.5
2018	700	398.0	56.9
2019	700	295.4	42.2
2020	699	233.4	33.4

FYs 2021-2023

OFL	ABC	ACL
1,438	456	441

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

FY2021 YTD Groundfish Commercial (Sector + Common Pool) Catches **69.1 mt** August 12, 2022, GARFO

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

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

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

For the category described as "other non-specified", catches will be monitored and if the catch rises above five percent accountability measures will be developed to prevent the overall ACL from being exceeded. A16

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

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

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

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

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Figure 5- ACE lease prices estimated for SNE/MA winter flounder for fishing years 2017-2021 using a hedonic price model. First quarter (May-July) lease prices are indicated by the vertical gray bars in the figures.

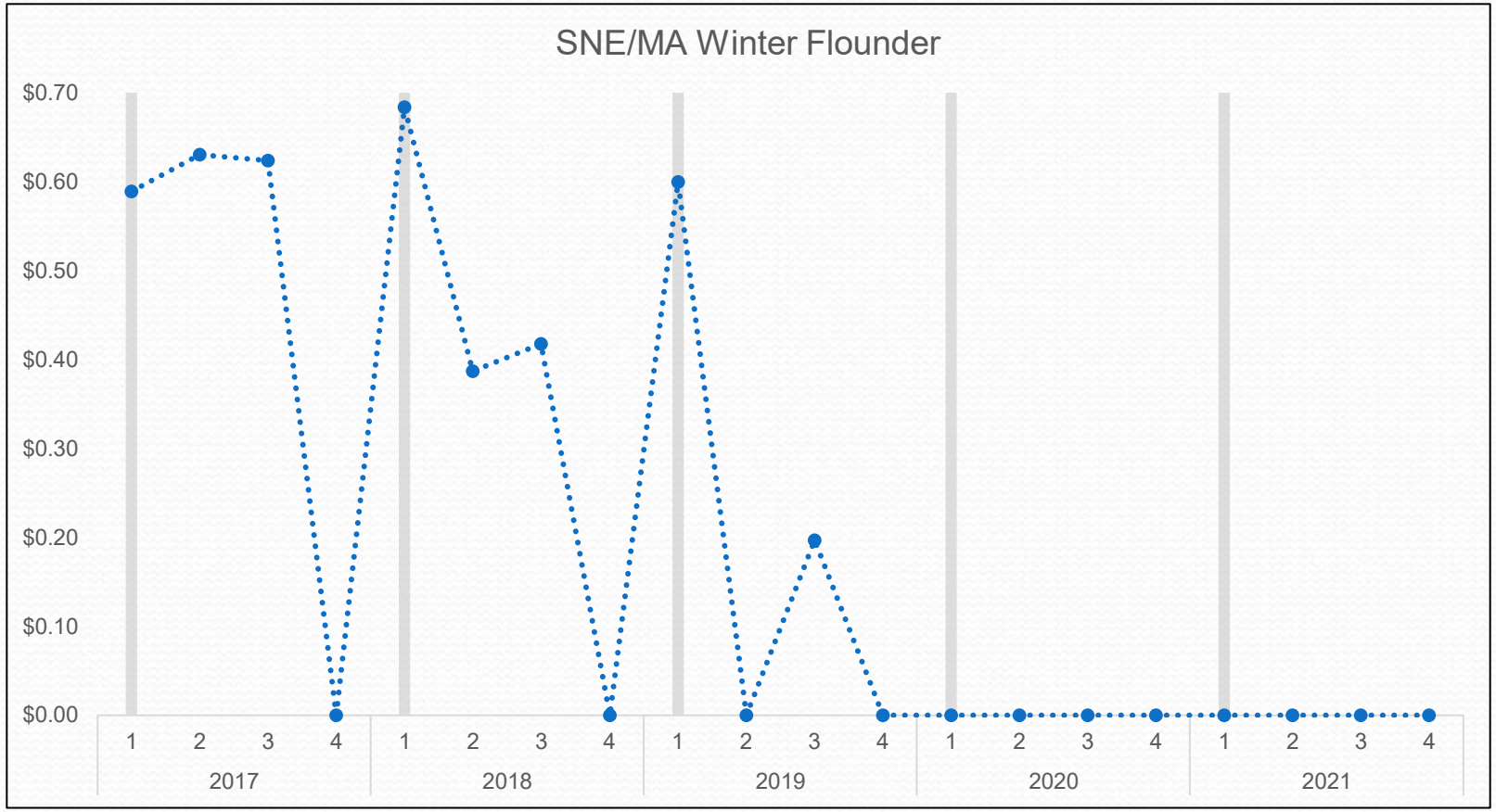

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Table 3- Catch performance (CY2010-CY2021), historical OFLs and ABCs (FY2010-FY2021), CY2022 "bridge year" catch assumption, and catch projections for F40 and 75%F40 (FY2023-FY2025) for SNE/MA winter flounder.

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

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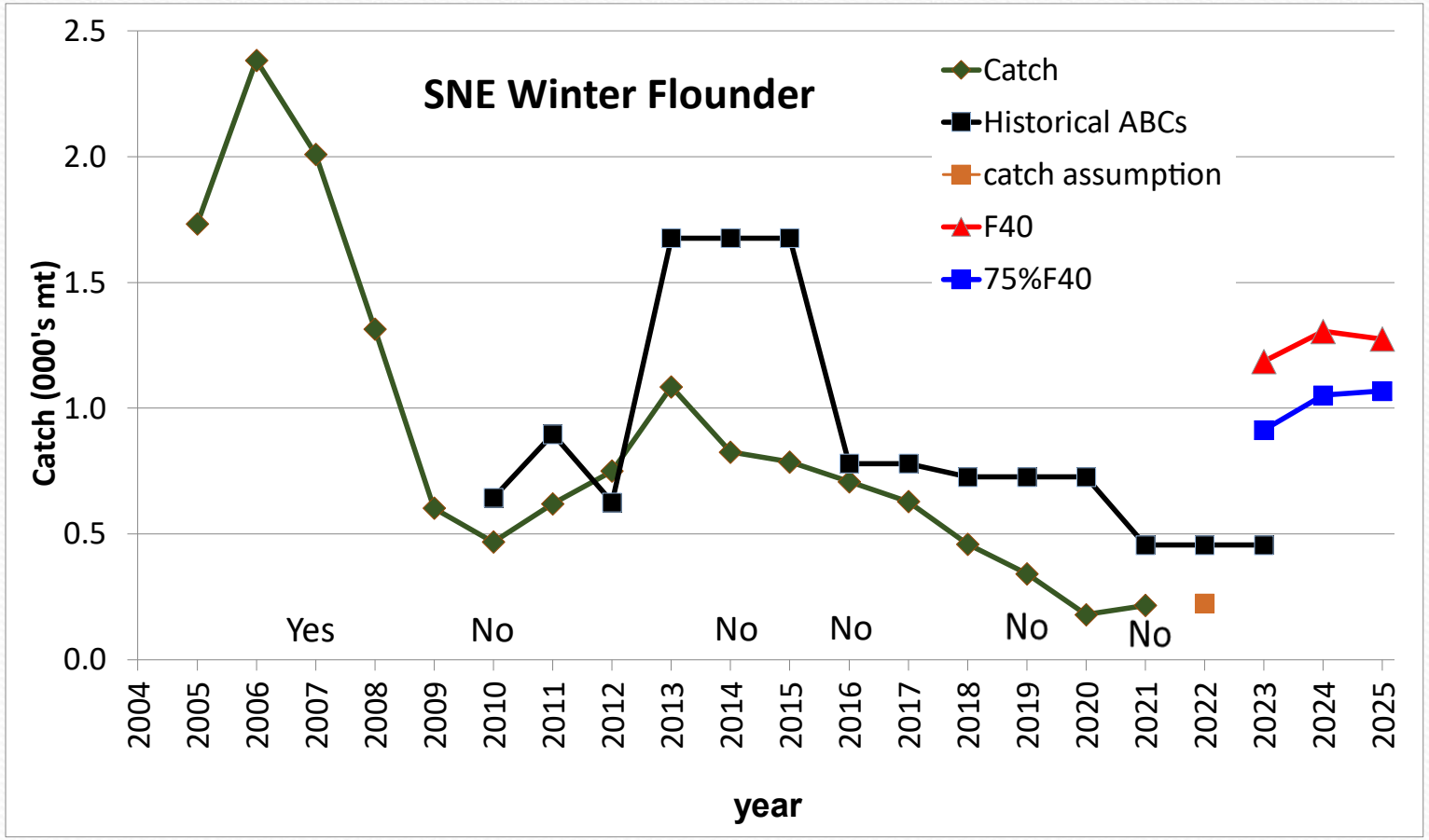
Figure 7- Catch performance for SNE/MA winter flounder including: catches from CY2005-CY2021, historical OFLs and ABCs since FY2010, CY2022 "bridge year" catch assumption, and projections for FY2023 - FY2025 at F40 and 75%F40. Overfishing status in the terminal year of the assessment indicated on the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



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Possible OFLs and ABCs

The PDT applies the Council's default ABC control rule for groundfish stocks (see Amendment 16) and offers some options for the SSC to consider based on the recommendations from the 2022 Peer Review Panel or previous SSC recommendations (e.g., constant ABCs, three-year average catches).

The PDT raises concerns with basing ABCs only on 75%F_{MSY} and recommends the SSC consider the use of a constant ABC for this stock.

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

Control rule "Option A"

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

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

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

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

Control rule "Option B"

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

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

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

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

- While the updated 2022 assessment indicates that the stock is rebuilt, this change is directly due to changing the recruitment stanza going into the projections, and not due to an increase in the stock biomass. The perception of the stock has not changed, and recent model estimates and fishery independent survey indices all reveal a poor stock condition for SNE/MA winter flounder.

- The ABC estimates based on the projections at 75%F_{MSY} have the potential to increase catch advice and possible targeting of SNE/MA winter flounder by the fishery. However, SNE/MA winter flounder catch appears to be on a declining trend (most recently 216 mt in 2021). Still, the PDT cautions against a doubling of the ABCs and subsequent ACLs, given the low productivity regime and poor condition of the stock.

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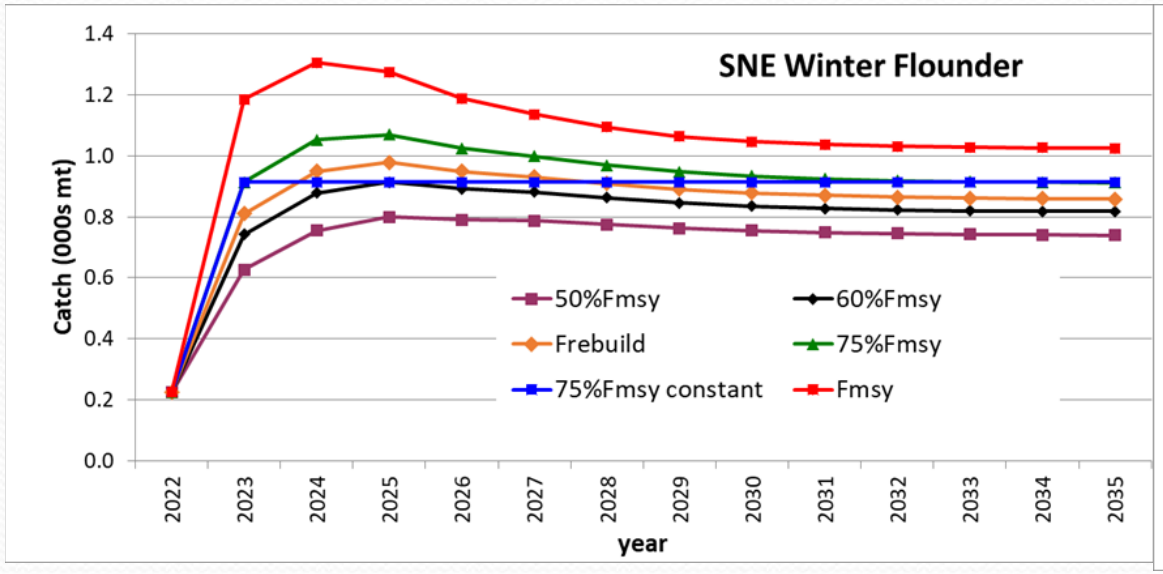
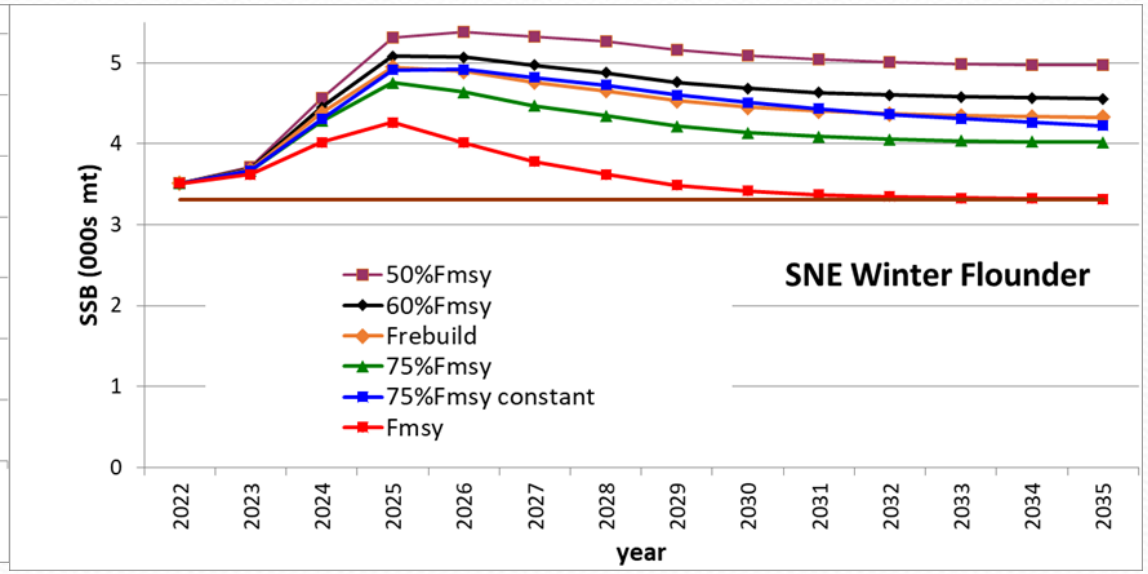
- The PDT is concerned about the short-term projections under 75%F_{MSY} that result in catches higher than MSY (1,025 mt) which drive the stock down to the new SSB_{MSY} target in the short term. This is designed to perpetuate maintaining the stock at the updated lower SSB_{MSY} biomass target.

