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 background[1].

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.

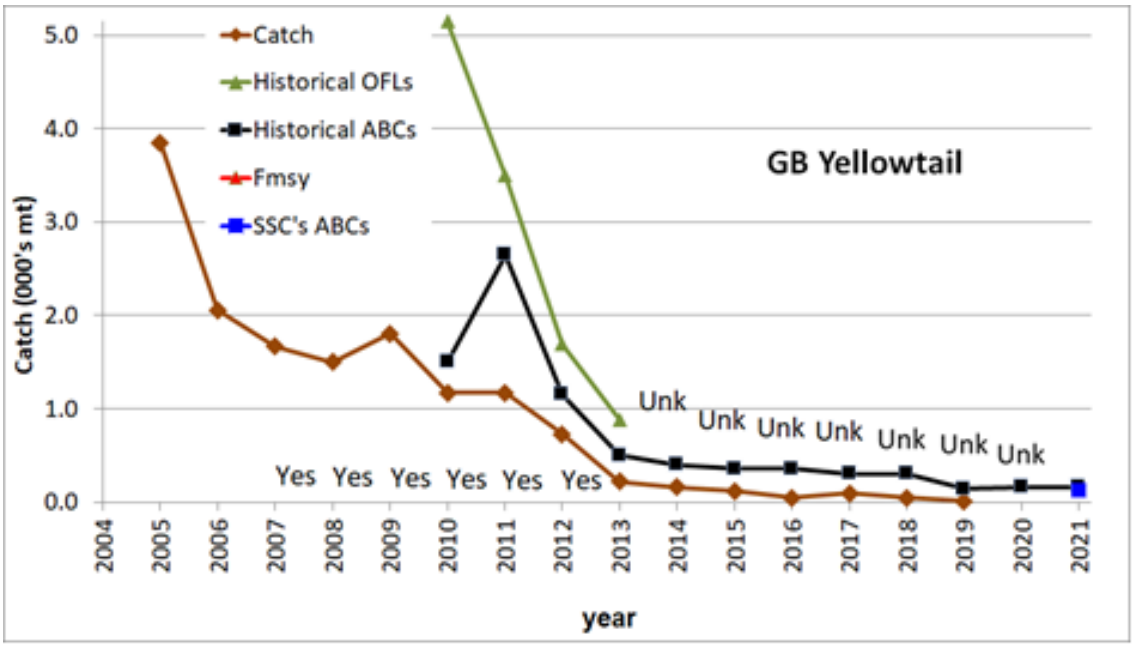


Table 1- Total US and Canada CY catch (mt) performance of GB yellowtail flounder, including OFLs and ABCs.

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.							

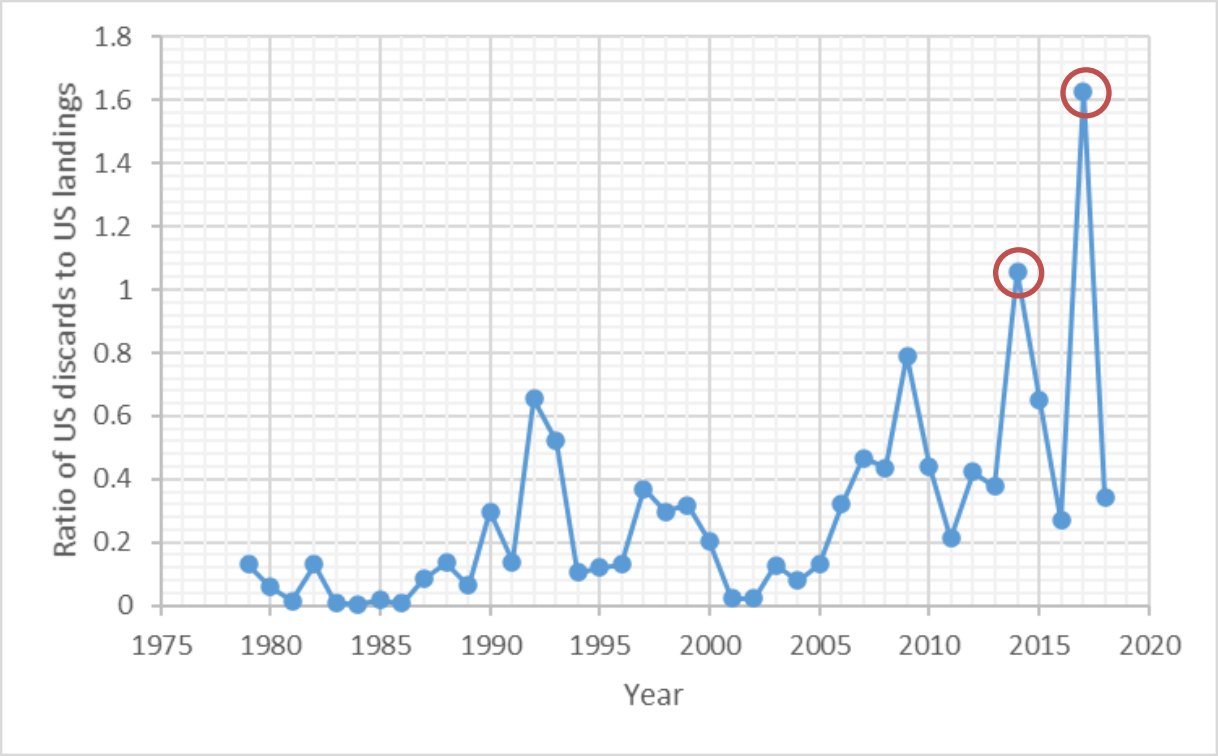
Table 3- Recent GB yellowtail flounder small-mesh fisheries sub-ACLs and catches (mt) for fishing years 2013 through preliminary FY2019*. Values shown in metric tons (mt). Source: GARFO. The sub-ACL was implemented in FY2013 and is not evaluated in-season.

