



New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: August 21, 2020
TO: Scientific and Statistical Committee (SSC)
CC: Groundfish Committee
FROM: Groundfish Plan Development Team (PDT)
SUBJECT: **Georges Bank yellowtail flounder Overfishing Limits and Acceptable Biological Catches for fishing years 2021 and 2022**

The Groundfish Plan Development Team (PDT) met on August 13 and August 20, 2020 by webinar and discussed **Georges Bank (GB) yellowtail flounder catch advice in support of developing Overfishing Limits (OFLs) and Acceptable Biological Catches (ABCs) for fishing years 2021 and 2022.**

The Groundfish PDT compiled information and analysis for the Scientific and Statistical Committee (SSC) to consider when developing catch advice. The Scallop PDT provides information on the scallop fishery and bycatch of GB yellowtail flounder in Attachment #2. Both PDTs refer the SSC to the 2017, 2018, and 2019 memos on the subject for additional background¹.

Information reviewed included 2020 assessment documents and 2019 PDT and SSC memos:

- TRAC. 2020. Georges Bank Yellowtail Flounder. TRAC Status Report (TSR) 2020.
- Background Presentations: TRAC Stock Assessment of Georges Bank Yellowtail Flounder, TRAC Homework, Legault's Shiny App Overview
- PDT to SSC re GB yellowtail flounder ABCs, dated August 15, 2019 including a memo from the Scallop PDT to the Groundfish PDT
- SSC to Council re GB yellowtail flounder ABCs, dated August 28, 2019.
- TRAC. 2019. Georges Bank Yellowtail Flounder. TRAC Status Report 2020.

¹ 2019 memo: https://s3.amazonaws.com/nefmc.org/A6_190815-GF-PDT-memo-to-SSC-re-GB-yellowtail-flounder-with-Scallop-PDT-memo-attached.pdf

2018 memo: https://s3.amazonaws.com/nefmc.org/A6_180809-GF-PDT-memo-to-SSC-re-GB-yellowtail-flounder-with-Scallop-PDT-memo-attachment.pdf

2017 memo: http://s3.amazonaws.com/nefmc.org/A6_170804-GF-PDT-memo-to-SSC-re-GB-yellowtail-flounder-with-Scallop-PDT-memo-attached_170807_114738.pdf

Stock Status

NOAA Fisheries determined GB yellowtail flounder is overfished and overfishing is occurring.² GB yellowtail flounder is in a 26-year rebuilding plan, with a target rebuild by date of 2032.

Overview of the 2020 Assessment

- The Transboundary Resource Assessment Committee (TRAC) met July 7-9, 2020 by webinar to conduct assessments for Eastern GB cod, Eastern GB haddock, and GB yellowtail flounder.
- The 2020 TRAC stock assessment results for GB yellowtail flounder continue to indicate low stock biomass and poor productivity.
- Recent catches are at historic low amounts, with combined catches for Canada and USA at 9 mt for 2019.
- To generate catch advice, the TRAC used an empirical approach based on survey catches developed during the 2014 Georges Bank Yellowtail Flounder Diagnostic and Empirical Approach Benchmark and updated during the 2017 intersession conference call was applied.
- The TRAC recommended an upper bound for the exploitation rate of 6% for catch advice, which results in 125 mt for 2021. The TRAC also recommended low exploitation to allow for the possibility of rebuilding.
- For future catch advice, the TRAC suggested a fixed quota approach.
- Impacts of the COVID-19 pandemic on the assessment work are documented in the TSR.

PDT Analysis and Discussion

The PDT compiled updated information since its 2019 memo to the SSC on (1) catch performance for GB yellowtail flounder (2) the ratio of discards to 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.

1. Catch performance of GB yellowtail flounder

Figure 1 and Table 1 summarize the total catch performance of GB yellowtail flounder in the US and Canadian fisheries. In the US, three fisheries have sub-annual catch limits (ACLs) for GB yellowtail flounder – the commercial groundfish fishery (sectors and common pool), the scallop fishery, and the small-mesh (primarily for whiting and squid) trawl fisheries. The utilization rate of the US groundfish fishery (i.e., percent groundfish ACL caught) was greater than 85 percent in FY2011, but it has been below 40 percent since FY2013, and below 20 percent since FY2015 (Table 2). At the same time, ACLs for the groundfish fishery have declined to about 7 percent of those in FY2011 (i.e., from 1,142 mt in FY2011 to 84.6 mt in FY2019) (Table 2). Accountability measures (AMs) include in-season GB yellowtail flounder stock area closures for the commercial groundfish fishery and payback provisions under certain conditions. Information on catch performance and management in the US scallop fishery is provided in Attachment 1. The sub-ACL for GB yellowtail flounder in the small-mesh trawl fisheries was implemented in

² See: <https://www.fisheries.noaa.gov/national/population-assessments/fishery-stock-status-updates>

FY2013. AMs for the small-mesh trawl fisheries include gear-restricted areas in the GB yellowtail flounder stock area in a year following an overage of the sub-ACL. To date, small-mesh fisheries have not exceeded their sub-ACL (Table 3).

Figure 1 – Total US and Canada catch performance for GB yellowtail flounder including: catches from CY 2005- CY 2019 and historical ABCs since FY 2010. Overfishing status in the terminal year of the assessment indicated on the x-axis (Yes = overfishing, No= not overfishing, and unknown = unknown overfishing status). Note: “unknown” status presented in this graph is based on the stock assessment and is not the official stock status determined by NOAA Fisheries.

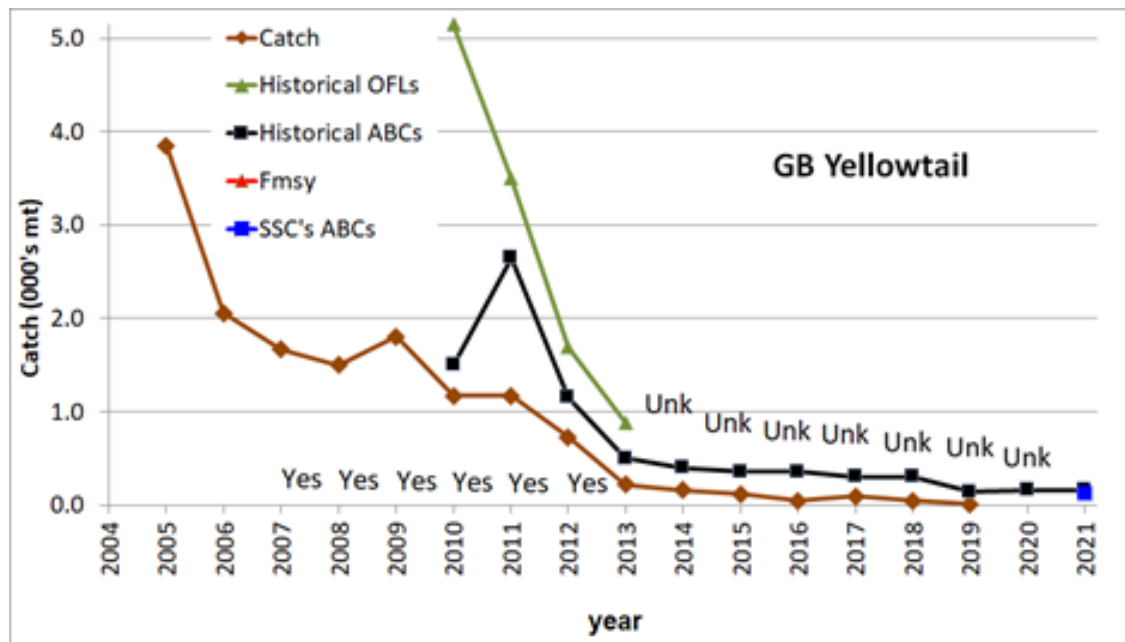


Table 1- Total US and Canada CY catch (mt) performance of GB yellowtail flounder, including OFLs and ABCs.

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		undefined	162

Table 2 - Recent GB yellowtail flounder TACs, groundfish fishery sub-ACLs, and catches for fishing years 2011 through preliminary 2019 and in-season preliminary 2020. Values shown in metric tons (mt). Source: GARFO.

	Total Shared TAC – US & CA (mt)	US % Share	US TAC (mt)	US catch (mt)	% US TAC Caught	Groundfish sub-ACL (mt)	Groundfish catch (mt)	Percent Groundfish ACL Caught (%)
FY2011	2,650	55%	1,458	1,105.9	75.9%	1142.0	990.0	86.7%
FY2012 [†]	1,150	49%	564	384.9	68.2%	368.3	215.5	58.5%
FY2013 [†]	500	43%	215	93.3	43.4%	154.5	55.8	36.1%
FY2014	400	82%	328	122.8	37.4%	254.5	62.5	24.5%
FY2015 [†]	354	70%	248	68.2	27.5%	202.9	38.4	18.9%
FY2016 [†]	354	76%	269	30.7	11.4%	250.8	23.9	9.5%
FY2017	300	69%	207	84.0	40.6%	162.6	31.4	19.1%
FY2018 [†]	300	71%	213	40.5	19.0%	187.9	27.6	14.7%
FY2019* [†]	140	76%	106	4.8	4.6%	99.8	3.1	3.1%
FY2020**	162	26%	120	4.6	3.8%	95.4	4.6	4.8%
	[†] Groundfish sub-ACL in table reflects final quota after in-season transfer from scallop to groundfish fishery, as required by regulation. *Indicates preliminary year-end catch data. **Preliminary in-season catch estimate as of August 14, 2020, GARFO catch reports. Catch includes discards based on assumed discard rate from FY2019.							

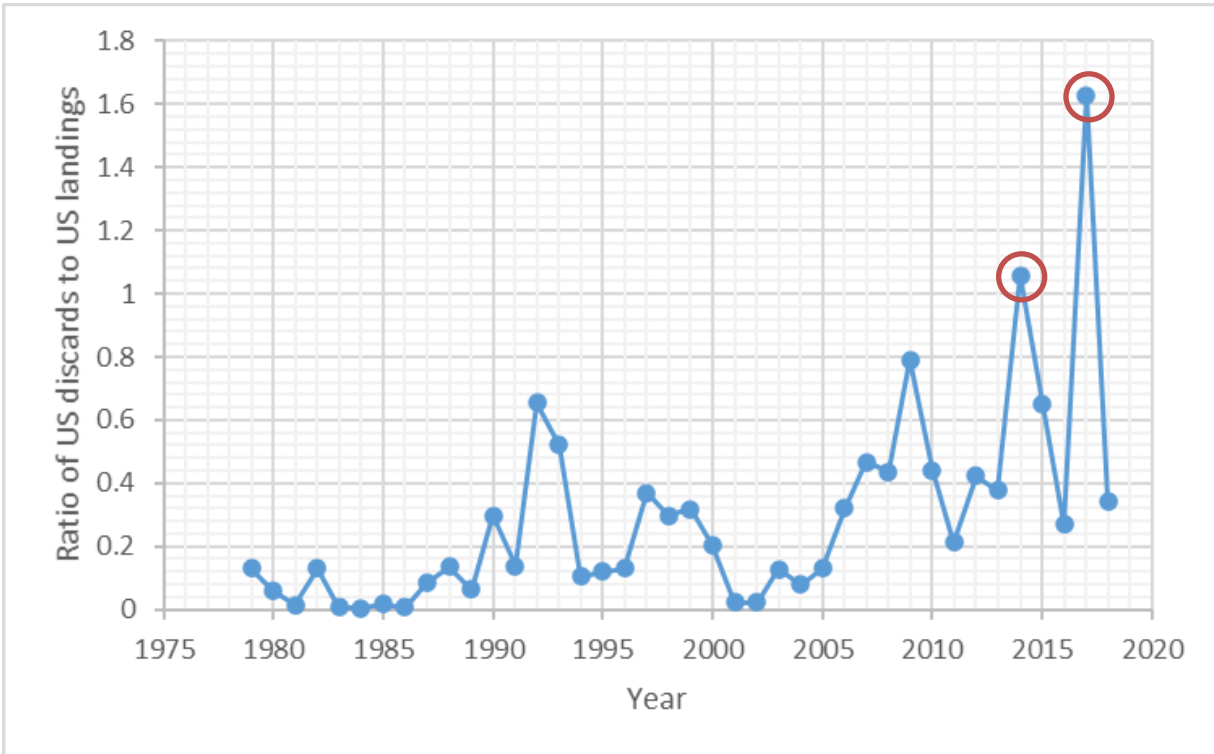
Table 3- Recent GB yellowtail flounder small-mesh fisheries sub-ACLs and catches (mt) for fishing years 2013 through preliminary FY2019*. Values shown in metric tons (mt). Source: GARFO. The sub-ACL was implemented in FY2013 and is not evaluated in-season.

	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	1.4%
FY2020	2		

2. *Ratio of US discards to US landings of GB yellowtail flounder*

Figure 2 displays the ratio of US discards to US landings of GB yellowtail flounder. In CY2014 and CY2017, US discards are greater than US landings (i.e., ratio >1). The US scallop fishery had access to the Closed Area II rotational management area in both FY 2014 and FY2017, which led to the increase in the magnitude of yellowtail flounder discards.

Figure 2 – Ratio of US discards to US landings of GB yellowtail flounder, CY1979-2019. Source: GB Yellowtail Flounder TSR for 2020, TRAC, Table A1, pp. 10. Years with Closed Area II access for the US Scallop fishery are circled.



3. Information on US observed catches of GB yellowtail flounder

Table 4 summarizes the 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 2019. These data are all large-mesh bottom trawl hauls (NEGEAR=050) and are not filtered by fishery.

Table 4- Count of observed hauls of yellowtail flounder by haul weight (lbs.) and SRA for FY2019 and by stock: Cape Cod/Gulf of Maine (CC/GOM) yellowtail flounder (513, 514, and 521), GB yellowtail flounder (522 and 525), and Southern New England/Mid-Atlantic (SNE/MA) yellowtail flounder (537, 539, and 613).

	CC/GOM			GB		SNE/MA		
	513	514	521	522	525	537	539	613
<100 lbs.	43	620	140	65	8	42	46	24
100-<200 lbs.	*	68			*	*		
200-<300 lbs.	*	19			*			
<300+ lbs.		38						

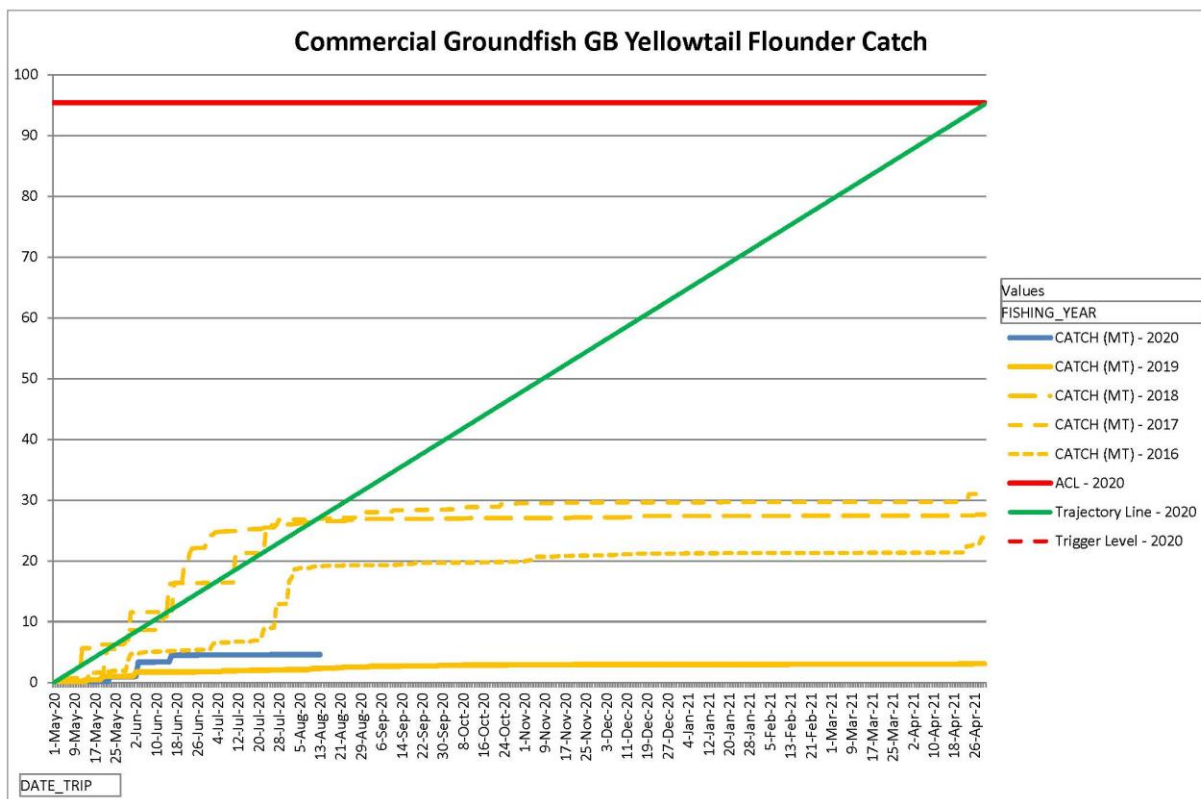
* indicates confidential data based on <3 vessels.

4. In-season utilization by the commercial groundfish fishery.

Figure 3 shows groundfish commercial (sector and common pool) GB yellowtail flounder catches since FY2016 along with the FY2020 commercial ACL. GB yellowtail catch has been substantially below the sub-ACL from FY2015 to FY2019, not exceeded 30% utilization of the commercial ACL in most years.

GB yellowtail catches in the groundfish commercial fishery show a strong seasonal component with most of the catch occurring from late April into August and catch mostly flat for the remainder of the fishing year. FY2019 had substantially lower catch than other years with FY2020 exhibiting a similar pattern. Absent any large increases in the quota, it appears that directed fishing effort for GB yellowtail flounder is unlikely to increase in the near future.

Figure 3-In-season utilization of GB yellowtail flounder by the sector portion of the groundfish fishery.



5. Summary of Economic Information

Table 5 compares the performance of the quota-change model (QCM) since FY 2011 to realized outcomes. Performance of the QCM varies year to year (in some years it underpredicts, while in others it overpredicts) but generally has accurately predicted utilization trends (with the exception of FYs 2014 and 2019), where utilization has been predicted to be low in recent fishing years as the sector-sub-ACLs have declined. Utilization was considerably lower in FY 2019 compared to predicted utilization, with only 3.1 mt of the 83 mt sub-ACL being caught. The PDT discussed how low recent utilization (since at least FY 2014) could indicate low economic demand for the stock or an inability to harvest GB yellowtail flounder.

Table 5- Stock-level catch and revenue predictions from the Quota Change Model (QCM) for each fishing year between 2011 and 2019 compared to realized catch and revenue (in 2019\$).

	FY	Sector sub-ACL	Catch (mt)		Utilization (%)		Gross Rev (\$mil, 2019)	
			Realized	Predicted	Realized	Predicted	Realized	Predicted
GB Yellowtail Flounder	2011	1142	997.5	901.1	0.873	0.789	2.9	2.4
	2012	364.1	214.8	323.3	0.59	0.888	0.7	1
	2013	100	55.8	99.6	0.558	0.996	0.2	0.3
	2014	251.5	61.2	161.1	0.243	0.641	0.2	0.6
	2015	192.3	38.4	52.5	0.2	0.273	0.1	0.2
	2016	207	23.9	21.5	0.116	0.104	0.1	0.1
	2017	119.8	31	19.4	0.259	0.162	0.1	0.1
	2018	167	27.6	36.8	0.166	0.22	0.1	0.2
	2019	83	3.1	37.3	0.037	0.449	0.1	0.1

PDT Discussion and Recommendations

The TRAC recommended an upper bound for the exploitation rate of 6% for catch advice, which results in 125 mt for 2021. The TRAC also recommends setting the exploitation rate low to allow for the possibility of rebuilding. Below is an excerpt of Table A6 in the 2020 TSR (pp. 21), showing corresponding catch advice for a range of exploitation rates of 2% to 6%.

Exploitation Rate	Catch Advice (mt)
2%	42
4%	83
6%	125

Considering the findings of the 2020 TRAC assessment and additional information evaluated, the PDT discussed recommendations for a possible 2021 OFL and ABC for GB yellowtail flounder. To summarize:

- The official stock status of GB yellowtail flounder is overfished, with overfishing occurring. NMFS retained this stock status determination from the 2013 assessment because the empirical area swept model used to assess the stock in later years cannot produce quantitative estimates to compare to the status determination criteria (SDC). GB yellowtail flounder is currently in a rebuilding program that began in 2006 that is scheduled to end in 2032.
- Based on the 2017 assessment, the SSC recommended ABC of 300 mt for 2018 and 2019, which was the same as the 2017 ABC. Those ABCs were based on recent catch and an exploitation rate that was the lowest on record, considering the poor condition of the stock. In 2018, the SSC recommended a catch limit that reduced the 2019 ABC by 46 percent from the 2018 ABC. In 2019, the SSC recommended the same catch limit recommended for FY2019, but that increased the 2020 ABC by 16 percent from the implemented 2019 ABC. Table 6 summarizes the past 3 years of TRAC and SSC recommendations for GB yellowtail, as well as the ABC that was implemented by NMFS based on the TMGC's recommendation and Council's decision.

Table 6- Summary of FY2018-FY2020 TRAC catch advice, SSC's ABC recommendations and final ABCs.

Fishing Year	TRAC recommended catch advice (mt)	SSC's Recommended ABC (mt)	Council's Recommendation/ NMFS Implemented ABC (mt)
2018	Between 62 and 187	300	300
2019	Upper bound of 68	162	140
2020	As low as possible below upper bound of 199	162	162

- National Standard 1 guidelines require fishery management plans to specify objective and measurable SDCs, for each stock, in a manner that enables the Council to monitor stock status, including an OFL³. When data are not available to specify SDCs based on maximum sustainable yield (MSY) or MSY proxies, alternative types of SDCs that promote sustainability of the stock or stock complex may be used⁴. GB yellowtail flounder has SDCs based on MSY. However, the GB yellowtail flounder OFL has been unknown since 2013 because the empirical stock assessment is not able to generate quantitative estimates of these SDCs, or even proxies, for specifying an OFL.
- **OFL/ABC-** The PDT suggested the SSC discuss the basis for determining the ABC that will prevent overfishing if the OFL remains unknown.
 - **OFL** - The 2020 TRAC's recommendation to possibly set future quota at a fixed amount (rather than an exploitation rate), once again raises the question of determining OFL. The PDT discussed that such an evaluation of new SDCs may be most appropriate during a stock assessment process, noting that NMFS has convened a stock assessment working group focused on index-based methods and control rules. This working group is expected to create guidelines for setting biological reference points (BRP) for stocks assessed with index-based approaches. A research track assessment will use simulation approaches to explore BRPs, among other topics, with a peer review expected in fall of 2020. This may result in guidance on setting SDCs and relevant catch limits in cases

³ 50 CFR 600.310(c)

⁴ §600.310(e)(2)(ii)

when an empirical assessment cannot provide numerical estimates of traditional reference points.

- **ABC** - The PDT confirms the TRAC recommendation (above) as an approach to determine ABC, although the TRAC recommendation could also be used to set an OFL, rather than the ABC. Using the TRAC's recommendation for 2021 would take into consideration the poor stock status of GB yellowtail flounder and allow for fisheries with GB yellowtail flounder catch to operate while limiting catches comparable to recent years with low quotas.



New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116

John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: August 12, 2020
TO: Groundfish PDT
FROM: Scallop PDT
SUBJECT: **Scallop Fishery Activity in Georges Bank Yellowtail Flounder Stock Area**

Preface

For several years, the Scallop Plan Development Team (PDT) has provided memos to the Groundfish PDT for consideration during the SSC's deliberations of the Georges Bank yellowtail flounder TAC. These memos outline recent management measures within the Georges Bank yellowtail flounder (GB yellowtail) stock area, catch estimates of GB yellowtail, scallop fishing effort within the GB yellowtail stock area, and information on GB yellowtail catch advice (see Appendix III). The Scallop PDT revisited discussion on these topics at their July 28, 2020 and August 12, 2020 meetings as well as through correspondence. This document updates the information provided in the 2016-2019 memos to reflect recent Council actions, as well as PDT input related to catch of scallops and GB yellowtail within the GB yellowtail stock area.

Table of Contents

Preface.....	1
Impacts of COVID-19 on 2021/2022 Specifications Process and Data Streams	2
Key Points – Scallop Activity in Closed Area II Access Area	2
Key Points – Georges Bank Yellowtail Flounder	3
2019 Scallop Survey Information and FY2020 Spatial Management	3
Scallop Fishery Allocations of GB Yellowtail and In-Season Transfers	6
CAII AA Fishery Performance	10
Accountability Measures	10
Impacts of Allocation.....	12
Appendix I: Rotational Management within the GB Yellowtail Stock Area and Recent Catch	14
Appendix II: Recent Scallop Fishery VMS Effort	19
Appendix III: Recent Memos from Scallop PDT to Groundfish PDT re: GB yellowtail.....	24

Impacts of COVID-19 on 2021/2022 Specifications Process and Data Streams

- Some scallop surveys have been delayed or canceled due to the COVID-19 pandemic. The timeline for developing scallop specifications has been pushed back nearly two months to allow for the completion of the 2020 survey field season. The Scallop PDT will not have estimates of flatfish bycatch associated with rotational management alternatives until early January 2021 because of the delay in the specification setting process. Bycatch estimates will likely be developed using observer data from fishing years prior to 2020 because observers have not been deployed since the start of the 2020 scallop fishing year. For Closed Area II bycatch estimates, the Scallop PDT will use data from fishing year 2017.
- In the absence of new information, changes to area configurations, or changes in the perception of the GB yellowtail stock condition, the bycatch rates and projections developed through Framework 32 would be reasonable approximations of the 2021 fishing year.
- The Council is planning to take final action on 2021/2022 specifications at its January 2021 meeting. This is expected to delay the implementation of specifications for FY2021.

Key Points – Scallop Activity in Closed Area II Access Area

- The scallop fishery was allocated access to Closed Area II Access Area (CAII AA) in FY2020 for the first time since FY2017. Rotational harvest in CAII AA is important to the scallop fishery for several reasons:
 - The total value of scallops landed from CAII AA in fishing year 2017 was \$63,843,745. Over 80% of scallop harvest from CAII AA was landed in New Bedford, Massachusetts (Table 3 and Table 4).
 - The Council closed this area for two years (i.e., FY2018 and FY2019) in an effort to optimize scallop yield-per-recruit. The area re-opened to access area fishing in FY2020, and accounts for 20% of access area allocations to the scallop fishery (1 of 5 trips). The oldest year class in CAII AA was expected to yield 10-12 meats per pound (i.e., U-10s and U-12s) in FY2020, which are the largest market grades in the fishery and can be expected to command a price premium. Fishery landings from the area have ranged from U10 to 10-20 count, which is consistent with the 2019 survey data.
 - Overall, CAII AA is a highly valuable fishing region with respect to meat quality, fishing conditions, and overall economic impact.
- The Council allocated full time limited access vessels one 18,000-pound trip to Closed Area II for FY2020. Part of the traditional access area was closed, along with the Closed Area II extension to protect small scallops and reduce bycatch of GB yellowtail and northern windowpane flounder. The seasonal closure of Closed Area II access area was extended to further mitigate impacts to these flatfish stocks. The smaller year class in the closed portion of CAII AA and CAII-Extension is not expected to reach full growth potential by FY2021. There will be three scallop surveys of Closed Area II and surrounds (dredge, drop camera, and HabCam) in 2020.

Key Points – Georges Bank Yellowtail Flounder

- The Council established additional proactive measures to reduce impacts on GB yellowtail for the 2020 fishing year, through Scallop Framework 32: 1) year round closure to part of the traditional CAII AA and CAII extension (previously part of the open area), 2) extended the CAII seasonal closure two weeks (closure in place from Aug. 15-Nov. 15, 2020), and 3) prohibition on RSA compensation fishing in CAII in FY2020.
- The scallop fishery is allocated a sub-Annual Catch Limit (sub-ACL) of Georges Bank yellowtail flounder based on 16% of the US TAC. Since 2012, the scallop fleet has caught an average of 30% of the US catch and 80% of the scallop sub-ACL.
- The scallop fishery's estimated catch of GB yellowtail has fluctuated in recent years. This is attributed to changes in rotational management, specifically access to CAII AA and open areas directly south and west (i.e., Southeast Parts).
- The Scallop PDT projected GB yellowtail bycatch to be approximately 23 mt for FY2020. This is large in part due to the scallop fishery having access to CAII AA in FY2020. The methods and caveats associated with this bycatch projection are discussed in Appendix I below.
- The scallop fishery AM is structured such that the fishery would be able to continue to harvest scallops even if the AM is triggered.
- If the reactive accountability measure (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. The Council has temporarily modified its scallop fishery AM policy for GB yellowtail so that an AM for the scallop fishery would only be implemented if the overall ACL is exceeded (sunsets for GBYT after FY2020). This provision provided relief from AMs for the scallop fishery based on the 2017 estimated catch. The Council did not extend this modification for Northern windowpane flounder for FY2020.

2019 Scallop Survey Information and FY2020 Spatial Management

The 2019 surveys of eastern Georges Bank continued to track two distinct year classes; one year class of juvenile scallops that was first observed in 2018, and another older, larger year class that settled in the eastern portion of Closed Area II. A comparison of length frequencies and survey station catch revealed that these two year classes overlapped slightly; however, the older harvestable scallops dominated the eastern portion of Closed Area II and the younger juvenile year class settled farther west within Closed Area II and Closed Area II extension (Figure 2). Considering these two year classes were spatially distinct within CAII and CAII extension, modifications were made to traditional management boundaries in CAII to facilitate harvest of the larger scallops in FY2020 while also allowing the smaller year class to continue growing in the absence of fishing. Since the mean length of the younger cohort was around 50 mm in 2019, it is likely that the Council will consider another year of closures to protect this year class (Figure 1). There will be three scallop surveys of Closed Area II and surrounds (dredge, drop camera, and HabCam) in 2020.

Through Framework 32, the Council set scallop fishery specifications for the 2020 fishing year, which included one 18,000-pound trip to the modified Closed Area II Access Area (i.e. now Closed Area II East) for full time limited access vessels. The remainder of the traditional CAII AA and CAII extension (i.e. now Closed Area II Southwest) were closed for the entirety of FY2020. The goal of this closure was twofold: 1) protect the year class of small scallops to allow

them to grow for the future, and 2) reduce scallop fishing effort in the part of the resource that has historically been known to have high GB yellowtail bycatch.

In addition to the focused closure within CAII and CAII extension (formerly part of the open area), the Council identified another key measure to further mitigate impacts of the scallop fishery on GB yellowtail and Northern windowpane flounder. For FY2020, the existing Closed Area II Access Area seasonal closure was extended by two weeks in November, making the newly configured area closed from August 15 until November 30, as a means to further reduce bycatch of Georges Bank yellowtail flounder and Northern windowpane flounder (Figure 3). This measure is discussed in the below section on proactive accountability measures.

Figure 1 – Scallop length frequencies from the 2019 VIMS survey of eastern Georges Bank from the survey and commercial dredge.

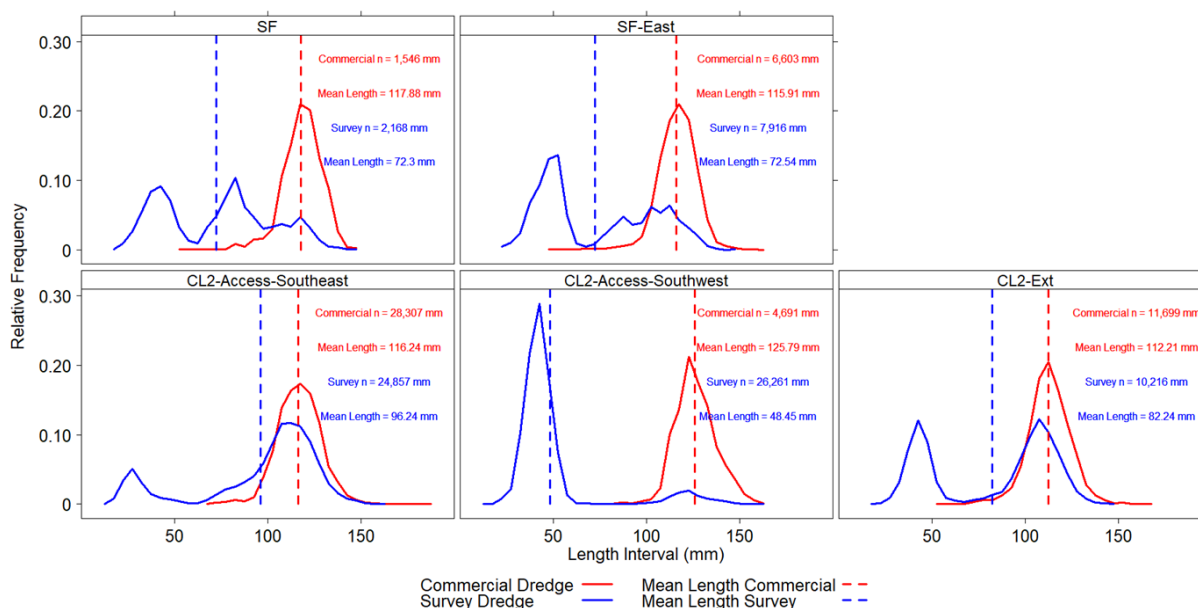


Figure 2 – Scallop density per m² of scallops with shell height less than 60 mm from the 2019 VIMS dredge survey of CAII AA and surrounds relative to FY2020 rotational management areas and groundfish/habitat closures.