- The PDT is concerned that large increases in the catch could potentially contribute to further declines in recruitment which could result in a future overfished status determination relative to the updated lower BRPs, as was seen in a previous situation that occurred with the history of the SNE/MA yellowtail flounder stock.





SNE/MA winter flounder projections for F_{MSY}, 75%F_{MSY}, 75%F_{MSY} constant, $F_{rebuild}$, 60%F_{MSY}, and 50%F_{MSY} catch and SSB.

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

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

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

Year	OFL	ABC	F	SSB
2023	1,186	742	0.159	3,694
2024	1,401	742	0.159	4,450
2025	1,488	742	0.159	5,083

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

Year	OFL	ABC	F	SSB
2023	1,186	627	0.133	3,712
2024	1,425	627	0.133	4,563
2025	1,536	627	0.133	5,309

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

Year	ABC
2023	246
2024	246
2025	246

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

The PDT recommends the SSC consider the use of a constant ABC, given the highlighted concerns about following increased catches in the projections.

If the SSC decides to pursue this approach, the range of options developed by the PDT for SSC consideration includes an upper (constant 75%F_{MSY}, 914 mt) and lower (three-year average catch, 246 mt) bound for possible ABCs.

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For the SSC today

Recommend OFLs and ABCs for Fishing Years 2023, 2024, and 2025 for Southern New England/Mid-Atlantic winter flounder.

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Council's Groundfish Control Rule

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

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Georges Bank Yellowtail Flounder Fishing Year 2023-Fishing Year 2024 OFLs and ABCs

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2. Georges Bank Yellowtail Flounder Terms of Reference

2A. Review information provided by the Council's Groundfish PDT and the results of recent 2022 Transboundary Resources Assessment Committee's (TRAC) stock assessment of Georges Bank (GB) yellowtail flounder.

2B. Recommend OFLs and ABCs for GB yellowtail flounder for fishing years 2023 and 2024 that will prevent overfishing, meet the management objective to rebuild, are consistent with the Council's ABC control rule and rebuilding plan, and consider the Council's Risk Policy Statement.

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Stock Status

NOAA Fisheries determined GB yellowtail flounder is overfished and overfishing is occurring. GB yellowtail flounder is in a 26-year rebuilding plan, with a target rebuild by date of 2032.

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Groundfish PDT Summary

The PDT supports the 2022 TRAC's recommendation to use the GB yellowtail flounder limiter, including the biological bounds, to set catch advice. The resulting catch advice is 200 mt. The PDT supports the TRAC's recommendation of 200 mt. Based on this, the following table summarizes possible OFLs and ABCs for fishing year 2023-2024 for consideration by the SSC. The second year (2024) is anticipated to be updated following the 2023 TRAC assessment.

Fishing Year	Possible OFL	Possible ABC
2023	*Unknown*	200
2024	*Unknown*	200

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Groundfish PDT Report Summary

Updated fishery information:

(1) catch performance for GB yellowtail flounder

(2) the ratio of US discards to US landings for GB yellowtail flounder,

(3) observed catches of GB yellowtail flounder,

(4) in-season utilization of GB yellowtail flounder by the commercial groundfish fishery, and

(5) summary of economic information

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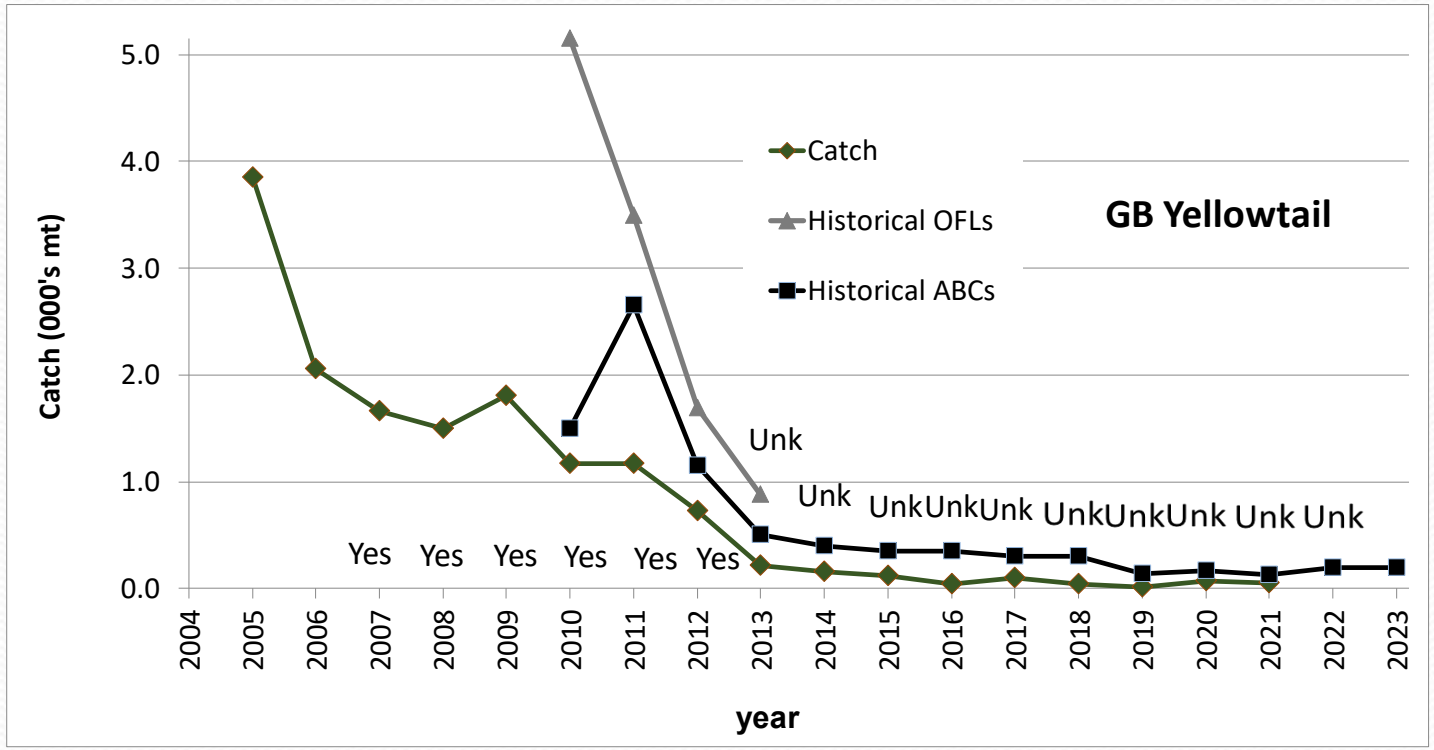
Catch Performance



Year	CY Catch	OFLs	ABCs
2010	1,170	5,148	1,500
2011	1,171	3,495	2,650
2012	725	1,691	1,150
2013	218	882	500
2014	159	undefined	400
2015	118	undefined	354
2016	44	undefined	354
2017	95	undefined	300
2018	45	undefined	300
2019	8	undefined	140
2020	68	undefined	162
2021	51	undefined	125
2022		undefined	200
2023		undefined	200

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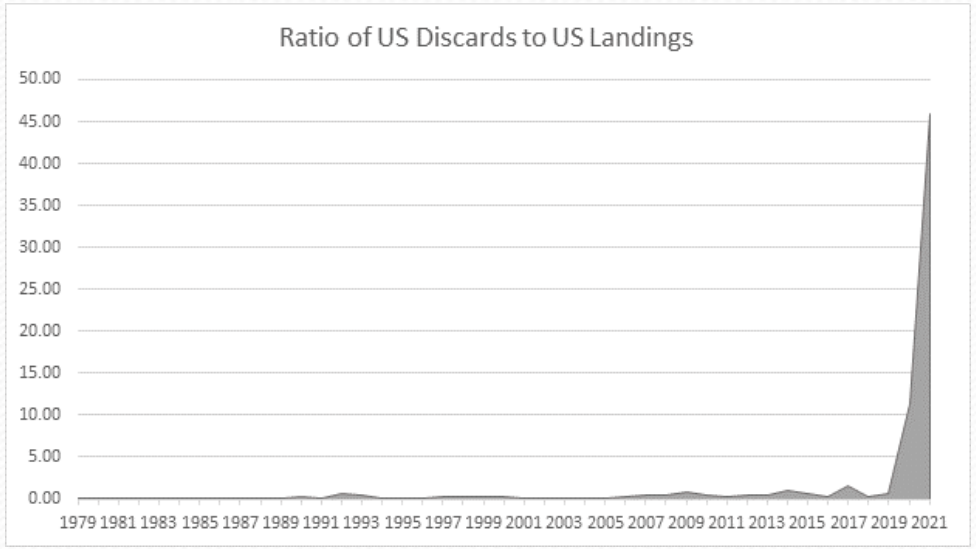
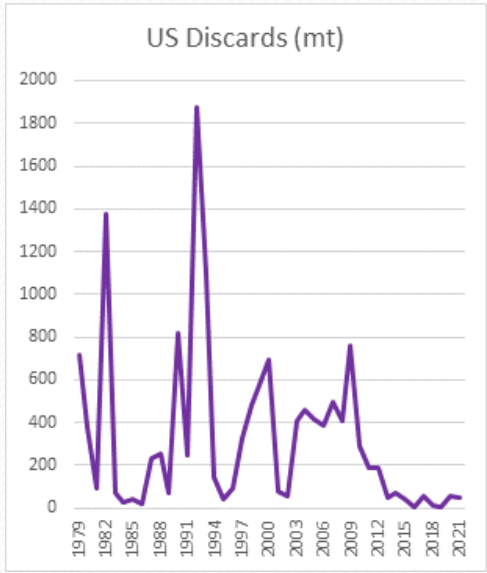
Ratio of US Discards to US Landings





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Observed Catches of Yellowtail Flounder

	CC/GOM				GB				SNE/MA			
	513	**514**	**515**	**521**	**522**	**525**	**561**	**562**	**537**	**538**	**539**	**611**
0 lbs.	128	967	6	136	23	*	5	5	19	*	26	3
-<200 lbs.		200		16								
-<300 lbs.		84		5								
+ lbs.		103		14			*					

* Indicates confidential data based on <3 vessels.

Count of observed large-mesh hauls of yellowtail flounder by haul weight (binned in 100 lb. increments) and statistical reporting areas (SRAs) for fishing year 2021

Data are all large-mesh bottom trawl hauls (NEGEAR=050) and are not filtered by fishery.

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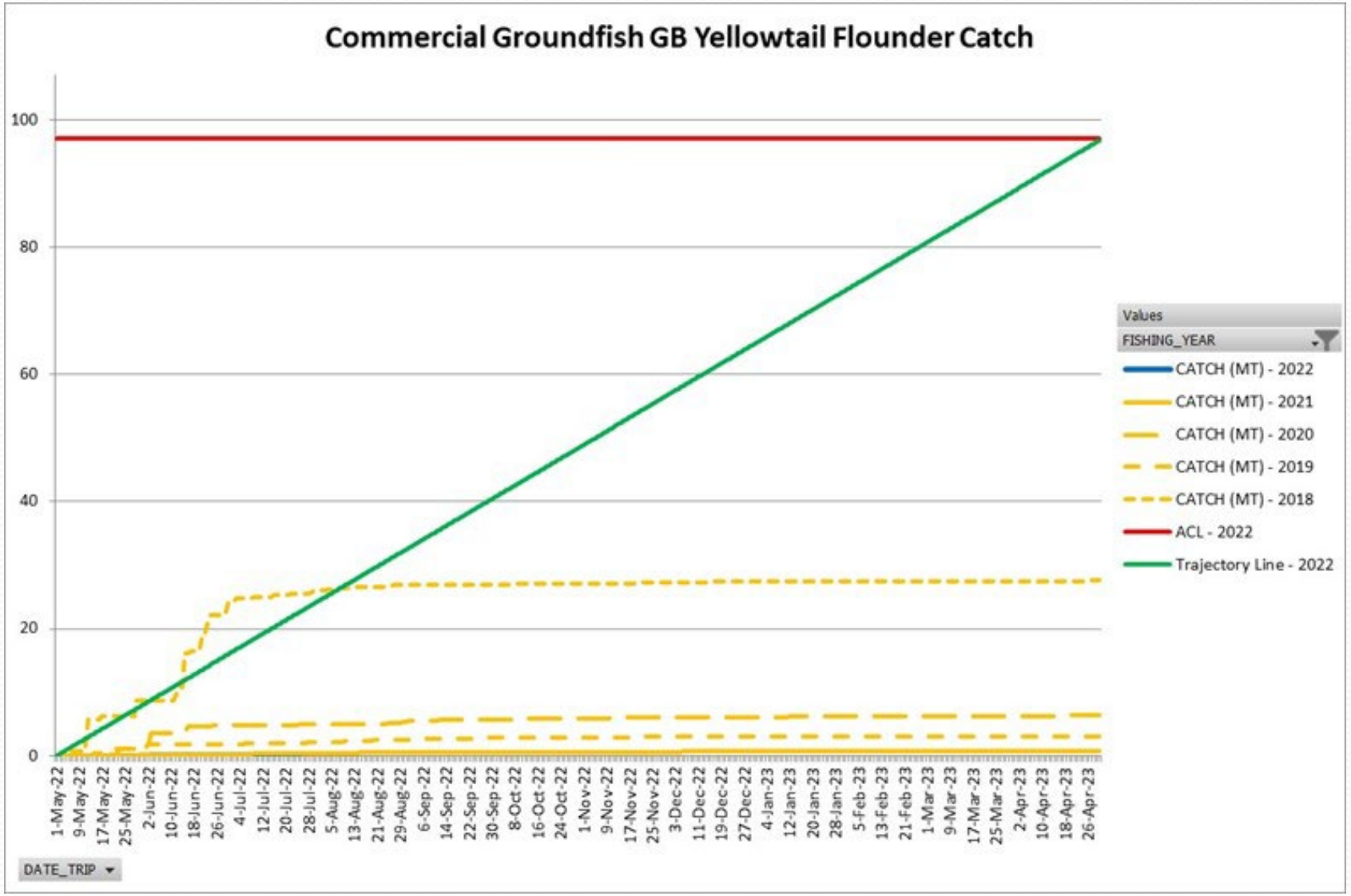
In-Season Utilization Commercial Groundfish