	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 summaries 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						

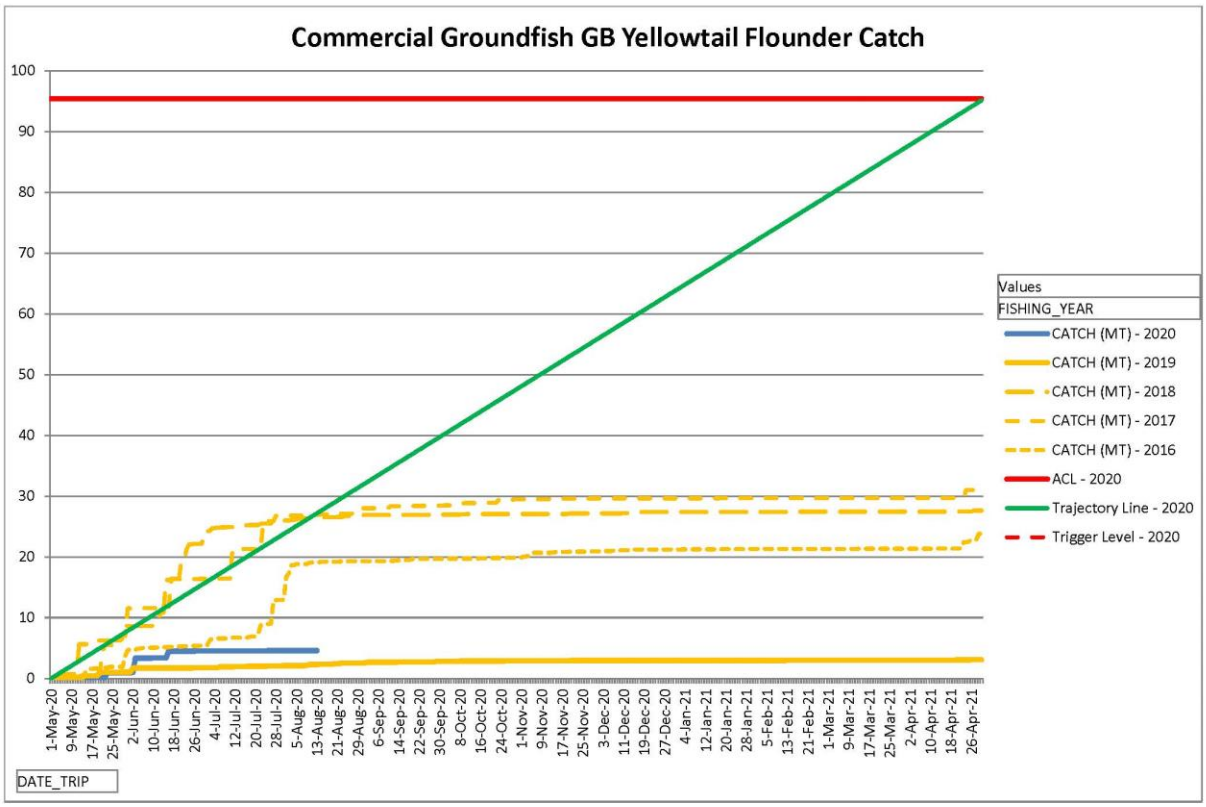
* indicates confidential data based on <3 vessels.

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 reminder 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$).

		Sector sub-ACL	Catch (mt)		Utilization (%)		Gross Rev ($mil, 2019)	
	FY		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 OFL[3]. 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 used[4]. 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

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 reveled 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 facilitated 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.