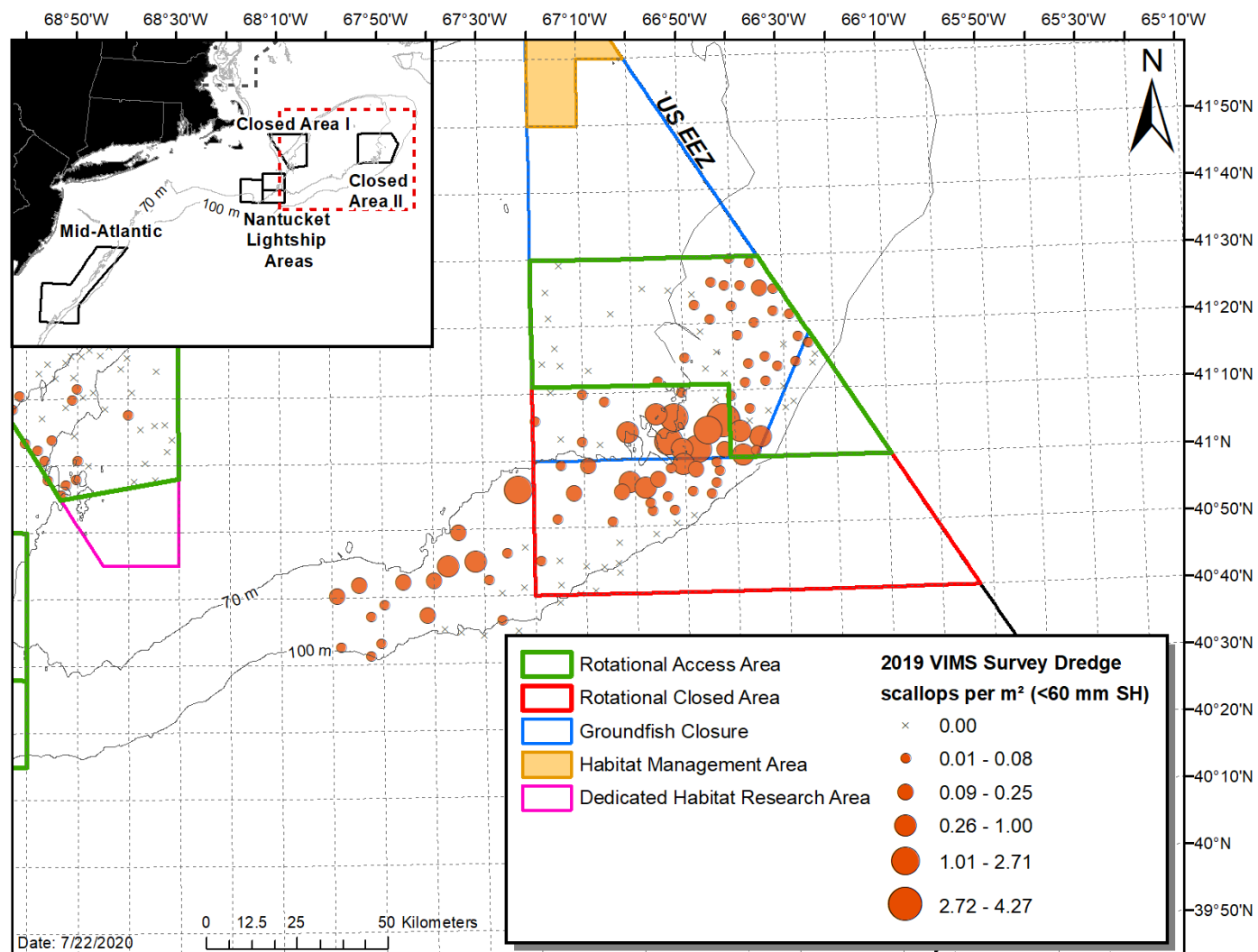
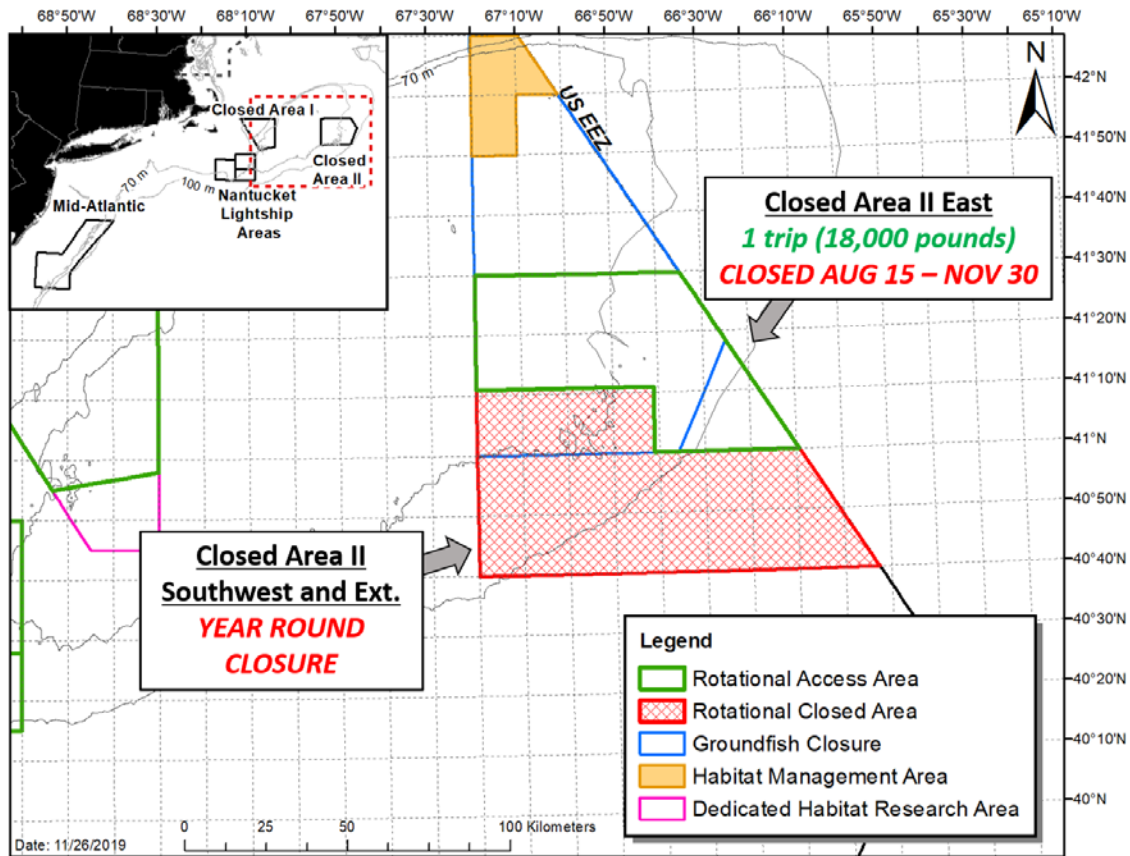


Figure 3 – Area coverage of the extended CAII seasonal closure (Aug. 15 – Nov. 30, 2020) implemented for FY2020.



Scallop Fishery Allocations of GB Yellowtail and In-Season Transfers

The scallop fishery is currently allocated 16% of the US share of the GB yellowtail ABC (see [Groundfish Framework 59](#) for current allocations). Recently, the scallop fishery's catch of GB yellowtail has been a higher percentage of the overall US catch, ranging from 6-57% with a mean of 31% of the US ABC between 2012 and 2019 (Table 1; Figure 4).

Figure 4 – GB yellowtail catch from the scallop fishery as a percentage of total US GB yellowtail catch from 2002-2019. Solid line indicates annual percentage of scallop catch; dashed grey lines indicate the average between 2002-2011 and 2012-2019.

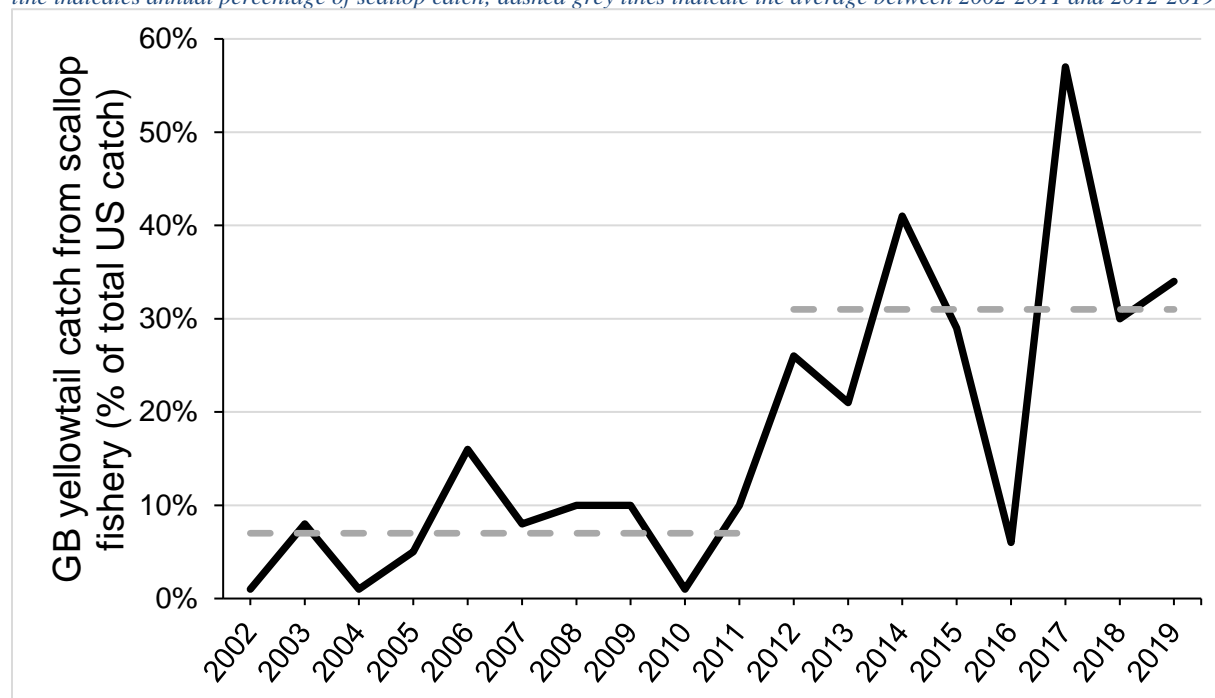


Table 1. GB yellowtail landings and discards (metric tons) from 2002-2019 based on TRAC 2020 assessment of GB yellowtail (updated from Groundfish Framework 48). Light gray shading indicates years considered in Framework 48; dark gray shading indicates years since Framework 48.

Calendar Year	US Landings	US Discards	US Catch	Scallop Landings of GBYT	Scallop Discards of GBYT	Total Scallop Catch of GBYT	Scallop Catch as % of US Catch
2002	2476	53	2529	0.2	29	29.2	1%
2003	3236	410	3646	0.1	293	293.1	8%
2004	5837	460	6297	3	81	84	1%
2005	3161	414	3575	8.1	186	194.1	5%
2006	1196	384	1580	2.6	251	253.6	16%
2007	1058	493	1551	1.5	120	121.5	8%
2008	937	409	1346	0.3	128	128.3	10%
2009	959	759	1718	1.9	170	171.9	10%
2010	654	289	943	0.2	8	8.2	1%
2011	904	192	1096	8.6	104	112.6	10%
2012	443	188	631	25	139	164	26%
2013	130	49	179	3.5	34	37.5	21%
2014	70	74	144	0	59	59	41%
2015	63	41	104	0	29.7	29.7	29%
2016	26	7	33	0	2.1	2.1	6%
2017	35	57	92	0	52.6	52.6	57%
2018	32	11	43	0	12.7	12.7	30%
2019	3	2	5	0	1.7	1.7	34%
Retention of GB yellowtail prohibited in scallop fishery 2014 to present							
Mean scallop catch of total US GB yellowtail catch 2002-2011 was 7%							
Mean scallop catch of total US GB yellowtail catch 2012-2019 was 31%							

Table 2 – Recent GB yellowtail TACs and scallop fishery sub-ACLs and catches. Values are shown in metric tons (mt).

FY	Total Shared TAC	US % Share	US TAC	% US TAC Caught	Scallop sub-ACL	Scallop catch	% Scallop sub-ACL Caught
FY2010	1,500	64%	1,200	68%	146	17.6	12%
FY2011	2,650	55%	1,458	76%	200.8	83.9	42%
FY2012	1,150	49%	564	68%	156.9	164.0	105%
FY2013	500	43%	215	43%	41.5	37.5	90%
FY2014*	400	82%	328	37%	50.9	59.0	116%
FY2015*	354	70%	248	28%	38	29.7	78%
FY2016*	354	76%	269	12%	42	2.1	5%
FY2017*	300	69%	207	44%	32	52.6	164%
FY2018*	300	71%	213	20%	33	12.7	38%
FY2019*	140	76%	106	5%	17	1.7	10%
FY2020*	162	74%	120	n/a	19	n/a	n/a
* retention of GB yellowtail prohibited for scallop fishery n/a = data not yet finalized.							

The scallop fishery’s sub-ACL includes a reduction for management uncertainty, and both the allocation and in-season catch accounting of the scallop fishery GB yellowtail sub-ACL are based on the scallop fishing year. In years when NMFS projects that less than 90% of the scallop fishery GB yellowtail sub-ACL will be caught, the agency may initiate an allocation transfer from the scallop fishery to the groundfish fishery. This in-season transfer of yellowtail to the groundfish fishery has occurred several times in recent years. Since 2015, NMFS has transferred 81.43 mt from the scallop fishery to the groundfish fishery. In 2017 when the Closed Area II access area was open, the scallop fishery exceeded the 32 mt sub-ACL by 20.6 mt (see Table 2), and no transfer was initiated.

- In FY2015, NMFS transferred 7.9 mt of GB yellowtail from the scallop fishery to the groundfish fishery (21% of the FY2015 scallop fishery GB yellowtail sub-ACL).
- NMFS initiated a transfer again in FY2016, where 39.8 mt of GB yellowtail from the scallop fishery sub-ACL was shifted to the groundfish fishery (~95% of the FY2016 scallop fishery GB yellowtail sub-ACL).
- No transfer was initiated in FY2017; however, in FY2018, NMFS transferred 18.53 mt of GB yellowtail from the scallop fishery to the groundfish fishery (56% of the FY2018 scallop fishery GB yellowtail sub-ACL).
- In FY2019, NMFS transferred 15.2 mt of GB yellowtail from the scallop fishery to the groundfish fishery (89% of the FY2019 scallop fishery sub-ACL).
- The scallop fishery did not have access to CAII AA in FY2015, FY2016, FY2018, or FY2019.

CAII AA Fishery Performance

In FY2020, the scallop fishery was allocated access to CAII AA. However, the fishing year is ongoing, and year-end data will not be available until summer 2021. Prior to 2020, the last year that an access area trip was allocated to Closed Area II was 2017. That year, full-time LA vessels were allocated one, 18,000-pound trip, which amounted to ~6 million pounds of scallop removals. Vessel trip report and dealer data were used to summarize the performance of CAII AA in FY2017 in terms of the number of active permits, landings, and value by state landed (Table 3) and by vessel principle port (Table 4). The total value of scallops landed from CAII AA in FY2017 was estimated to be ~\$63.8 million USD. Most CAII AA scallop landings and revenue were attributed to the state of Massachusetts, amounting to ~4.6 million pounds and \$53.1 million USD, respectively. In terms of vessel principle port, CAII AA landings and revenue were distributed across the range of the fishery, from Massachusetts to as far south as North Carolina but largely in New Bedford, MA and Cape May, NJ (Table 4).

Table 3 – Summary of scallops landed from CAII AA in Fishing Year 2017 (source: GARFO, APSD).

State (VTR)	Permits (n)	Scallop Meats (lbs)	Value	% Landed	% Value
CT	4	89,567	\$972,573	2%	2%
MA	195	4,632,726	\$53,084,834	83%	84%
NJ	19	358,911	\$3,704,074	6%	6%
RI	16	384,521	\$4,051,421	7%	6%
VA	7	120,957	\$1,457,049	2%	2%
Total		5,586,682	\$63,269,951	100%	100%

Table 4 – Summary of active permits, scallop landings, and value from CAII AA in Fishing Year 2017 by vessel principle port. Principle ports with less than 3 active permits are not shown.

Principle Port	Permits (n)	Scallop Meats (lbs)	Value
NEW BEDFORD, MA	106	2,660,719	\$30,891,682
CAPE MAY, NJ	43	1,084,836	\$11,596,289
NEWPORT NEWS, VA	24	542,240	\$6,080,141
HAMPTON, VA	11	199,571	\$2,203,944
NEW BERN, NC	5	152,108	\$1,882,213
BARNEGAT LIGHT, NJ	10	175,466	\$1,452,347
SEAFORD, VA	7	127,769	\$1,448,972
FAIRHAVEN, MA	5	89,784	\$1,105,970
STONINGTON, CT	4	89,567	\$972,573

Accountability Measures

Proactive AMs. The Scallop FMP has several measures in place to proactively mitigate bycatch of GB yellowtail and other non-target flatfish species. Framework 24 (2013) established a seasonal closure of CAII AA from August 15th to November 15th to reduce bycatch of GB yellowtail; this seasonal closure has been in effect since 2013 and is applied when CAII AA is open to the scallop fishery. Through scallop Framework 26 (2015), the Council approved measures that restrict the maximum number of rows in the dredge apron to seven in all areas, as shorter aprons have been shown to reduce flatfish bycatch and improve fish escapement (see Scallop FW 24, Appendix IV). Part of the rationale for this 7-row restriction was to reduce

flatfish bycatch and prevent sub-ACLs from being exceeded and triggering reactive AMs. The 7-row apron restriction has been in effect since FY2015. The PDT also notes that the fishery-wide requirement of a minimum 10" twine top (Amendment 10, 2004) improved the escapement of yellowtail flounder. RSA compensation fishing, which sets aside 1.25 million pounds of scallops annually to support research, was restricted in CAII AA under Framework 28 (FY2017) and Framework 32 (FY2020) for the specific reason of reducing GB yellowtail bycatch.

As discussed on page 3, additional proactive measures were developed by the Council for FY2020 through Framework 32. For FY2020, the seasonal closure of CAII was extended by two weeks, making it span August 15th through November 30th. Historically, GB yellowtail and Northern windowpane d/K ratios have been higher in November compared to the summer months in CAII Access Area. Though scallop landings from CAII Access Area have been lower in November than the late-spring early-summer months, the bycatch savings expected by extending the existing closure an additional two weeks are anticipated to reduce catch of both GB yellowtail and Northern windowpane flatfish stocks. Additionally, extending the seasonal closure in CAII complimented other FY2020 spatial management measures focused on reducing bycatch, such as the year-round closure of a portion of Closed Area II AA and Closed Area II-Ext (i.e. Closed Area II Southwest), and restricting RSA compensation fishing in Closed Area II Access Area.

Reactive AMs. Through Framework 29 (FY2018), the Council modified the reactive AM for GB yellowtail. Prior to FY2018, this AM was a time-area closure of statistical reporting area 562 (i.e., CAII AA and surrounds), with the duration of the time-area closure being dependent on the percent of the sub-ACL overage. As of FY2018, the AM was changed to a reactive gear restricted area (GRA), with the duration of the GRA being dependent on the magnitude of the sub-ACL overage. When the AM is in place, vessels fishing in CAII AA and CAII extension are required to fish a dredge with: 1) a dredge bag with a maximum of 5-rows in the apron; and 2) a 1.5:1 maximum hanging ratio. This gear-modification was based on a study conducted by the Coonamessett Farm Foundation (2012 final report [here](#)), which suggested the 5-row apron modified dredge bag reduces bycatch of yellowtail and other species of flatfish compared to a standard dredge bag configuration used by industry.

In November 2016, the Council voted to allow a "temporary exception with a two-year sunset provision, to the scallop fishery AM implementation policy for the GB yellowtail flounder stock" under Groundfish Framework 56. NMFS approved this measure in the final rule to Framework 56 in July of 2017, retroactive to the start of the groundfish fishing year (May 1, 2017). Under this temporary exception, the only criteria used to determine if an AM would be implemented for GB yellowtail is if the scallop fishery exceeds their sub-ACL and the overall ACL for the stock is also exceeded in fishing years 2017 and 2018. This exception removes the AM trigger criteria of the scallop fishery exceeding the GB yellowtail sub-ACL by 150% or more. In December 2018, the Council voted to extend this temporary exception to apply for FY2019 and FY2020. The Council specifically noted that recent utilization of GB yellowtail by the groundfish fishery has been low due to low quotas.

Impacts of Allocation

The interannual variability of GB yellowtail bycatch by the scallop fishery suggests that the fixed percentage allocation management scheme may be constraining to both the scallop and groundfish fisheries. In years when CAII AA is closed, the scallop fishery has not caught their full allocation of GB yellowtail (Table 2) and the groundfish fishery does not have access to the additional quota until January or later, based on agency action to transfer a portion of the scallop fishery's allocation. However, in years when CAII AA is open, the scallop fishery has exceeded the GB yellowtail sub-ACL and concentrated fishing effort in a short seasonal window. The Council uses projected catch, rather than a fixed percentage, to determine the scallop fishery's sub-ACL for Southern New England/Mid-Atlantic Yellowtail Flounder.

Scallop rotational management and access to CAII AA is the main factor in determining how much GB yellowtail flounder will be caught by the scallop fishery annually. As shown in Table 2, GB yellowtail bycatch fluctuates depending on when the fishery is operating in CAII AA and surrounding areas on the southern flank of Georges Bank. In fishing year 2017 the scallop fishery caught 25% of the overall US TAC of GB yellowtail, equal to 57% of the total US catch. The scallop fishery catch was 53 mt out of a total US/Canada TAC of 300 mt. This level of catch by the scallop fishery was similar to fishing year 2014 when the fishery caught 59 mt of GB yellowtail. In contrast, the scallop fishery caught only 1% of the US TAC in 2016 because there was no access to CAII AA and the region south of the access area was also closed. In 2019, the scallop fishery did not have access to CAII AA but was active in the open area directly south; realized GB yellowtail bycatch in FY2019 was roughly 2% of the overall US TAC.

As noted by the SSC in 2018, CAII AA is a key area where GB yellowtail are known to occur. Considering the variability in scallop bycatch of GB yellowtail during years when CAII AA is open versus closed may be useful for understanding when catch is expected to be higher or lower. This information may be useful in determining annual TACs since averaging exploitation rates over several years may not capture the nuance of rotational management.

Based on survey information provided to the Scallop PDT in 2019 and fishery performance information through August of FY 2020, continued closures to improve yield-per-recruit should be considered for FY 2021. The smaller year class in the closed portion of CAII AA and CAII-Extension is not expected to reach full growth potential by FY 2021 and this year class is expected to support fishing opportunities in FY 2022. Some larger grade scallops (i.e., U10s) were landed from CAII AA at the beginning of fishing year 2020; however, smaller market grades (i.e., 10-20 and 20-30 count) have been landed consistently more recently and this trend is expected to continue. Depending on results from the 2020 surveys of CAII AA, this area could be evaluated for access in FY2021, however, there is substantial growth potential for these scallops if the area remains closed another year.

References

- New England Fishery Management Council/Scientific and Statistical Committee. 2015. Overfishing levels and acceptable biological catch recommendations for Georges Bank yellowtail Flounder for fishing years 2016 and 2017. September 8, 2015: https://s3.amazonaws.com/nefmc.org/2_SSC_response_groundfish_Sept2015_.pdf
- New England Fishery Management Council/Scientific and Statistical Committee. 2016. Overfishing levels and acceptable biological catch recommendations for Georges Bank yellowtail Flounder for fishing years 2017 and 2018. August 22, 2016: https://s3.amazonaws.com/nefmc.org/2_SSC_response_GBYTF_Aug2016_FINAL.pdf
- New England Fishery Management Council/Scientific and Statistical Committee. 2017. Overfishing levels and acceptable biological catch recommendations for Georges Bank yellowtail Flounder for fishing years 2018 and 2019. August 14, 2017: https://s3.amazonaws.com/nefmc.org/2_SSC_response_GBYTF_Aug2017_Final.pdf
- TRAC. 2014. Stock Assessment of Georges Bank Yellowtail Flounder for 2014. Reference Document 2014/01. https://www.nefsc.noaa.gov/saw/trac/TRD_2014_01_E_.pdf
- TRAC. 2014. Georges Bank Yellowtail Flounder. TRAC Status Report 2014/03. https://www.nefsc.noaa.gov/saw/trac/TSR_2014_03_E_revised.pdf
- TRAC. 2015. Georges Bank Yellowtail Flounder. TRAC Status Report 2015/03. https://www.nefsc.noaa.gov/saw/trac/TSR_2015_GBYellowTailFlounder.pdf
- TRAC. 2016. Georges Bank Yellowtail Flounder. TRAC Status Report 2016/03. <https://www.nefsc.noaa.gov/saw/trac/tsr-2016-03-yellowtail-flounder.pdf>
- TRAC. 2017. Georges Bank Yellowtail Flounder. TRAC Status Report 2017/03. https://www.nefsc.noaa.gov/saw/trac/tsr_2017_gbytail.pdf
- TRAC. 2018. Georges Bank Yellowtail Flounder. TRAC Status Report 2018/03. https://www.nefsc.noaa.gov/saw/trac/2019_TSR%20Georges%20Bank%20Yellowtail%202018.pdf
- TRAC. 2019. Georges Bank Yellowtail Flounder. TRAC Status Report 2019/XX. [See SSC Meeting Materials for August 21, 2019.](#)

Appendix I: Rotational Management within the GB Yellowtail Stock Area and Recent Catch

The scallop fishery is managed through a rotational area management system. This system directs effort throughout the resource at varying levels using the following types of spatial management areas: 1) “open area”, where scallop vessels may operate using Days-At-Sea (limited access vessels) or IFQ (limited access general category vessels); 2) permanent closures, where scallop fishing is prohibited to reduce impacts on essential fish habitat and(or) groundfish mortality; and 3) scallop rotational areas, where scallop fishing is either temporarily prohibited or periodically allowed at controlled levels of access, depending on the condition of the resource inside their boundaries. Generally, scallop rotational areas (also known as “access areas”) will ‘close’ to protect small scallops, and ‘open’ when scallops are large enough to be harvested by a commercial dredge (i.e., 4” ring). The duration of a closure depends on many factors, but for access areas in the Georges Bank region, closures typically have ranged from two to three years. Area closures are also utilized on a seasonal basis to mitigate impacts on non-target stocks.

CAII AA is a scallop rotational area located within the GB yellowtail stock boundary. Along with being productive scallop grounds, CAII AA and areas directly south and west have also historically supported yellowtail flounder. In light of this overlap, bycatch of GB yellowtail in the scallop fishery is highly variable and dependent on access to CAII AA. Table 5 describes allocations to the limited access fishery and the level of effort directed to CAII AA from FY2011 to FY2019.

Since FY2013, CAII AA has been seasonally closed from August 15th to November 15th to reduce bycatch of GB yellowtail by the scallop fishery. In FY2017, RSA compensation fishing was prohibited in CAII AA to further reduce bycatch of GB yellowtail by the scallop fishery. The open-area directly south of CAII AA (known as ‘CAII extension’) was closed from FY2015 to FY2017 to protect a set of small scallops and was opened in FY2018 and FY2019. CAII extension has historically had relatively higher bycatch than other Georges Bank open areas, so the three years of closure likely reduced overall bycatch of GB yellowtail by the scallop fishery.

The Scallop PDT projects GB yellowtail bycatch associated with the preferred scallop allocation alternatives for each Framework. Since FY2011, scallop fishery catch of GB yellowtail has ranged from a high of 164 mt in FY2012 to a low of 2.1 mt in FY2016 (note that there was no access to CAII or CAII extension for FY2016; Table 2, Table 5).

Framework 28 to the Scallop FMP directed limited access trips to CAII AA in FY2017. The projection of GB yellowtail bycatch for FY2017 was 63.2 mt (~50 mt was projected for CAII AA and ~13 mt was projected for the remaining open areas of Georges Bank), while the scallop fishery’s sub-ACL was only 32 mt. The actual catch was 52.6 mt, meaning the GB yellowtail sub-ACL allocated to the scallop fishery for FY2017 was exceeded. Table 6 summarizes monthly GB yellowtail catch by the scallop fishery in FY2017 (source: GARFO data monitoring). FY2017 GB yellowtail catch was highest in June and July because overall effort in CAII AA increased relative to other months, partly due to the seasonal closure from August 15th to November 15th for yellowtail bycatch reduction. Table 6 illustrates the correlation between scallop fishery effort in CAII AA and GB yellowtail bycatch, in that about 98.5% of FY2017 yellowtail catch came from CAII AA and less than 2% came from Georges Bank open areas.

Under Framework 29, FY2018 spatial management turned CAII extension into open area and did not allocate access to CAII AA. The Scallop PDT projected catch of GB yellowtail by the

scallop fishery would be approximately 11.7 mt in FY2018, which is approximately 78% less than realized yellowtail catch in FY2017. The scallop fishery's sub-ACL was 33 mt, and actual GB yellowtail bycatch by the scallop fishery in FY2018 was estimated at 12.7 mt (i.e., 38% of the FY2018 GB yellowtail sub-ACL).

During the development of FY2019 specifications (Framework 30), the PDT analyzed an alternative that considered one, 15,000-pound full-time LA trip for CAII AA (equating to approximately 5 million pounds of scallop removals from CAII AA). The PDT projected that the scallop fishery would likely catch 10.5 mt of GB yellowtail under this alternative, which would have been approximately 62% of the GB yellowtail sub-ACL allocated to the scallop fishery for FY2019.

Bycatch projections were analyzed during the development of FY2020 specifications (Framework 32). Projected bycatch for GB yellowtail in FY2020 was approximately 23 mt, roughly 4 mt greater than the scallop fishery sub-ACL for FY2020 (i.e., 19 mt); however, Framework 32 impact analyses acknowledged the caveats associated with FY2020 projections for both GB yellowtail and northern windowpane flounder, and offered rationale for why they may be overestimated. The estimation methods used to calculate these projections rely on the most recent 12 months of observer data available. This means that FY2020 bycatch projections of GB yellowtail and northern windowpane in CAII AA were based on observer records from FY2017, the last time the scallop fishery had access to this area. A comparison of observed discard to kept ratios for northern windowpane and GB yellowtail indicates that relative bycatch of these flatfish stocks has declined outside of CAII (i.e. in areas that have been consistently fished by the scallop fishery) since FY2017. For this reason, it is highly possible that FY2020 realized catch rates of northern windowpane and GB yellowtail in CAII will be less than what was projected.

Table 5 – Full-time limited access scallop fishery allocations by FY and recent schedule of CAII AA.

FY	Action	LA DAS (Full Time)	FT LA AA (trips)	CA II AA	Notes re: CA II AA and other management
2011	FW22	32	4 (2 MA)	0.5 trips (157 vessels; 18K lbs/trip)	10% access area bycatch cap; GB stock-wide monitoring of YT sub- ACL; Bycatch Avoidance Program CAI and CAII
2012	FW22	34	4	1 trip (313 vessels; 18K lbs/trip)	GB stock-wide monitoring of YT sub-ACL; Bycatch Avoidance Program CAI and CAII
2013	FW24	33	2	182 trips (13K lbs/trip)	Seasonal closure of CAII Aug 15 – Nov 15; GB stock-wide monitoring of YT sub-ACL; Bycatch Avoidance Program CAII
2014	FW25	31	2	197 trips (12K lbs/trip)	16% GB YT sub-ACL; YT landings prohibited; Seasonal closure of CAII Aug 15 – Nov 15; GB stock-wide monitoring of YT sub-ACL; Bycatch Avoidance Program CAII
2015	FW26	30.86	51K lbs to MAAA	Closed	In-season transfer to groundfish fishery (7.9 mt).
2016	FW27	34.55	3 (51K lbs to MAAA)	Closed	‘CAII Extension’ closure of open areas to protect small scallops; In- season transfer to groundfish fishery (39.8 mt)
2017	FW28	30.41	4 (18K each)	1 trip (313 vessels; 18k lbs trip)	‘CAII Extension’ closure of open areas to protect small scallops; no RSA compensation fishing in CAII; seasonal closure of CAII Aug 15—Nov 15; Bycatch Avoidance Program CAII
2018	FW29	24	6 (18K each)	Closed	‘CAII extension’ reverted back to open area. Reactive AM for GB yellowtail changed from time-area closure to gear modification in CAII. In-season transfer to groundfish fishery (18.53 mt)
2019	FW30	24	7 (18K each)	Closed	CAII extension continues as part of GB open area.
2020	FW32	24	6 (mixed trip limit)	1 trip (18,000 lbs)	Western part of CAII and CAII-ext closed year-round. Seasonal closure extended to protect GB yellowtail (Aug. 15-Nov. 30, 2020)

Table 6 – Estimated scallop fishery catch of GB yellowtail by area, component, and month for FY2017 (source: GARFO quota monitoring page, <https://www.greateratlantic.fisheries.noaa.gov/aps/monitoring/atlanticseascallop.html>).