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Economic Information – Sectors - QCM

FY	Sector sub-ACL	Catch (mt)		*Utilization (%)*		Gross Rev ($mil, 2021)	
		Realized	Predicted	*Realized*	*Predicted*	Realized	Predicted
2012	364	201	360	*0.55*	*0.99*	0.7	1.1
2013	100	46	97	*0.46*	*0.97*	0.2	0.3
2014	252	54	167	*0.21*	*0.66*	0.2	0.6
2015	192	36	55	*0.19*	*0.28*	0.1	0.2
2016	207	23	22	*0.11*	*0.10*	0.1	0.1
2017	160	31	18	*0.19*	*0.11*	0.1	0.1
2018	167	27	37	*0.16*	*0.22*	0.1	0.2
2019	83	3	37	*0.04*	*0.45*	<0.1	0.1
2020	93	5	27	*0.05*	*0.29*	<0.1	<0.1
2021	59	1	2	*0.01*	*0.04*	<0.1	<0.1

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Other US Fisheries with Catch Limits

- Small-mesh (mainly squid and whiting) fisheries
- Scallop fishery

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Small-Mesh Fisheries

	Small-mesh fisheries sub-ACL (mt)	Small-mesh fisheries (mt)	Percent small-mesh fisheries Caught (%)
FY2013	4	2.5	63.7%
FY2014	6.1	1.1	18.1%
FY2015	5	0.1	1.0%
FY2016	5	4.8	95.2%
FY2017	4	0.4	9.7%
FY2018	4	0.1	2.5%
FY2019	2	<0.0	1.5%
FY2020	2	1.8	82.2%
FY2021	1.5		
FY2022	2.3		

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Sea Scallop Fishery – Scallop PDT Report

- The scallop fishery is allocated a sub-Annual Catch Limit (sub-ACL) of GB yellowtail equivalent to 16% of the US TAC.

- The scallop fishery accountability measure (AM) is structured in a way that the fishery would be able to continue to harvest scallops even if the AM is triggered. If the reactive AM is triggered for either GB yellowtail or northern windowpane, the fishery would be required to use a gear modification while fishing on eastern Georges Bank. Preliminary data suggests that the northern windowpane sub-ACL was exceeded by more than 150% in FY2020. This would mean that the gear restricted area (GRA) would be in effect in FY2022 and that a reduction in GB yellowtail catch could be expected in CAII AA in FY2022 as a result of the AM.

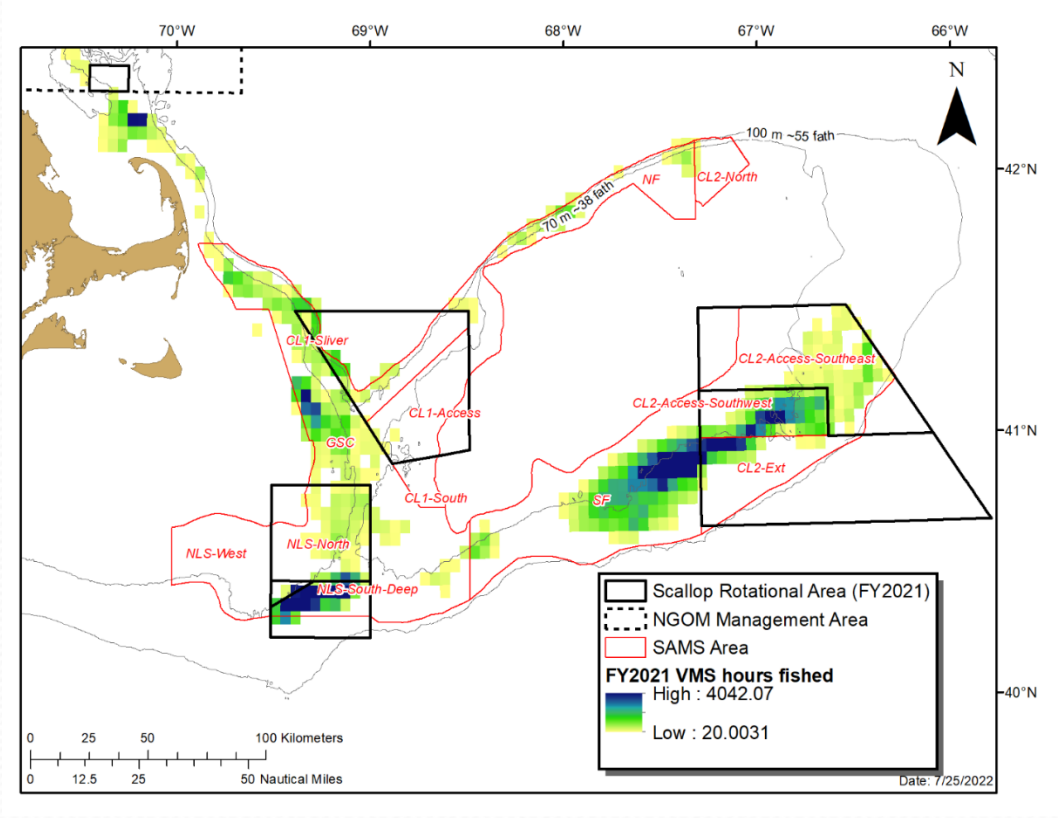
- Due to an overage of the northern windowpane flounder sub-ACL in FY2020, the scallop fishery is subject to a reactive accountability measure (AM) for the duration of FY2022. The reactive AM requires use of a modified dredge (i.e., maximum 5-row apron with 1.5:1 hanging ratio) when fishing in Closed Area II for the entirety of FY2022. Use of the modified dredge is anticipated to reduce bycatch of both GB yellowtail and northern windowpane flounder.

Sea Scallop Fishery – Scallop PDT Report

- The Scallop PDT projected GB yellowtail bycatch to be about 17 mt for FY2022, which is slightly lower than the scallop fishery sub-ACL of 19 mt. Due to several caveats associated with the data used for projections and lack of current observer information on bycatch rates of flatfish stocks on eastern Georges Bank, the Scallop PDT noted that the FY2022 GB yellowtail bycatch projection was highly uncertain.

- In season bycatch estimates are typically based on area-specific (i.e., in access areas and open areas) observed discard rates. Due to a lack of observer coverage in 2020 and data processing delays in 2021 and 2022, limited observer data are available to inform bycatch estimates for CAII, an area where GB yellowtail bycatch is typically higher than elsewhere in the stock area. The lack of up-to-date observer data has resulted in continued use of the 2019 broad stock discard rate for certain strata (LAGC in Closed Area I, LA in NLS North) when estimating GB yellowtail bycatch for FY2021 (i.e., 30 mt, 251% of the scallop sub-ACL). The boundaries for Closed Area II changed between FY2020 and FY2021, from the Southeast to the Southwest, adjacent to the Southern Flank open area and Closed Area II Extension. The PDT reiterates that the FY2021 scallop fishery bycatch estimate of GB yellowtail remains uncertain and suggests that this estimate be revisited when more recent observer records are available from FY2021.

Scallop fishery effort in terms of Vessel Monitoring System (VMS) hours fished for fishing year 2021 on Georges Bank. Scallop Area Management Simulator (SAMS) area boundaries are shown in red..



New England Fishery Management Council

For the SSC today

Recommend OFLs and ABCs for Fishing Years 2023 and 2024 for Georges Bank yellowtail flounder.

New England
Fishery Management Council

Council's Groundfish Control Rule

"These ABC control rules will be used in the absence of better information that may allow a more explicit determination of scientific uncertainty for a stock or stocks. If such information is available - that is, if scientific uncertainty can be characterized in a more accurate fashion -- it can be used by the SSC to determine ABCs, these ABC control rules can be modified in a future Council action (an amendment, framework, or specification package):

1. *ABC should be determined as the catch associated with 75% of FMSY.*
2. *If fishing at 75% of FMSY does not achieve the mandated rebuilding requirements for overfished stocks, ABC should be determined as the catch associated with the fishing mortality that meets rebuilding requirements (Frebuild).*
3. *For stocks that cannot rebuild to BMSY in the specified rebuilding period, even with no fishing, the ABC should be based on incidental bycatch, including a reduction in bycatch rate (i.e., the proportion of the stock caught as bycatch).*
4. *Interim ABCs should be determined for stocks with unknown status according to case-by- case recommendations from the SSC."*

New England
Fishery Management Council

Georges Bank Cod
Additional Relevant Information for Fishing Year 2023-Fishing Year 2024 OFLs and ABCs

New England
Fishery Management Council

3. Georges Bank Cod Terms of Reference

3A. Recommend a GB cod OFL and ABC for fishing years 2023 and 2024. The Scientific and Statistical Committee should consider its recommendations made in fall 2021, issues and approaches raised in the 2021 SSC report including the minority report, and additional relevant information provided by the Groundfish PDT.

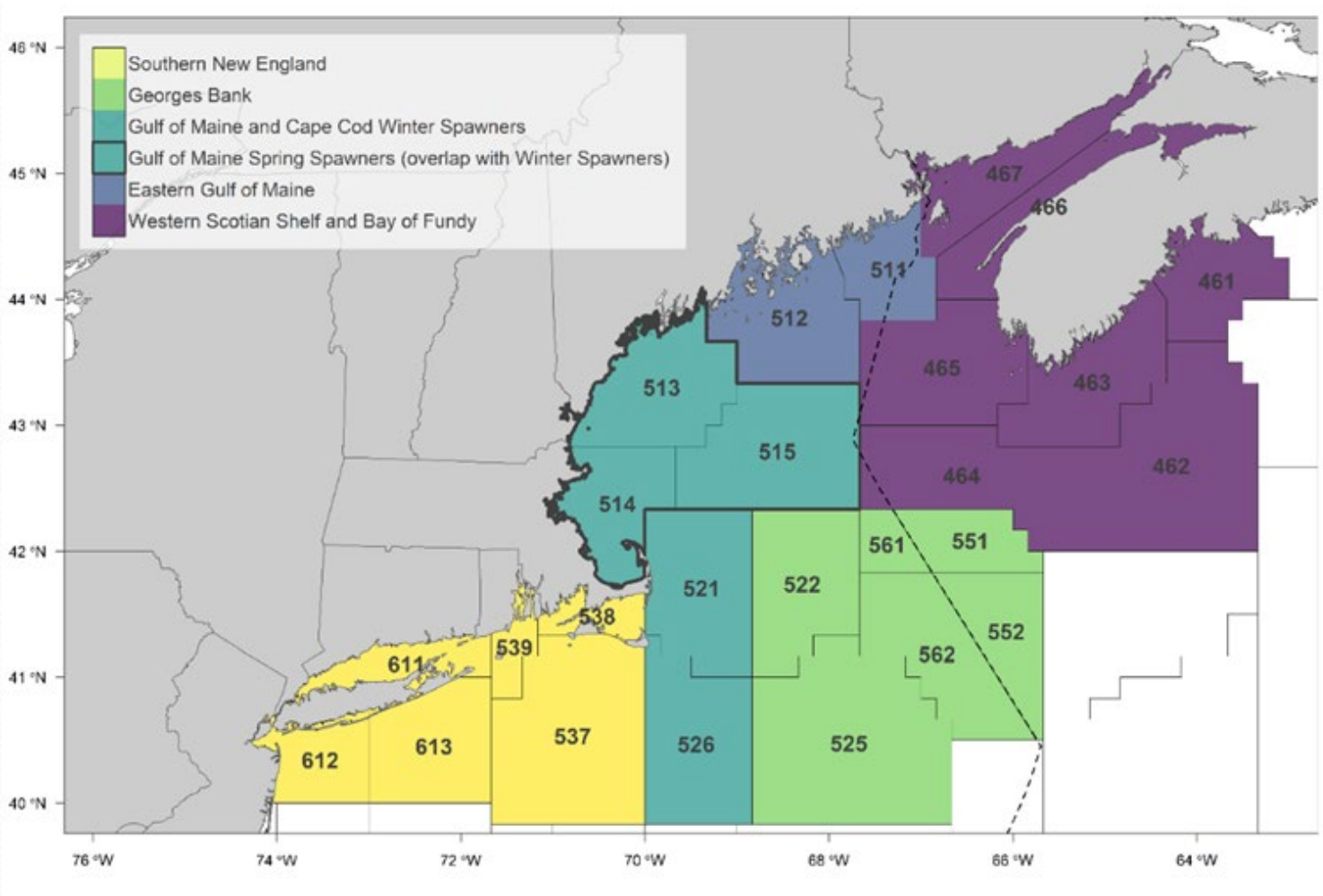
New England Fishery Management Council

Table 1- Summary of rebuilding status for GB cod stocks on the most recent assessment in 2021.