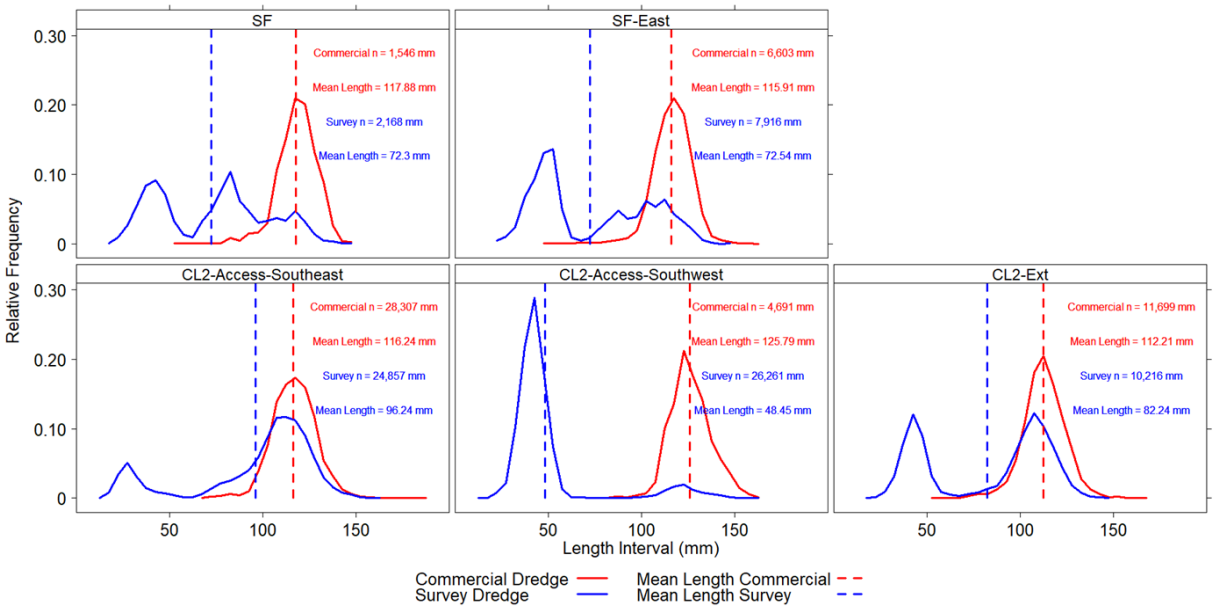


Figure 2 – Scallop density per m^2 of scallops with shell height less than 60 mm from the 2019 VIMS dredge survey of CAII AA and surrounds relative to FY2020 rotational management areas and groundfish/habitat closures.

