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New England Fishery Management Council

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Eric Reid, *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: October 22, 2021
TO: Scientific and Statistical Committee
CC: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: **OFLs and ABCs for Georges Bank haddock and Gulf of Maine haddock for fishing year 2022**

The Groundfish Plan Development Team (PDT) discussed possibly revising overfishing limits (OFLs) and acceptable biological catches (ABCs) for Georges Bank (GB) haddock and Gulf of Maine (GOM) haddock. The Groundfish Plan Development team met by webinar on October 13, 2021 and October 20, 2021.

1. Information reviewed included:

2019 stock assessments and peer review reports, SSC reports, and PDT reports, survey information, and economic information.

2. Overview

This memorandum provides information to support FY2022 OFL and ABC recommendations by the SSC for GB haddock and GOM haddock. **The PDT recommends maintaining the current FY 2022 OFLs and ABCs** (shown in Table 1 and Table 2) for these reasons:

- For both haddock stocks the updated survey trends (shown in Figure 1 and Figure 3), track the model projections, reflecting a continued decline in the survey indices since the 2019 assessments.
- Length frequency plots for both haddock stocks (Figure 2 and Figure 4) track the strong year classes declining through time.
- The Haddock Research Track Assessment is ongoing and will be reviewed in 2022 and a Management Track Assessment is scheduled for 2022, during which the magnitude of the decline in abundance will be evaluated.

Appendix

This memorandum includes 1 appendix.

- Appendix 1 - Excerpt from FW61 on the GOM haddock recreational fishery

3. Overview of Stock Status and Rebuilding Plans

GB haddock and GOM haddock stocks are rebuilt, not overfished with no overfishing occurring.

4. Economic Information

Commercial Fishery – Figure 5 and Figure 6 show groundfish commercial (sector and common pool) GB haddock and GOM haddock catches since FY2017 along with the FY2021 commercial ACL.

Sectors - ACE lease prices were estimated for 11 allocated groundfish stocks for fishing years 2015-2019 using a hedonic price model. Figure 7 displays GOM haddock. GB haddock is not shown as this stock was traded at a price not statistically different from \$0.00. Input data into the model is comprised of 5,169 inter-sector ACE leases over the FY2015-2019 period.

Table 1 and Table 2 compare 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). Generally, utilization of GB haddock is low and GOM haddock is moderate.

Recreational Fishery - GOM haddock

See Appendix 1 for a summary of Gulf of Maine haddock recreational catch performance and federal management (fishing years 2010–2020).

Tables

Table 1- Current specifications for GOM haddock.

FY	OFL	ABC
2020	25,334	19,696
2021	21,521	16,794
2022	14,834	11,526

Table 2- Current specifications for GB haddock.

FY	OFL	ABC
2020	184,822	145,367
2021	116,883	90,337
2022	114,925	88,856

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

GB Haddock	FY	Sector sub- ACL	Catch (mt)		Utilization (%)		Gross Rev (\$mil, 2020)	
			Realized	Predicted	Realized	Predicted	Realized	Predicted
	2011	21,515	2,766	8,546	0.13	0.40	9.9	24.6
	2012	19,251	626	2,211	0.03	0.11	3.2	7.5
	2013	24,908	2,167	1,601	0.09	0.06	6.5	5.7
	2014	18,666	3,523	793	0.19	0.04	9.4	3.1
	2015	16,206	3,293	4,495	0.20	0.28	8.5	12.7
	2016	34,156	3,006	4,511	0.09	0.13	7.8	10.5
	2017	22,968	3,208	4,787	0.14	0.21	6.5	10.8
	2018	28,857	4,135	3,628	0.14	0.13	8	7.9
	2019	38,003	4,368	4,160	0.11	0.11	9.2	7.5
	2020	103,849	5,783	4,426	0.06	0.04	12.4	7.8

Table 4- GOM haddock stock-level catch and revenue predictions from the Quota Change Model (QCM) for each fishing year between 2011 and 2020 compared to realized catch and revenue (in 2020\$).