Groundfish Stock	**Rebuilding Plan Start of the Current Plan**	**Planned Rebuilding Date**	**Years Remaining in Plan, starting with FY2022**	**Total ACLs exceeded within past three completed FYs?** *If yes, identify the Fys.*	**Has the original rebuilding F been achieved? Or is this unknown?** *Indicate the current F estimate relative to F rebuild at the start of the plan.*	**What is current SSB estimate relative to SSBMSY? Or is this unknown?**
Georges Bank cod	5/1/2004	2026	5	No	Unknown	Unknown

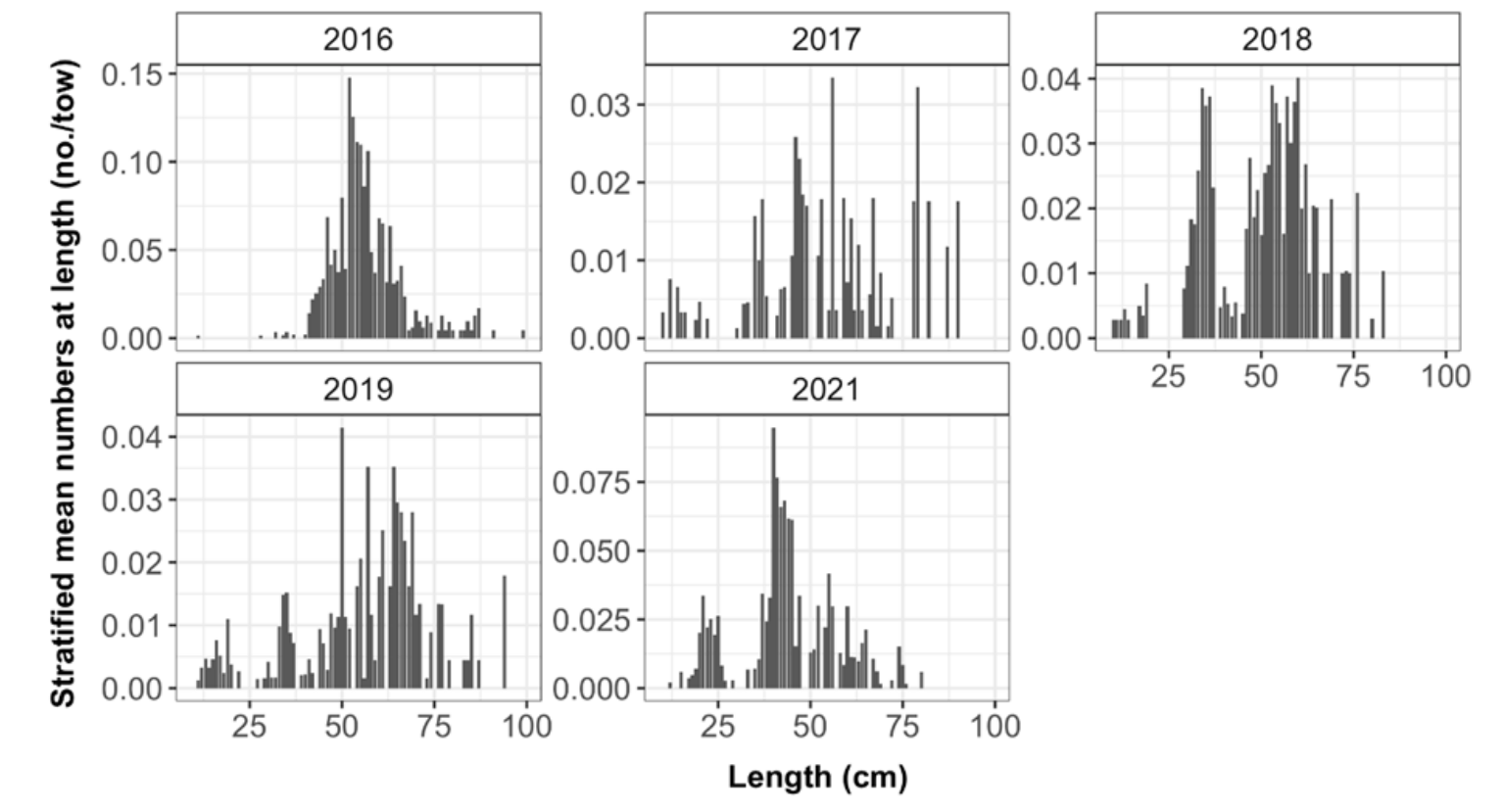
New England Fishery Management Council

Atlantic Cod Stock Structure



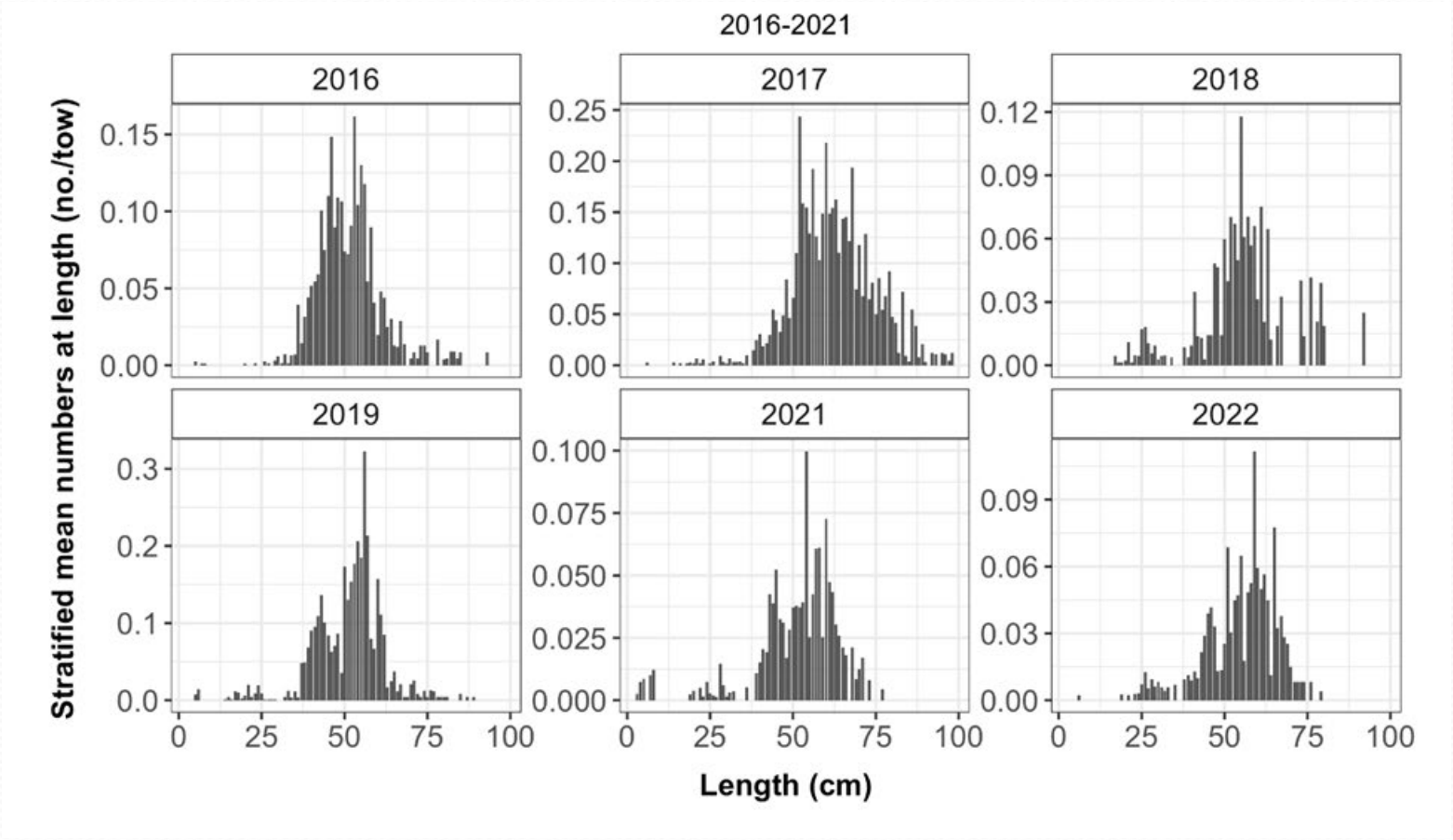
New England Fishery Management Council

Figure 3. GB cod stratified mean numbers at length from the NMFS fall bottom trawl survey



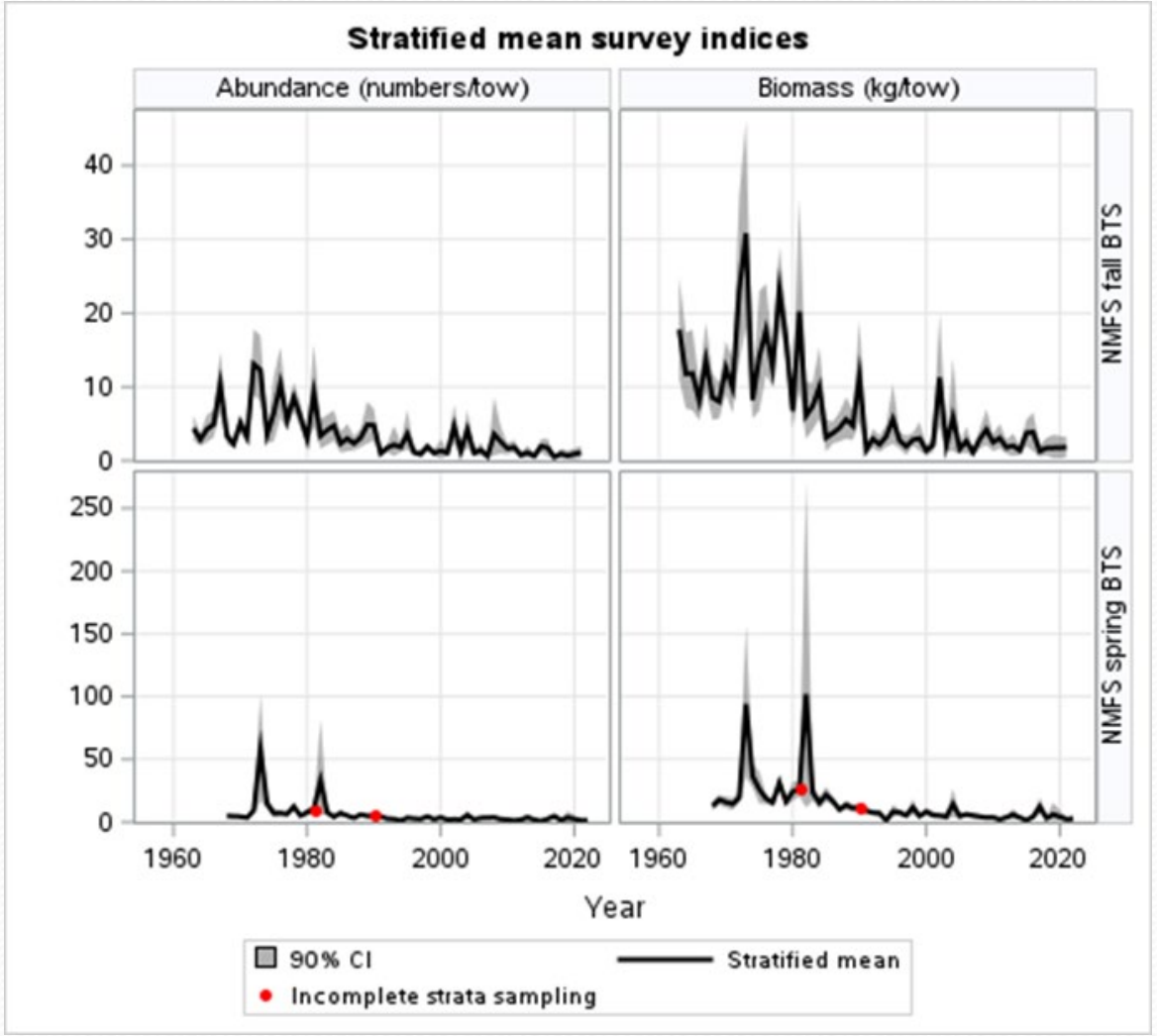
New England Fishery Management Council

Figure 4. GB cod stratified mean numbers at length from the NMFS spring bottom trawl survey



New England
Fishery Management Council

Figure 2. GB cod abundance (number/tow) and biomass (kg/tow) trends in the NMFS fall bottom-trawl survey (top panels) and NMFS spring bottom-trawl survey (bottom panels).