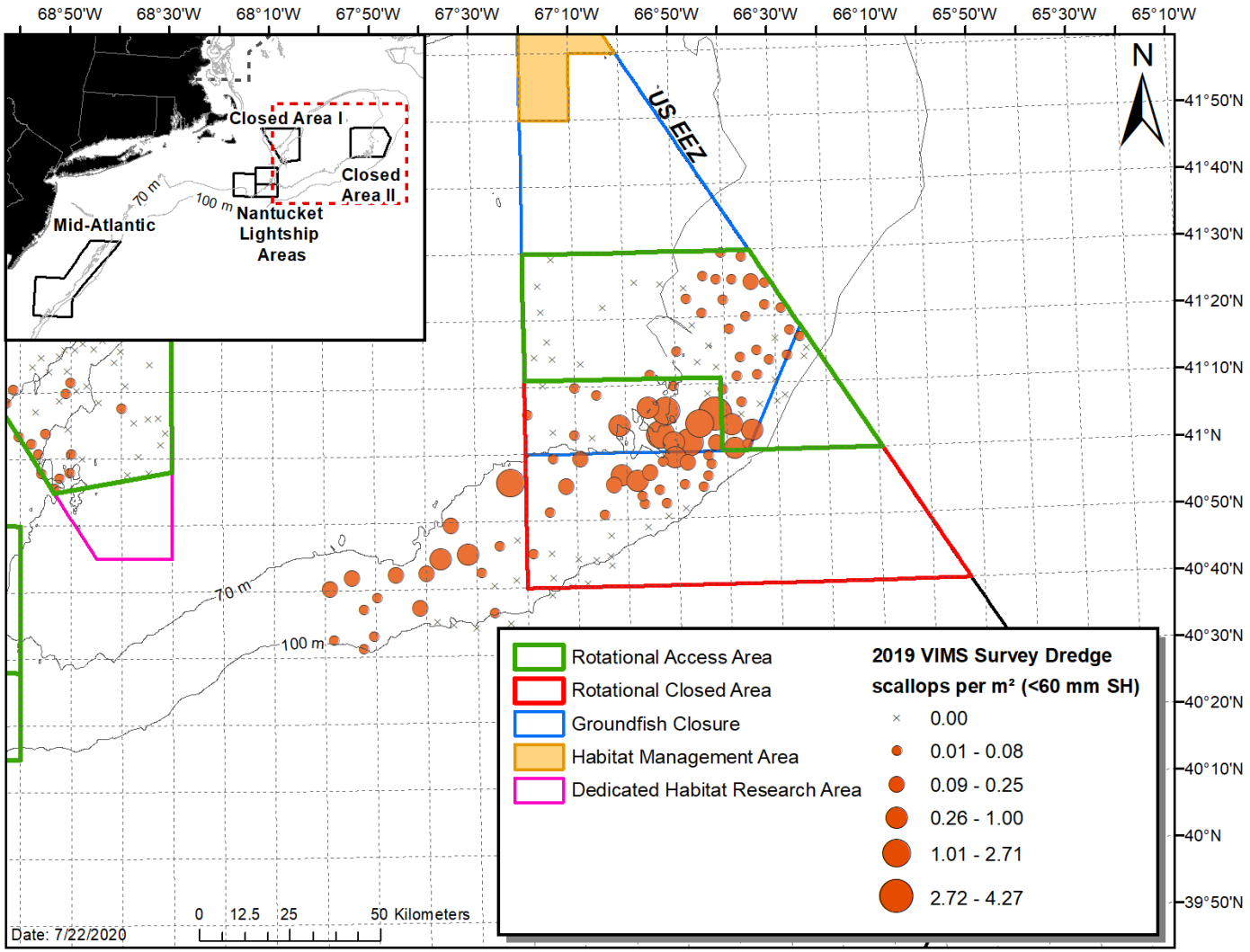
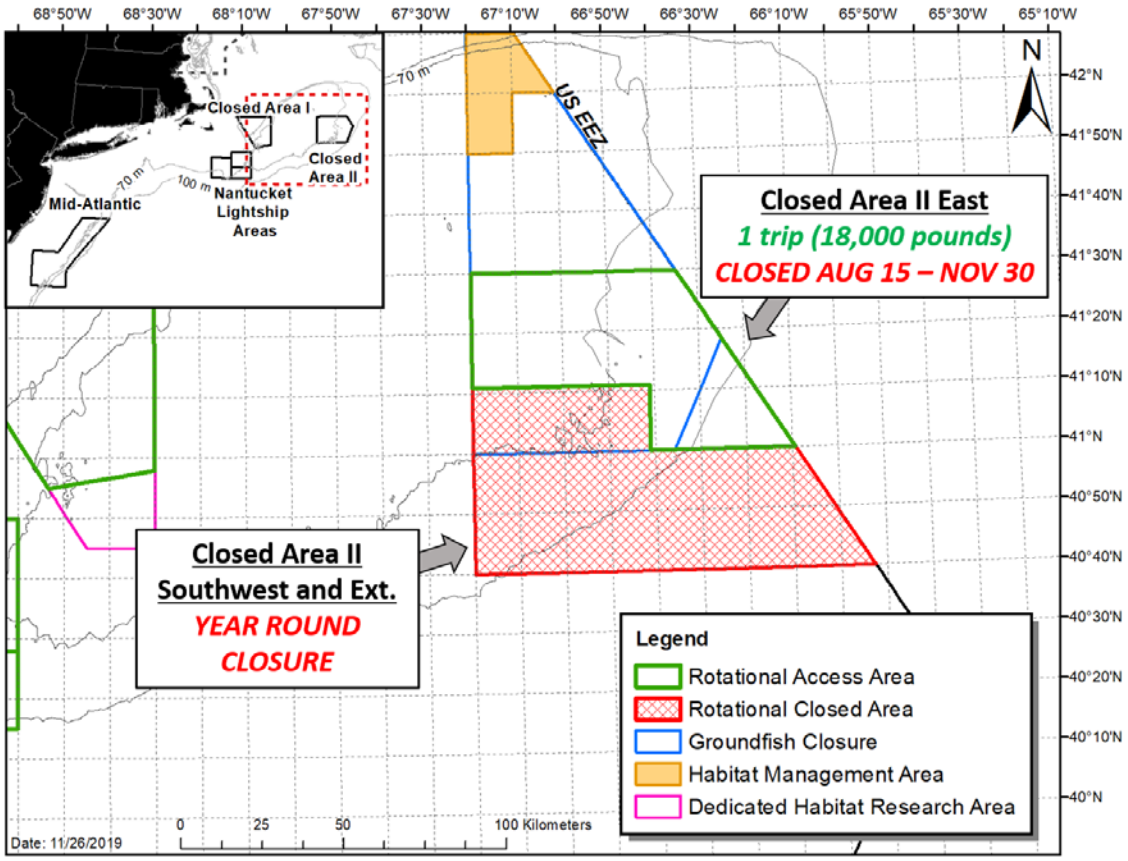


Figure 3 – Area coverage of the extended CAII seasonal closure (Aug. 15 – Nov. 30, 2020) implemented for FY2020.