Date	Limited Access Fleet*		LAGC IFQ Fleet	Monthly total catch (lb)	Cumulative catch (lb)	Percent of sub-ACL (70,584 lb)
	Open Areas	Closed Area II	Open Areas			
17-Mar	68	-	2	69	69	0.1
17-Apr		2,251		2,251	2,320	3.3
17-May		15,196		15,196	17,517	24.8
17-Jun		35,740		35,740	53,257	75.5
17-Jul	159	31,382		31,541	84,798	120.2
17-Aug	888	13,590		14,477	99,275	140.7
17-Sep	356	-		356	99,630	141.2
17-Oct	182	-		182	99,813	141.5
17-Nov		2,045		2,045	101,858	144.4
17-Dec		9,834		9,834	111,692	158.3
18-Jan		2,349		2,349	114,042	161.7
18-Feb		1,864		1,864	115,906	164.3
18-Mar			-	0	115,906	164.3
Total	1,652	114,252	2	115,906		

Table 7 – Estimated scallop fishery catch of GB yellowtail by fishing area (i.e. open area, CAII AA, CAI AA) from fishing year 2011 to 2019. Total GB yellowtail catch by the scallop fishery is shown in pounds and as a percentage of the sub-ACL for that year (source: GARFO).

FY	Open	CAII	CAI	Total	sub-ACL	% sub-ACL
2011*	94,737	81,495	8,755	184,987	442,688	42%
2012*	46,759	297,866	16,932	361,557	345,905	105%
2013*	35,239	35,219	12,172	82,630	91,492	90%
2014*	50,184	80,450	-	130,634	112,215	116%
2015	62,373	3,223	-	65,596	83,776	78%
2016	4,548	-	-	4,548	92,594	5%
2017*	1,652	114,252	-	115,904	70,548	164%
2018	25,329	1,457	1,153	27,939	72,973	38%
2019	3,242	-	530	3,772	37,479	10%
* Scallop fishery access to CAII AA						

Appendix II: Recent Scallop Fishery VMS Effort

VMS data were used to estimate scallop fishery effort in FY2019 (Figure 5), FY2018 (Figure 6), FY2017 (Figure 7), and FY2016 (Figure 8). The VMS data represent combined scallop fishery activity in terms of hours fished, aggregated at a resolution of 3 nautical mile squares with a minimum of 20 hours recorded per square. A speed filter of 2 to 5 kts was applied to remove vessel activity that was likely a result of transiting to and from fishing grounds.

In FY2019, scallop effort in the GB yellowtail stock area occurred mostly in the open area directly south and southwest of CAII AA, referred to as the Southeast Parts (Figure 5). The Southeast Parts encompass CAII extension, an area that has been accessible to the scallop fishery as part of Georges Bank open area in FY2018 and FY2019, but was closed to the fishery for FY2020. Effort was also directed along the northern flank of Georges Bank in FY2019, but to a lesser extent than in the Southeast Parts. Despite the significant scallop fishery effort in the Southeast Parts and considering this area is known to have typically higher GB yellowtail bycatch relative the rest of Georges Bank open areas, the scallop fishery caught only 10% of its sub-ACL in FY2019 (Table 2).

The spatial extent of effort on Georges Bank in FY2018 (Figure 6) was similar to FY2019 (Figure 5). Overall scallop fishery effort (i.e., both in access areas and open areas) was noticeably more concentrated in 2017 (Figure 7) compared to FY2016 (Figure 8). This was especially true within the GB yellowtail stock area, where wide-spread open area effort along the 50-fathom contour on both the north and south sides of Georges Bank in FY2016 shifted to highly concentrated fishing in CAII AA (with the opening of the access area) and a small area of open bottom directly west of CAII extension in FY2017.

Figure 5 – Scallop fishery VMS hours fished on Georges Bank in FY2019.

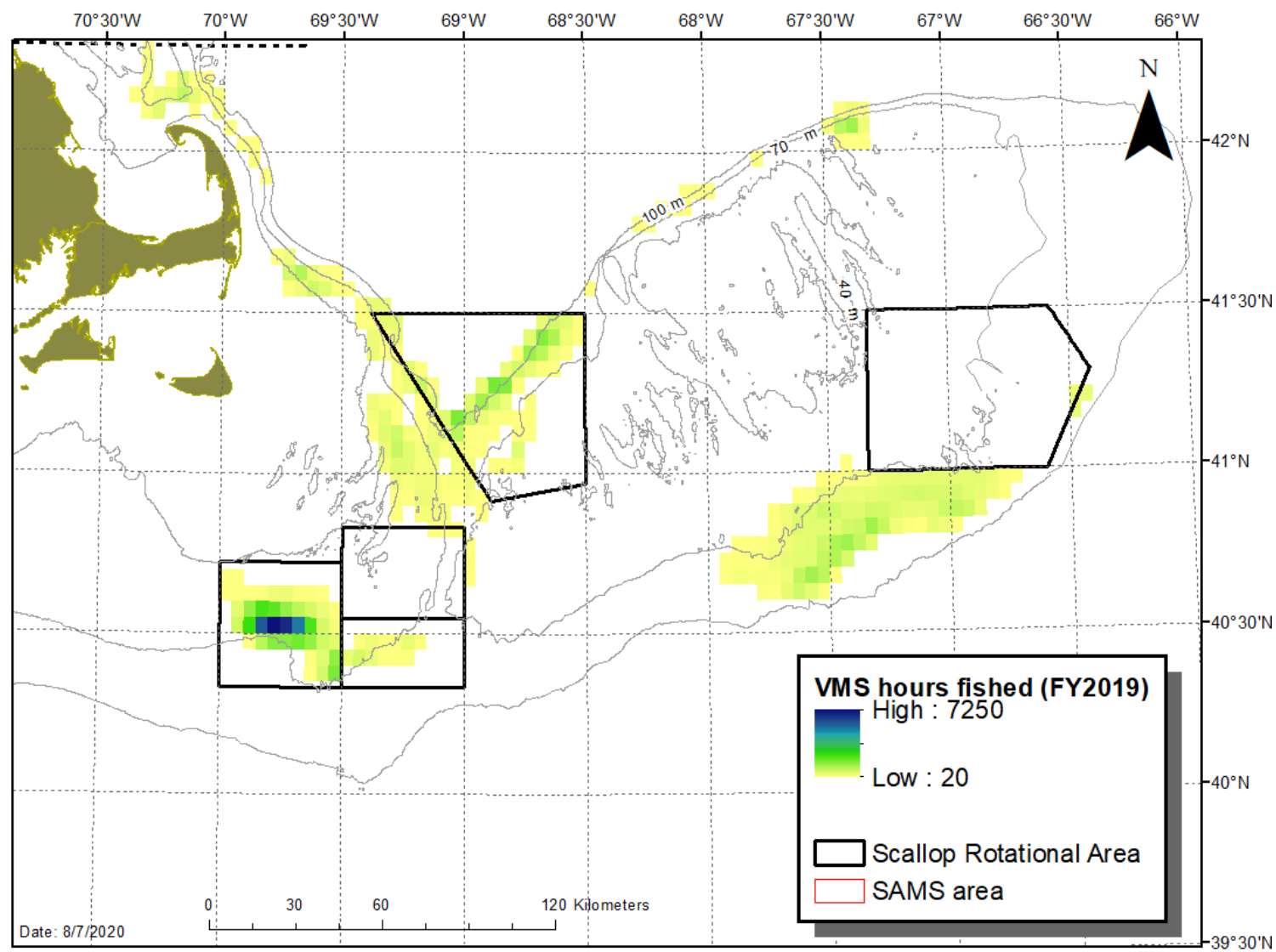


Figure 6 – Scallop fishery VMS hours fished on Georges Bank in FY2018. Scallop Area Management Simulator (SAMS) model area boundaries are in red.

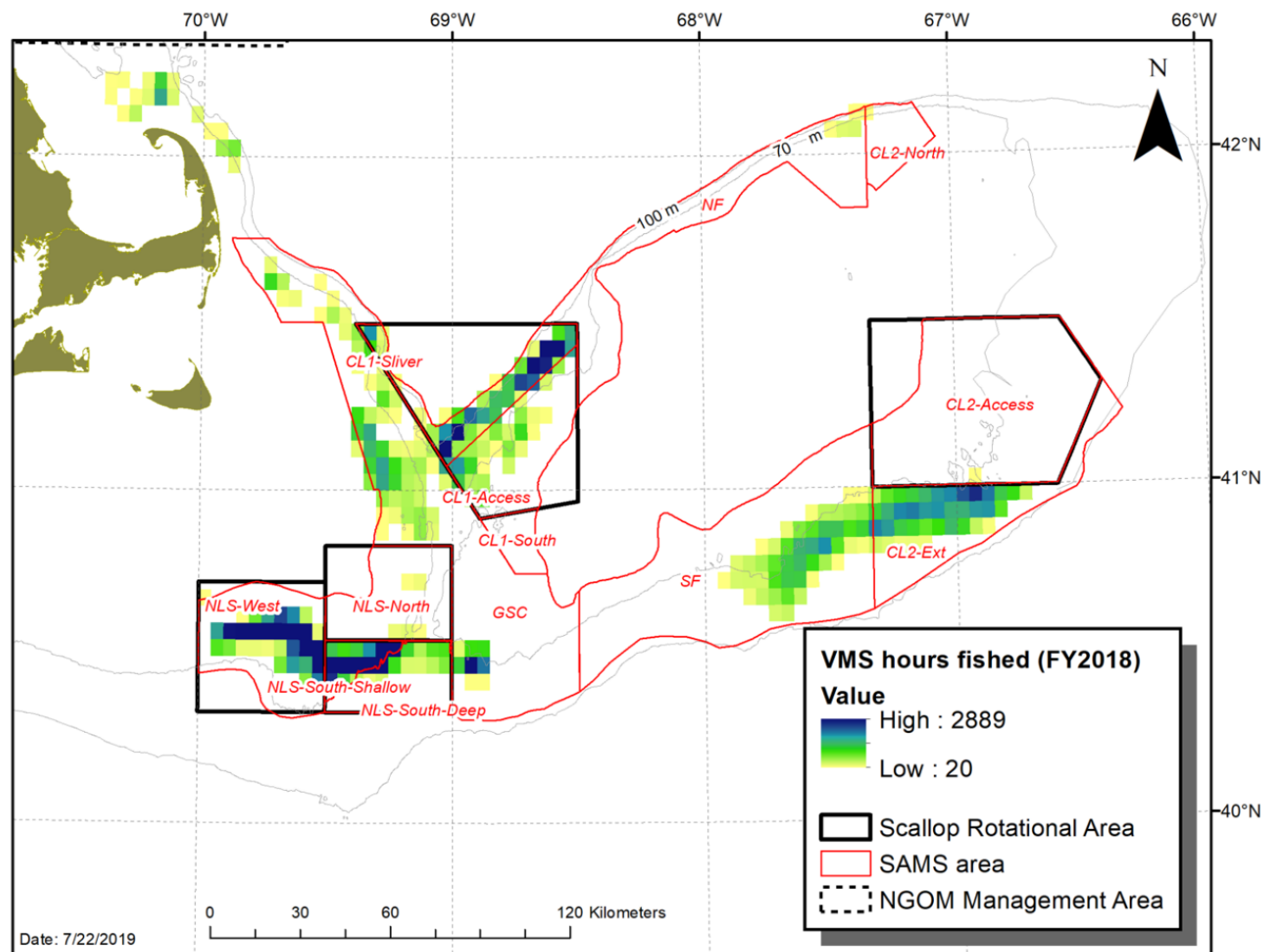


Figure 7 – Scallop fishery VMS hours fished on Georges Bank in FY2017. Scallop Area Management Simulator (SAMS) model area boundaries are in red.

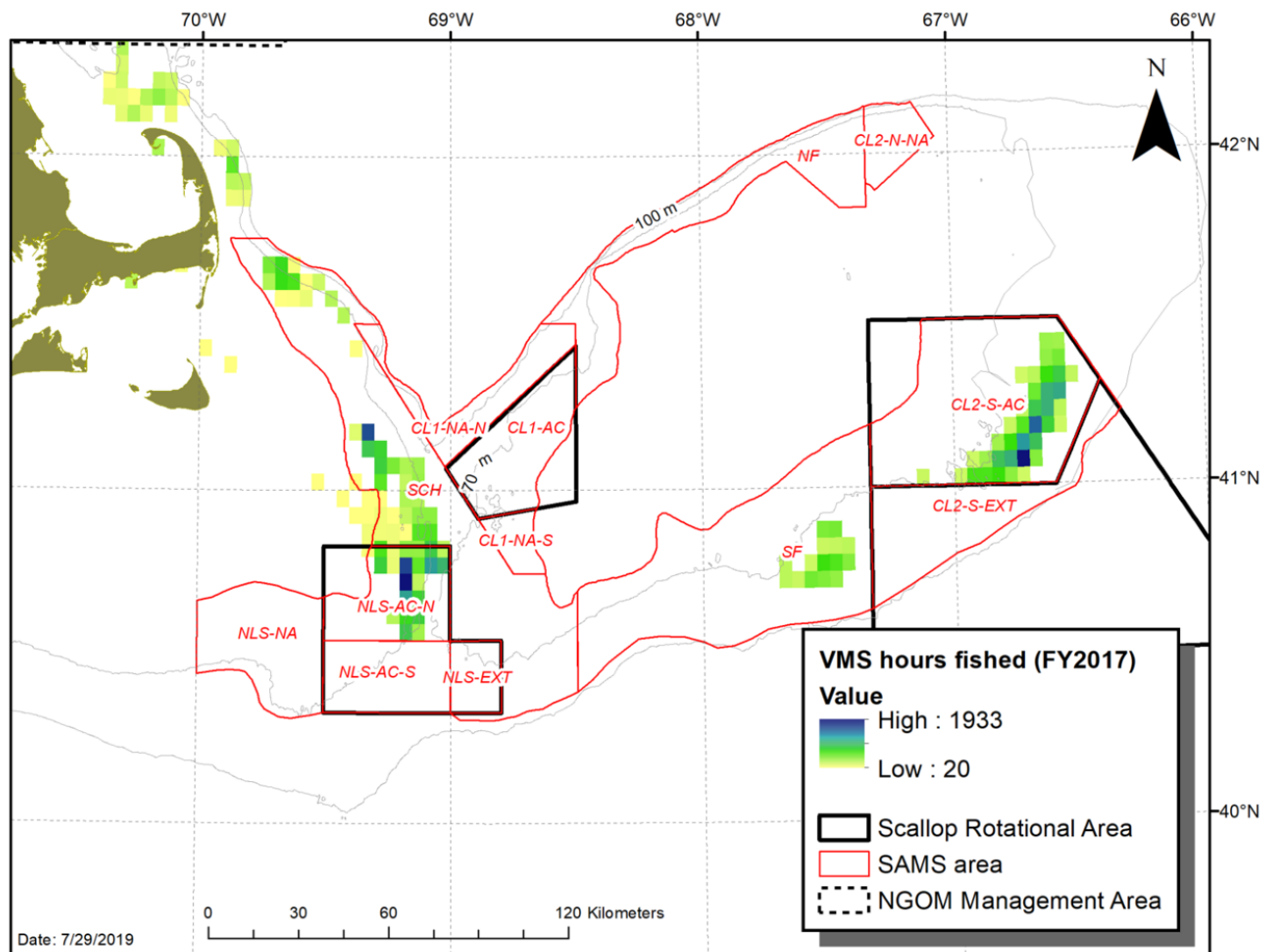
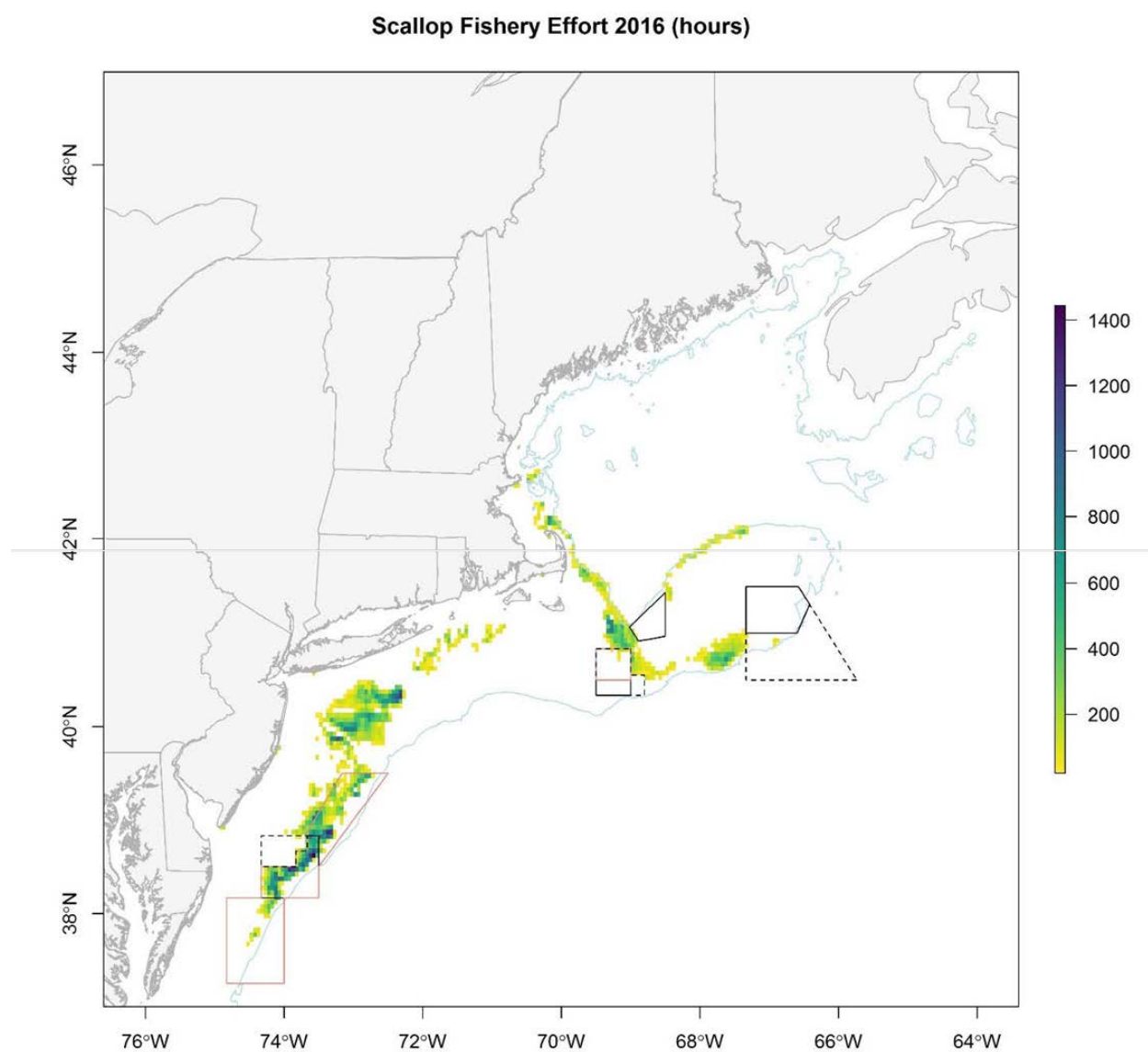


Figure 8 – Scallop fishery VMS hours fished for FY2016.



Appendix III: Recent Memos from Scallop PDT to Groundfish PDT re: GB yellowtail

Table 8 – Links to past memos from the scallop PDT to the groundfish PDT regarding GB yellowtail.

Date	Link
August 1, 2016	See page 14: https://s3.amazonaws.com/nefmc.org/B.2-160805-GF-PDT-memo-to-SSC-re-GB-yellowtail-flounder-with-attachments_corrected-081716.pdf
August 2, 2017	See page 7: https://s3.amazonaws.com/nefmc.org/A6_170804-GF-PDT-memo-to-SSC-re-GB-yellowtail-flounder-with-Scallop-PDT-memo-attached_170807_114738.pdf
July 27, 2018	See page 7: https://s3.amazonaws.com/nefmc.org/A6_180809-GF-PDT-memo-to-SSC-re-GB-yellowtail-flounder-with-Scallop-PDT-memo-attachment.pdf
August 13, 2019	https://s3.amazonaws.com/nefmc.org/Doc.9-190813_Scallop-PDT-memo-to-Groundfish-PDT-re-GB-yellowtail.pdf



New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: August 21, 2020
TO: Scientific and Statistical Committee (SSC)
CC: Groundfish Committee
FROM: Groundfish Plan Development Team (PDT)
SUBJECT: **Developing a White Hake Rebuilding Plan**

The Groundfish Plan Development Team (PDT) met on August 13 and 20, 2020 by webinar to discuss **possible approaches to drafting rebuilding plan options for white hake.**

The Groundfish PDT summarizes its proposed approach and requests feedback from the Scientific and Statistical Committee (SSC).

Background Information Discussed

- [Letter GARFO to Council re 2019 stock status \(March 5, 2020\)](#)
- [2019 Groundfish Operational Update Reports see white hake on pp. 139-150, pre-publication copy, NEFSC \(Jan 7, 2020\).](#)
- [Memo from SSC to Tom Nies re 2020-2021 SSC ABC and OFL recommendations for groundfish stocks \(Nov 22, 2019\)](#)
- [Memo from SSC to Nies re Rebuilding strategies for several groundfish stocks \(Sept 4., 2018\)](#)
- [Memo from Groundfish PDT to SSC re Rebuilding strategies for several groundfish Stocks \(Aug. 13, 2018\)](#)

Stock Status

White hake is overfished but overfishing is not occurring (GARFO 2020). The current rebuilding plan for white hake ended in 2014, with the stock not achieving rebuilt status.

Overview of the 2019 Assessment

Based on the 2019 peer review, white hake is overfished but overfishing is not occurring (NEFSC 2020). This was a change in status, as the 2017 assessment concluded the stock was not overfished. Retrospective adjustments were made to the model results in the terminal year and the retrospective pattern appears to be worsening. White hake is under a rebuilding plan, but the stock did not rebuild by 2014 as planned. As previously advised by the Regional Office, the SSC

and the Council has continued to set catch limits based on $75\%F_{MSY}$. The rho adjusted SSB in 2018 (15,891 mt) was at 50% of the rebuilding target SSB (SSB_{MSY} proxy = 31,828 mt).

Recommendations from the SSC for FY2020-FY2022 OFLs and ABCs for White Hake

Framework Adjustment 59 (FW59) to the Northeast Multispecies (Groundfish) Fishery Management Plan implemented the most recent specifications for white hake for fishing years (FY) 2020-2022. Table 1 summarizes the SSC's recommendations for OFLs and ABCs for white hake for FY2020 to FY2022.

Table 1- OFLs and ABCs (mt) for FY2020- FY2022 for white hake. Projected F and SSB provided. For reference, SSB_{MSY} = 31,828mt, F_{MSY} = 0.1677.

Year	OFL	ABC	F	SSB
2020	2,857	2,186	0.13	19,758
2021	2,906	2,186	0.12	20,308
2022	2,986	2,186	0.12	20,826

The SSC (2019) stated:

The SSC supports the continued use of the ASAP model to provide catch advice for white hake. This method is an analytical assessment, from which reference points are derived. The SSC recommends the values of OFL be based on stock projections with the F_{MSY} proxy. The SSC recommends a constant ABC for three-years, corresponding to the lowest ABC in the first year (2020) of the $75\%F_{MSY}$ projections.

Recommendations from the SSC for the Next White Hake Stock Assessment

White hake is scheduled for a management track stock assessment in 2021.

The SSC (2019) advised:

The SSC recommends a level 3 Management Track assessment for next cycle with the following advice on things to change or test (note: these may or may not be possible in newest ASAP version):

- 1. Incorporation of aging error (likely requires strong prior on selectivity);*
- 2. Incorporating a low sample size to reflect reality of the commercial harvest samples coupled with switching to a Dirichlet likelihood for the age compositions may be worth investigating;*
- 3. Using methods that account for market categories instead of size categories to convert to age composition;*
- 4. Adding a new selectivity block;*
- 5. Adding new survey information to the model if available.*

On the data side, improving commercial sampling would help characterize catch better, and processing the existing age structures to augment age and length info would benefit the next assessment.

PDT Proposed Approach to Developing Rebuilding Plan Options for White Hake

Overview - For white hake, the PDT plans to follow the most recent SSC advice for the development of rebuilding plans by basing F_{rebuild} on a fixed fishing mortality rate (SSC 2018). The PDT does not intend to develop new plans based on achieving an SSB target in a particular year.

In summary regarding the technical basis for rebuilding strategies, the SSC (2018) stated:

The SSC recommends that management metrics such as F_{rebuild} should be considered as an approach, with rates being used rather than specific values.

The SSC generally does not prefer setting arbitrary rebuilding dates, though there is some procedural value in having a timeline.

There are some mechanisms that could be used to set a timeline that would be less arbitrary and could be customized to the species being investigated, such as surplus production models and/or life history characteristics.

The SSC recommends continuing to investigate ways to improve the performance of stock assessment projections as a high priority for the species under the NEFMC's jurisdiction.

Finding ways to incorporate economic and social risk factors is also important to consider in the rebuilding strategies.

Assumptions/setting up the projections – The following summarizes the PDT's plan to set up the rebuilding projection options:

- Bridge year - Rebuilding plans would assume an updated estimated bridge year catch in CY2019 and FY ACLs plus the Canadian catch assumption in 2020 and 2021.
- Year one - The first year of the rebuilding plan would be 2021. The PDT is not planning on revising the catch advice already set for 2021 through FW59.
- Recruitment – The rebuilding plans would be based on projections that assumes a CDF of recruitment from the full time series to be consistent with the estimated SSB_{MSY} from the benchmark assessment.
 - The PDT also plans to run sensitivity projections to examine the implications of recruitment not increasing to the time series mean. These sensitivity projections may help inform the time span chosen for rebuilding plans.
 - In FW59, the constant ABCs for white hake were based on a CDF of recent low recruitment (1995-2016) for the short term. This provides some justification for maintaining the ABCs from FW59 in year 2021 when developing longer term rebuilding plans using a different recruitment assumption.
- Fishing Mortality/ F_{rebuild} – The PDT plans to use the following fishing mortality rates to develop a range of options with some projection runs conducted for comparison purposes:

F_0 , F_{25} , F_{50} , F_{70} , F_{75} , and F_{MSY} .

The PDT requests SSC feedback on the proposed approach and assumptions.



New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: September 29, 2020
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: **Framework Adjustment 61 - Analysis for the priority to address allocation issues if raised by new MRIP data**

The Groundfish Plan Development Team (PDT) met on September 28, 2020, via webinar and discussed analysis for the priority to address allocation issues if raised by new Marine Recreational Information Program (MRIP) data.

A. Background on recreational allocation

Amendment 16 (A16) to the Northeast Multispecies (Groundfish) fishery management plan (FMP) implemented the process for allocation to commercial and recreational groundfish fisheries. Specifically:

An allocation will be made of certain regulated groundfish stocks to the commercial and recreational components of the fishery.

An allocation will be determined after accounting for state waters catches taken outside of the FMP.

An allocation will not be made in the case of stocks that are not fully harvesting the ACL.

An allocation will also not be made if the recreational harvest, after accounting for state waters catches outside the management plan, is less than five percent of the removals.

A16 also outlined the steps to determining an allocation, such that:

A defined time period will be used to calculate the allocation.

When possible, the shares will be determined by using the numbers of fish in the years caught (as used by the assessment: harvested, landed, or discarded) by each component. The shares determined in this manner will be applied to the ACL to determine the weight of catch available for each component.

If the number of fish caught by each component is not available, the shares will be calculated based on weight.

The proportion for each year will be calculated, and then the average proportion over the time period will be the share for each component of the fishery.

The proportions will be reviewed consistent with the periodic assessment cycle, and if determined necessary, changes can be implemented through a framework action.

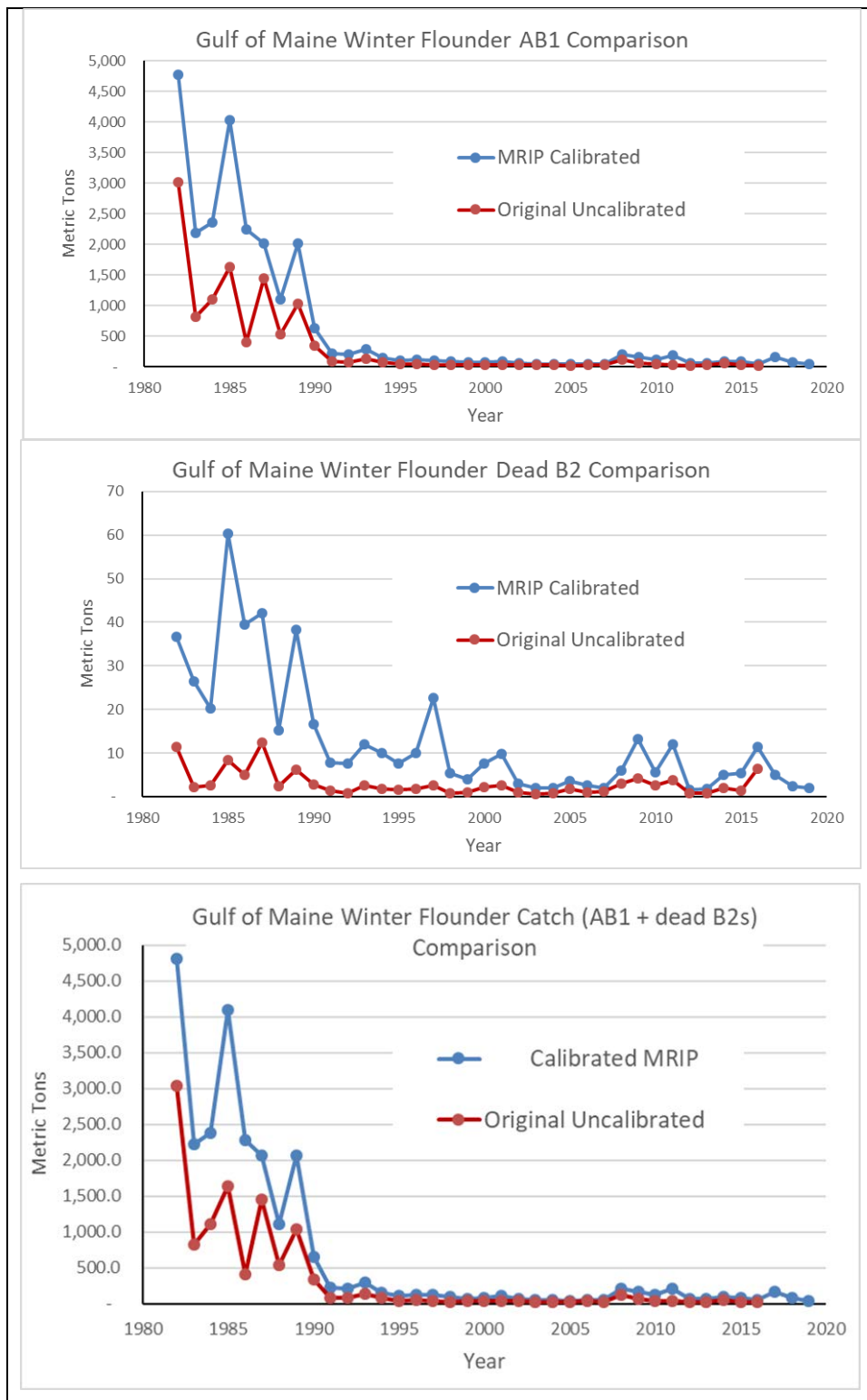
B. Results of Recent Groundfish Assessments

Of the 10 groundfish stocks assessed in 2020, three stocks (Gulf of Maine (GOM) winter flounder, Southern New England/Mid-Atlantic (SNE/MA) winter flounder, and wolffish) include recreational catches. The time series of recreational catches were updated in the assessments (see Figure 1 - Figure 3).

1) Gulf of Maine winter flounder

The 2020 management track assessment for GOM winter flounder revised the time series of recreational catches to account for the re-calibrated MRIP data. The re-calibrating of the MRIP data resulted in a 2.4 times average increase in the GOM winter flounder recreational catch across the time series since the early 1980s. However, the overall trends in the recreational fishery have not changed. There was a large decrease in the recreational catch in the early 1990s and has remained relatively low for three decades.