New England Fishery Management Council

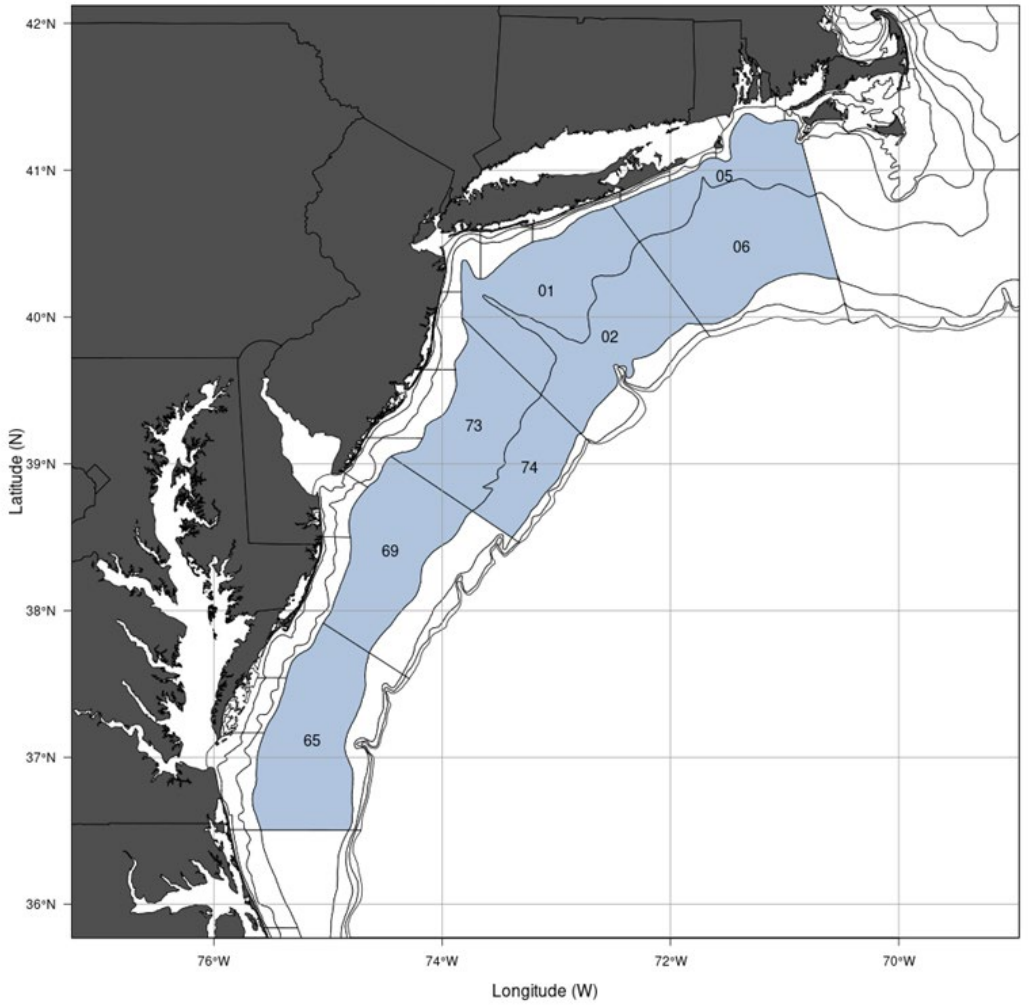
Table 3. GB cod biomass (kg/tow) trends in the NMFS spring bottom-trawl survey and NMFS spring bottom-trawl survey (2013-2022)

NMFS Survey	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Spring BTS	5.8647	3.5196	1.4858	4.2183	12.3237	2.9447	6.0064	*	2.2052	2.6966
Fall BTS	2.0122	1.3712	3.7573	3.8386	1.2575	1.7074	1.725	*	1.7896	*

*Survey indices not available.

New England Fishery Management Council

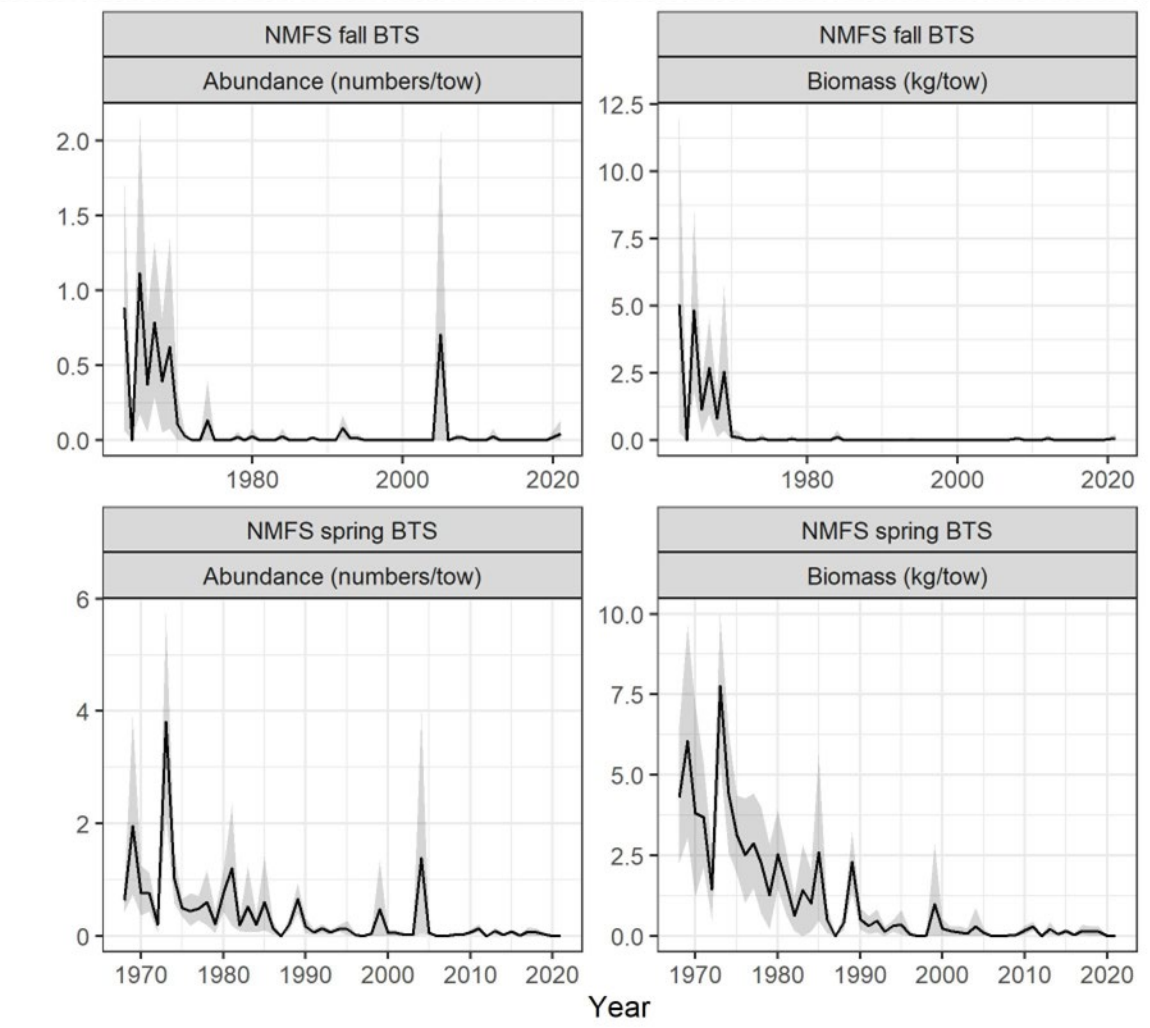
Figure 6. Map of the Northeast Fisheries Science Center (NEFSC) bottom trawl survey strata used to construct NEFSC survey indices for SNE cod (shaded blue).



Source: 2022 Cod Research Track Working Group Meeting, June 24, 2022

New England Fishery Management Council

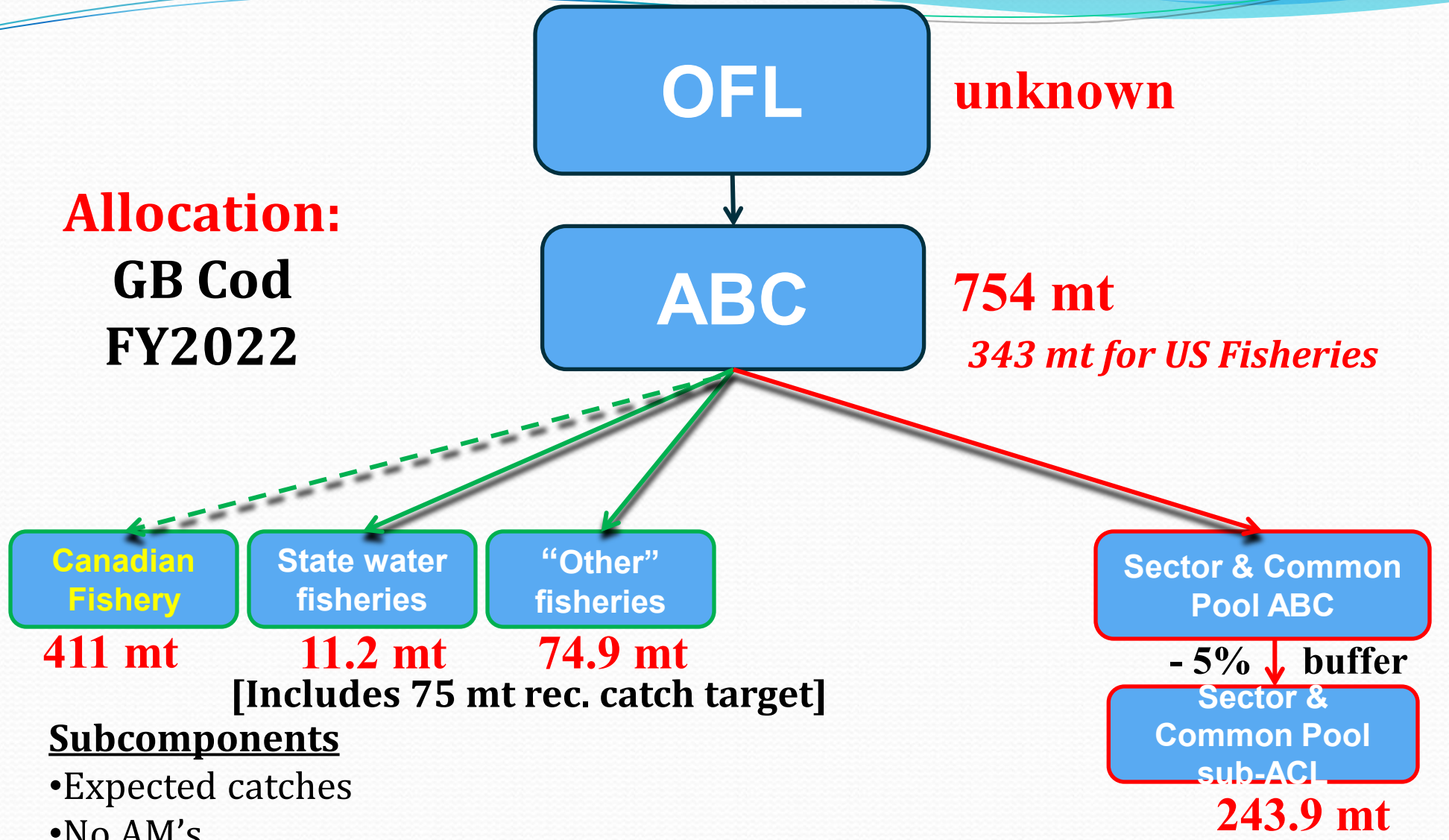
Figure 5. Northeast Fisheries Science Center (NEFSC) spring and fall bottom trawl survey abundance (numbers/tow) and biomass (kg/tow) indices for SNE cod. The shaded area represents the 90% confidence interval.



Source: 2022 Cod Research Track Working Group Meeting, June 24, 2022
Note: Spring survey did not begin until 1968.

New England Fishery Management Council

Allocation:
GB Cod
FY2022



[Includes 75 mt rec. catch target]

Subcomponents

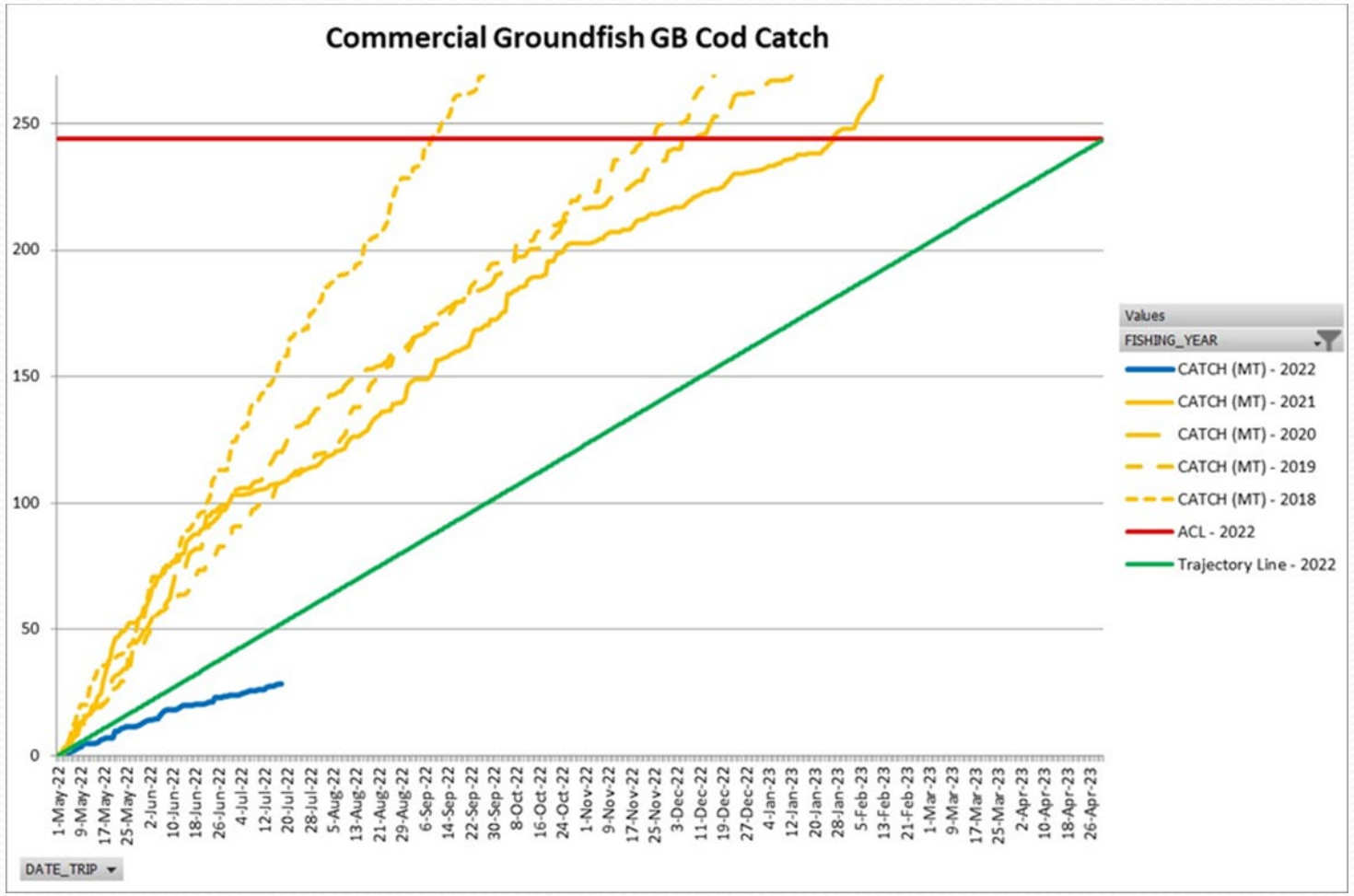
- Expected catches
- No AM's
- No adjustment for management uncertainty

Sub-ACL's

- Subject to AM's
- Management uncertainty adjustment

New England Fishery Management Council

Figure 7- In-season Utilization of GB cod by the commercial (sectors and common pool) groundfish fishery (FY2018 - 2022)



Note: FY2021 catch has not been finalized.