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.

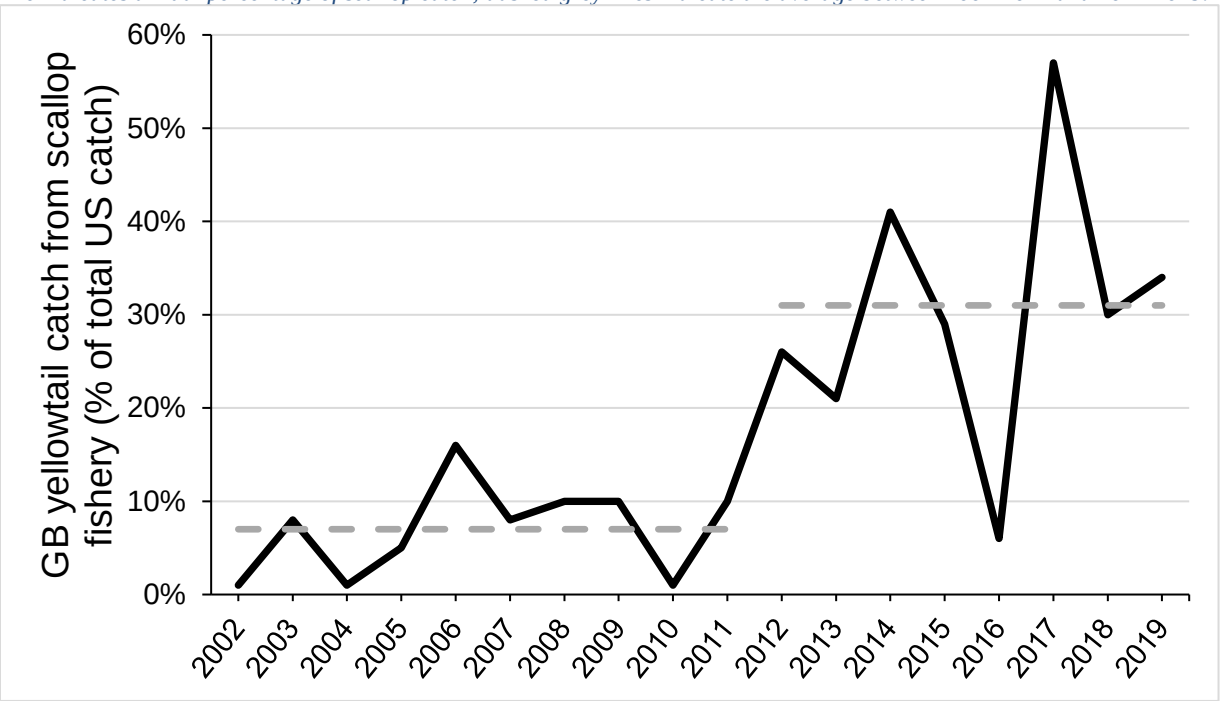


Table 1. GB yellowtail landings and discards (metric tons) from 2002-2019 based on TRAC 2020 assessment of GB yellowtail (updated from Groundfish Framework 48). Light gray shading indicates years considered in Framework 48; dark gray shading indicates years since Framework 48.

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.