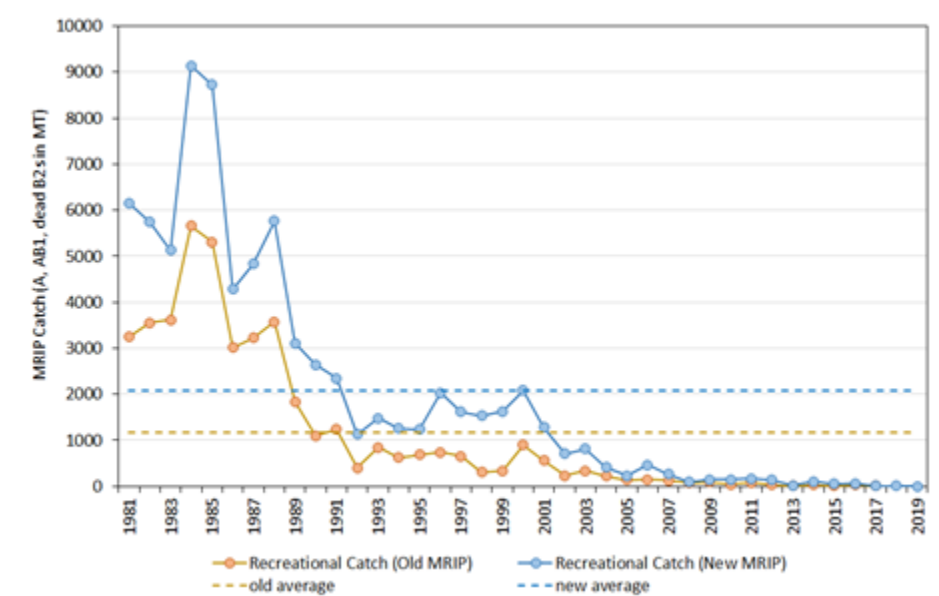
Figure 1- MRIP data comparison for Gulf of Maine winter flounder.



2) Southern New England/Mid-Atlantic winter flounder

The 2020 management track assessment for SNE/MA winter flounder revised the time series of recreational catches to account for the re-calibrated MRIP data. The re-calibrated MRIP data resulted in a 2.4 times average increase in the SNE/MA winter flounder recreational catch across the time series since the early 1980s. However, the overall trends in the recreational fishery have not changed. There was a more gradual decline in the recreational catch from the early 1980s to the early 2000s with recreational catch remaining very low since 2003.

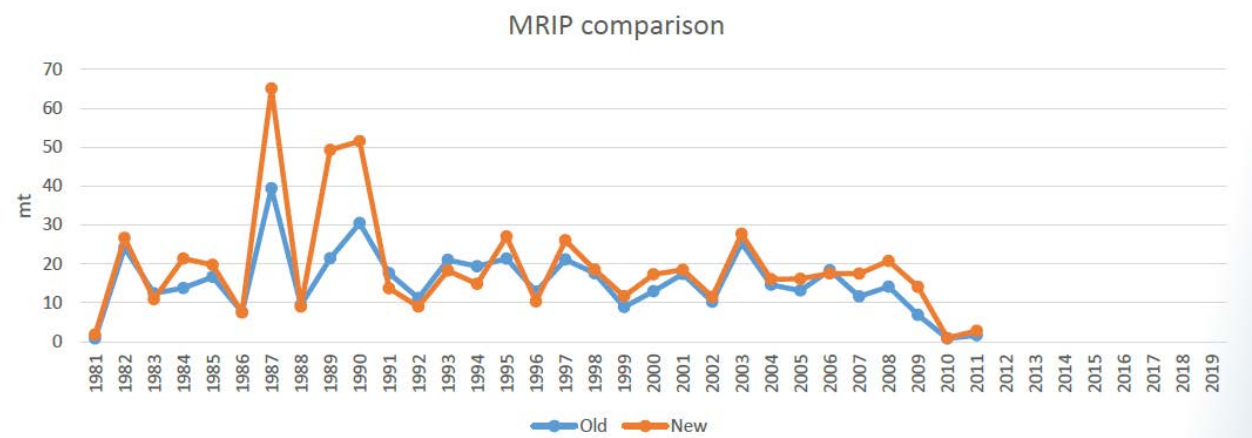
Figure 2- MRIP data comparison for Southern New England/Mid-Atlantic winter flounder.



3) Wolffish

The 2020 management track assessment for wolffish revised the time series of recreational catches to account for the re-calibrated MRIP data. Wolffish has relatively low recreational landings (20 mt average). Discards were assumed to be minor and not included in the estimated removals within the assessment model. Landings of wolffish became prohibited in the recreational fishery with the inclusion of this stock to the multispecies fishery management plan. The re-calibrated MRIP data resulted in a 26% average increase in wolffish recreational landings from 1982 to 2011.

Figure 3- MRIP data comparison for wolffish.



C. Summary of Recreational Measures for Winter Flounder

Federal- winter flounder species

- Open season: All year
- Minimum size: 12 inches
- Possession limit: None

Filleting at sea is allowed. Fillets must have some skin left on, and be consistent in size as that taken from legal size fish. Recreational vessels remain subject to the Whaleback Cod Spawning Protection Area.

States- varies by stock and state, as in Table 1.

Table 1- Recreational winter flounder regulations. Source: ASMFC.

State	Stock Unit	Creel Limit	Size Limit	Seasonal Closure (dates inclusive)
Maine	GOM	8	12"	Open all year
New Hampshire	GOM	8	12"	Open all year
Massachusetts	GOM	8	12"	Open all year
	SNE/MA	2	12"	January 1- February 28
Rhode Island	SNE/MA	2	12"	January 1 – February 28
Connecticut	SNE/MA	2	12"	January 1 – March 31
New York	SNE/MA	2	12"	May 31 – March 31
New Jersey	SNE/MA	2	12"	January 1 – February 28

PDT Discussion and Recommendations

In relation to the allocation criteria identified in A16 (see evaluation in Attachment 1 for additional details):

- **Gulf of Maine winter flounder:** Examining the last five calendar years (2015-2019) in the 2020 assessment, recreational catches on average are 32% of total catches. However, overall utilization for the past five fishing years (2014-2018) on average is 38%. Therefore, the stock is not fully utilized. **The PDT recommends continuing to monitor recreational catches and utilization of GOM winter flounder in future assessments and monitoring.** If overall utilization relative to the ACL becomes high, consider creating a sub-ACL for the recreational fishery for GOM winter flounder. **Recreational catches would continue to be accounted for through the sub-component analysis.**
- **Southern New England/Mid-Atlantic winter flounder:** Examining the last five calendar years (2015-2019) in the 2020 assessment, recreational catches on average are

4% of total catches. However, overall utilization for the past five fishing years (2014-2018) on average is 62%. Therefore, the stock is not fully utilized, and recreational catches are less than 5% on average. **The PDT recommends continuing to monitor recreational catches and utilization of SNE/MA winter flounder in future assessments and monitoring.** If overall utilization relative to the ACL becomes high and recreational catches exceed 5%, consider creating a sub-ACL for the recreational fishery for SNE/MA winter flounder. **Recreational catches would continue to be accounted for through the sub-component analysis.**

- **Wolffish:** Recreational landings are 0 and discards are not a part of the stock assessment. Overall utilization is very low. **The PDT recommends continuing to monitor recreational catches and utilization of wolffish in future assessments and monitoring.**
- **The PDT recommends incorporating the analysis within this memo into the Affected Environment of Framework 61.**
- **The PDT provides the summary of federal and state recreational regulations for winter flounder if the Council decides to adjust the federal recreational measures in Framework 61.**

Attachment 1- Evaluation of recent recreational catches. Data sources: 2020 Management Track Assessments (NEFSC) and Year-End Multispecies Fishery Catch Reports (GARFO).

**Gulf of Maine Winter Flounder
2020 Assessment**

Calendar Year	<u>Recreational</u>			<u>Commercial</u>			Assessment Catch	% Recreational (Recreational Total Catch/Assessment Catch)	Fishing Year	<u>Recent Monitoring</u>		
	discards	landings	total	discards	landings	total				ACL	Total Catch	Utilization
2014	5	89	94	5	215	220	315	29.8%	2014	1040	240.8	23.1%
2015	5	85	90	2	179	181	271	33.2%	2015	489	205.8	42.1%
2016	11	41	52	3	185	188	241	21.6%	2016	776	247.7	31.9%
2017	5	161	166	3	210	213	378	43.9%	2017	776	308.1	39.7%
2018	2	80	82	3	158	161	244	33.6%	2018	428	233.9	54.6%
2019	2	42	44	4	102	106	150	29.3%				

**Southern New England / Mid-Atlantic Winter Flounder
2020 Assessment**

Calendar Year	<u>Recreational</u>			<u>Commercial</u>			Assessment Catch	% Recreational (Recreational Total Catch/Assessment Catch)	Fishing Year	<u>Recent Monitoring</u>		
	discards	landings	total	discards	landings	total				ACL	Total Catch	Utilization
2014	4	99	103	64	660	724	827	12.5%	2014	1612	703.2	43.6%
2015	13	39	52	82	661	743	795	6.5%	2015	1607	886.7	55.2%
2016	3	61	64	125	516	641	704	9.1%	2016	749	597.2	79.7%
2017	2	10	12	101	495	596	608	2.0%	2017	749	550.5	73.5%
2018	4	10	14	108	326	434	449	3.1%	2018	700	398	56.9%
2019	2	1	3	105	202	307	310	1.0%				

Wolffish

2020 Assessment

Calendar Year	<u>Recreational</u>		<u>Commercial</u>		Assessment Catch	% Recreational (Recreational Total Catch/Assessment Catch)		<u>Recent Monitoring</u>			
	landings	discards	landings	total				Fishing Year	ACL	Total Catch	Utilization
2014	0	1	0	1	1		0.0%	2014	65	15.1	23.1%
2015	0	1	0	1	1		0.0%	2015	65	30.1	46.3%
2016	0	1	0	1	1		0.0%	2016*	77	0.8	1.0%
2017	0	2	0	2	2		0.0%	2017	77	1.7	2.2%
2018	0	3	0	3	3		0.0%	2018	84	1.6	1.9%
2019	0	3	0	3	3		0.0%				

*change in discard mortality assumption



New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: October 9, 2020
TO: Scientific and Statistical Committee
CC: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: Possible OFLs and ABCs for fishing years 2021 to 2023 for several stocks

The Groundfish Plan Development Team (PDT) discussed possible overfishing limits (OFLs) and acceptable biological catches (ABCs) options for nine of the groundfish stocks.

NOTE: The PDT plans to provide an addendum to this summary in time for the SSC meeting. See comments by stock, as appropriate.

1. Information reviewed included:

- The Council's Risk Policy Road Map (2016), that includes the Risk Policy Statement and Implementation Plan, see pp. 4-5.
- Management Track Peer Review Panel Report, DRAFT (September 2020).
- Supplemental Information: Stock Assessment Support Information (SASINF) -use this link to access the database which includes the assessment reports, peer review presentations, and additional information:
<https://www.fisheries.noaa.gov/resource/data/northeast-region-stock-assessment-support-materials>
- Background: Affected Environment, excerpt from Framework Adjustment 59, NEFMC, April 2020.
- Background: State of the Ecosystem and Current Conditions. NOAA/NEFSC. Available at: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/ecosystems/state-ecosystem-reports-northeast-us-shelf>
- Memo SSC to Council re OFL and ABC recommendations for groundfish stocks for fishing years 2018-2020, Nov. 30, 2017.
- Memo SSC to Council re OFL and ABC recommendations for groundfish stocks for fishing years 2020-2022, Nov. 22, 2019 (amended Jan. 22, 2022).
- Memo from the Groundfish PDT to Groundfish Committee re analysis of new MRIP data and possible allocation, Sep. 29, 2020.

2. Overview

Nine groundfish stocks were recently assessed (as listed below) and seven of these stocks were peer reviewed during the 2020 Management Track Assessments in September 2020, while the remaining two stocks (marked with “*”) were provided by direct delivery to the PDT and SSC as recommended by the Assessment Oversight Panel (i.e., as Level 1 assessments¹). Stocks to review include:

1. Georges Bank (GB) winter flounder
2. Gulf of Maine (GOM) winter flounder
3. Southern New England/Mid-Atlantic (SNE/MA) winter flounder
4. Redfish
5. Atlantic halibut*
6. Gulf of Maine/Georges Bank (Northern) windowpane flounder
7. Southern New England/Mid-Atlantic (Southern) windowpane flounder
8. Ocean pout*
9. Wolffish

The stock assessments are located on the NEFSC’s data portal and peer review report is provided as a separate document (see list above for details). The information in the assessments are not repeated within this memorandum. Generally, these assessments update the data since the last assessment for each stock without changes to the model formulation. However, there are some exceptions, which are documented in the assessment and peer review report.

The PDT did not make specific recommendations for fishing year 2021 to 2023 OFLs/ABCs for each groundfish stock. Rather, the PDT applies the Council’s ABC control rule for groundfish and for some stocks offers some options for the SSC to consider based on the recommendations from the 2020 Peer Review Panel or previous SSC recommendations (e.g., constant ABCs, three-year average catches, etc.). Constant ABC alternatives for stocks with projections (GB winter flounder and SNE/MA winter flounder) are presented for stocks with an increasing trend in projected ABCs. The PDT did not offer a constant ABC alternative for the stock with a projected declining trend in ABCs (redfish). The PDT followed this approach reflecting on decisions made for the remanded stocks at the January 2020 SSC meeting².

Catch projections for FY2021 - FY 2023:

The PDT applied the same approach to catch projections that it used following the 2015, 2017 and 2019 assessments.

1. For stocks needing a “bridge” year catch to run catch projections, the PDT estimated the CY2020 catches for those groundfish stocks. This information was used in the projections within the 2020 stock assessments. Detailed catch estimate information for CY2020 is provided in Appendix I.
2. Projection assumptions followed those approved at the 2020 peer review meeting. In addition, the 2020 Peer Review Panel requested specific sensitivity projections be provided by the PDT to the SSC, and those are included and noted as appropriate.

¹ For an overview of the process, see https://s3.amazonaws.com/nefmc.org/11_Stock-assessment-process-FINAL.pdf.

² SSC to Nies Jan 22, 2020, see: https://s3.amazonaws.com/nefmc.org/SSC_response_GFSpecies_Jan10_FINAL.pdf

3. The PDT followed the Council's ABC control rule to develop options for each stock. The Council's ABC control rule (see Amendment 16) is:

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

- a. ABC should be determined as the catch associated with 75% of F_{MSY} .*
- b. If fishing at 75% of F_{MSY} does not achieve the mandated rebuilding requirements for overfished stocks, ABC should be determined as the catch associated with the fishing mortality that meets rebuilding requirements ($F_{rebuild}$).*
- c. For stocks that cannot rebuild to B_{MSY} in the specified rebuilding period, even with no fishing, the ABC should be based on incidental bycatch, including a reduction in bycatch rate (i.e., the proportion of the stock caught as bycatch).*
- d. Interim ABCs should be determined for stocks with unknown status according to case- by case recommendations from the SSC*

Catch Performance

The PDT provides information on catch performance for each stock in a series of tables and figures (e.g., Table 3 and Figure 1).

- Catch is the calendar year catches from 2005-2019 for each stock.
- Historical OFLs and ABCs are provided for each fishing year (May 1 start) since 2010.
- The catch performance information provides calendar year catches from the stock assessments and fishing year ABC's, and therefore that data sources do not temporally align. As an example, this means calendar year 2013 catch exceeding fishing year 2013 ABC does not necessarily mean an overage occurred. However, this misalignment in catch accounting between the stock assessments and management is a source of error. In addition, stocks with updated MRIP catch estimates (GOM winter flounder, SNE/MA winter flounder, and wolffish) also do not necessarily align with the past calculated OFLs and ABCs.
- The catch assumption is the calendar 2020 "bridge year" estimated catch used in the assessments (see Appendix I).
- F_{MSY} and 75% F_{MSY} or $F_{rebuild}$ projections for FY2021 - FY2023 are plotted, as appropriate.

Uncertainty with projections

Performance of projections has been discussed by the PDT for some time. In 2011, the PDT examined an alternative to using updated assessments for setting FY2012 – FY2014 ABCs. Simulation analyses showed that projections tend to be biased high – that is, they over-estimated stock growth and future catches (Brooks and Legault 2016 and Wiedenmann and Jensen 2017). This work led to the SSC's implementation of constant ABCs for several groundfish stocks. Furthermore, a recent PDT report suggests projection performance may be improving for some groundfish stocks of those examined³. The PDT did not update the analysis for this report.

³ See: https://s3.amazonaws.com/nefmc.org/A4_200107_GF-PDT-memo-to-SSC-re-ABCs-for-four-stocks-with-attachments.pdf

Appendices

This memorandum includes two appendices: Appendix I - Estimates of CY 2020 catches – for the “bridge year” in the projections , and Appendix II – Summary of in-season commercial (sector and common pool) groundfish fishery catches for all groundfish stocks.

3. Possible OFLs and ABCs by Stock

1. Georges Bank Winter Flounder

SEE ADDENDUM: The PDT is updating the 2020 bridge year catch assumption along with catch projections and will provide this information in the addendum. What follows is the PDT’s summary prior to the change in this projection assumption.

Based on the 2020 Peer Review Panel, GB winter flounder is overfished and overfishing is not occurring. Biomass in 2019 was estimated to be 2,587 mt, which is 38% of the biomass target. GB winter flounder is in a rebuilding plan with F_{Rebuild} rate defined as $70\%F_{\text{MSY}}$ with an end date of 2029. A retrospective adjustment was applied to the terminal year of the assessment. The 2020 peer review panel accepted biological reference points based on $F_{40\%}$ proxy due to concerns with a residual pattern based with the SARC 52 stock recruitment relationship. Catch projections are provided for FY2021- FY2023 under $70\%F_{\text{MSY}}$ (Table 1) and for comparison by holding the lowest first year value of $70\% F_{\text{MSY}}$ for FY2021- FY2023 projected catches constant for three years (Table 2).

The 2020 Peer Review Panel notes that recruitment from the 2019 year class is likely to be underestimated. The index for GB winter flounder has high variation and does not provide enough information to estimate this year class. The panel also notes that alternative projections should be considered that assume future recruitment will be similar to recent recruitment. Sensitivity analyses were conducted and presented at the peer review to evaluate various recruitment scenarios which suggests that increases in the projections are attributed to the assumption of incoming relative higher recruitment from using the entire times series of recruitment in the projections.

Table 3 and Figure 1 summarize catch performance and changes in overfishing status for Georges Bank winter flounder.

Table 1- Possible OFLs and ABCs (mt) for FY2021- FY2023 for Georges Bank Winter Flounder, under $70\%F_{\text{MSY}}$ (F_{Rebuild}) projections. Projected F and SSB provided.

year	OFL	ABC	F	SSB
2021	859	629	0.25	2,387
2022	970	699	0.25	2,378
2023	1,413	1,020	0.25	3,782

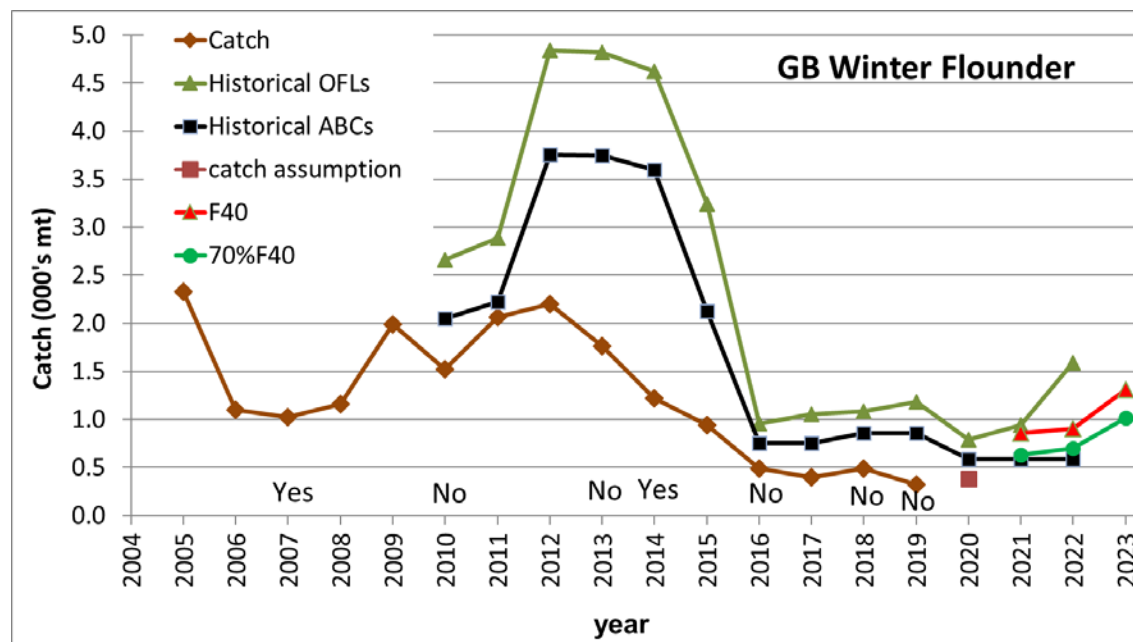
Table 2- Comparison OFLs and ABCs (mt) for FY2021- FY2023 for Georges Bank Winter Flounder, holding the first lowest year constant of 70% F_{MSY} (Frebuild) for FY 2021- FY2023. Projected F and SSB provided.

year	OFL	ABC	F	SSB
2021	859	629	0.25	2,387
2022	970	629	0.22	2,392
2023	2,193	629	0.15	3,975

Table 3- Catch performance (CY2010- CY2019), historical OFLs and ABCs (FY2010-FY2022), CY2020 “bridge year” catch assumption, and F_{40} and 70% F_{40} (FY2021-FY2023) for Georges Bank Winter Flounder.

Year	Catch	Historical OFLs	Historical ABCs	Catch Assumption	F_{40}	70% F_{40}
2010	1,523	2,660	2,052			
2011	2,068	2,886	2,224			
2012	2,199	4,839	3,753			
2013	1,761	4,819	3,750			
2014	1,219	4,626	3,598			
2015	940	3,242	2,124			
2016	492	957	755			
2017	400	1,056	755			
2018	488	1,083	855			
2019	319	1,182	855			
2020		790	587	386		
2021		944	587		859	629
2022		1,590	587		905	699
2023					1,314	1,020

Figure 1- Catch performance for Georges Bank Winter Flounder including: catches from CY2005- CY2019, historical OFLs and ABCs since FY 2010, CY 2020 “bridge year” catch assumption, and FY2021-FY2023 F_{40} and 70% F_{40} . Overfishing status in the terminal year of the assessment indicated on the x-axis (“Yes” = overfishing or “No” = not overfishing).



2. Gulf of Maine Winter Flounder

Based on the recommendation of the 2020 Peer Review Panel, overfishing is not occurring for GOM winter flounder, but the overfished status is unknown. Catch projections are not possible for this stock; therefore, Table 4 provides possible OFLs and ABCs for FY2021- FY2023 using a constant approach for three years.

The survey area-swept biomass estimate is calculated from three separate trawl fall surveys. The 2020 Peer Review Panel recommended using a revised average catchability estimate (0.71) from the recent cooperative research project survey catchability experiment which decreased from 0.87 in 2017 (Miller et al 2020). A moving average approach to estimating catch advice (rather than based on a single year) was considered in this assessment to stabilize catch advice and to use a greater amount of the available updated information. The Peer Review Panel agrees that catch advice be based on 75% of $E_{40\%}$ (75% E_{MSY} proxy) using the most recent two years of information from fall surveys for the biomass estimate and catch advice.

Table 5 and Figure 2 summarize catch performance and changes in overfishing status for Gulf of Maine winter flounder.

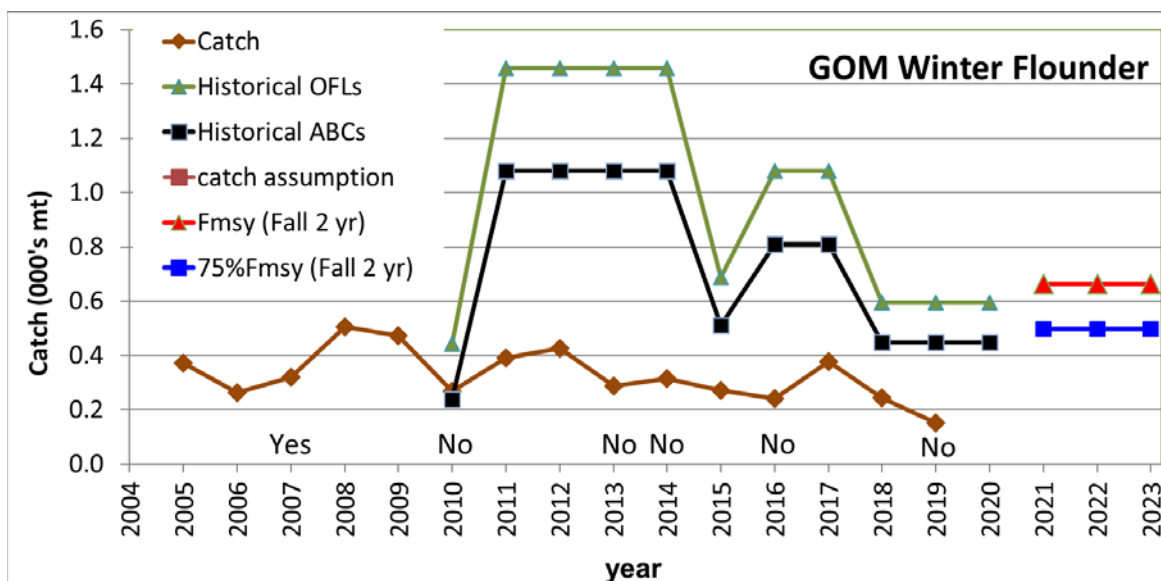
Table 4- Possible OFLs and ABCs (mt) for FY2021- FY2023 for Gulf of Maine Winter Flounder, using a constant approach for three years.

year	OFL	ABC
2021	662	497
2022	662	497
2023	662	497

Table 5- Catch performance (CY2010-CY2019), historical OFLs and ABCs (FY2010-FY2020), and calculated F_{MSY} and $75\%F_{MSY}$ (FY2021-FY2023) for Gulf of Maine Winter Flounder. Peer review suggested to use the two-year average of 30+ biomass from the fall survey for the calculations of the catch advice.

Year	Catch	Historical OFLs	Historical ABCs	1 yr Fall F_{MSY}	1 yr Fall $75\%F_{MSY}$	2 yr Fall F_{MSY}	2 yr Fall $75\%F_{MSY}$
2010	268	441	238				
2011	390	1,458	1,078				
2012	426	1,458	1,078				
2013	288	1,458	1,078				
2014	315	1,458	1,078				
2015	271	688	510				
2016	241	1,080	810				
2017	378	1,080	810				
2018	244	596	447				
2019	150	596	447				
2020		596	447				
2021				658	494	662	497
2022				658	494	662	497
2023				658	494	662	497

Figure 2- Catch performance for Gulf of Maine Winter Flounder including: catches from CY2005- CY2019, historical OFLs and ABCs since FY 2010, and OFL and ABC estimates for FY2021- FY2023 using the Fall two year average 30+ biomass estimate. Overfishing status in the terminal year of the assessment indicated on the x-axis (“Yes” = overfishing or “No” = not overfishing).



3. Southern New England Mid-Atlantic Winter Flounder

SEE ADDENDUM: The PDT is updating the 2020 bridge year catch assumption along with catch projections and will provide this information in the addendum. What follows is the PDT's summary prior to the change in this projection assumption. Additional information for "Option C" of the ABC control rule will also be provided in the addendum.

Based on the recommendations of the 2020 Peer Review Panel, SNE/MA winter flounder is overfished, but overfishing is not occurring. SNE/MA winter flounder is in a rebuilding plan with a rebuild by date of 2023. In 2019, SSB is at 30% of the SSB_{MSY} target. A projection using assumed catch in 2020 and $F = 0$ through 2023 indicated a less than a 5% chance of reaching the SSB target. The SSB trends appear to be declining over the time series with a continued declining trend in recruitment. There are no signs of stock rebuilding. The 2020 Peer Review Panel accepted biological reference points based on a $F_{40\%}$ proxy due to concerns with a residual pattern based on the SARC 52 stock recruitment relationship. The panel also accepted a change in selectivity from a dome shaped pattern to flat-top with the catch. Catch projections are provided for FY2021- FY2023 under 75% F_{MSY} (Table 6) and for comparison by holding the first lowest value of 75% F_{MSY} for FY2021- FY2023 projected catches constant for three years (Table 7).

As an alternative to using the 75% F_{MSY} projections to determine ABCs, the SSC may wish to discuss developing catch advice under "Option C" of the ABC control rule since this stock cannot rebuild by 2023. The ABC estimates based on the projections 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 310 mt in 2019). In 2017, the SSC based ABCs on a three-year average of catch due to concerns with the assessment and trends in the indices. The updated three-year (2017-2019) average catch is 456 mt.

Table 8 and Figure 3 summarize catch performance and changes in overfishing status for SNE/MA winter flounder.

Table 6- Possible OFLs and ABCs (mt) for FY2021- FY2023 for Southern New England Mid-Atlantic Winter Flounder, under 75% F_{MSY} projections. Projected F and SSB provided.

year	OFL	ABC	F	SSB
2021	1,434	1,105	0.213	4,371
2022	1,835	1,410	0.213	5,189
2023	2,477	1,904	0.213	6,954

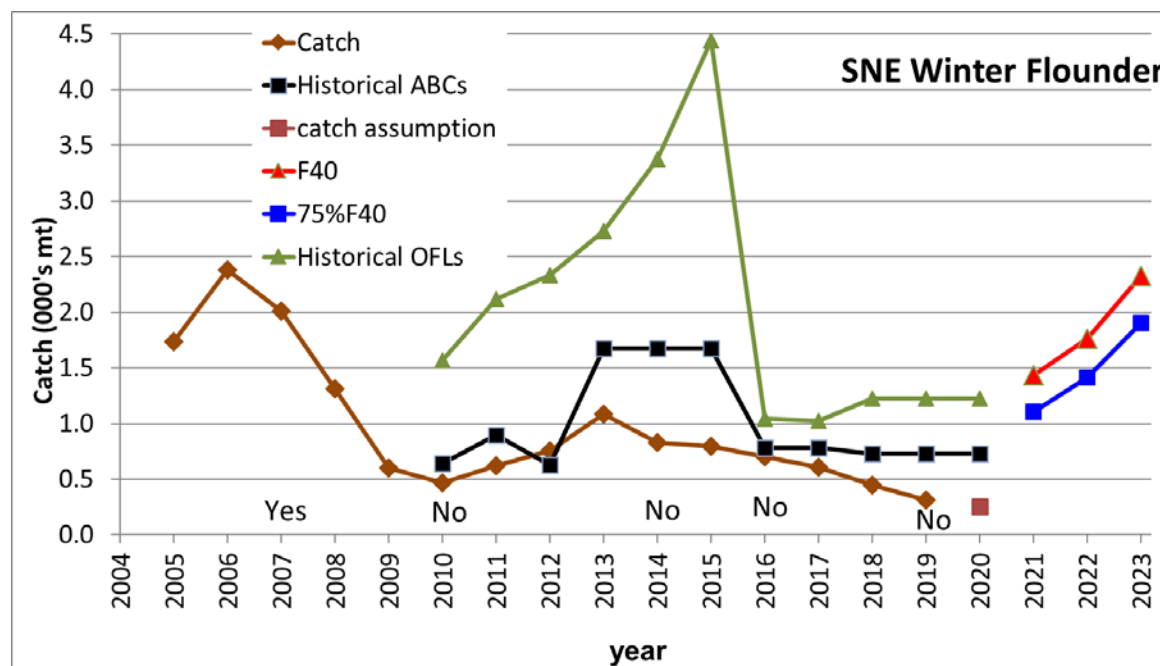
Table 7- Comparison OFLs and ABCs (mt) for FY2021- FY2023 for Southern New England Mid-Atlantic Winter Flounder, holding the lowest first year value constant of 75% F_{MSY} for FY2021- FY2023. Projected F and SSB provided.

year	OFL	ABC	F	SSB
2021	1,434	1,105	0.213	4,371
2022	1,835	1,105	0.164	5,239
2023	2,546	1,105	0.116	7,333

Table 8- Catch performance (CY2010-CY2019), historical OFLs and ABCs (FY2010-FY2020), CY2020 “bridge year” catch assumption, and catch projections for F_{40} and $75\%F_{40}$ (FY2021-FY2023) for Southern New England Mid-Atlantic Winter Flounder.

Year	Catch	Historical OFLs	Historical ABCs	Catch Assumption	F_{40}	$75\%F_{40}$
2010	469	1,568	644			
2011	620	2,117	897			
2012	752	2,336	626			
2013	1,087	2,732	1,676			
2014	827	3,372	1,676			
2015	795	4,439	1,676			
2016	704	1,041	780			
2017	608	1,021	780			
2018	449	1,228	727			
2019	310	1,228	727			
2020		1,228	727	251		
2021					1,434	1,105
2022					1,760	1,410
2023					2,326	1,904

Figure 3- Catch performance for Southern New England Mid-Atlantic Winter Flounder including: catches from CY2005-CY2019, historical OFLs and ABCs since FY2010, CY2020 “bridge year” catch assumption, and projections for FY2021 - FY2023 at F_{40} and $75\%F_{40}$. Overfishing status in the terminal year of the assessment indicated on the x-axis (“Yes” = overfishing or “No” = not overfishing).



4. Redfish

SEE ADDENDUM: The PDT is updating the 2020 bridge year catch assumption along with catch projections and will provide this information in the addendum. What follows is the PDT's summary prior to the change in this projection assumption.