New England Fishery Management Council

Table 4- Summary of recent catches (mt) of Georges Bank cod by the US commercial (sectors and common pool) groundfish fishery, FY2015-FY2020, preliminary FY2021, and in-season FY2022. Sources: FY2015 – FY2020 final year-end multispecies catch reports and catch monitoring, GARFO

	Commercial Groundfish Fishery- Georges Bank Cod				
Fishing Year	Sub-ACL	Landings	Discards	Catch	Percentage of sub-ACL
2015	1,787	1,608.5	28.3	1,636.8	91.6%
2016	608	571.9	24.6	596.6	98.1%
2017	531	432.8	13.1	446.0	84.0%
2018	1,360	833.2	4.7	837.9	61.6%
2019	1,568	524.5	7.9	532.4	34.0%
2020	1,073	417.4	7.8	425.3	39.6%
**2021*	*1,093.1*	**463.6*	**7.2*	**470.8*	**43.1%*
***2022*	*243.9*	***29.7*	***2.7*	***32.4*	***13.3%*

New England Fishery Management Council

Table 5. Sector and Common Pool Catch Monitoring for FY2022. Report run on August 15, 2022 for data reported through August 9, 2022.

Stock	Cumulative Kept (mt)	Cumulative Discard (mt)	Cumulative Catch (mt)	Sub-ACL* (mt)	Percent Caught
GB Cod East	1.2	0.1	1.2	160.0	0.8
GB Cod	29.7	2.7	32.4	243.9	13.3

New England Fishery Management Council

Table 6. Summary of landings and discards for GB cod (FY 2019 and FY 2020).

	2019 (mt)				2020 (mt)			
	Groundfish Fishery	**Other**	**State**	**2019 Total**	**Groundfish Fishery**	**Other**	**State**	**2020 Total**
Landings	524.5	83.5	13.1	621.1	417.4	138.1	145.2	700.8
Discards	7.9	11.7	1.0	20.6	7.8	20.4	2.3	30.5
Total	532.4	95.2	14.1	641.7	425.3	158.5	147.5	731.2

New England
Fishery Management Council

Table 7. Summary of realized FY2020 and predicted FY2021 and FY2022 revenues and costs for the sector portion of the commercial groundfish fishery; median values, nominal dollars

Option	Groundfish Gross Revenues	Total Gross Revenues	Operating Costs	Sector Cost	Quota Cost	Operating Profit	Days Absent
FY2020 Realized	54.2	72.9	11.4	2.2	2.4	59.7	11,435
FY2020 Prediction (FW59)	49.0	70.1	10.9	1.8	3.6	50.3	10,919
FY2021 Prediction (FY61)	46.3	64.1	10.9	1.8	3.6	47.7	9,942
FY 2022 Prediction, GB cod = 233 mt[1]	51.9	73.3	10.9	1.8	2.7	59.4	11,448
FY2022 Prediction, GB cod = 1,045 mt[2]	55.1	75.7	12	1.9	3.0	59.7	11,838

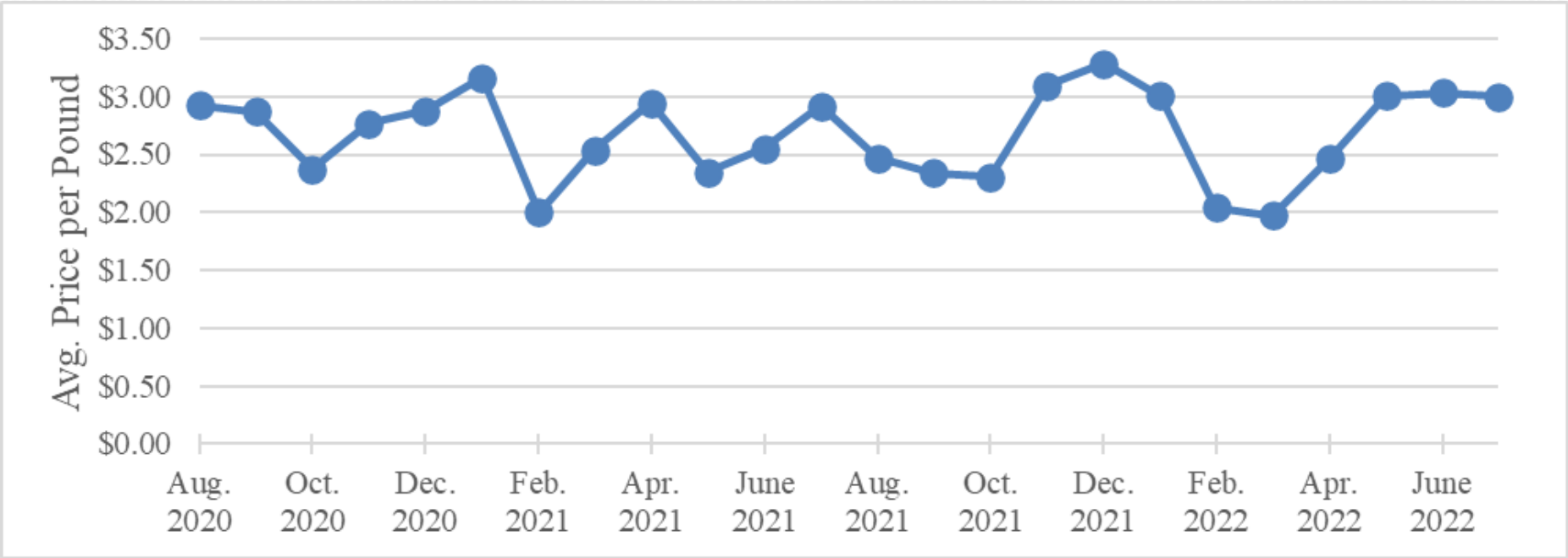
Source: Groundfish FW63

[1]The sector sub-ACL implemented for FY2022

[2]Analyzed under the no-action alternative in FW63.

New England Fishery Management Council

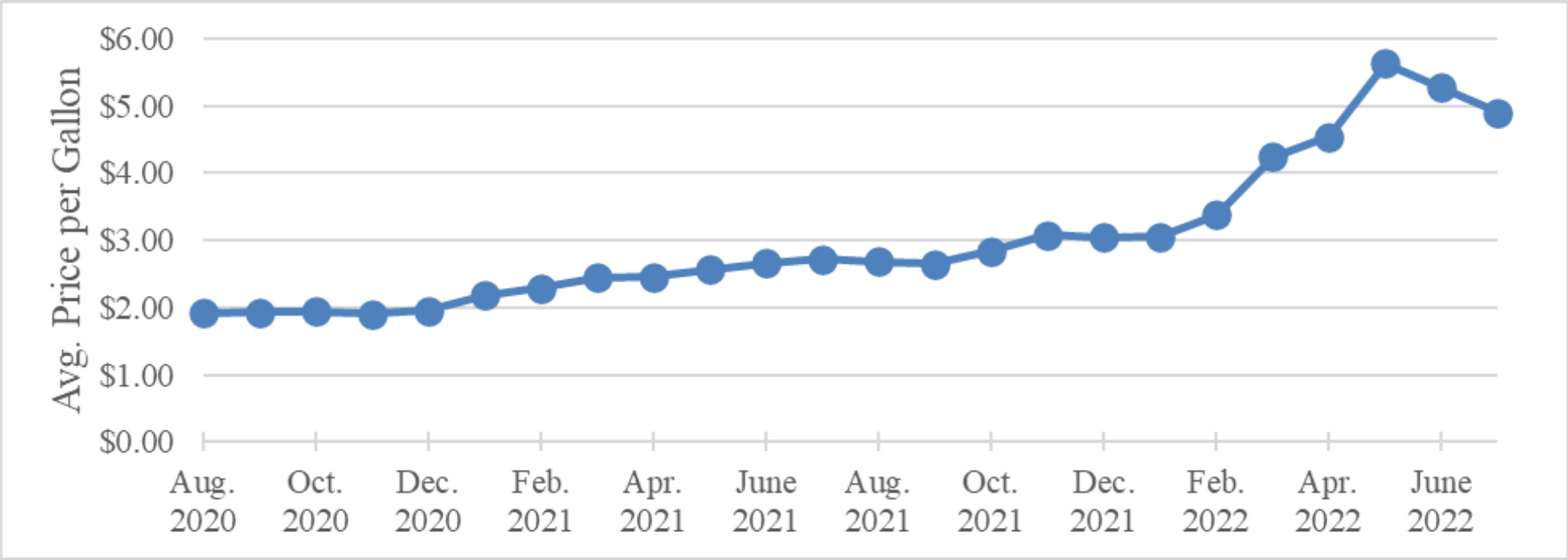
Figure 9. Average cod ex-vessel price (nominal dollars) by month from August 2020 through July 2022.



Source: Dealer data was used to calculate prices, which are across all cod stocks.

New England Fishery Management Council

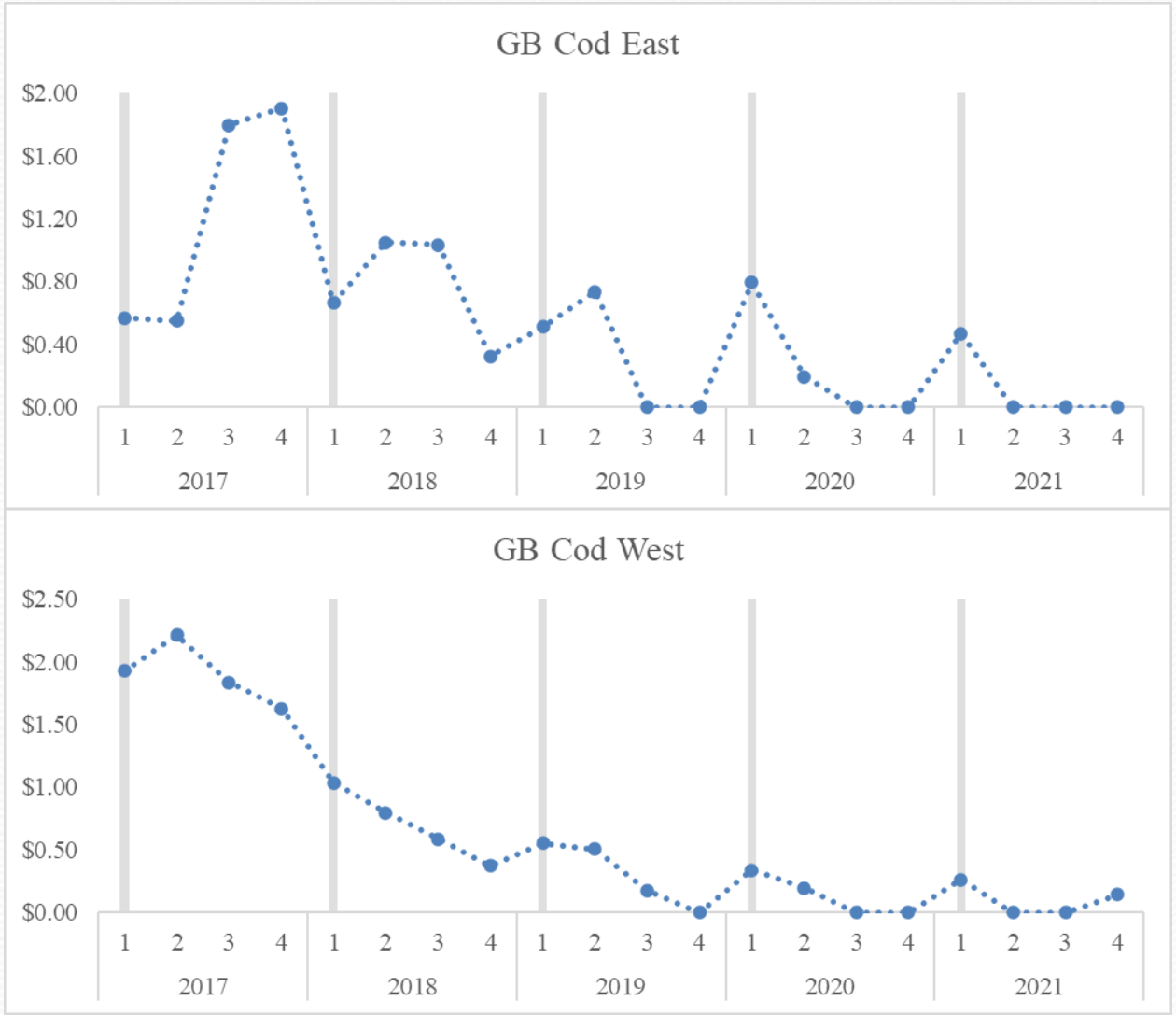
Figure 10. Average fuel cost per gallon (nominal dollars) by month from August 2020 through July 2022. Source: NEFOP and ASM Data



Note: At-sea observers in the NEFOP and ASM programs collect information from the captain on the number of gallons of fuel used and the price paid per gallon on all observed trips. The quantity and price were multiplied to calculate the total cost per trip. Trip costs were then aggregated by month and divided by the fuel quantity to derive monthly fuel prices.