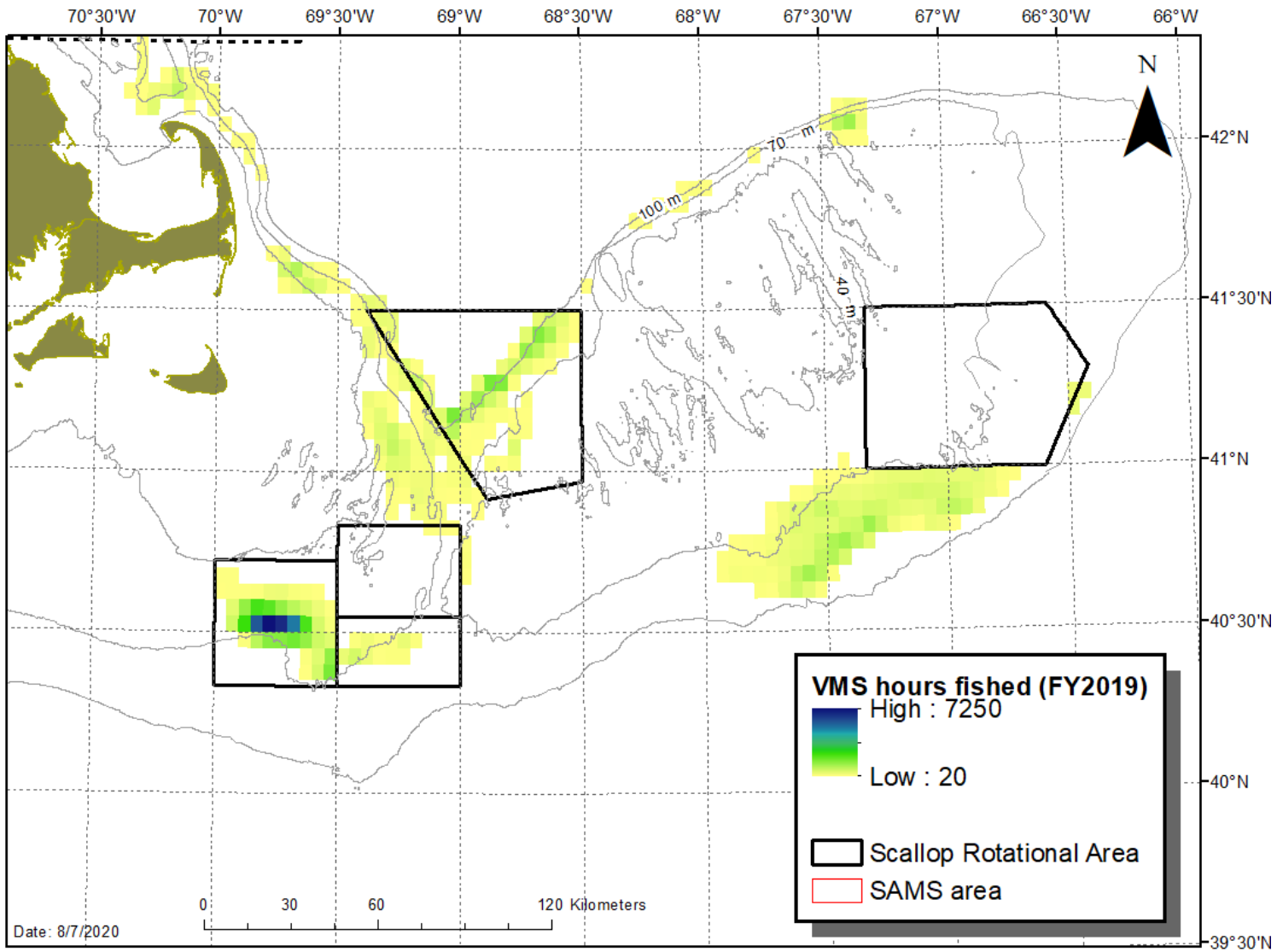


Figure 6 – Scallop fishery VMS hours fished on Georges Bank in FY2018. Scallop Area Management Simulator (SAMS) model area boundaries are in red.