Based on the recommendation of the 2020 Peer Review Panel, redfish is not overfished and overfishing is not occurring. Redfish is rebuilt. A retrospective adjustment was applied to the terminal year of the assessment. The 2020 Peer Review Panel stated:

The first review by Peer Review Panel observed that the two stock size indices used in the ASAP model had been declining more steeply than the estimated biomass in the assessment. The Peer Review Panel considered rejecting the assessment on that basis, but given that the ASAP modelling did not show other problems, the analyst was asked to explore ways to better fit recent survey indices. The analyst found that altering the weighting of the various data sources provided a better fit to recent indices and improved the retrospective pattern. The Peer Review Panel accepted the base case assessment but cautioned that it may overestimate stock size as indicated by the sensitivity run where a different weighting scheme was used.

Catch projections are provided for FY2021- FY2023 under 75%F_{MSY} (Table 11) and for the data weighting scenario (DWS) sensitivity model for FY2021- FY2023 (Table 12). OFLs are based on the accepted base case model. The DWS sensitivity model projection is provided for consideration of the uncertainty in the assessment given the lack of fit to the survey indices within the base model.

Table 11 and Figure 4 summarize catch performance and changes in overfishing status for redfish.

Table 9- Possible OFLs and ABCs (mt) for FY2021- FY2023 for Redfish, under 75%F_{MSY} base model projections. Projected F and SSB provided.

year	OFL	ABC	F	SSB
2021	13,525	10,191	0.029	354,193
2022	13,360	10,066	0.029	352,792
2023	13,235	9,972	0.029	349,253

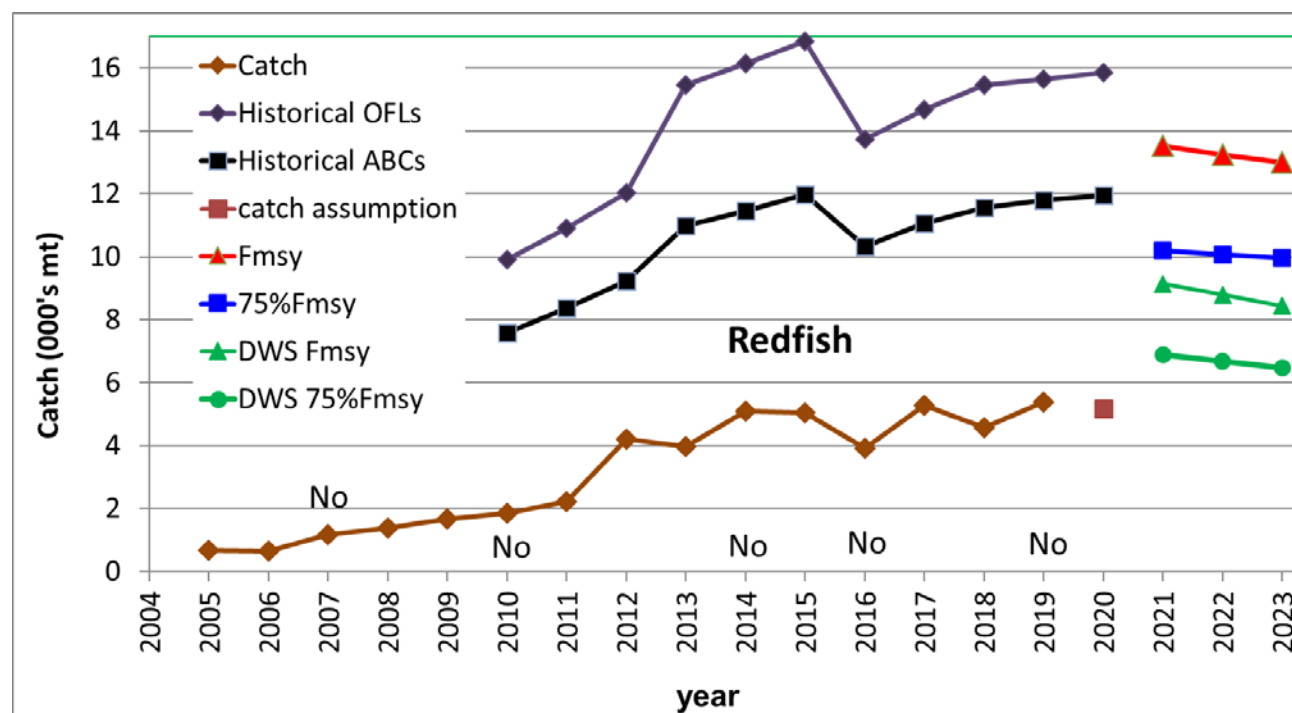
Table 10- Comparison OFLs and ABCs (mt) for FY2021- FY2023 for Redfish, using 75% F_{MSY} from the DWS sensitivity model. OFL determination is from the base model projection for FY 2021- FY2032. Base model projected F and SSB are provided.

year	OFL	ABC	F	SSB
2021	13,525	6,877	0.019	355,506
2022	13,484	6,682	0.019	357,418
2023	13,486	6,474	0.018	357,282

Table 11- Catch performance (CY2010-CY2019), historical OFLs and ABCs (FY2010-FY2020), CY 2020 “bridge year” catch assumption and catch projections for F_{MSY} and $75\%F_{MSY}$ (FY2021-FY2023). Redfish projections for both the base and DWS sensitivity model are provided.

Year	Catch	Historical OFLs	Historical ABCs	Catch Assumption	Base Fmsy	Base 75%Fmsy	DWS Fmsy	DWS 75%Fmsy
2010	1,850	9,899	7,586					
2011	2,227	10,903	8,356					
2012	4,196	12,036	9,224					
2013	3,964	15,468	10,995					
2014	5,097	16,130	11,465					
2015	5,044	16,845	11,974					
2016	3,926	13,723	10,338					
2017	5,266	14,665	11,050					
2018	4,568	15,451	11,552					
2019	5,380	15,640	11,785					
2020		15,852	11,942	5,184				
2021					13,525	10,191	9,127	6,877
2022					13,235	10,066	8,788	6,682
2023					12,990	9,972	8,437	6,474

Figure 4- Catch performance for Redfish including: catches from CY2005- CY2019, historical OFLs and ABCs since FY2010, CY2020 “bridge year” catch assumption, and projections for FY2021 - FY2023 at F_{MSY} and $75\%F_{MSY}$. Overfishing status in the terminal year of the assessment indicated on the x-axis “No” = not overfishing).



5. Atlantic Halibut

SEE ADDENDUM: The PDT found an error in the 2019 Canadian landings reported in the 2020 stock assessment. This error directly impacts catch advice. The PDT will provide additional details in the addendum. What follows is the PDT's summary prior to addressing the error.

The stock assessment for Atlantic halibut was a Level 1 assessment (direct delivery). Halibut is assessed using a data-poor method (First Second Derivative model), and projections are not possible using this method⁴. Biological reference points are unknown for halibut, but the stock is considered overfished. Halibut is currently in a rebuilding plan with an end date of 2056. Catch advice for halibut is derived by multiplying the recent catch by the rate of change in 3 indices (NEFSC fall survey, trawl D:K, gillnet D:K). The rate of change has decreased to 0.83 in the 2020 assessment. Table 12 summarizes possible ABCs using a constant approach for three years.

The 2020 stock assessment report states:

Stock status cannot be determined and remains unchanged. Rago in his 2018 report argued that because the catch multiplier estimated in the FSD model had been greater than one for several years, that overfishing was unlikely. Because the catch multiplier is now less than one, overfishing may be the more likely determination in 2020. There is however, no way to credibly determine stock status without reference points.

Table 13 and Figure 5 summarize catch performance and changes in overfishing status for redfish.

Table 12- Possible ABCs (mt) for FY2021- FY2023 for Halibut, using a constant approach for three years from the First Second Derivative model.

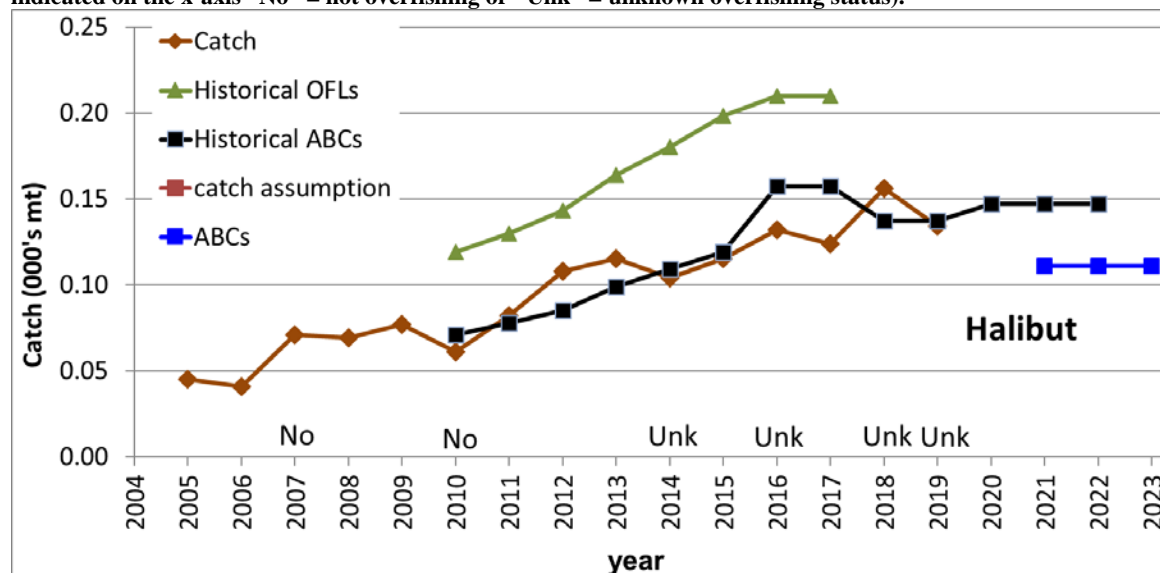
year	OFL	ABC
2021	unknown	111
2022	unknown	111
2023	unknown	111

⁴ https://www.nefsc.noaa.gov/saw/sasi/uploads/2019_HAL_UNIT_FSDmodelResults.pdf

Table 13- Catch performance (CY2010-CY2019), historical OFLs and ABCs (FY2010-FY2022), and constant approach ABC estimate (FY2021-FY2023) for Halibut.

Year	Catch	Historical OFLs	Historical ABCs	F_{MSY}	ABC
2010	61	119	71		
2011	82	130	78		
2012	108	143	85		
2013	115	164	99		
2014	104	180	109		
2015	115	198	119		
2016	132	210	158		
2017	124	210	158		
2018	156	undefined	137		
2019	134	undefined	137		
2020		undefined	147		
2021			147	-	111
2022			147	-	111
2023				-	111

Figure 5- Catch performance for Halibut including: catches from CY2005- CY2019, historical OFLs and ABCs since FY2010, and constant catch approach for FY2021- FY2023. Overfishing status in the terminal year of the assessment indicated on the x-axis “No” = not overfishing or “Unk” = unknown overfishing status).



6. Gulf of Maine Georges Bank Windowpane Flounder

Based on the recommendations of the 2020 Peer Review Panel, northern windowpane flounder stock status is unknown. The NOAA current official status is that the stock is overfished and overfishing is not occurring. Northern windowpane flounder is in a rebuilding plan with an end date of 2029. The rebuilding plan specifies a fishing mortality rate of $70\%F_{msy}$. The peer review panel rejected the AIM model due to a lack of a relationship between the catch and the survey index. The updated assessment is based on a survey area swept assessment. Biological reference points are not specified under this approach. Candidate ABCs are therefore provided based on the average exploitation rate over different periods as recommended by the 2020 Peer Review Panel (Table 14 and Table 15). However the Peer Review Panel did not recommend continued use of the AIM-based F_{MSY} proxy due to the mismatch in assessment methods and time series of exploitation rates exceeding the proxy in nearly all years (see Table 16 for comparison). Without a F_{MSY} proxy, $70\%F_{msy}$ cannot be directly calculated.

Table 16 and Figure 6 summarize catch performance and changes in overfishing status for northern windowpane flounder.

National Standard 1 guidelines require fishery management plans to specify objective and measurable status determination criteria (SDCs), for each stock, in a manner that enables the Council to monitor stock status, including an OFL⁵. When data are not available to specify SDCs based on maximum sustainable yield (MSY) or MSY proxies, alternative types of SDCs that promote sustainability of the stock or stock complex may be used⁶.

The PDT discussed that such an evaluation of new SDCs may be most appropriate during a stock assessment process, noting that NMFS has convened a stock assessment working group focused on index-based methods and control rules. This working group is expected to create guidelines for setting biological reference points (BRPs) for stocks assessed with index-based approaches. A research track assessment will use simulation approaches to explore BRPs, among other topics, with a peer review expected in December of 2020. This may result in guidance on setting SDCs and relevant catch limits in cases when an empirical assessment cannot provide numerical estimates of traditional reference points.

Table 14- Potential candidate ABCs based on an average exploitation rate of the Bigelow years (2009-2019) for Gulf of Maine Georges Bank Windowpane Flounder.

year	OFL	ABC
2021	Unknown	166
2022	Unknown	166
2023	Unknown	166

⁵ 50 CFR 600.310(c)

⁶ §600.310(e)(2)(ii)

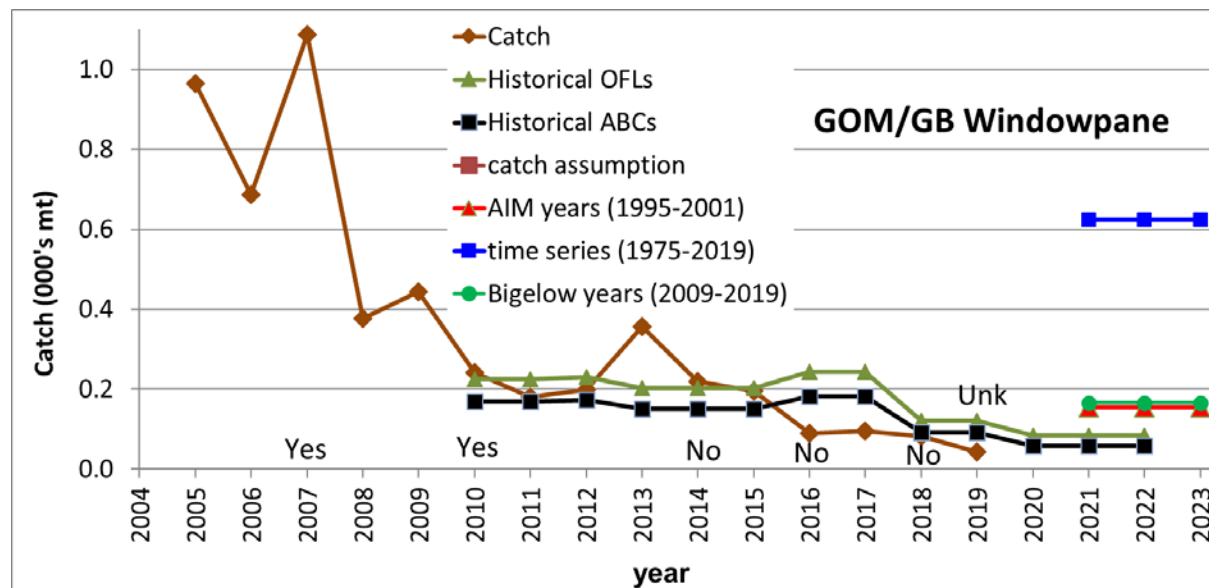
Table 15- Potential candidate ABCs based on an average exploitation rate of all years in the time series (1975-2019) for Gulf of Maine Georges Bank Windowpane Flounder.

year	OFL	ABC
2021	Unknown	624
2022	Unknown	624
2023	Unknown	624

Table 16- Catch performance (CY2010-CY2019), historical OFLs and ABCs (FY2010-FY2022), and catch estimates using the average exploitation rate for different time periods for (FY2021-FY2023) for Gulf of Maine Georges Bank Windowpane Flounder.

Year	Catch	Historical OFLs	Historical ABCs	AIM Years 1995-2001	Bigelow Years 2009-2019	All years 1975-2019
2010	241	225	169			
2011	181	225	169			
2012	199	230	173			
2013	356	202	151			
2014	220	202	151			
2015	195	202	151			
2016	90	243	182			
2017	96	243	182			
2018	83	122	92			
2019	43	122	92			
2020		84	59			
2021		84	59	155	166	624
2022		84	59	155	166	624
2023				155	166	624

Figure 6- Catch performance for Gulf of Maine Georges Bank Windowpane Flounder including: catches from CY2005-CY2019, historical OFLs/ABCs since FY2010 and catch estimates using the average exploitation rate for different time periods for (FY2021-FY2023). Overfishing status in the terminal year of the assessment indicated on the x-axis (“Yes” = overfishing, “No” = not overfishing, and “unk” = unknown overfishing status).



7. Southern New England/Mid-Atlantic Windowpane Flounder

Based on the recommendations of the 2020 Peer Review Panel, Southern windowpane flounder is not overfished and overfishing is not occurring (status has not changed from the 2018 assessment). Southern windowpane flounder is rebuilt as of 2012. Southern windowpane flounder was a Level 2 assessment based on AIM. Catch projections are not acceptable for this stock; therefore, Table 17 provides possible OFLs and ABCs for FY2021 - FY2023 using a constant approach for three years.

Table 18 and Figure 7 summarize catch performance and changes in overfishing status for Southern windowpane flounder.

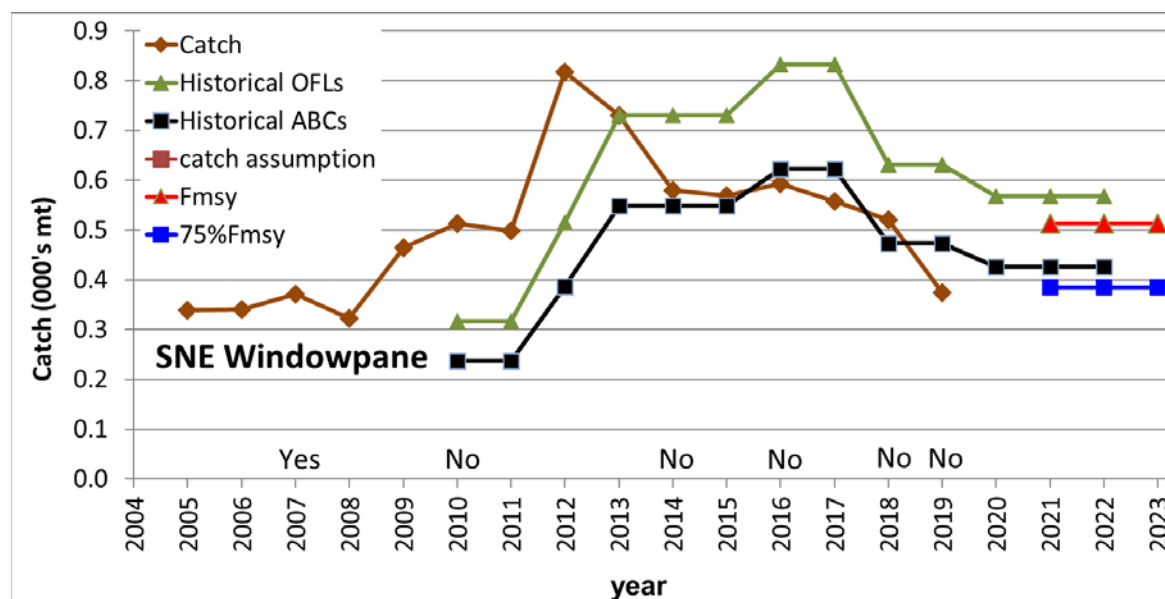
Table 17- Possible OFLs and ABCs (mt) for FY2021 - FY2023 for Southern New England/Mid-Atlantic Windowpane Flounder, using a constant approach for three years.

year	OFL	ABC
2021	513	384
2022	513	384
2023	513	384

Table 18- Catch performance (CY2010-CY2019), historical OFLs and ABCs (FY2010-FY2022), and F_{MSY} and $75\%F_{MSY}$ (FY2021-FY2023) for Southern New England/Mid-Atlantic Windowpane Flounder.

Year	Catch	Historical OFLs	Historical ABCs	F_{MSY}	$75\%F_{MSY}$
2010	513	317	237		
2011	498	317	237		
2012	817	515	386		
2013	731	730	548		
2014	580	730	548		
2015	569	730	548		
2016	593	833	623		
2017	558	833	623		
2018	520	631	473		
2019	374	631	473		
2020		568	426		
2021		568	426	513	384
2022		568	426	513	384
2023				513	384

Figure 7- Catch performance for Southern New England/Mid-Atlantic Windowpane Flounder including: catches from CY2005- CY2019, historical OFLs and ABCs since FY 2010, and at F_{MSY} and $75\%F_{MSY}$ catch estimates for FY2021- FY 2023. Overfishing status in the terminal year of the assessment indicated on the x-axis (“Yes” = overfishing or “No”= not overfishing).



8. Ocean Pout

The stock assessment for ocean pout was a Level 1 assessment (direct delivery). Based on the 2020 stock assessment report, ocean pout is overfished but overfishing is not occurring. Ocean pout is in a rebuilding plan with $F_{Rebuild}$ rate defined as $70\%F_{MSY}$ with an end date of 2029. In 2019, biomass is at 3% of the B_{MSY} target. Catch projections are not possible for this stock; therefore, Table 19 provides possible OFLs and ABCs for FY2021- FY2023 using a constant approach for three years. The Council manages ocean pout as a non-allocated discard only stock (in such a manner since 2010); therefore, catch that does occur is considered bycatch. However, further reductions in the catch may not result in stock rebuilding since this stock does not appear to be responding to low exploitation rates.

Table 20 and Figure 8 summarize catch performance and changes in overfishing status for ocean pout.

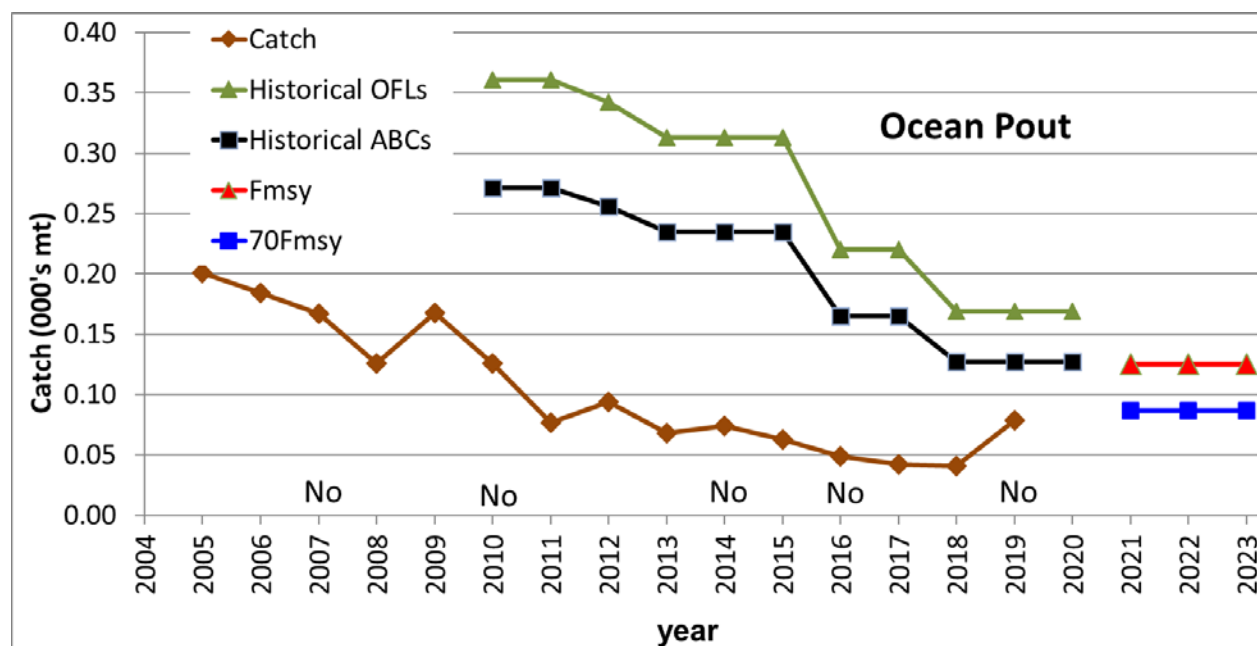
Table 19- Possible OFLs and ABCs (mt) for FY2021 - FY2023 for ocean pout, using a constant approach for three years.

year	OFL	ABC
2021	125	87
2022	125	87
2023	125	87

Table 20 - Catch performance (CY2010-CY2019), historical OFLs and ABCs (FY2010-FY2020), and F_{MSY} and 70% F_{MSY} constant catch estimate for FY2021- FY2023 for Ocean Pout.

Year	Catch	Historical OFLs	Historical ABCs	F_{MSY}	70% F_{MSY}
2010	126	361	271		
2011	77	361	271		
2012	94	342	256		
2013	68	313	235		
2014	74	313	235		
2015	63	313	235		
2016	49	220	165		
2017	42	220	165		
2018	41	169	127		
2019	79	169	127		
2020		169	127		
2021				125	87
2022				125	87
2023				125	87

Figure 8- Catch performance for Ocean Pout including: catches from CY2005- CY2019, historical OFLs and ABCs since FY2010, and F_{MSY} and 75% F_{MSY} constant catch estimate for FY2021- FY2023. Overfishing status in the terminal year of the assessment indicated on the x-axis (“No” = not overfishing).



9. Wolffish

Based on the recommendations of the 2020 Peer Review Panel, wolffish is overfished but overfishing is not occurring. Wolffish is in a rebuilding plan but the end date is not defined. In 2019, biomass is at 44% of the SSB_{MSY} target. Catch projections were not accepted for this stock at the benchmark assessment; therefore, Table 21 provides possible OFLs and ABCs for FY2021- FY2023 using a constant approach for three years. $OFL = \text{exploitable terminal year biomass} \times F_{MSY}$ and $ABC = \text{exploitable biomass} \times 75\%F_{MSY}$.

Table 22 and Figure 9 summarize catch performance and changes in overfishing status for wolffish.

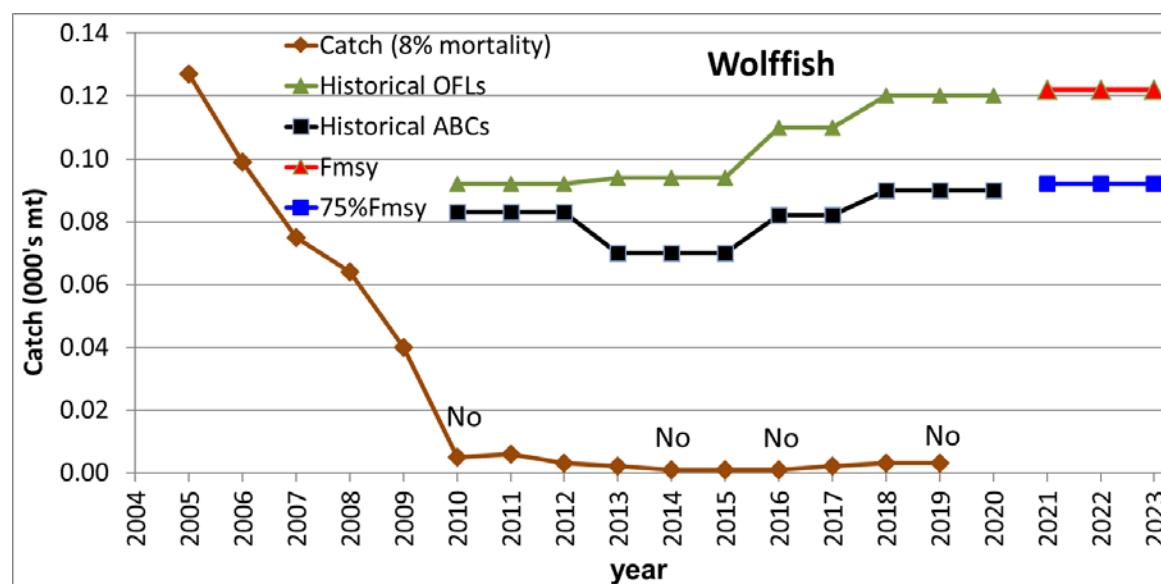
Table 21- Possible OFLs and ABCs (mt) for FY2021- FY2023 for Wolffish, using a constant approach for three years.

year	OFL	ABC
2021	122	92
2022	122	92
2023	122	92

Table 22- Catch performance (CY2010-CY2019), historical OFLs and ABCs (FY2010-FY2020), and F_{MSY} and $75\%F_{MSY}$ constant catch estimate (FY2021-FY2023) for Wolffish.

Year	Catch	Historical OFLs	Historical ABCs	F_{MSY}	$75\%F_{MSY}$
2010	5	92	83		
2011	6	92	83		
2012	3	92	83		
2013	2	94	70		
2014	1	94	70		
2015	1	94	70		
2016	1	110	82		
2017	2	110	82		
2018	3	120	90		
2019	3	120	90		
2020		120	90		
2021				122	92
2022				122	92
2023				122	92

Figure 9- Catch performance for Wolffish including: catches from CY2005- CY2019, historical OFLs and ABCs since FY2010 and FY2021- FY2023 OFL and ABCs estimates. Overfishing status in the terminal year of the assessment indicated on the x-axis (“No” = not overfishing).



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

Table 1: Estimated CY2020 Northeast Multispecies Total Catch (mt)

Stock	Total Catch	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
GB Winter Flounder	359.6	333.6	333.6	-					-	26.0
SNE/MA Winter Flounder	250.8	105.5	97.3	8.2					3.8	141.5
Redfish	5183.6	5177.8	5177.4	0.4					5.2	0.6
Values in metric tons of live weight					Any value for a non-allocated species may include landings of that stock or misreporting of species and/or stock area. These are northern windowpane, southern windowpane, ocean pout, halibut, and wolffish.					
Sector and common pool include estimate of missing dealer reports										
Source: NMFS Greater Atlantic Regional Fisheries Office										
August 10, 2020, run dates of August 6, 2020 and June 25, 2020										
These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.										

Table 2: Estimated CY2020 Northeast Multispecies Total Landings (mt)

Stock	Total Landings	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
GB Winter Flounder	333.3	332.6	332.6	-					-	0.7
SNE/MA Winter Flounder	109.7	102.6	94.6	8.0					3.5	3.5
Redfish	5137.8	5133.7	5133.3	0.4					4.0	0.2
Values in metric tons of live weight					Any value for a non-allocated species may include landings of that stock or misreporting of species and/or stock area. These are northern windowpane, southern windowpane, ocean pout, halibut, and wolffish.					
Sector and common pool include estimate of missing dealer reports										
Source: NMFS Greater Atlantic Regional Fisheries Office										
August 10, 2020, run dates of August 6, 2020 and June 25, 2020										
These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.										

Table 3: Estimated CY2020 Northeast Multispecies Discards (mt)

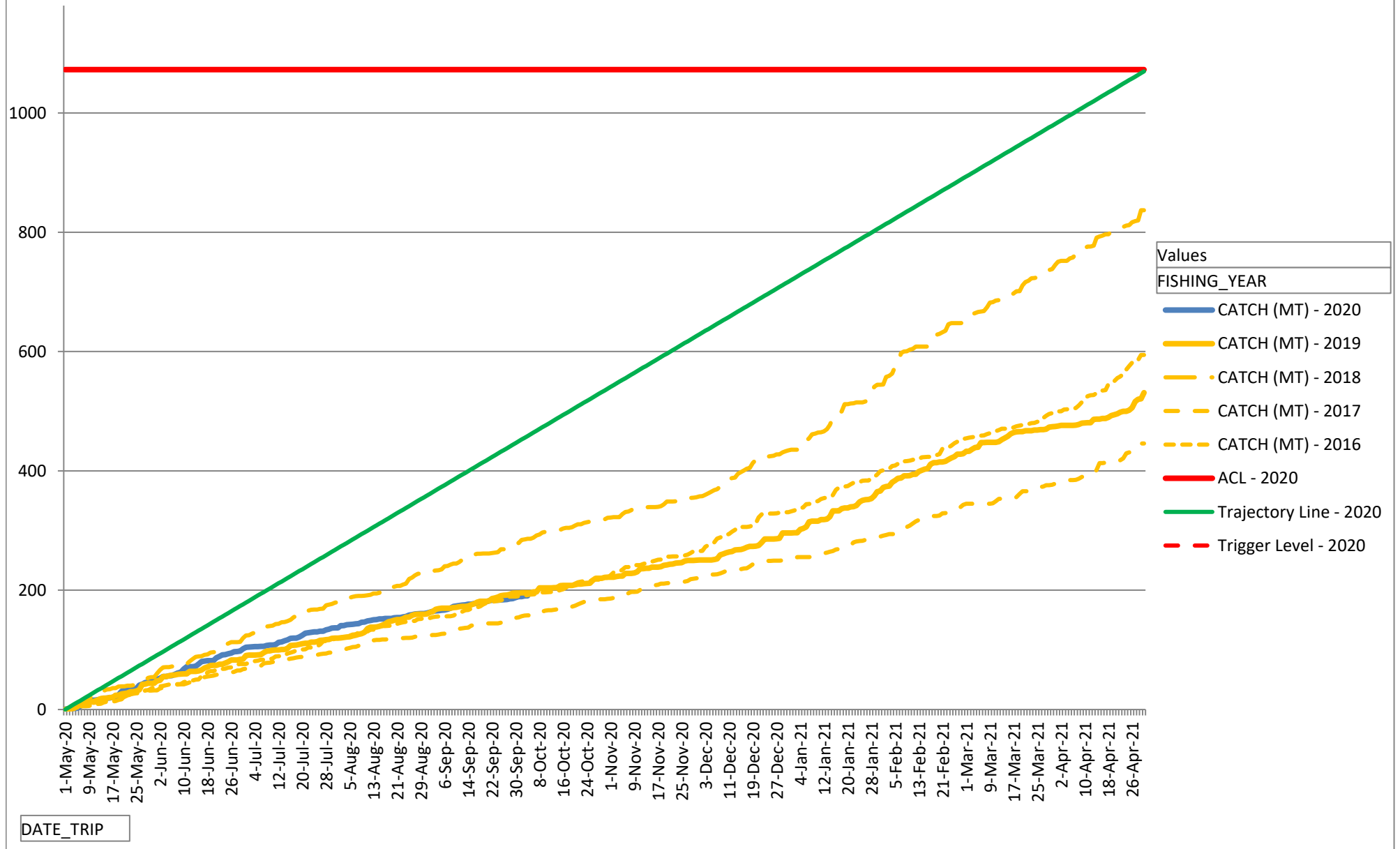
Stock	Total Discards	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
GB Winter Flounder	26.3	1.0	1.0	-					-	25.3
SNE/MA Winter Flounder	141.1	2.9	2.8	0.1					0.2	138.0
Redfish	45.8	44.1	44.1	0.0					1.2	0.4
Values in metric tons of live weight										
Sector and common pool include estimate of missing dealer reports										
Source: NMFS Greater Atlantic Regional Fisheries Office										
August 10, 2020, run dates of August 6, 2020 and June 25, 2020										
These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.										