New England Fishery Management Council

Figure 11. ACE lease prices estimated for GB Cod East and GB Cod West for fishing years 2017-2021 using a hedonic price model. First quarter (May-July) lease prices are indicated by the vertical gray bars.



Note: ACE lease prices for GB Cod East and GB Cod West were estimated for fishing years 2017-2021 using a hedonic price model. Input data into the model is comprised of inter-sector ACE leases over the FY2017-2021 period.

New England Fishery Management Council

Table 8- Georges Bank cod recreational catch (mt), FY2015-FY2020. Sources: FY2015 – FY2020 final year-end multispecies catch reports, GARFO. Preliminary FY2021, NEFSC personal communication.

	Recreational Fishery – Georges Bank Cod					
Fishing Year	Federal Waters Recreational Catch	State Waters Recreational Catch	All Recreational Catch	Recreational Catch Target	Total US Catch	Recreational Portion of Total US Catch (Percent)
2015	132.1	33.0	165.1	n/a	1,835.4	9.0%
2016	419.7	57.8	477.5	n/a	1,125.5	42.4%
2017	50.1	2.8	52.9	n/a	522.5	10.1%
2018	31.6	5.5	37.1	138	887.3	4.2%
2019	88.9	11.0	99.9	138	641.7	15.6%
2020	152.6	141.8	294.4	138	731.2	40.3%
*2021			*236.0	138		
**2022				75		

Preliminary

New England Fishery Management Council

FY2022 OFL and ABC

OFL (mt)	ABC (mt)
unknown	754

New England
Fishery Management Council

For the SSC today

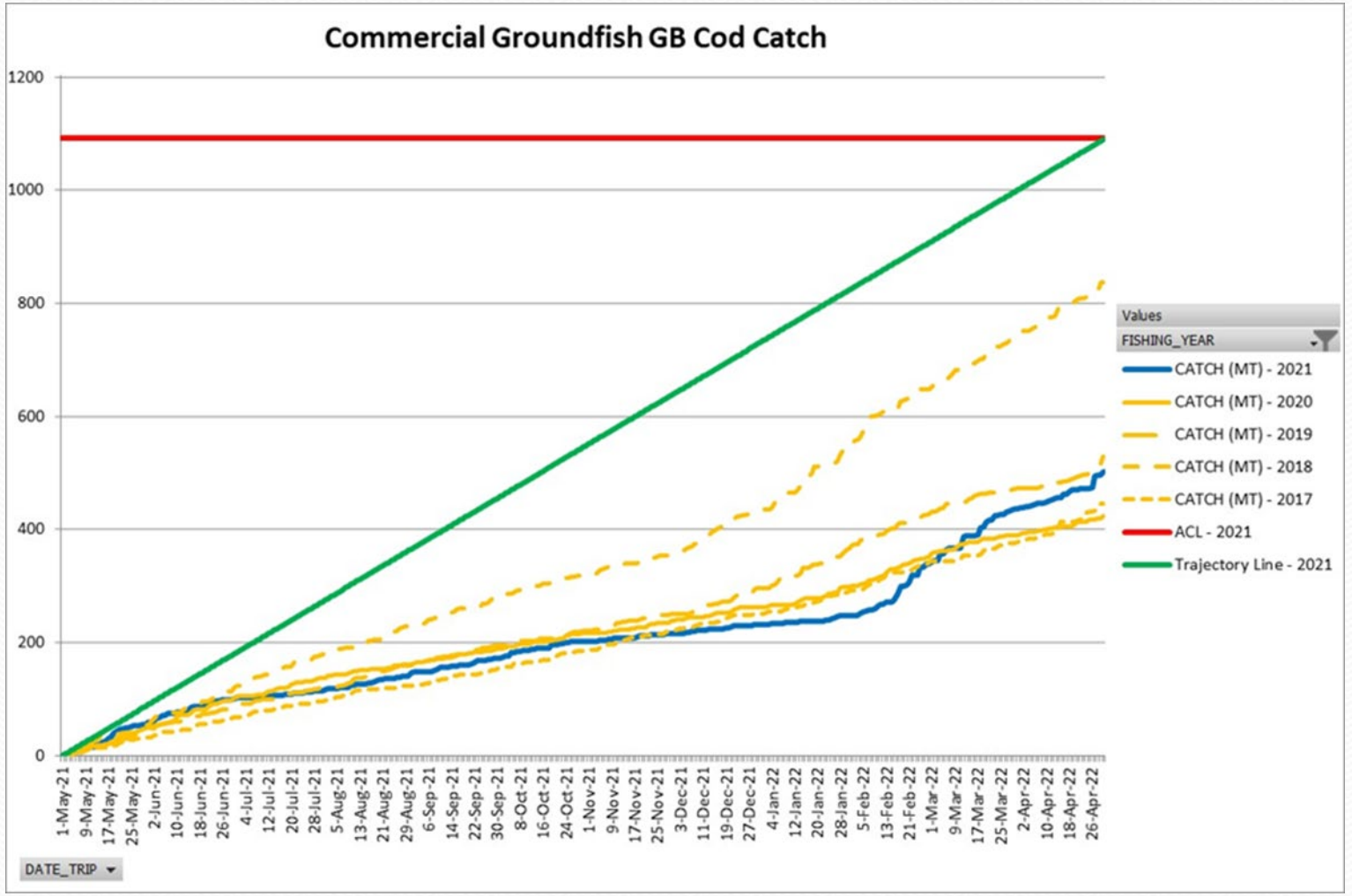
Recommend OFLs and ABCs for Fishing Years 2023 and 2024 for Georges Bank cod.

New England
Fishery Management Council

Additional Slides

New England
Fishery Management Council

Figure 8- Utilization of GB cod by the commercial (sectors and common pool) groundfish fishery (FY2017 - 2021)



Note: FY2021 catch has not been finalized.

New England Fishery Management Council

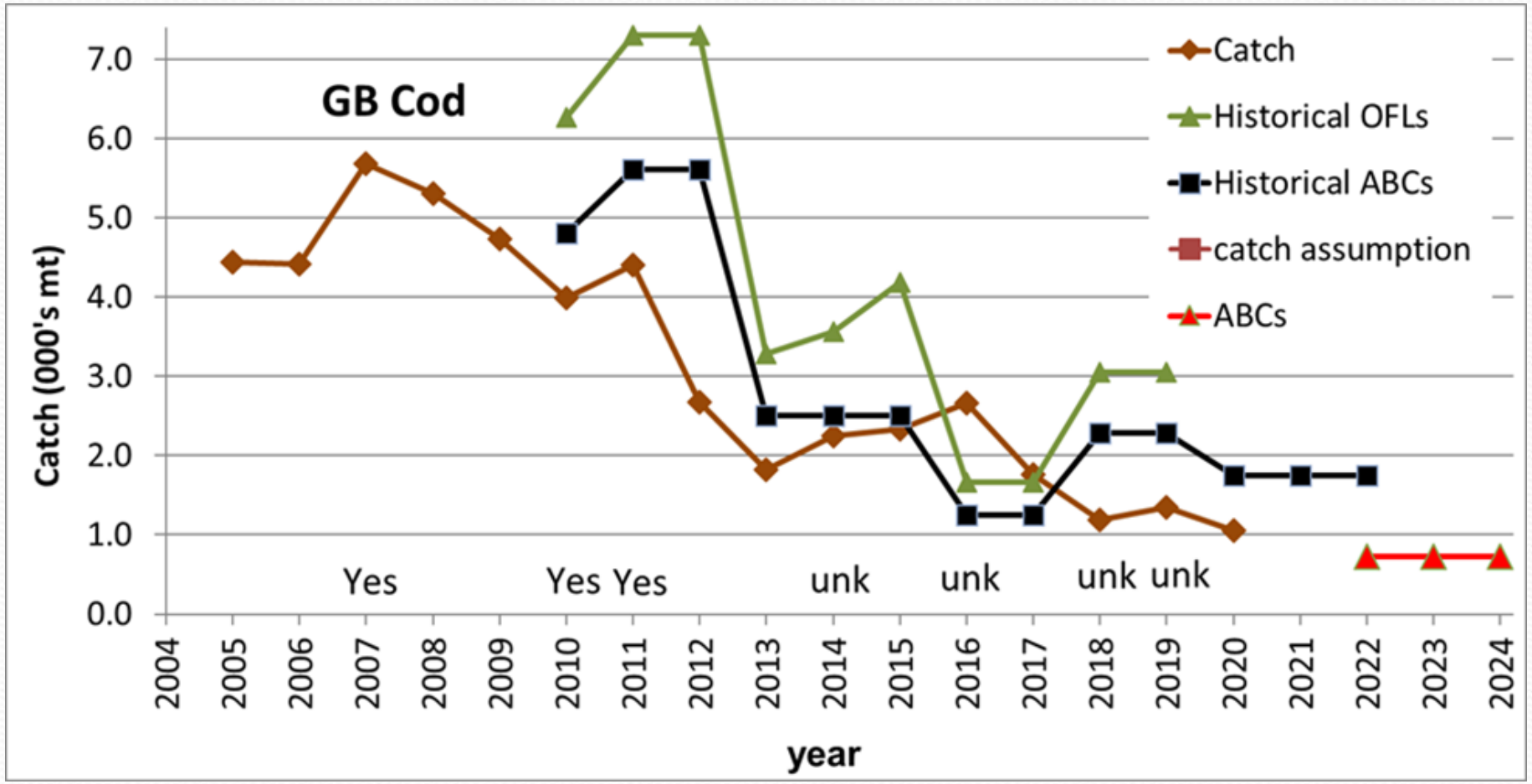
TRAC/TMGC– Eastern Georges Bank Cod

Table 2. EGB Cod allocation share percentages between the United States and Canada and resulting TACs based on TMGC/SC recommendations.

	2020		2021		2022	
	Percentage	Quota (mt)	Percentage	Quota (mt)	Percentage	Quota (mt)
United States	29%	188.5	30%	190.5	28%	160
Canada	71%	461.5	70%	444.5	72%	411
Total		650		635		571

New England
Fishery Management Council

Figure 5- Catch performance for Georges Bank cod including: catches from CY2005- CY2020, historical OFLs and ABCs since FY 2010, and constant ABC approach (FY2022-FY2024). Overfishing status in the terminal year of the assessment indicated on the x-axis ("Yes" = overfishing, "No" = not overfishing, and "unk" = unknown overfishing status).



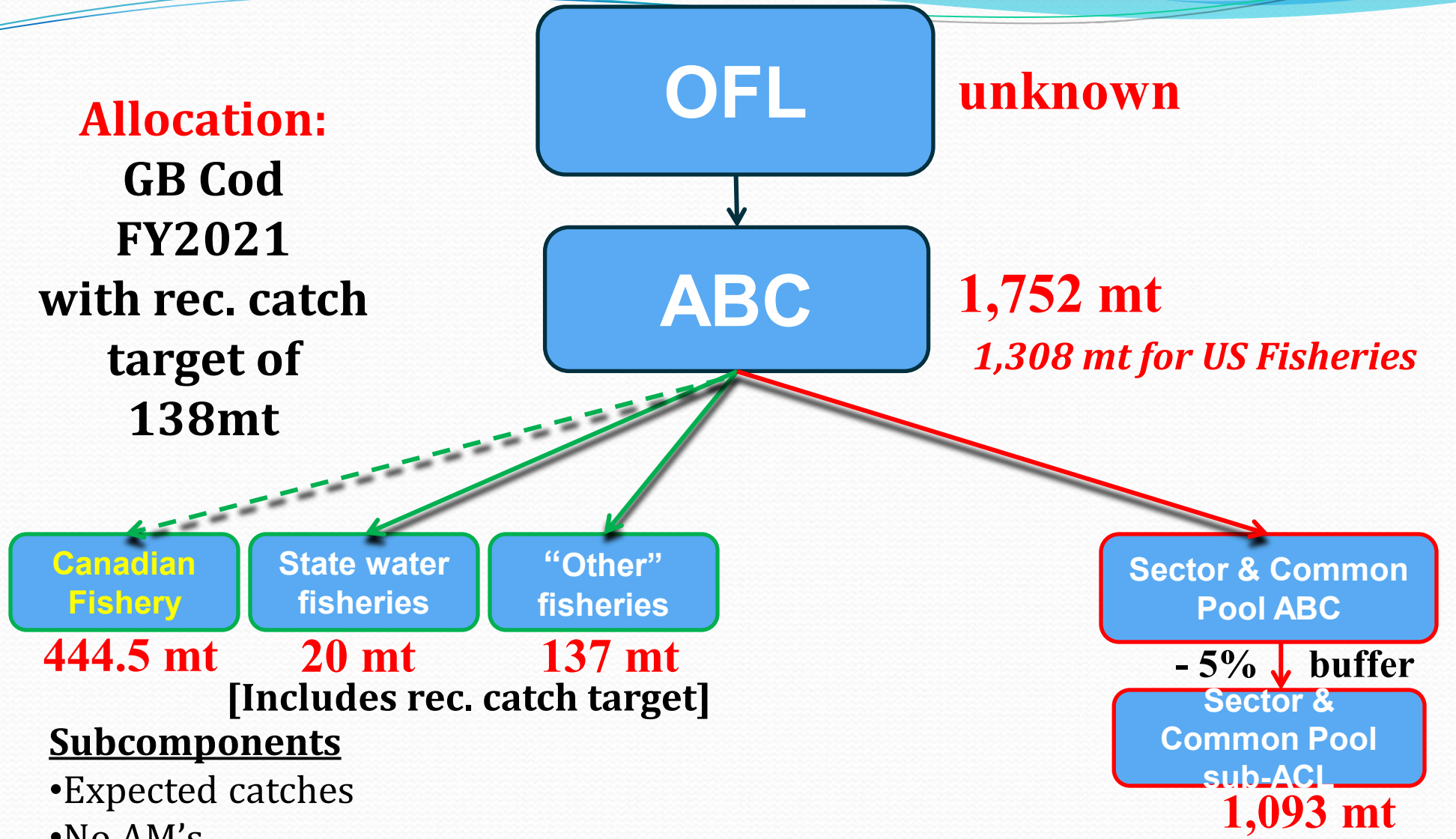
New England Fishery Management Council

Table 4- GB cod catch performance (CY2010-CY2020) and historical OFLs and ABCs (FY2010-FY2022), compared with the possible candidate ABCs - constant approach (FY2022-FY2024).