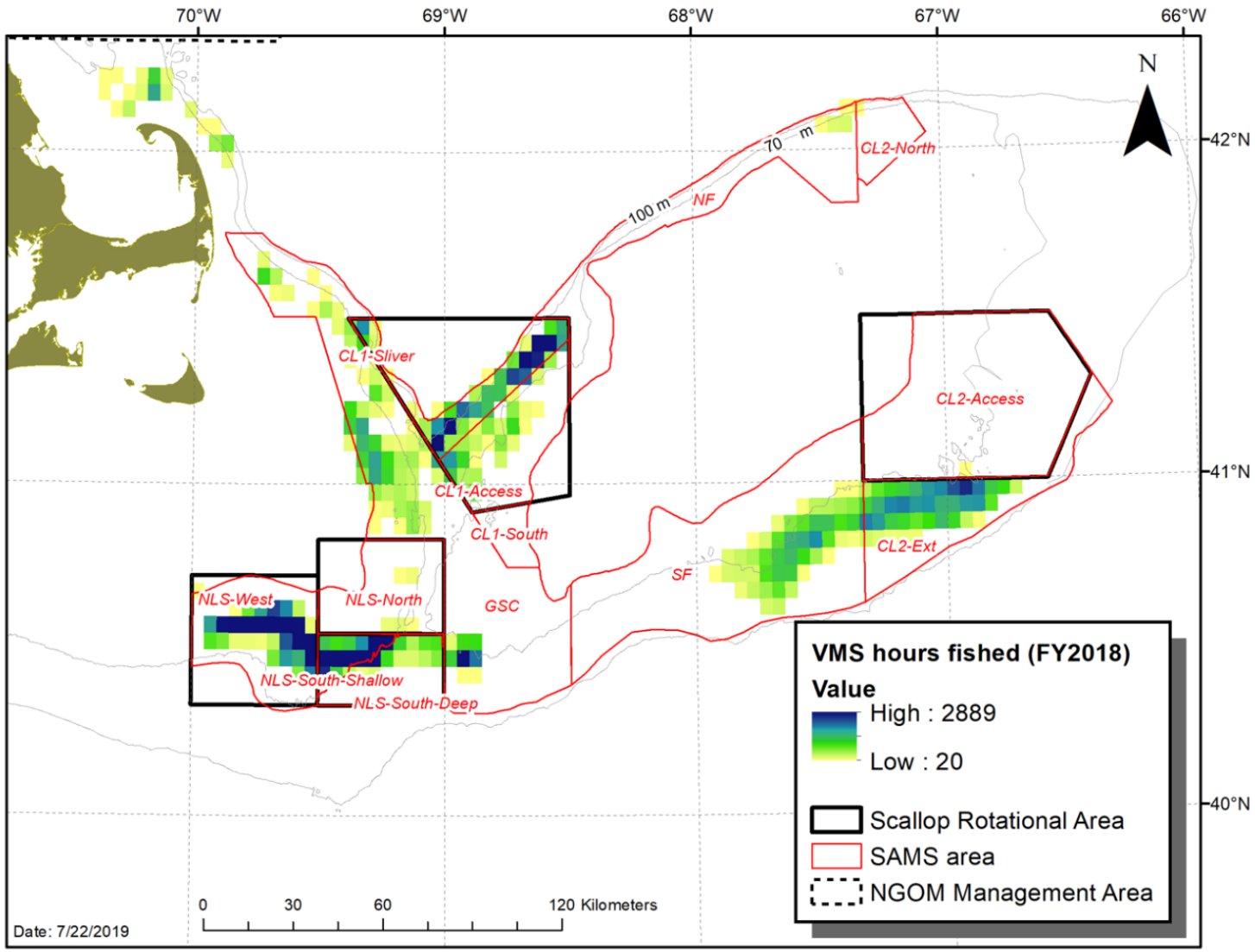


Figure 7 – Scallop fishery VMS hours fished on Georges Bank in FY2017. Scallop Area Management Simulator (SAMS) model area boundaries are in red.