Table 4: Estimated CY2020 “bridge year” catch estimate including US and Canadian catches, as appropriate.

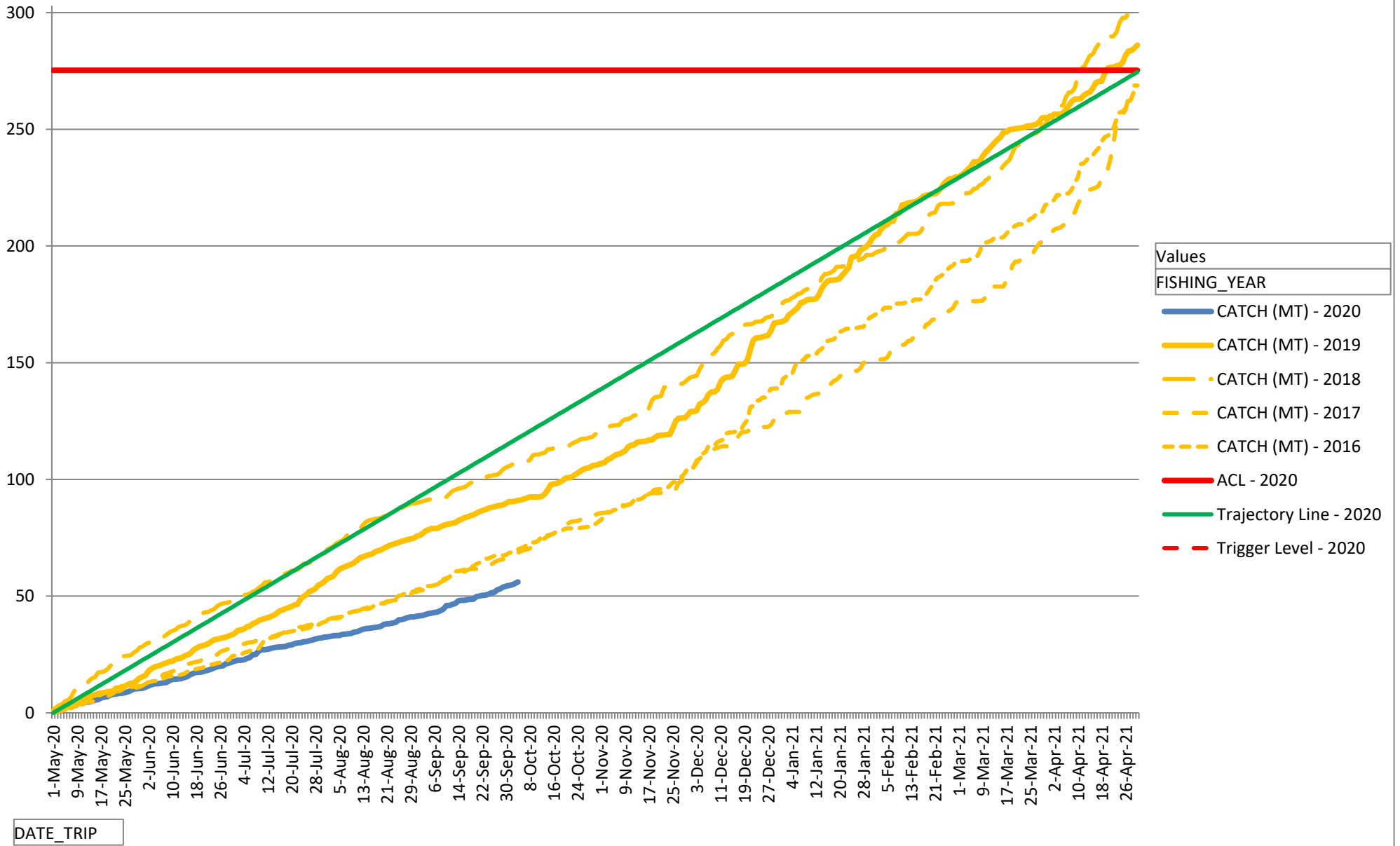
Stock	CY 2020 Catch Estimate (mt)		
	US	Canada	Total
GB Winter Flounder	360	26	386
SNE/MA Winter Flounder	251	n/a	251
Redfish	5,184	n/a	5,184

Appendix II: Summary of in-season commercial (sector and common pool) groundfish fishery catches for all groundfish stocks

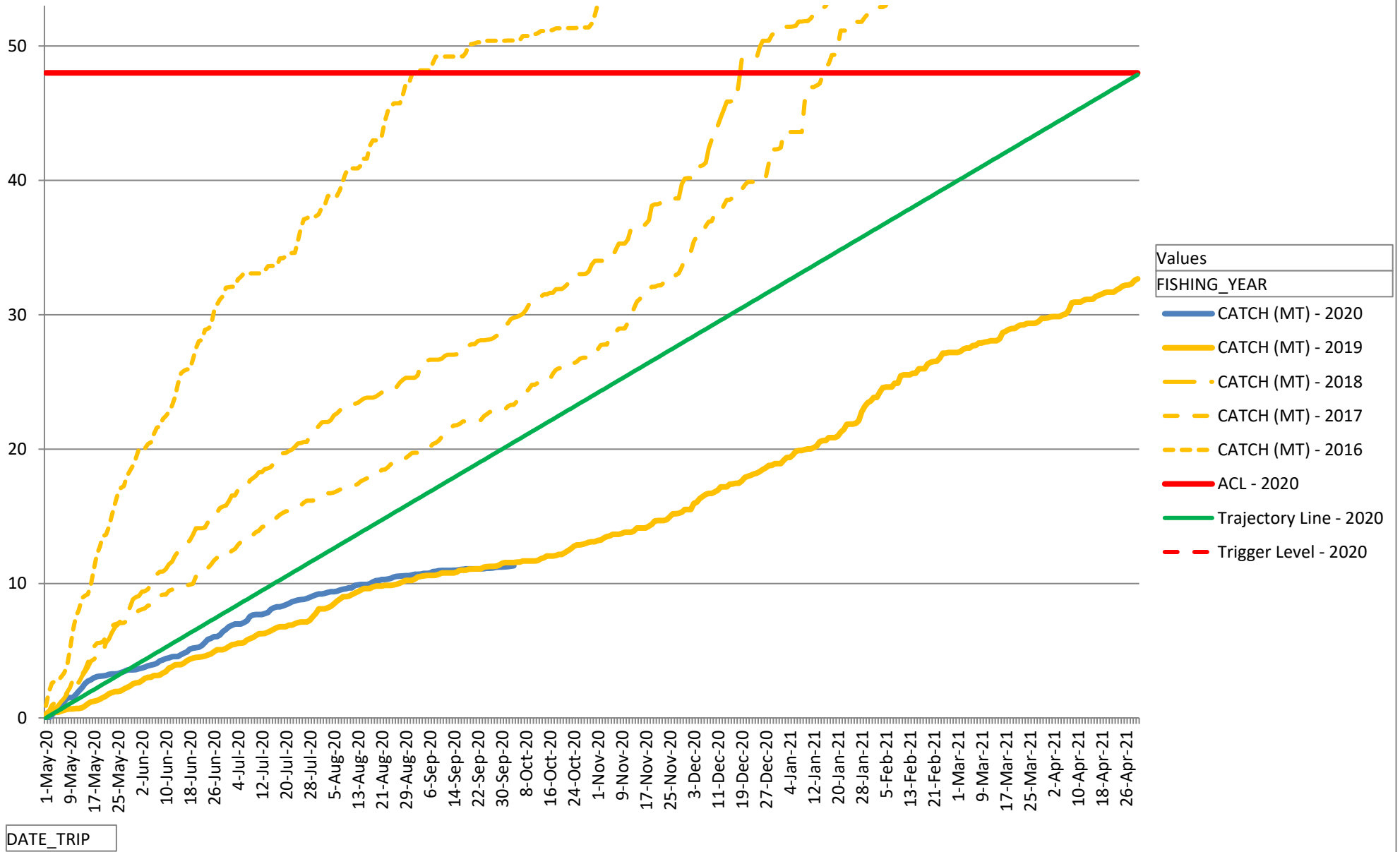
Commercial Groundfish GB Cod Catch



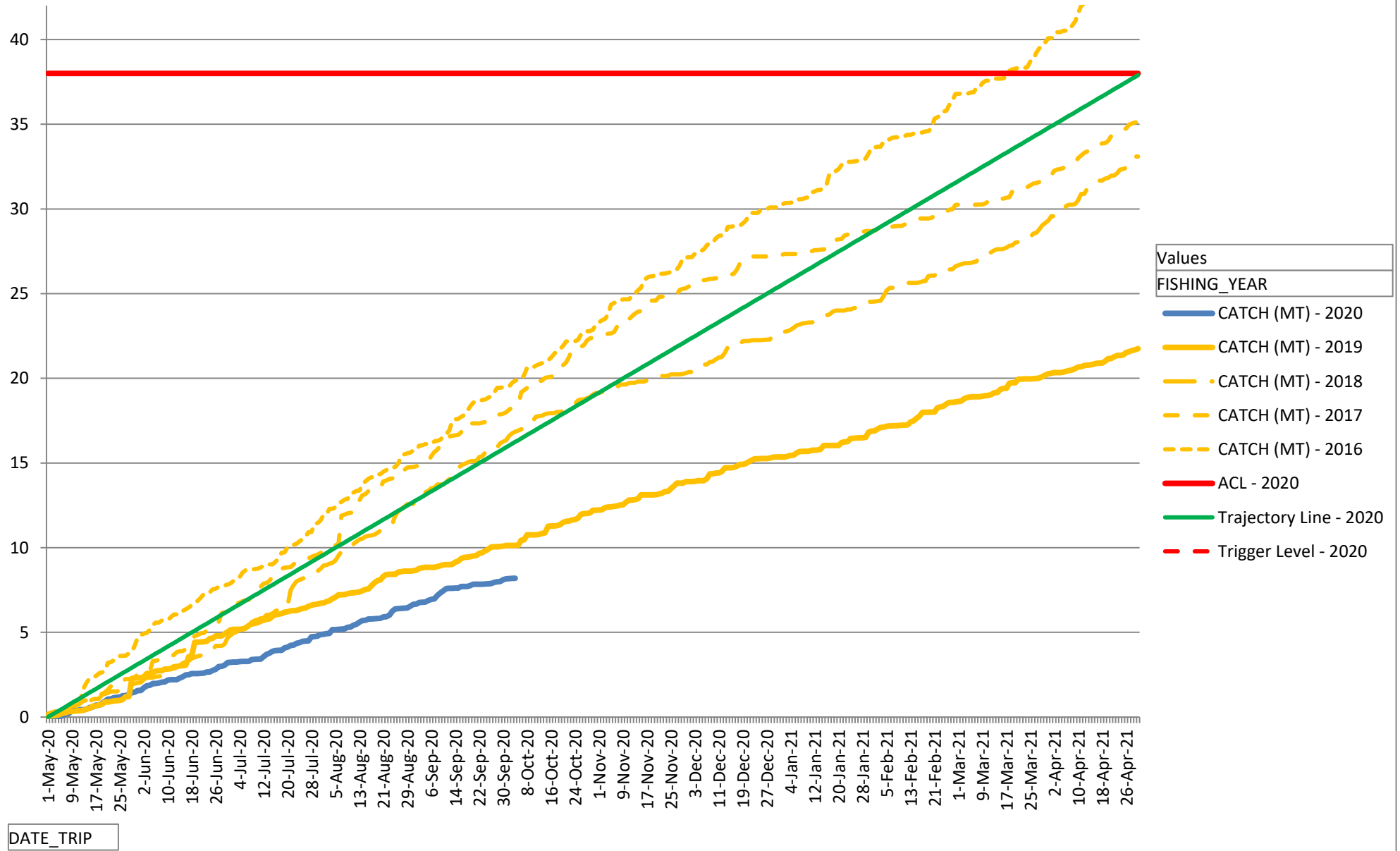
Commercial Groundfish GOM Cod Catch



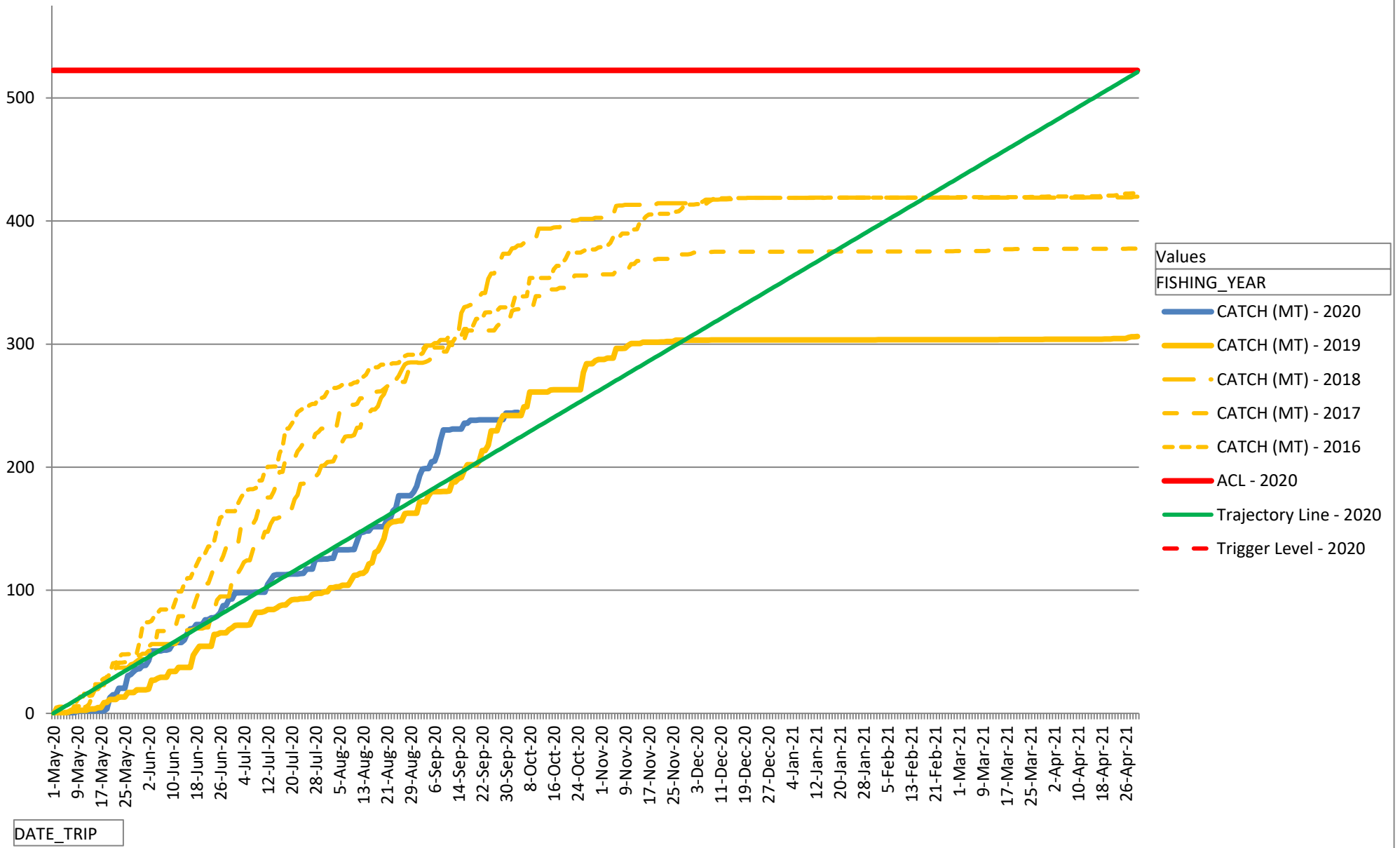
Commercial Groundfish Southern Windowpane Catch



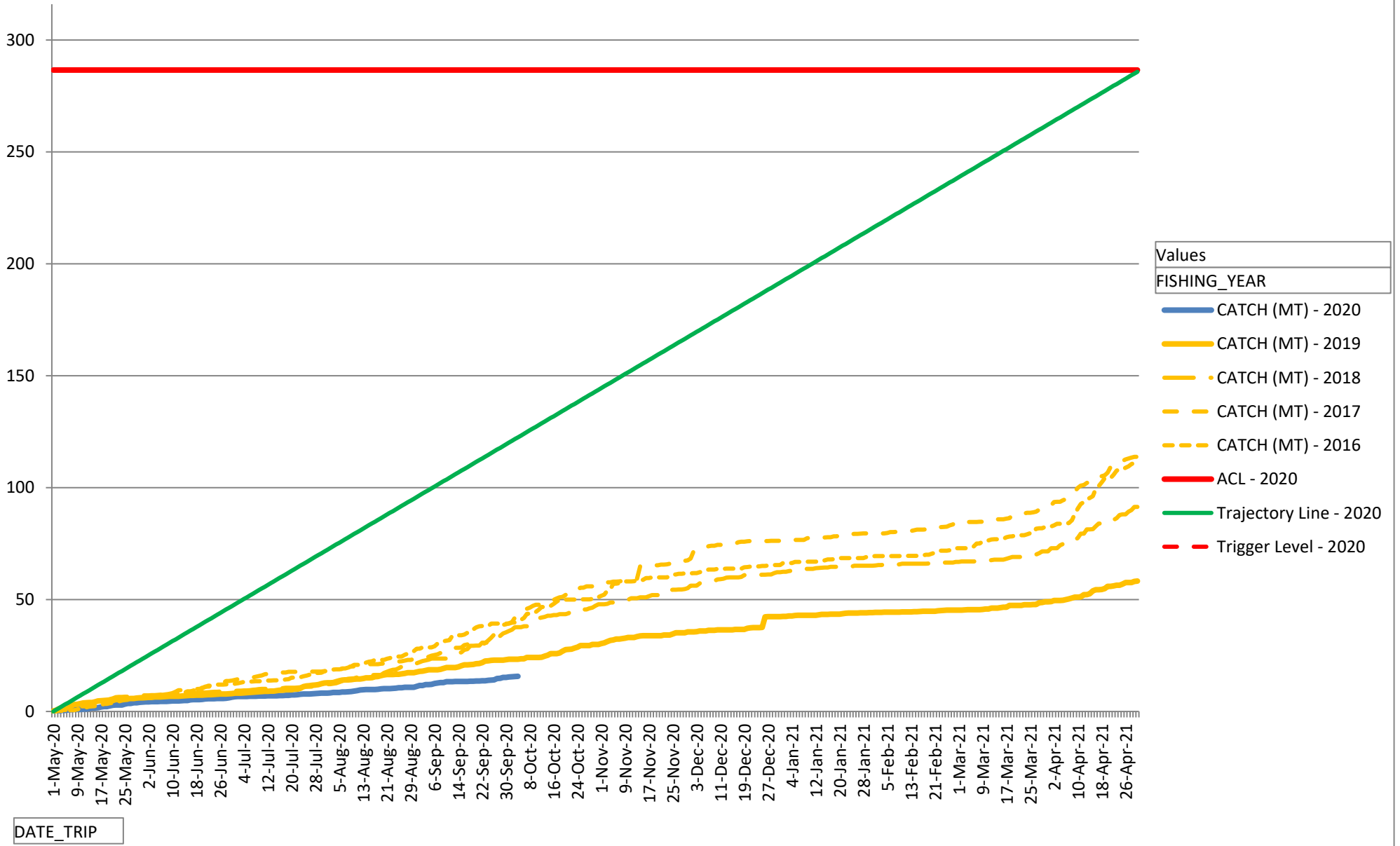
Commercial Groundfish Northern Windowpane Catch



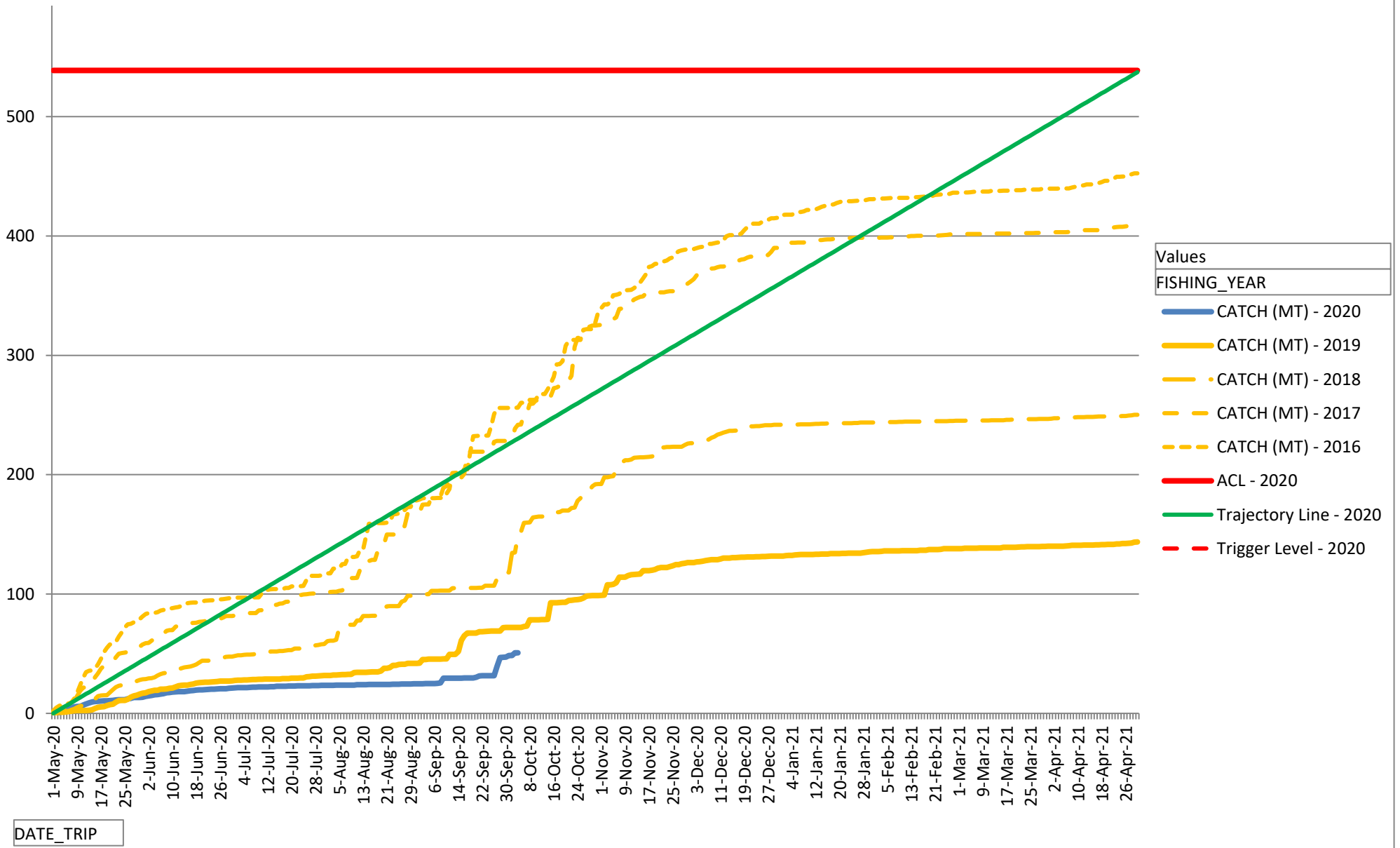
Commercial Groundfish GB Winter Flounder Catch



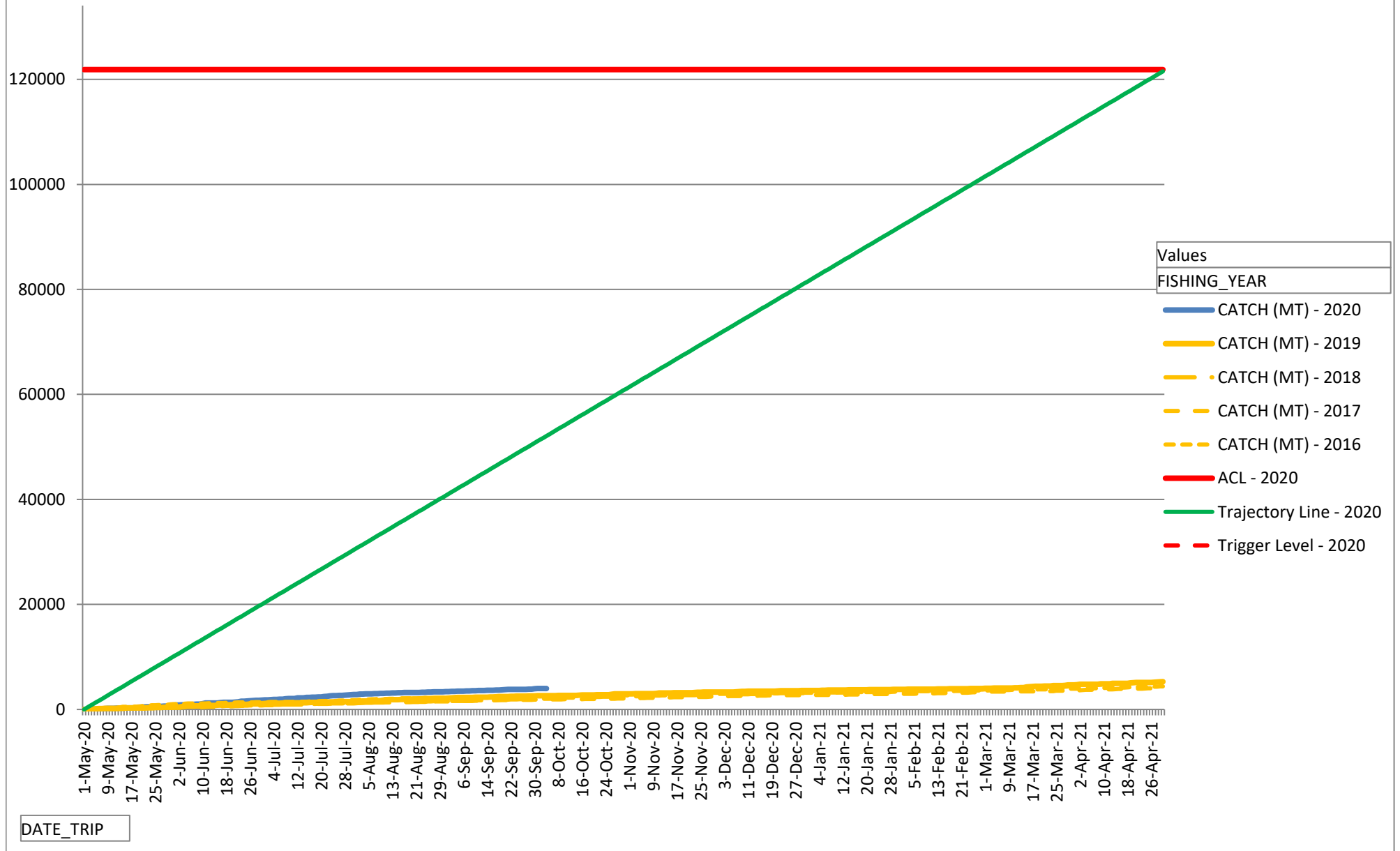
Commercial Groundfish GOM Winter Flounder Catch



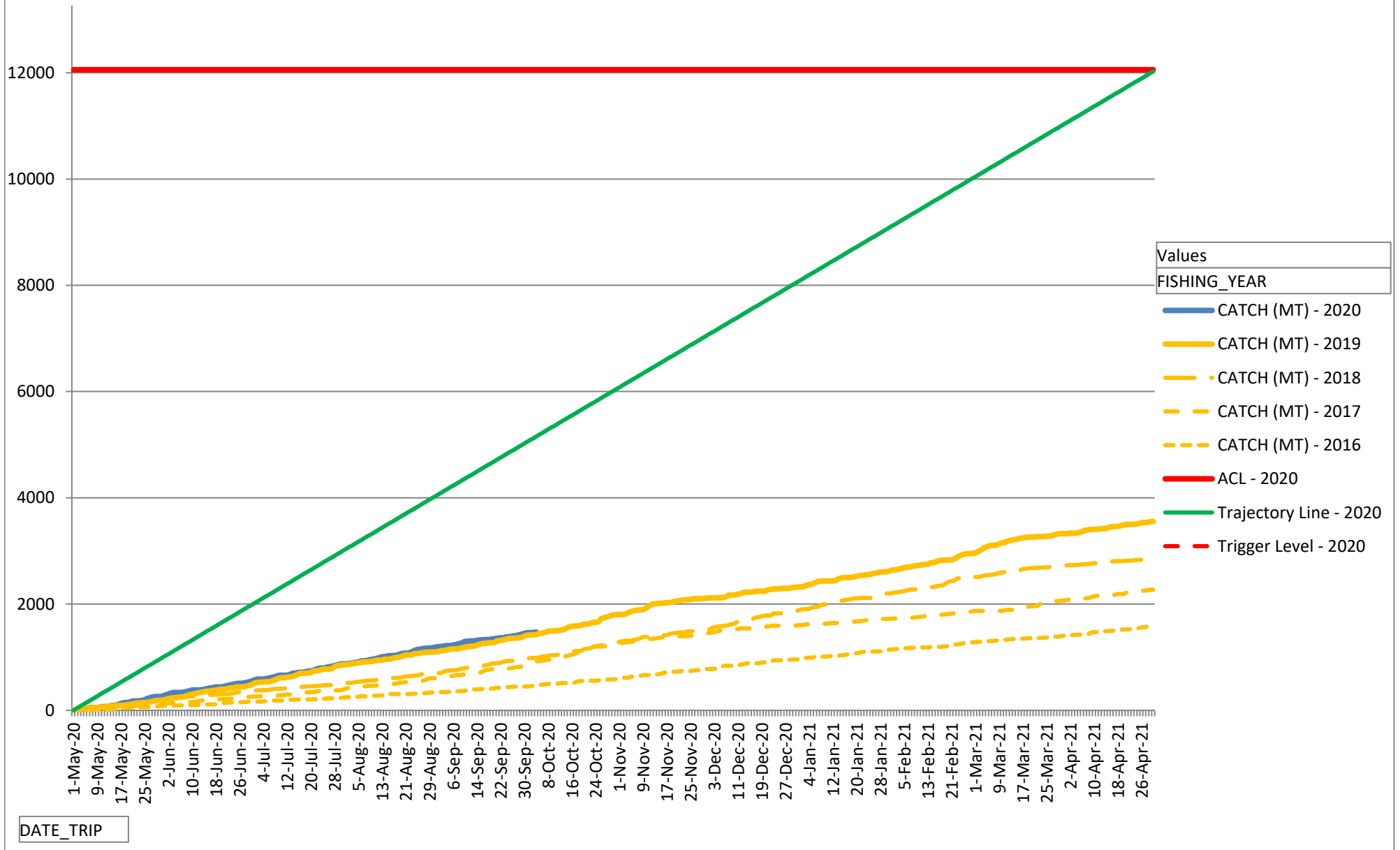
Commercial Groundfish SNE/MA Winter Flounder Catch