Year	Catch	Historical OFLs	Historical ABCs	ABC
2010	3,986	6,272	4,812	
2011	4,404	7,311	5,616	
2012	2,679	7,311	5,616	
2013	1,827	3,279	2,506	
2014	2,253	3,570	2,506	
2015	2,330	4,191	2,506	
2016	2,667	1,665	1,249	
2017	1,765	1,665	1,249	
2018	1,183	3,047	2,285	
2019	1,344	3,047	2,285	
2020	1,053		1,752	
2021			1,752	
2022			1,752	729
2023				729
2024				729

New England
Fishery Management Council

Allocation:
GB Cod
FY2021
with rec. catch target of 138mt



[Includes rec. catch target]

Subcomponents

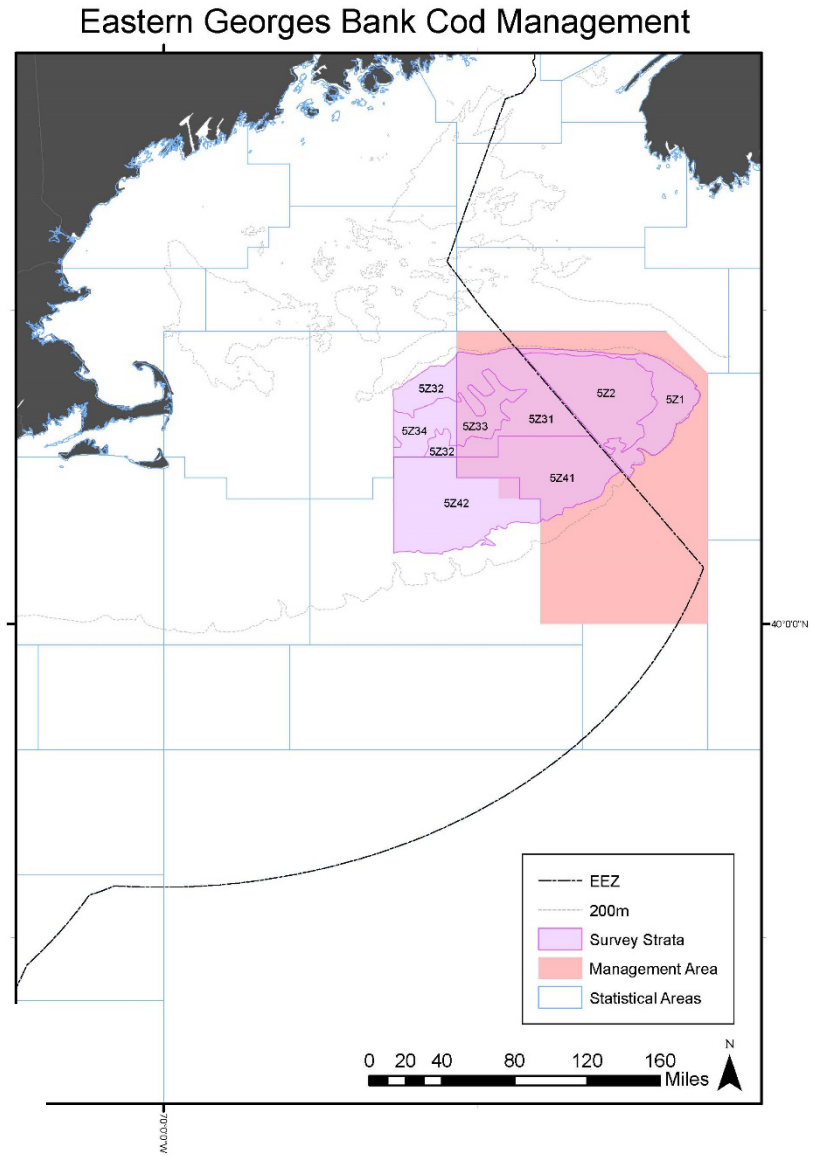
- Expected catches
- No AM's
- No adjustment for management uncertainty

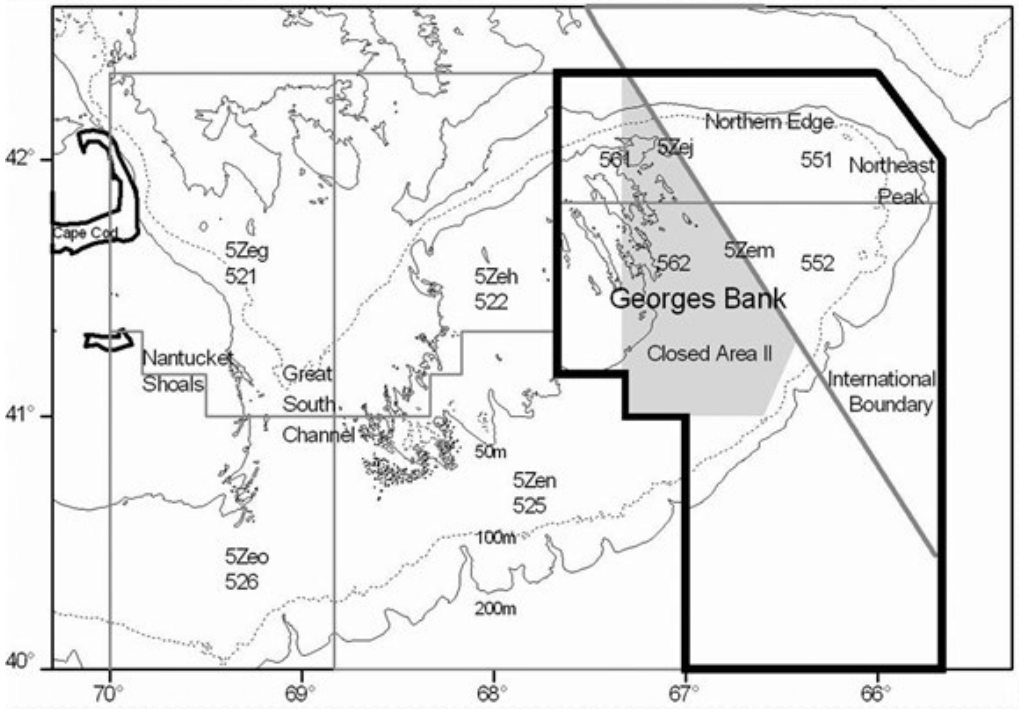
Sub-ACL's

- Subject to AM's
- Management uncertainty adjustment

New England Fishery Management Council

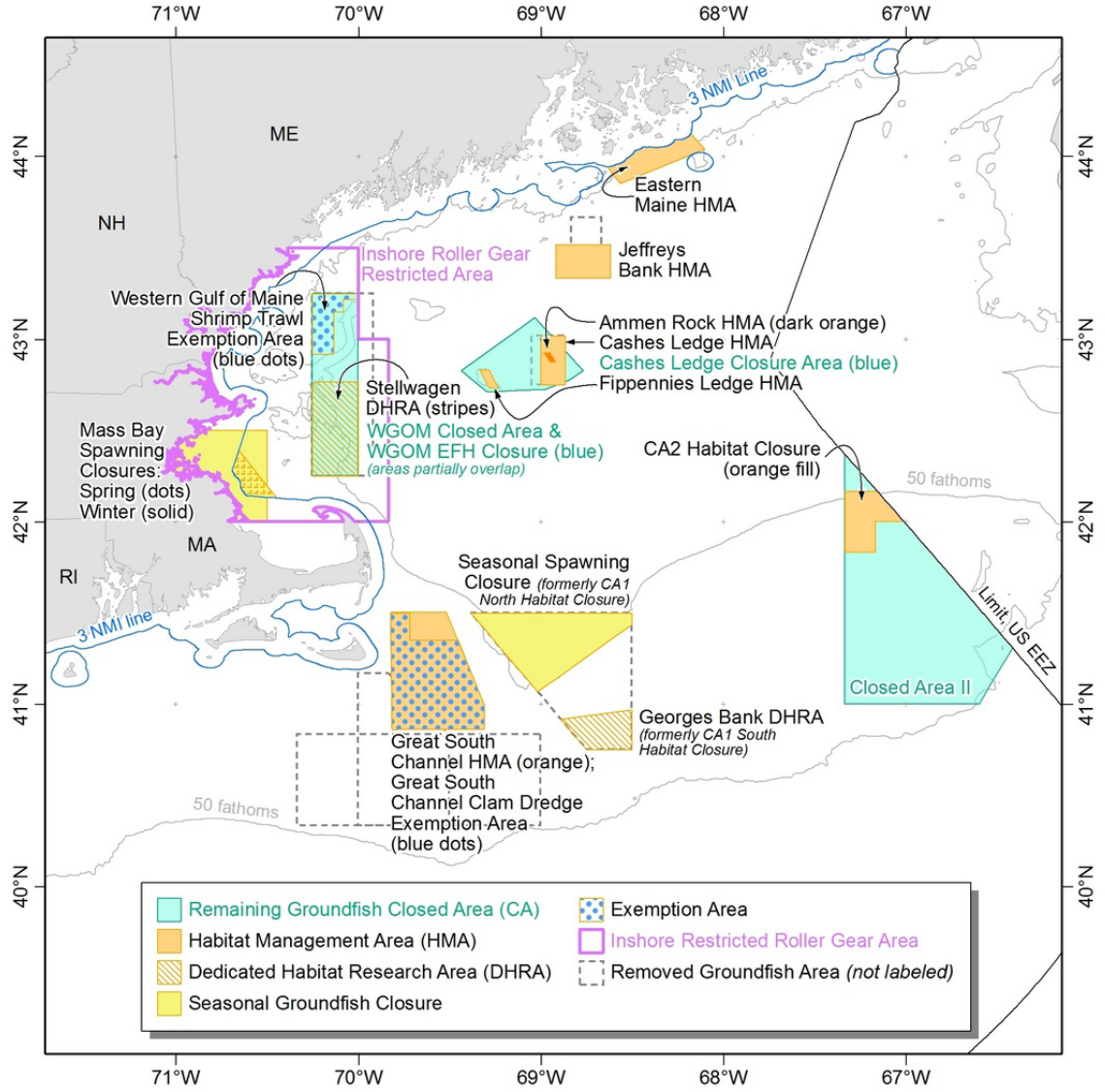
International – United States and Canada





New England Fishery Management Council

Habitat/Spawning



New England Fishery Management Council

Table 2- GB cod stock-level catch and revenue predictions from the Quota Change Model (QCM) for each fishing year between 2011 and 2020 compared to realized catch and revenue (in 2020$).

	FY	Sector sub-ACL	Catch (mt)		Utilization (%)		Gross Rev ($mil, 2020)	
			Realized	Predicted	Realized	Predicted	Realized	Predicted
GB Cod	2011	3,878	2,987	3,338	*0.77*	*0.86*	13.5	15.1
	2012	4,079	1,437	1,149	*0.35*	*0.28*	7.6	5.6
	2013	2,131	1,500	1,657	*0.70*	*0.78*	6.4	7.4
	2014	1,584	1,295	1,525	*0.82*	*0.96*	5.6	7.7
	2015	1,629	1,522	1,526	*0.93*	*0.94*	6.3	6.3
	2016	550	488	547	*0.89*	*0.99*	2.7	2.6
	2017	378	389	377	*1.03*	*1.00*	2.1	1.6
	2018	1,083	720	616	*0.66*	*0.57*	3.2	3.2
	2019	1,351	452	489	0.33	*0.36*	2.3	2.6
	2020	851	352	826	0.41	*0.97*	1.7	3.6

New England
Fishery Management Council

Table 3- GOM cod stock-level catch and revenue predictions from the Quota Change Model (QCM) for each fishing year between 2011 and 2020 compared to realized catch and revenue (in 2020$).

	FY	Sector sub-ACL	Catch (mt)		Utilization (%)		Gross Rev ($mil, 2020)	
			Realized	Predicted	Realized	Predicted	Realized	Predicted
GOM Cod	2011	4,825	4,268	4,737	*0.88*	*0.98*	21.2	25.3
	2012	3,619	2,070	3,572	*0.57*	*0.99*	11.2	18
	2013	881	716	871	*0.81*	*0.99*	4	4.7
	2014	814	638	803	*0.78*	*0.99*	3	4.8
	2015	202	171	201	*0.85*	*1.00*	0.9	1.1
	2016	273	255	268	*0.93*	*0.98*	1.6	1.3
	2017	271	248	268	*0.92*	*0.99*	1.5	1.3
	2018	377	304	354	*0.81*	*0.94*	1.7	2.2
	2019	378	271	339	0.72	*0.90*	1.6	1.9
	2020	267	214	267	0.80	*1.00*	1.2	1.4

New England Fishery Management Council