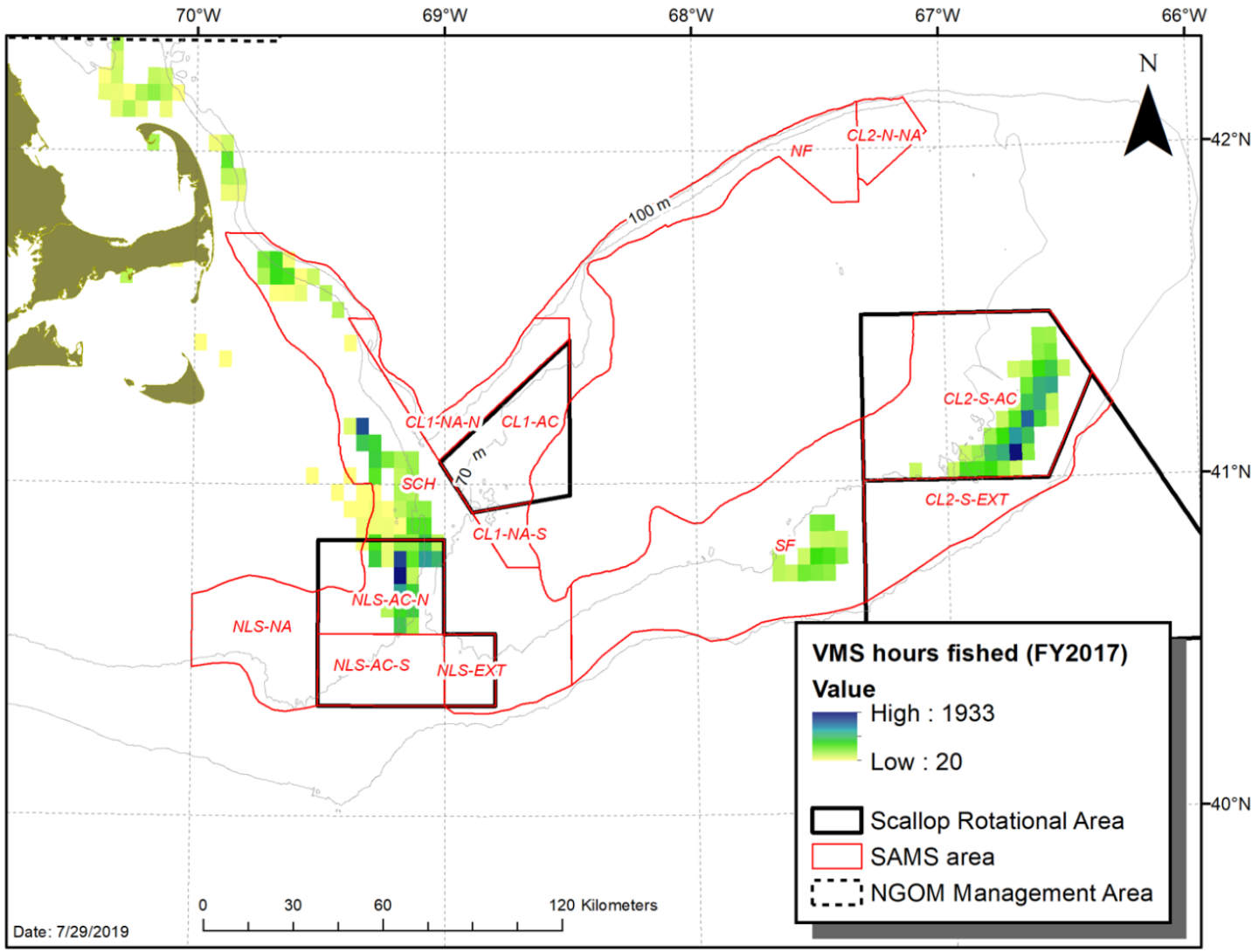
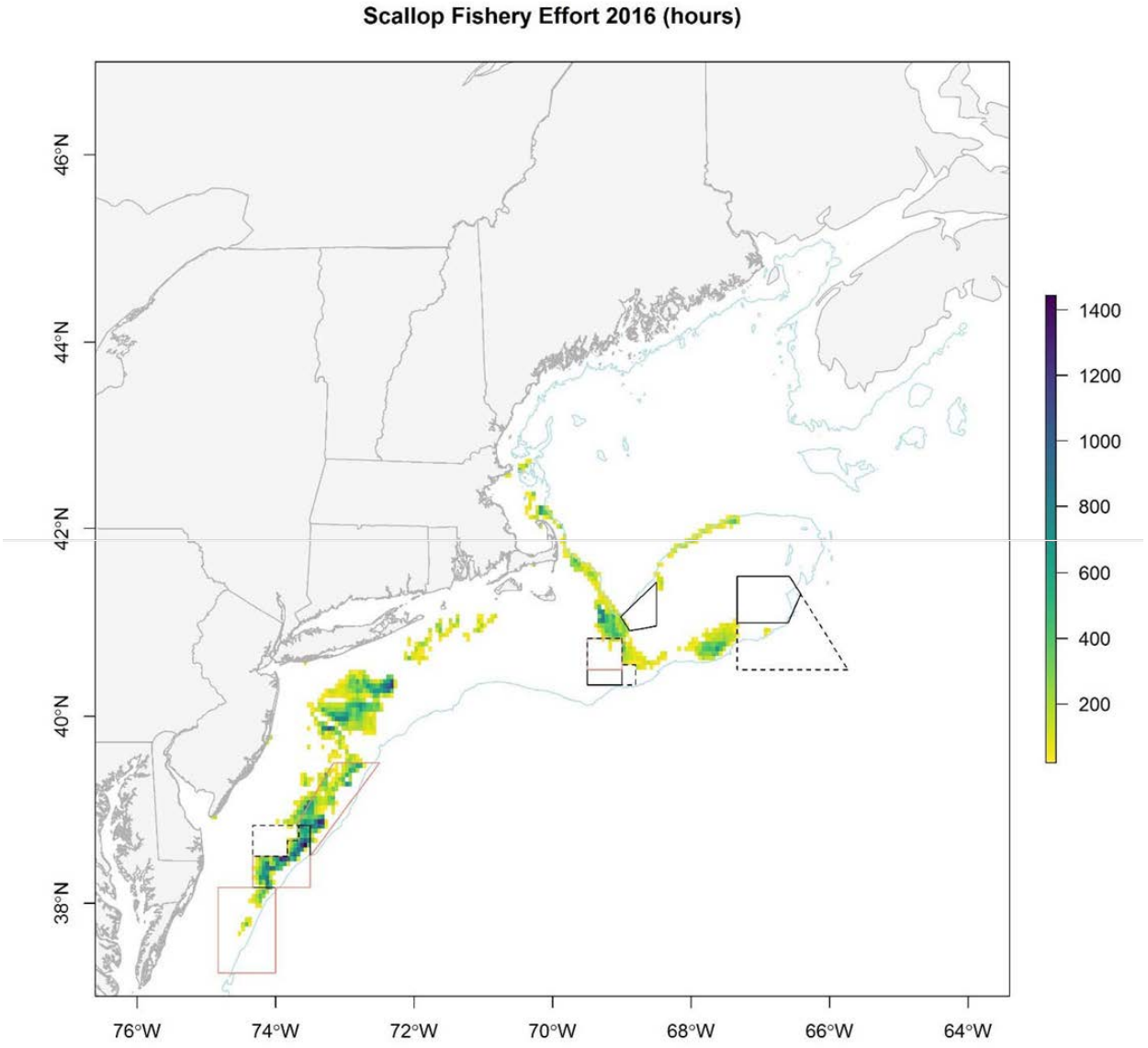


Figure 8 – Scallop fishery VMS hours fished for FY2016.



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