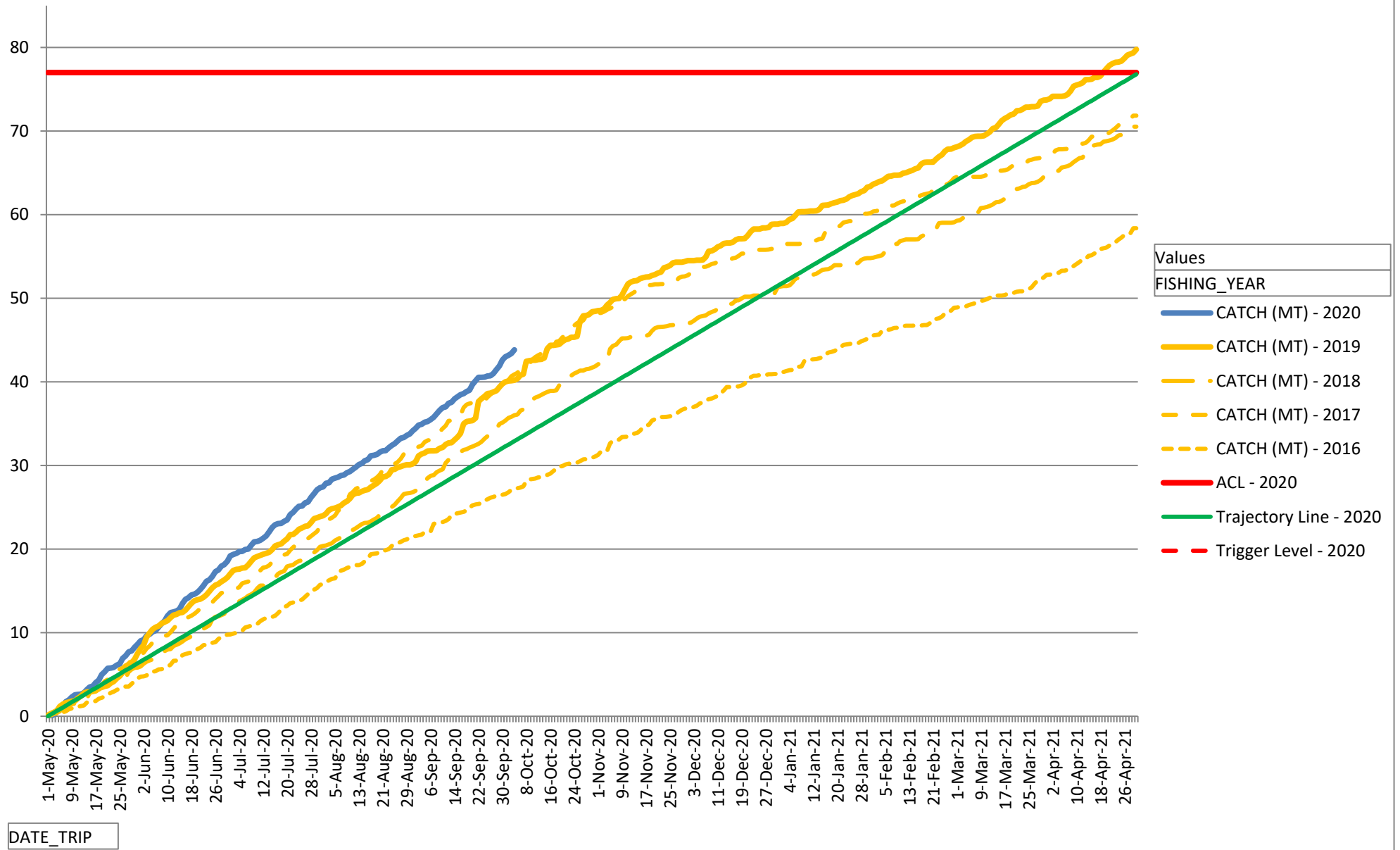
Commercial Groundfish GB Haddock Catch



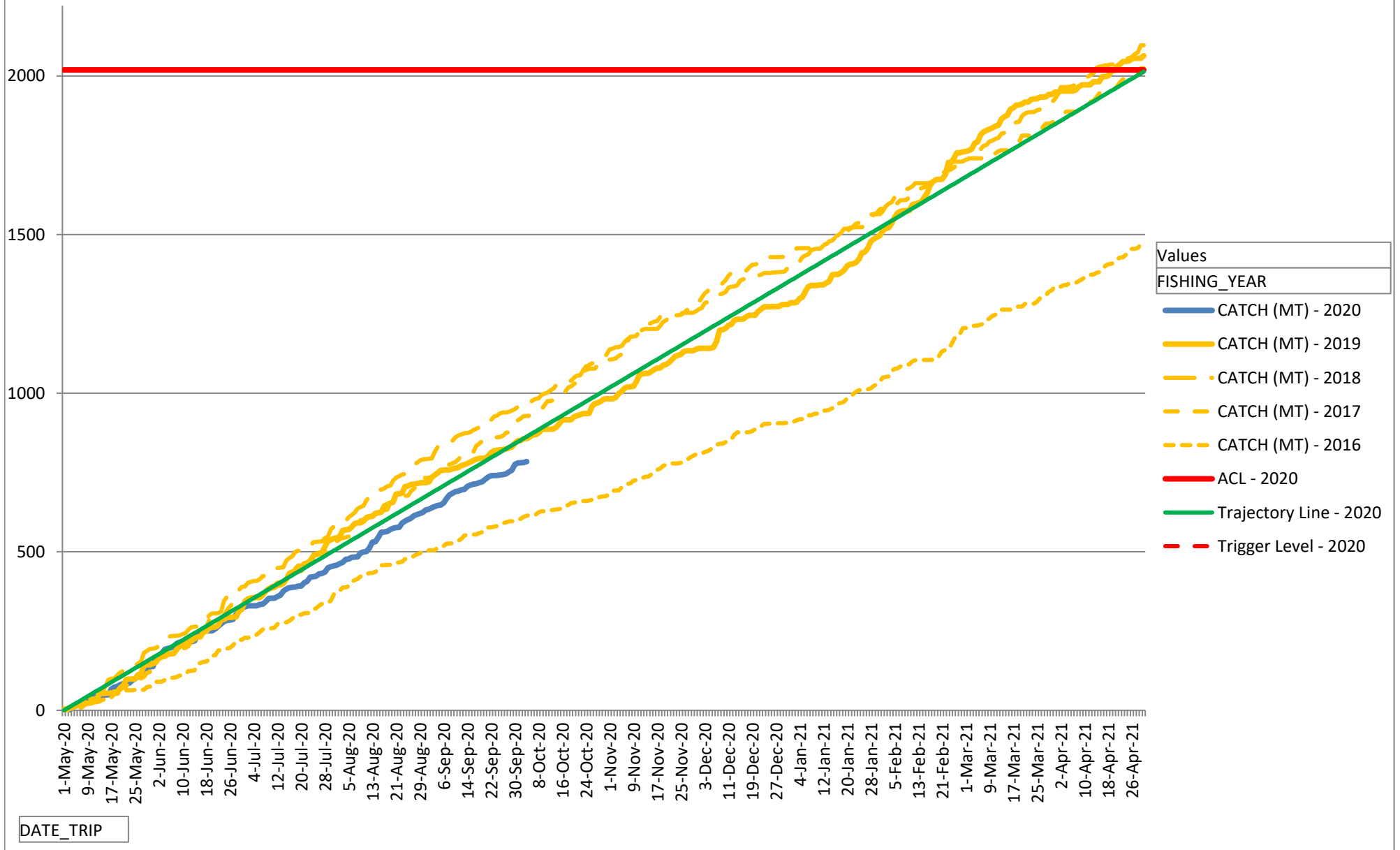
Commercial Groundfish GOM Haddock Catch



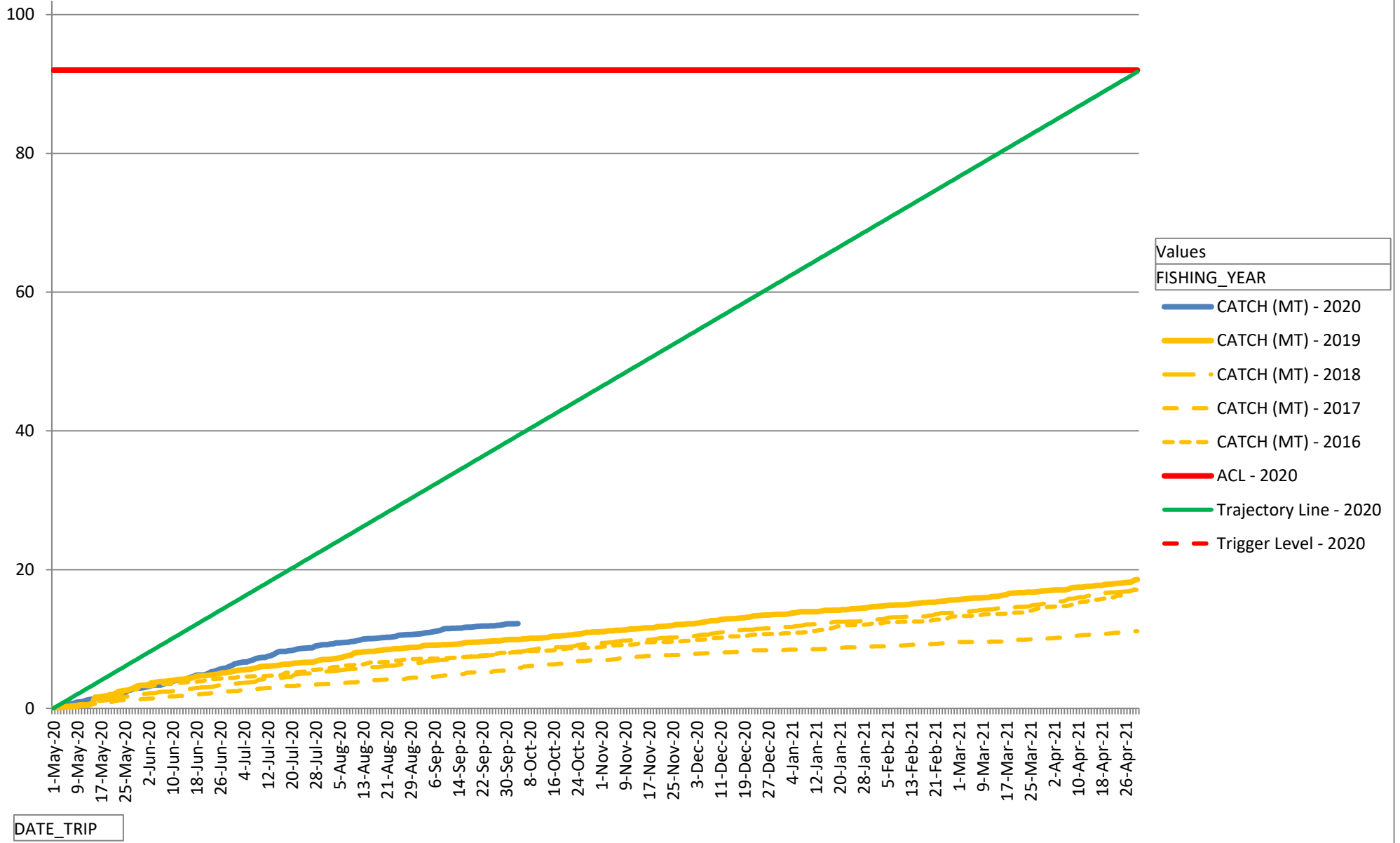
Commercial Groundfish Halibut Catch



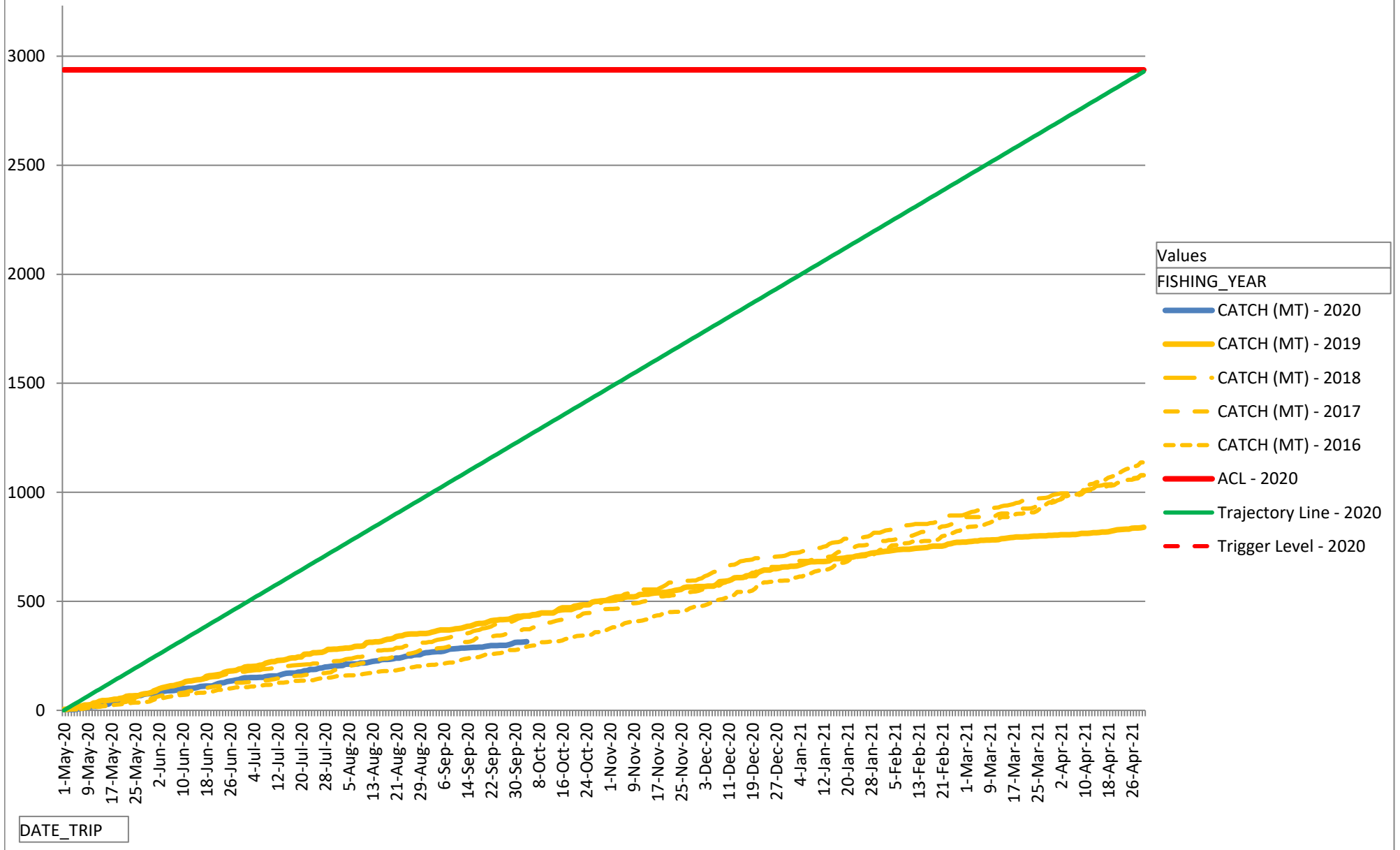
Commercial Groundfish White Hake Catch



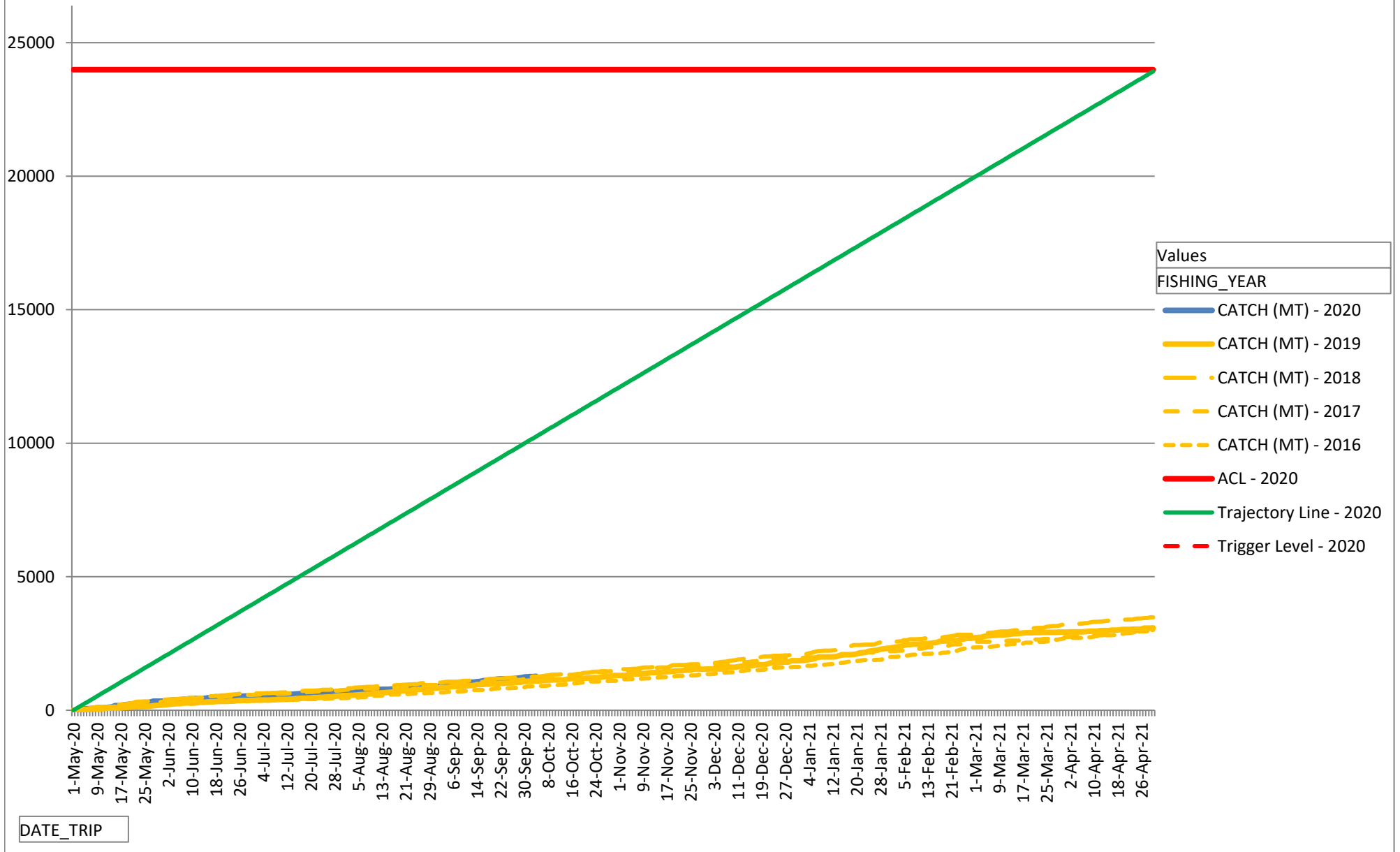
Commercial Groundfish Ocean Pout Catch



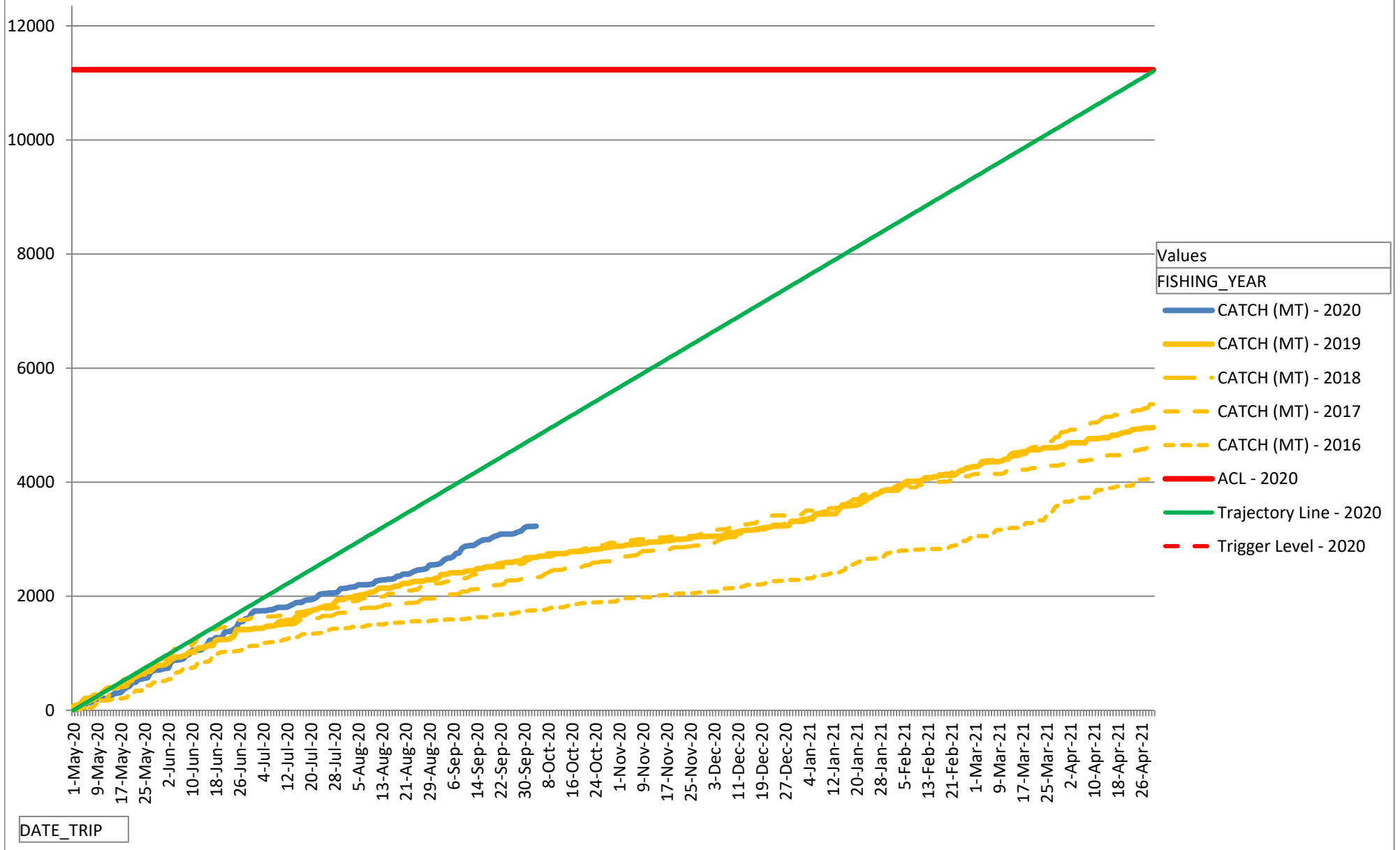
Commercial Groundfish Plaice Catch



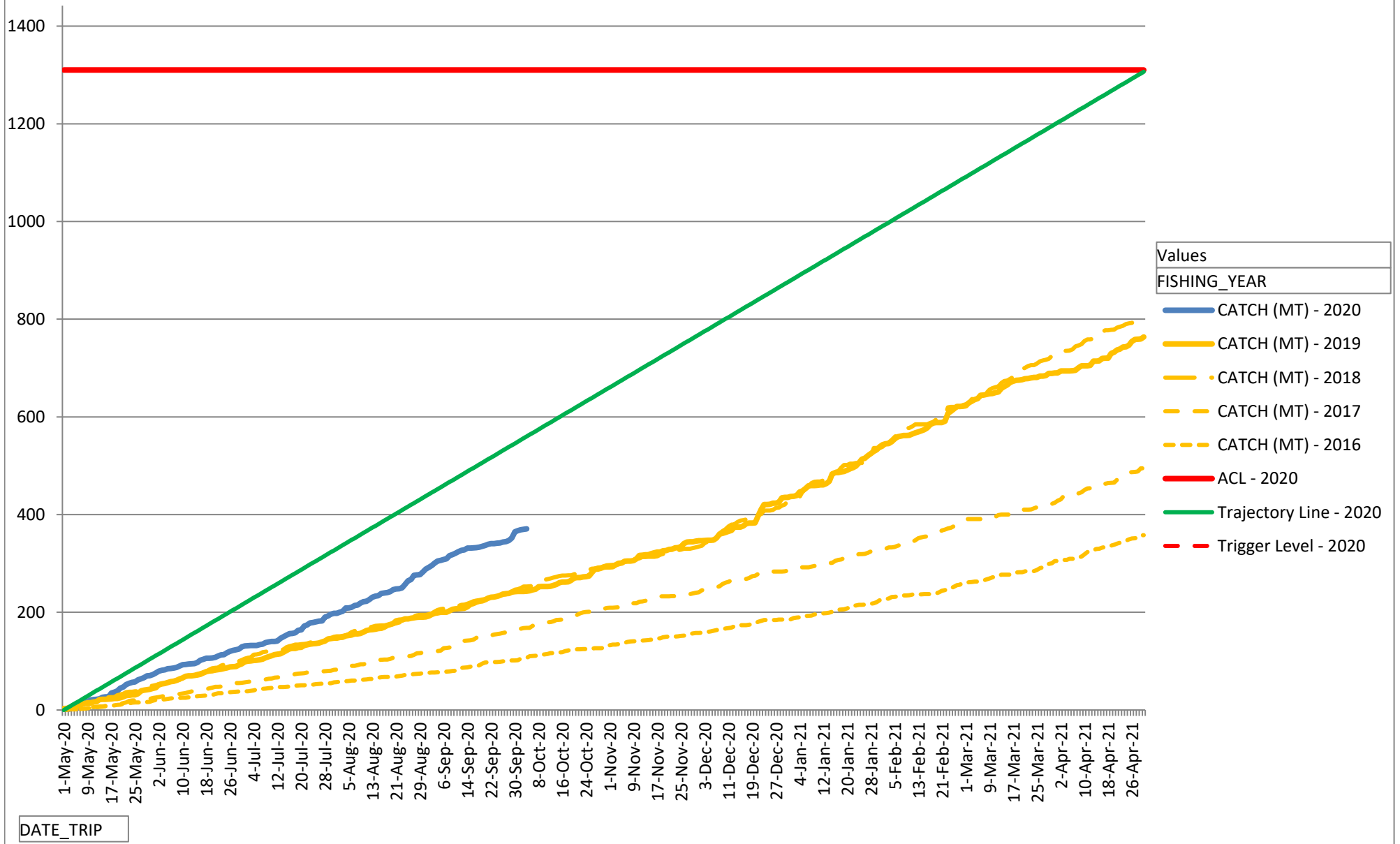
Commercial Groundfish Pollock Catch



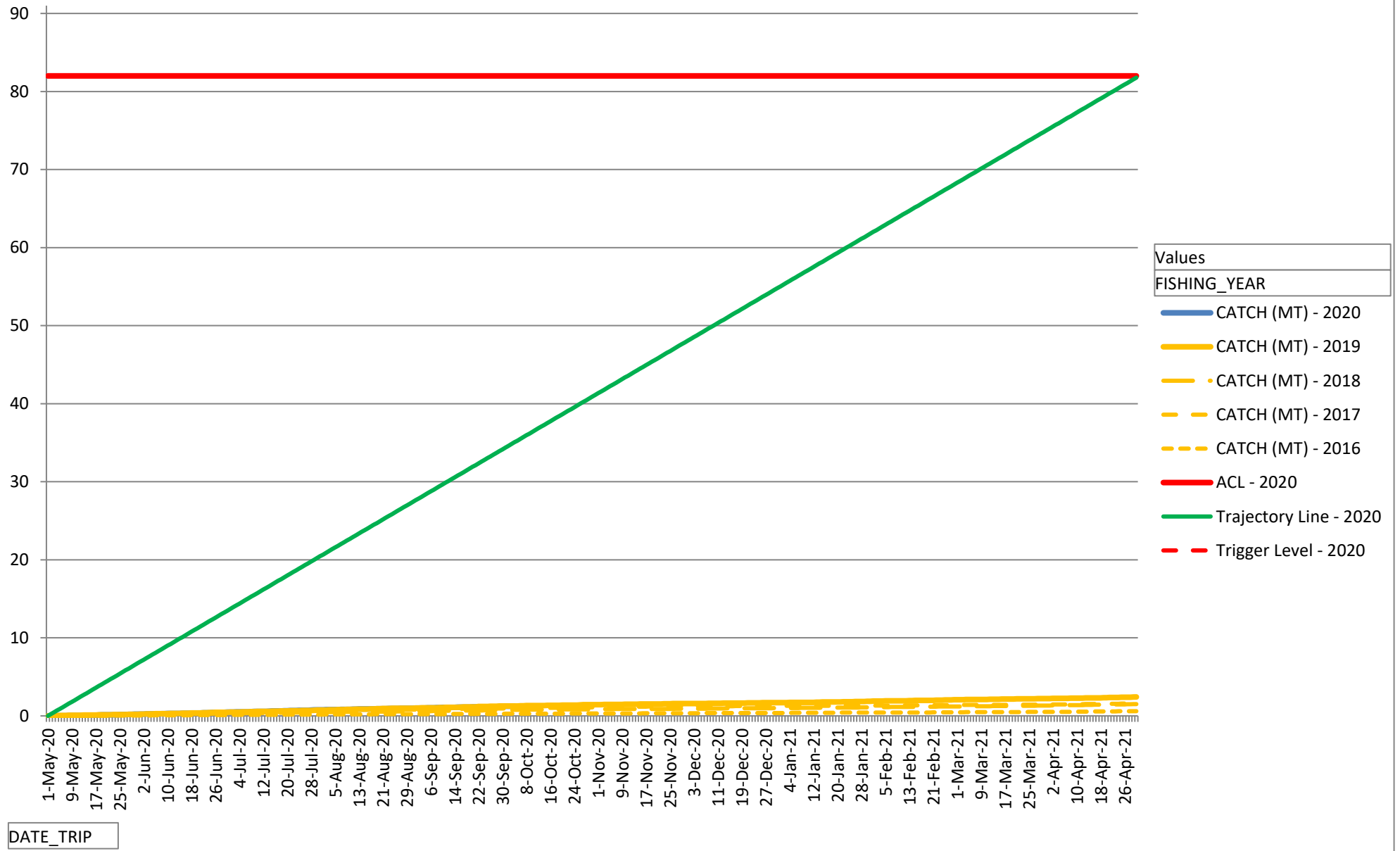
Commercial Groundfish Redfish Catch



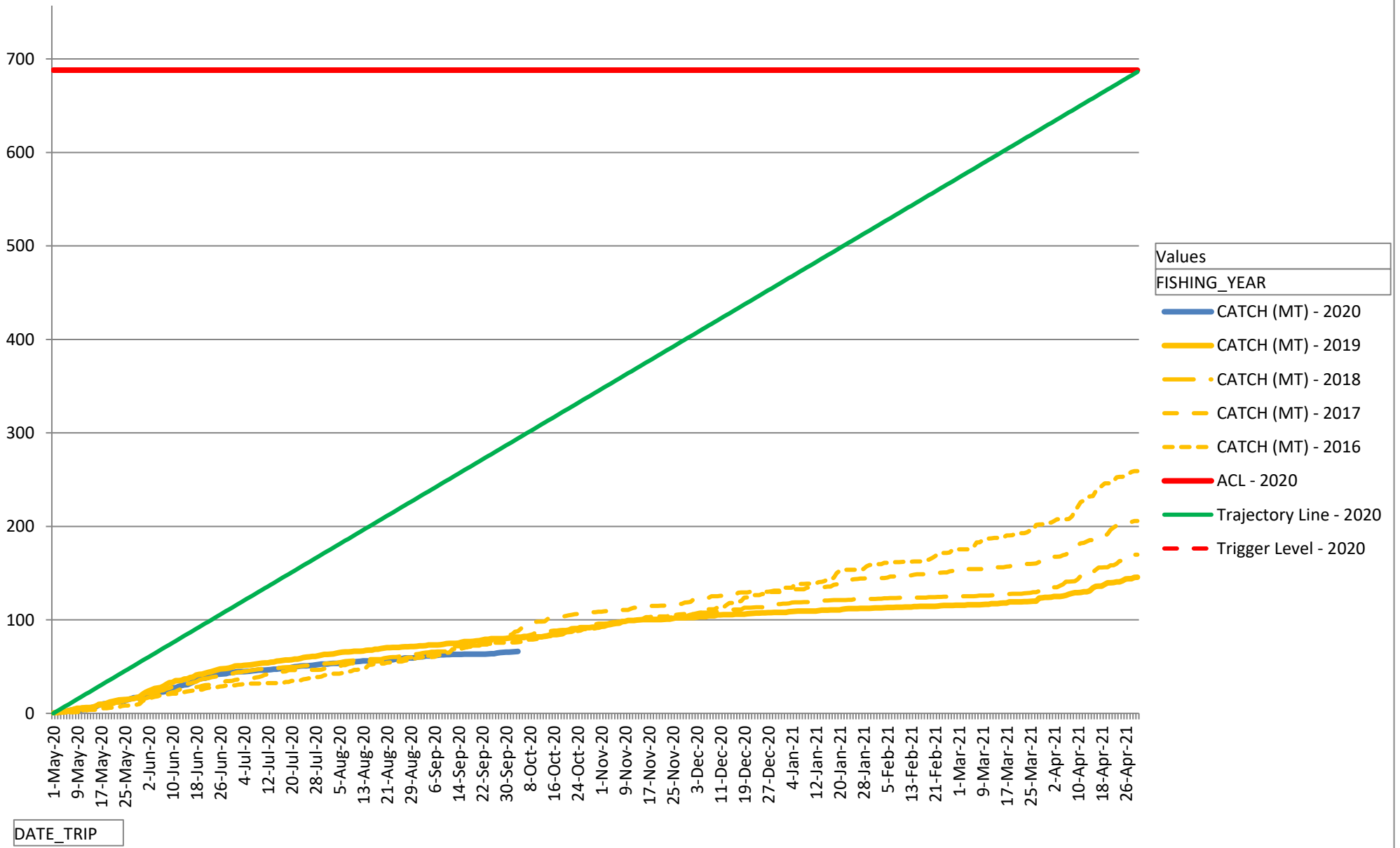
Commercial Groundfish Witch Flounder Catch



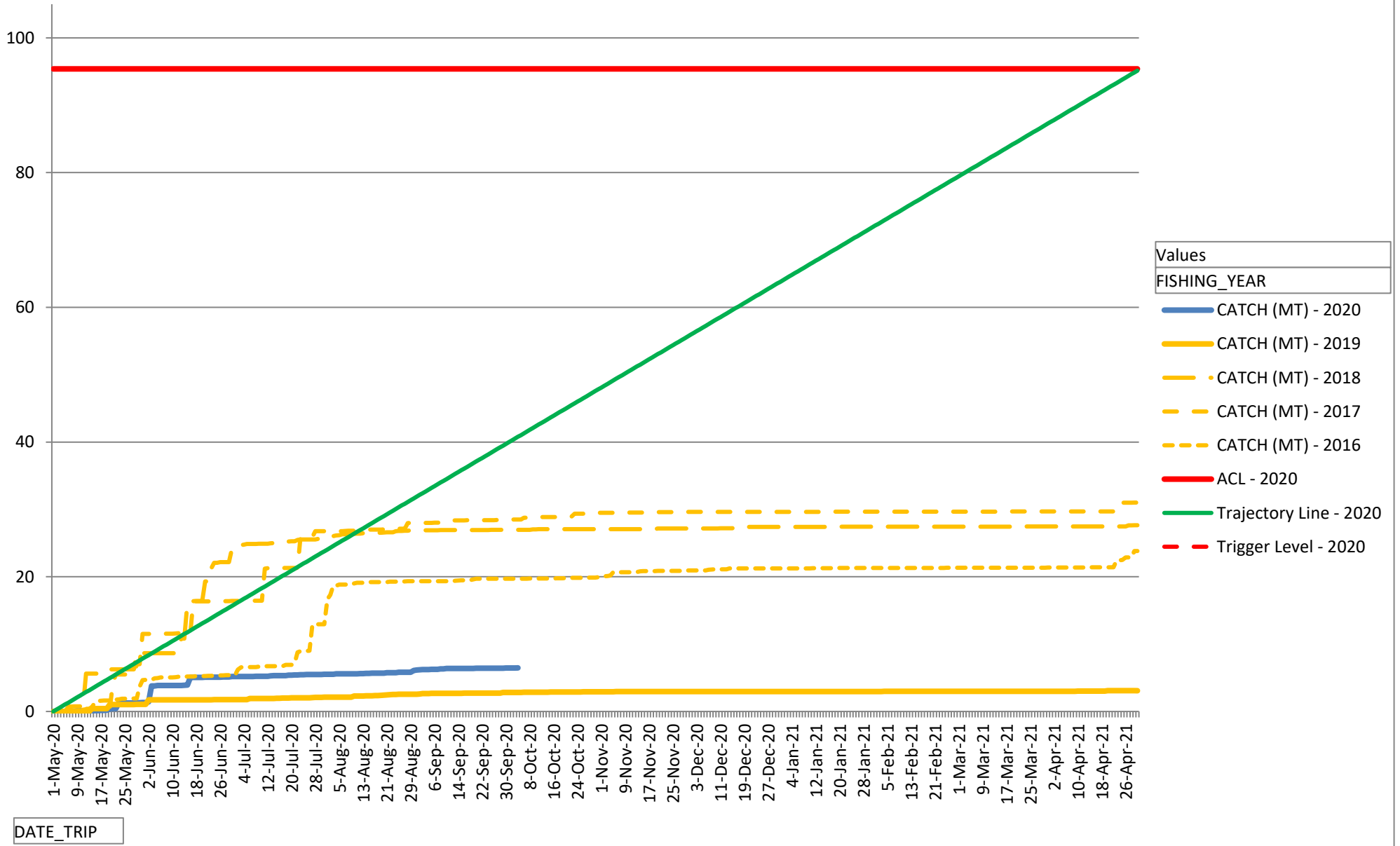
Commercial Groundfish Wolffish Catch



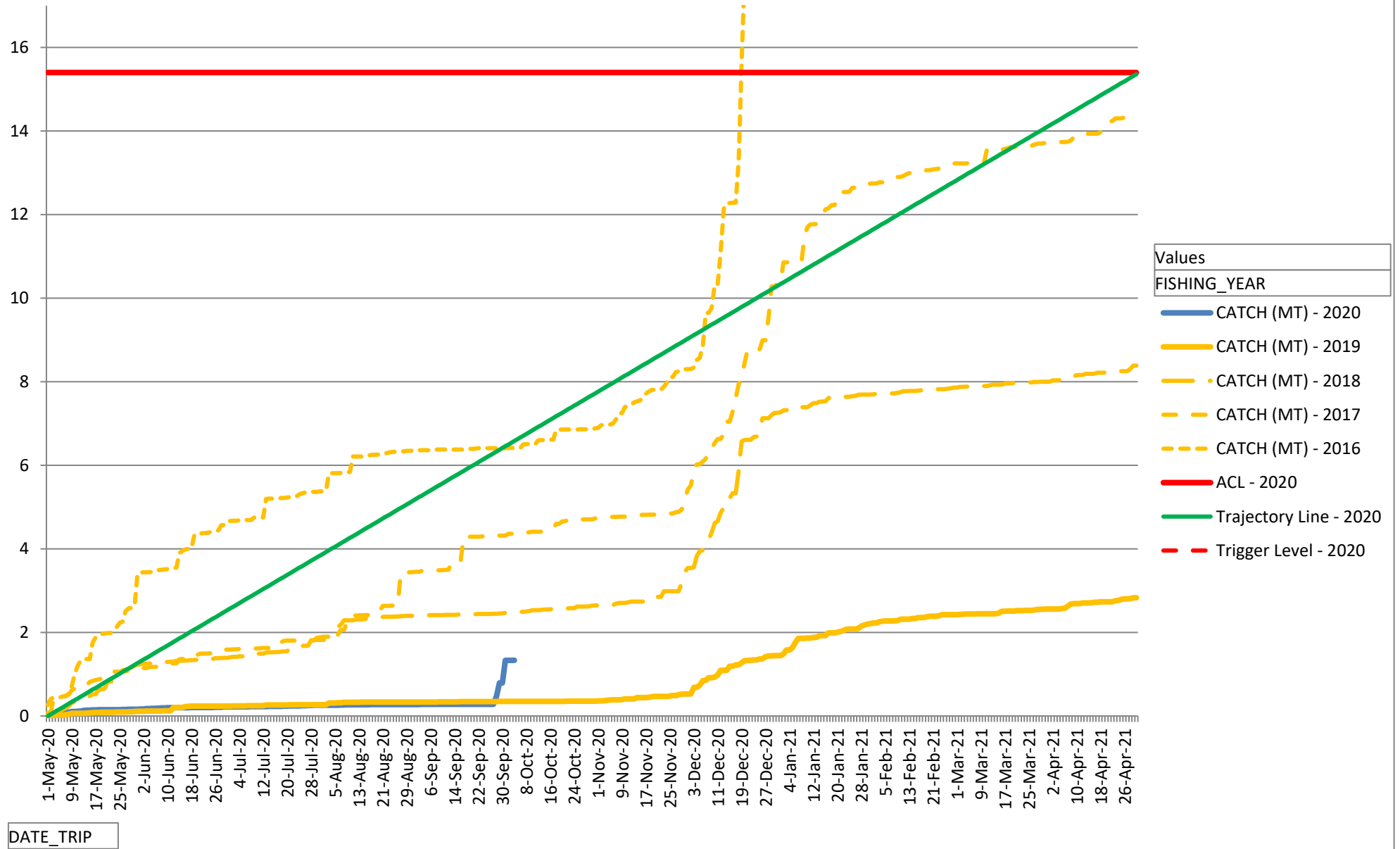
Commercial Groundfish CC/GOM Yellowtail Flounder Catch



Commercial Groundfish GB Yellowtail Flounder Catch



Commercial Groundfish SNE/MA Yellowtail Flounder Catch



ADDENDUM to Groundfish PDT Memo to SSC, dated October 9, 2020

Groundfish Plan Development Team October 12, 2020

1. Source of uncertainty- 2019 Canadian landings in Atlantic halibut and Georges Bank winter flounder stock assessment

Atlantic halibut - The 2020 management track assessment of Atlantic halibut is a Level 1 assessment (direct delivery to the PDT and SSC). When the PDT convened to discuss the Atlantic halibut assessment, the PDT suspected the Canadian landings for all CY2019 of 9 mt could be an error. Most recently, Canadian landings have been approximately 30-50mt. After examining the Center's database, the PDT found only January through May 2019 Canadian landings data was included for the 2019 catch value, while July through December 2019 appeared absent. Therefore, the PDT discussed how to address this catch uncertainty. Upon examining the publicly available NAFO database on Oct 9, 2020, the PDT summarizes the following landings information in comparison to the data reported in the 2020 assessment (see Table 1 of the Atlantic halibut stock assessment report):

Year	2020 Assessment Report Canadian Landings (mt)	NAFO Database Canadian Landings (mt)
2016	34	34
2017	34	34
2018	56	55
2019	9	56

When comparing data from 2016-2018, the two Canadian landings values are nearly identical. However, a major difference can be seen in the 2019 values. The terminal year of the assessment catch is used to derive catch advice. Therefore, the PDT proposes to use 56 mt (NAFO Database) rather than 9 mt (2020 Assessment Report) for Canadian landings in 2019. The PDT therefore is adjusting the total catch for 2019 from 134 mt (2020 Assessment Report) to 181 mt.

Georges Bank winter flounder- While examining this issue for Atlantic halibut, the PDT investigated GB winter flounder – which also has a Canadian catch component in the data for the stock assessment. The PDT found a similar data error in the Center database (missing several months of data for Canadian landings in 2019). 0 mt for 2019 for GB winter flounder Canadian landings in the 2020 stocks assessment seems unusual (see Table 1 of the GB winter flounder report) when compared to the NAFO Database. The PDT notes this as a minor source of uncertainty in 2019 catch.

Year	2020 Assessment Report Canadian Landings (mt)	NAFO Database Canadian Landings (mt)
2016	5	4
2017	6	7
2018	9	9
2019	0	11

2. Updated projections – following revised CY2020 “bridge year” catch estimates

See Attachment #1 for detailed undated catch estimates.

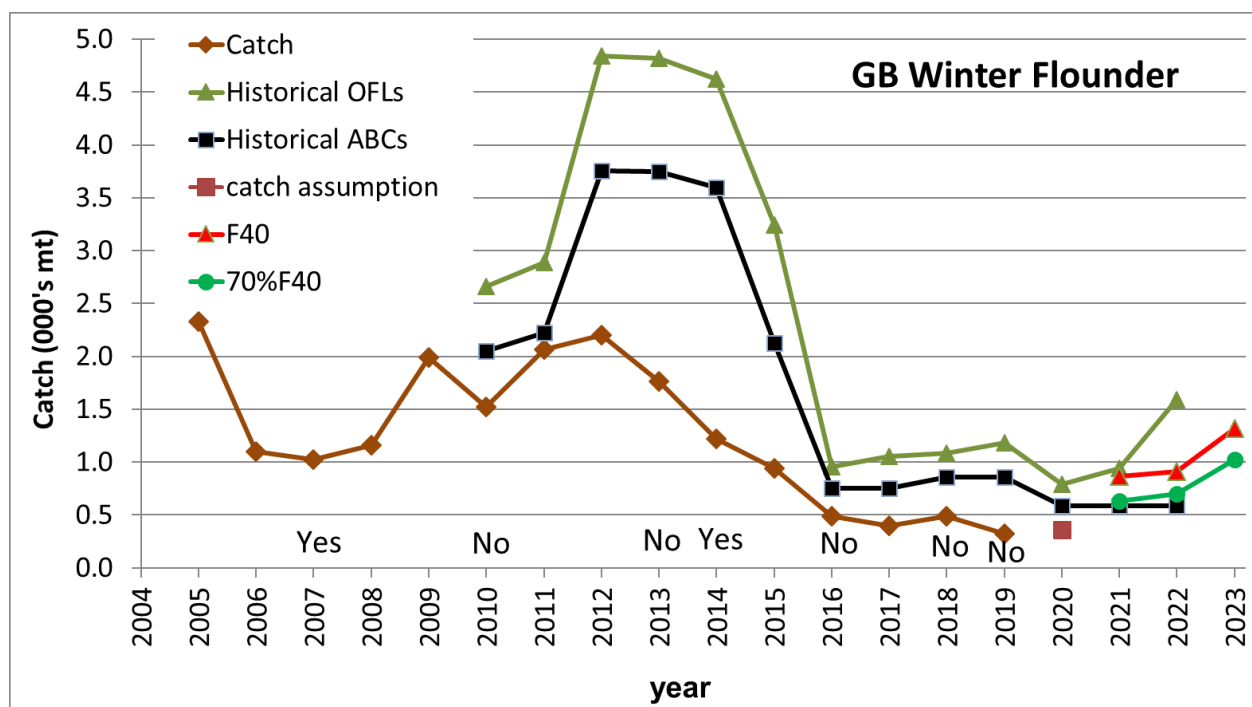
A. *Georges Bank winter flounder*

Projections- 70%F40

year	OFL	ABC	F	SSB
2021	865	634	0.25	2,405
2022	974	702	0.25	2,390
2023	1,415	1,022	0.25	3,790

Projections- First-year constant

year	OFL	ABC	F	SSB
2021	859	634	0.25	2,405
2022	974	634	0.22	2,404
2023	1,431	634	0.15	3,980



Year	Catch	Historical OFLs	Historical ABCs	Catch Assumption	F40	70%F40
2010	1,523	2,660	2,052			
2011	2,068	2,886	2,224			
2012	2,199	4,839	3,753			
2013	1,761	4,819	3,750			
2014	1,219	4,626	3,598			
2015	940	3,242	2,124			
2016	492	957	755			
2017	400	1,056	755			
2018	488	1,083	855			
2019	319	1,182	855			
2020		790	587	362		
2021		944	587		865	634
2022		1,590	587		908	702
2023					1,316	1,022

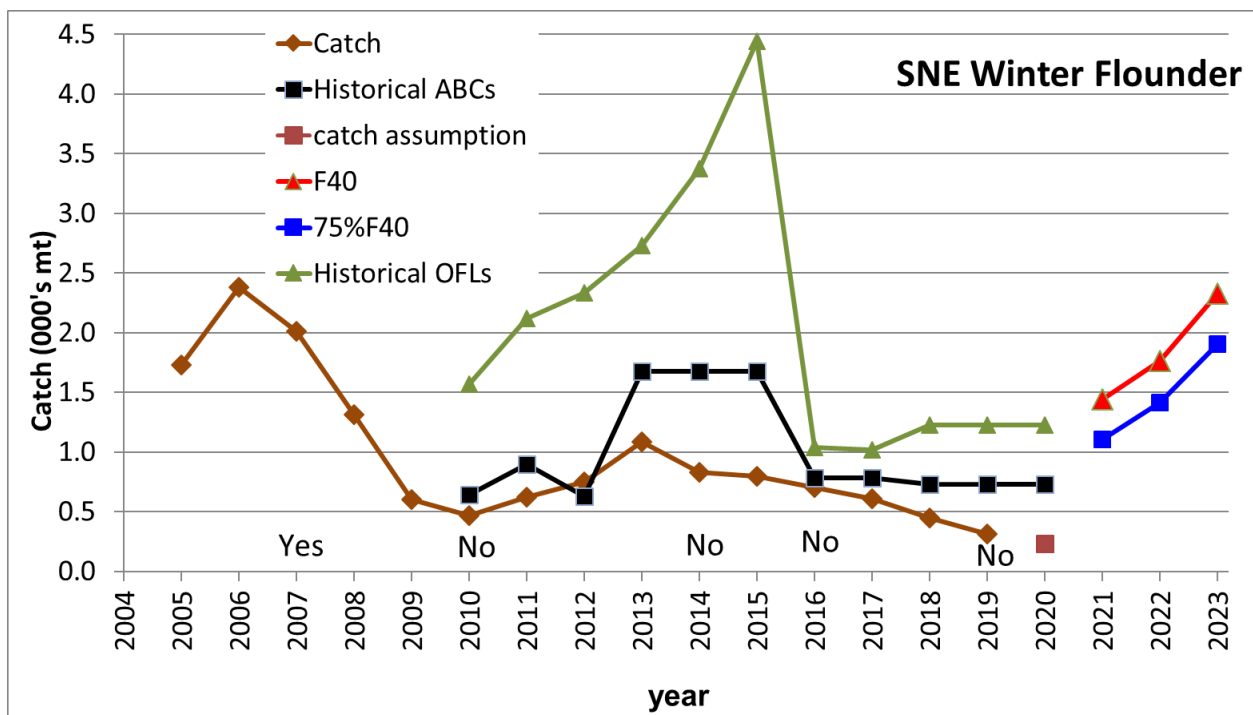
B. Southern New England/Mid-Atlantic winter flounder

Projections- 75%F40

year	OFL	ABC	F	SSB
2021	1,438	1,108	0.213	4,388
2022	1,839	1,412	0.213	5,201
2023	2,479	1,905	0.213	6,962

Projections- first year constant

year	OFL	ABC	F	SSB
2021	1,438	1,108	0.213	4,371
2022	1,839	1,108	0.164	5,236
2023	2,544	1,108	0.116	7,328



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

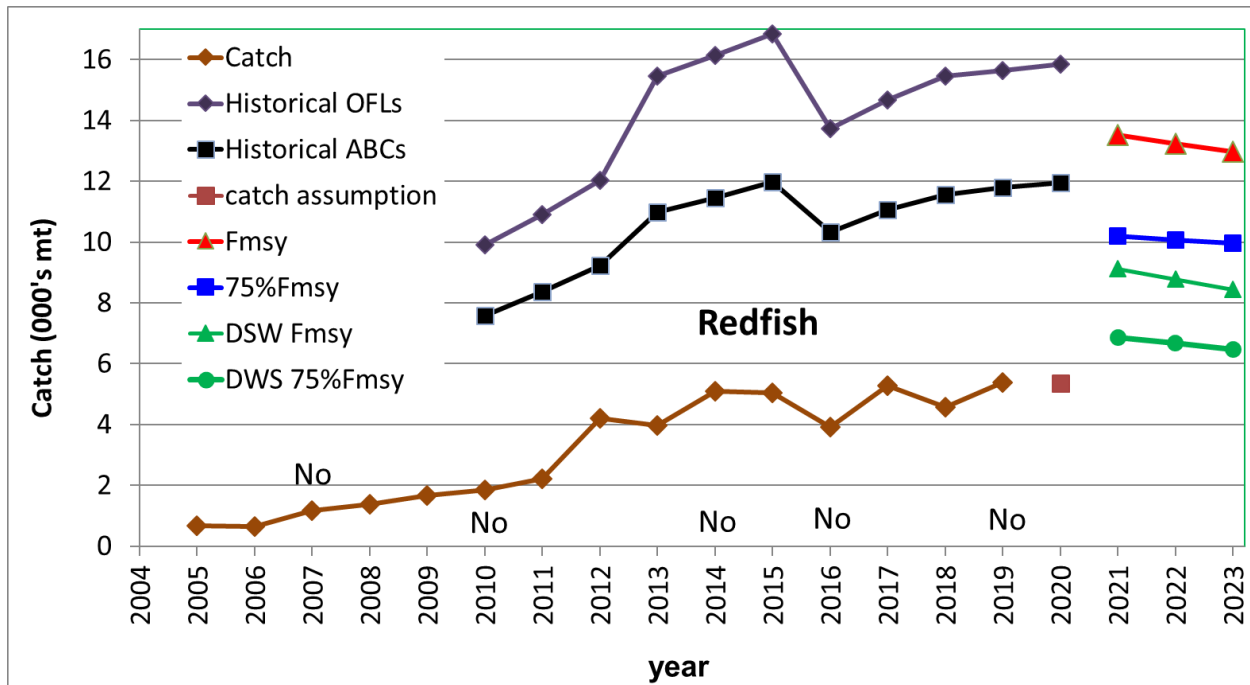
C. *Acadian redfish*

Projections – 75%FMSY, base

year	OFL	ABC	F	SSB
2021	13,519	10,186	0.029	354,027
2022	13,354	10,062	0.029	352,630
2023	13,229	9,967	0.029	349,097

Projections – 75%FMSY, DWS sensitivity

year	OFL	ABC	F	SSB
2021	13,519	6,872	0.019	355,340
2022	13,477	6,677	0.019	357,256
2023	13,480	6,469	0.018	357,124



Year	Catch	Historical OFLs	Historical ABCs	Catch Assumption	Base Fmsy	Base 75%Fmsy	DWS Fmsy	DWS 75%Fmsy
2010	1,850	9,899	7,586					
2011	2,227	10,903	8,356					
2012	4,196	12,036	9,224					
2013	3,964	15,468	10,995					
2014	5,097	16,130	11,465					
2015	5,044	16,845	11,974					
2016	3,926	13,723	10,338					
2017	5,266	14,665	11,050					
2018	4,568	15,451	11,552					
2019	5,380	15,640	11,785					
2020		15,852	11,942	5,353				
2021					13,519	10,186	9,121	6,872
2022					13,228	10,062	8,782	6,677
2023					12,984	9,967	8,432	6,469

3. Additional information for “Option C” for Southern New England/Mid-Atlantic winter flounder

Under the current prevailing conditions of the fishery in FY2019, the preliminary total discards are 2.6mt from the commercial (sectors and common pool) groundfish fishery and non-groundfish fishery (state and other fisheries components) catches are 149.9mt. Details of FY2019 preliminary catches of SNE/MA winter flounder are provided in the following two tables.

FY2019 Preliminary SNE/MA Winter Flounder Commercial Catch (mt)

Landings	Discards	Catch	Sub-ACL	Percent Caught
141.2	2.6	143.8	518.0	27.8%

FY 2019 Preliminary SNE/MA Winter Flounder State Water and Other Subcomponent Catch (mt)

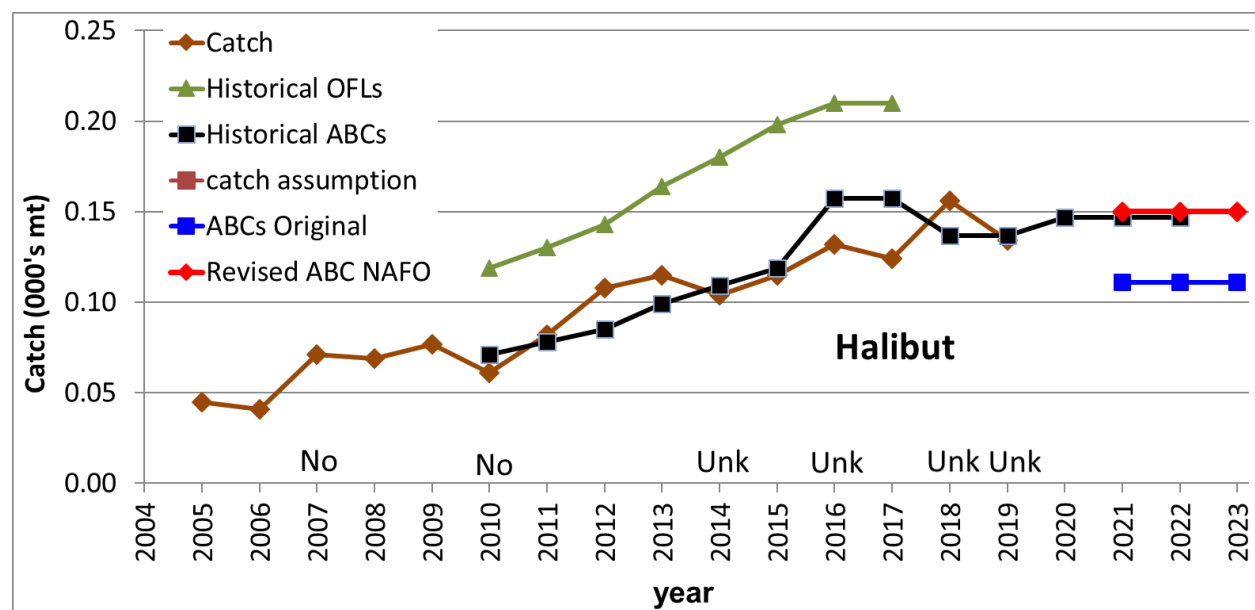
	Catch		Landings		Discards	
Stock	State Water	Other	State Water	Other	State Water	Other
	A + C	B + D	A	B	C	D
SNE/MA Winter Flounder	9.2	140.7	9.0	3.5	0.2	137.2
Values in metric tons of live weight						
Source: NMFS Greater Atlantic Regional Fisheries Office						
October 7, 2020, run date of June 25, 2020						

4. Revised catch advice option for Atlantic halibut

2019 catch (181 mt) X 0.83 = 150 mt

Catch advice with Canadian NAFO landings

year	OFL	ABC
2021	unknown	150
2022	unknown	150
2023	unknown	150



Year	Catch	Historical OFLs	Historical ABCs	F_{MSY}	ABC	Revised ABC
2010	61	119	71			
2011	82	130	78			
2012	108	143	85			
2013	115	164	99			
2014	104	180	109			
2015	115	198	119			
2016	132	210	158			
2017	124	210	158			
2018	156	undefined	137			
2019	134	undefined	137			
2020		undefined	147			
2021			147	-	111	150
2022			147	-	111	150
2023				-	111	150

5. Summary of current NOAA stock status and additional information

Stock	Status	Rebuilding Status	Last / Next Planned Assessment ^{1,B}	Acceptable Biological Catch Annual Catch Limit (ABC/ACL) Default Management Uncertainty Buffer ² for components of the fishery with sub-ACLs	Accountability Measures (AMs)
Cod, GB	Overfishing Overfished	Rebuild by 2026	SEP 2019/ SEP 2021	95% of sub-ABC	<p>Proactive: <u>Common pool:</u> Trimester TAC, DAS, and stock area closures <u>Sectors:</u> In-season ACL, stock area closures <u>Recreational</u> – GOM cod and haddock - NMFS, in consultation with the Council, will implement measures to prevent recreational fishery from exceeding applicable sub-ACL in following years, AMs may include adjustments to fishing season, minimum fish size, and possession limits.</p> <p>Reactive: <u>Sectors</u> - Overages deducted from a sector's allocation in next fishing year <u>Common pool</u> - Overages deducted from sub-ACL <u>Non-allocated stocks</u> - gear restrictions in year 2 or 3 following the overage, depending on timing of information <u>Other fisheries</u> – sub-ACLs with associated AMs for certain groundfish stocks caught by the scallop fishery (windowpane flounder stocks, GB and SNE/MA yellowtail flounder stocks), small mesh fisheries (GB yellowtail flounder); and mid-water trawl herring fishery (haddock stocks).</p>
Cod, GOM	Overfishing Overfished	Rebuild by 2024	SEP 2019/ SEP 2021	95% of sub-ABC comm.; 93% of sub-ABC rec.	
Haddock, GB	No overfishing Not overfished	Rebuilt	SEP 2019/ JUL ^R & SEP 2021	95% of sub-ABC 93% of sub-ABC MWT	
Haddock, GOM	No overfishing Not overfished	Rebuilt	SEP 2019/ JUL ^R & SEP 2021	95% of sub-ABC comm.; 93% of sub-ABC rec. 93% of sub-ABC MWT	
YTF, GB	Overfishing Overfished	Rebuild by 2032	JUL 2020/ JUL 2021	97% of sub-ABC 93% of sub-ABC small-mesh 97% of sub-ABC scallops	
YTF, SNE/MA	No overfishing Overfished	Rebuild by 2029	SEP 2019/ SEP 2021	95% of sub-ABC 100% of sub-ABC scallops	
YTF, CC/GOM	No overfishing Overfished	Rebuild by 2023	SEP 2019/ SEP 2021	95% of sub-ABC	
American Plaice	No overfishing Not overfished	Rebuilt	SEP 2019/ SEP 2021	95% of sub-ABC	
Witch Fl.	Unknown Overfished	Rebuild by 2043	SEP 2019/ SEP 2021	95% of sub-ABC	
Winter Fl., GB	No overfishing Overfished	Rebuild by 2029	SEP 2019/ SEP 2020	97% of sub-ABC	
Winter Fl., GOM	No overfishing Unknown	Stock status unknown	SEP 2020	95% of sub-ABC	
Winter Fl., SNE/MA	No overfishing Overfished	Rebuild by 2023	SEP 2019/ SEP 2021	95% of sub-ABC	
GB/GOM Acadian Redfish	No overfishing Not overfished	Rebuilt	SEP 2017/ SEP 2020	95% of sub-ABC	
Pollock	No overfishing Not overfished	Rebuilt	SEP 2019/ SEP 2021	95% of sub-ABC	
White Hake	No overfishing Overfished	Rebuild by 2014, <i>new plan in development</i>	SEP 2019/ SEP 2021	95% of sub-ABC	

¹ Terminal year for data used in assessments typically is the year before the assessment.

^R Indicates a research track assessment.

² 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	Status	Rebuilding Status	Last / Next Planned Assessment	Acceptable Biological Catch Annual Catch Limit (ABC/ACL) Buffer	Accountability Measures (AMs)
Ocean Pout	No overfishing Overfished	Rebuild by 2029	SEP 2017/ SEP 2020	93% of sub-ABC	Same as above
GOM/GB Windowpane FL.	No overfishing Overfished	Rebuild by 2029	SEP 2019/ SEP 2020	93% of sub-ABC	
SNE/MAB Windowpane FL.	No overfishing Not overfished	Rebuilt	SEP 2019/ SEP 2020	93% of sub-ABC	
Atlantic Halibut	No overfishing Overfished	Rebuild by 2056	SEP 2019/ SEP 2020	95% of ABC	
Atlantic Wolffish	No overfishing Overfished	Unable to determine rebuilding period	SEP 2017/ SEP 2020	93% of ABC	

Attachment I: Updated estimates of CY2020 catches – for the “bridge year” in the projections

Table 1: Updated estimated CY2020 Northeast Multispecies Total Catch (mt)

Stock	Total Catch	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
GB Winter Flounder	335.6	309.6	309.6	-					-	26.0
SNE/MA Winter Flounder	231.4	86.1	77.9	8.2					3.8	141.5
Redfish	5352.6	5346.9	5346.3	0.5					5.2	0.6
Values in metric tons of live weight					Any value for a non-allocated species may include landings of that stock or misreporting of species and/or stock area. These are northern windowpane, southern windowpane, ocean pout, halibut, and wolffish.					
Sector and common pool include estimate of missing dealer reports										
Source: NMFS Greater Atlantic Regional Fisheries Office										
October 8, 2020, run dates of October 2, 2020 and September 17, 2020										
These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.										

Table 2: Updated estimated CY2020 Northeast Multispecies Total Landings (mt)

Stock	Total Landings	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
GB Winter Flounder	308.3	307.6	307.6	-					-	0.7
SNE/MA Winter Flounder	89.9	82.8	74.8	8.1					3.5	3.5
Redfish	5307.0	5302.8	5302.3	0.5					4.0	0.2
Values in metric tons of live weight					Any value for a non-allocated species may include landings of that stock or misreporting of species and/or stock area. These are northern windowpane, southern windowpane, ocean pout, halibut, and wolffish.					
Sector and common pool include estimate of missing dealer reports										
Source: NMFS Greater Atlantic Regional Fisheries Office										
October 8, 2020, run dates of October 2, 2020 and September 17, 2020										
These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.										

Table 3: Updated estimated CY2020 Northeast Multispecies Discards (mt)

Stock	Total Discards	Groundfish Fishery	Sector	Common Pool	Recreational	Midwater Trawl Herring Fishery	Scallop Fishery	Small Mesh Fisheries	State Water	Other
	A to H	A+B+C	A	B	C	D	E	F	G	H
GB Winter Flounder	27.3	2.0	2.0	-					-	25.3
SNE/MA Winter Flounder	141.5	3.2	3.1	0.1					0.2	138.0
Redfish	45.6	44.0	44.0	0.0					1.2	0.4
Values in metric tons of live weight										
Sector and common pool include estimate of missing dealer reports										
Source: NMFS Greater Atlantic Regional Fisheries Office										
October 8, 2020, run dates of October 2, 2020 and September 17, 2020										
These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.										

Table 4: Updated estimated CY2020 "bridge year" catch estimate including US and Canadian catches, as appropriate.

Stock	CY 2020 Catch Estimate (mt)		
	US	Canada	Total
GB Winter Flounder	336	26	362
SNE/MA Winter Flounder	231	n/a	251
Redfish	5,353	n/a	5,184