GOM Haddock	FY	Sector sub- ACL	Catch (mt)		Utilization (%)		Gross Rev (\$mil, 2020)	
			Realized	Predicted	Realized	Predicted	Realized	Predicted
	2011	778	469	417	0.60	0.54	2.3	2.1
	2012	648	208	370	0.32	0.57	1.3	1.9
	2013	251	148	177	0.59	0.71	0.7	0.9
	2014	218	293	167	1.34	0.76	1.1	0.9
	2015	948	681	124	0.72	0.13	2.1	0.4
	2016	2,385	1,500	365	0.63	0.15	4.8	1.2
	2017	2,985	2,161	1,383	0.72	0.46	5.4	4
	2018	8,643	2,791	1,995	0.32	0.23	6.5	6.1
	2019	8,219	3,452	2,964	0.42	0.36	8.3	7.2
	2020	11,918	3,992	2,734	0.33	0.23	9.7	6.3

Figures

Figure 1- Stratified mean survey indices for GOM haddock, from the NMFS fall and spring bottom-trawl surveys, updated since the 2019 assessment.

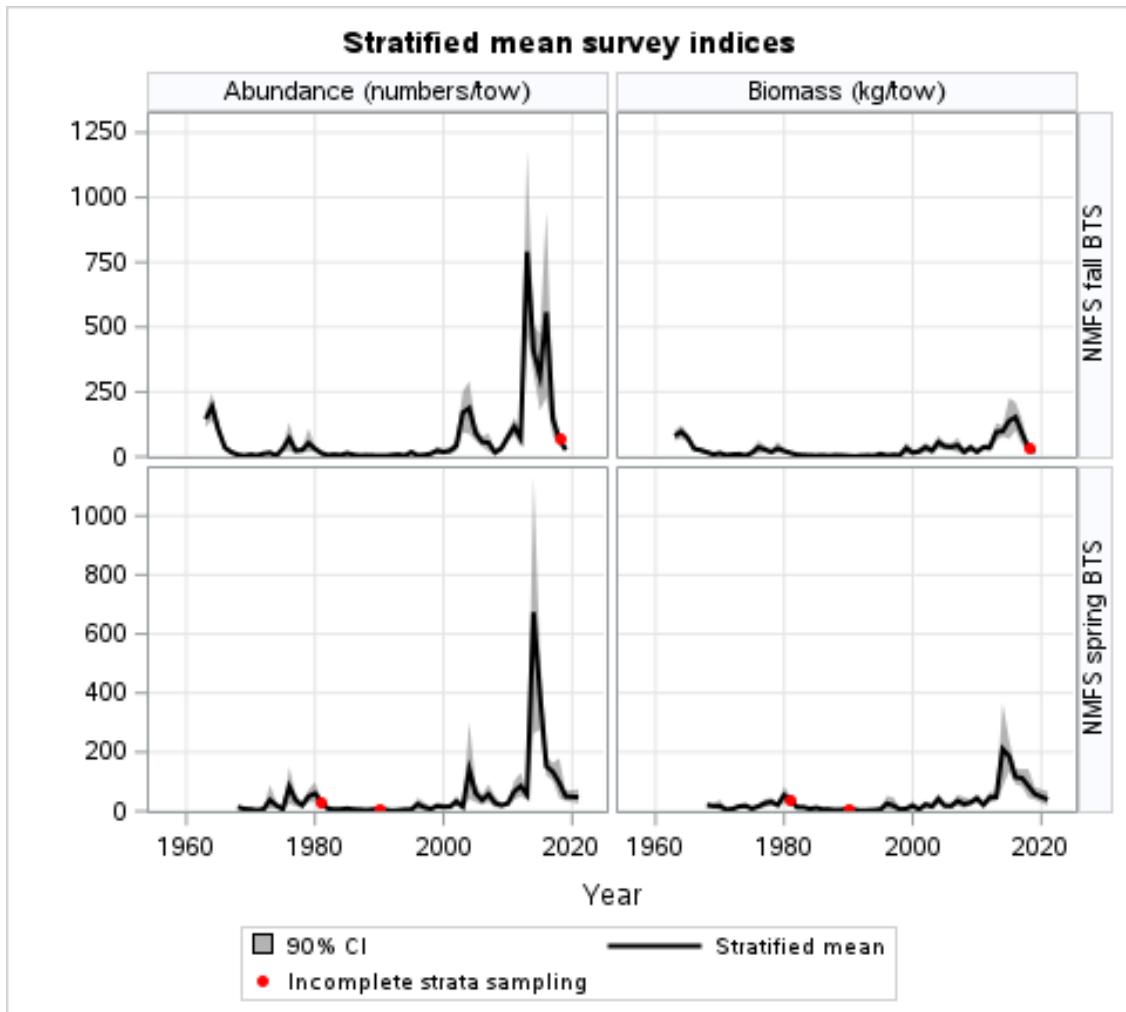
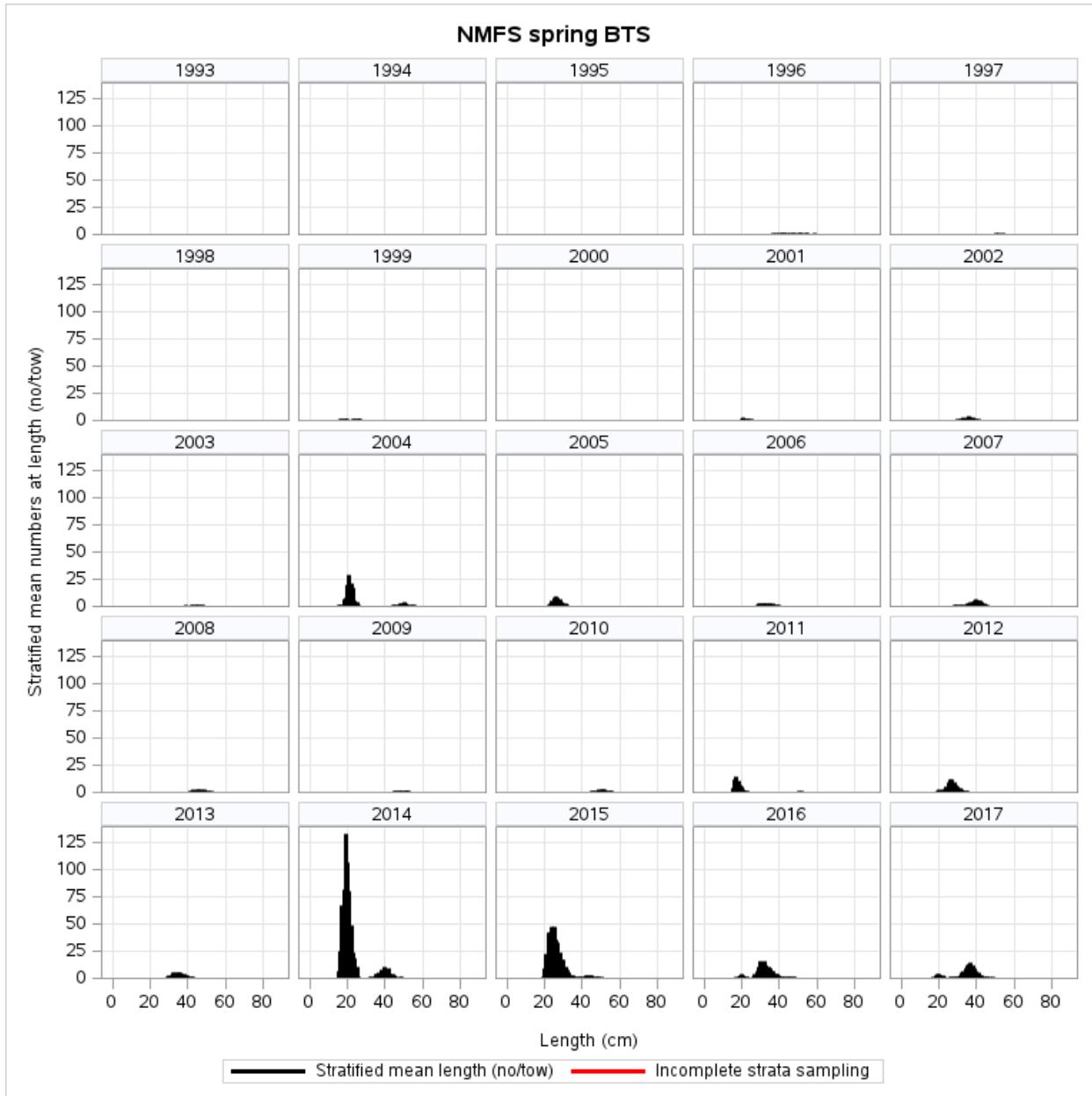


Figure 2- Survey length frequencies for GOM haddock, updated since the 2019 assessment. Note that no spring NMFS bottom trawl survey occurred in 2020.



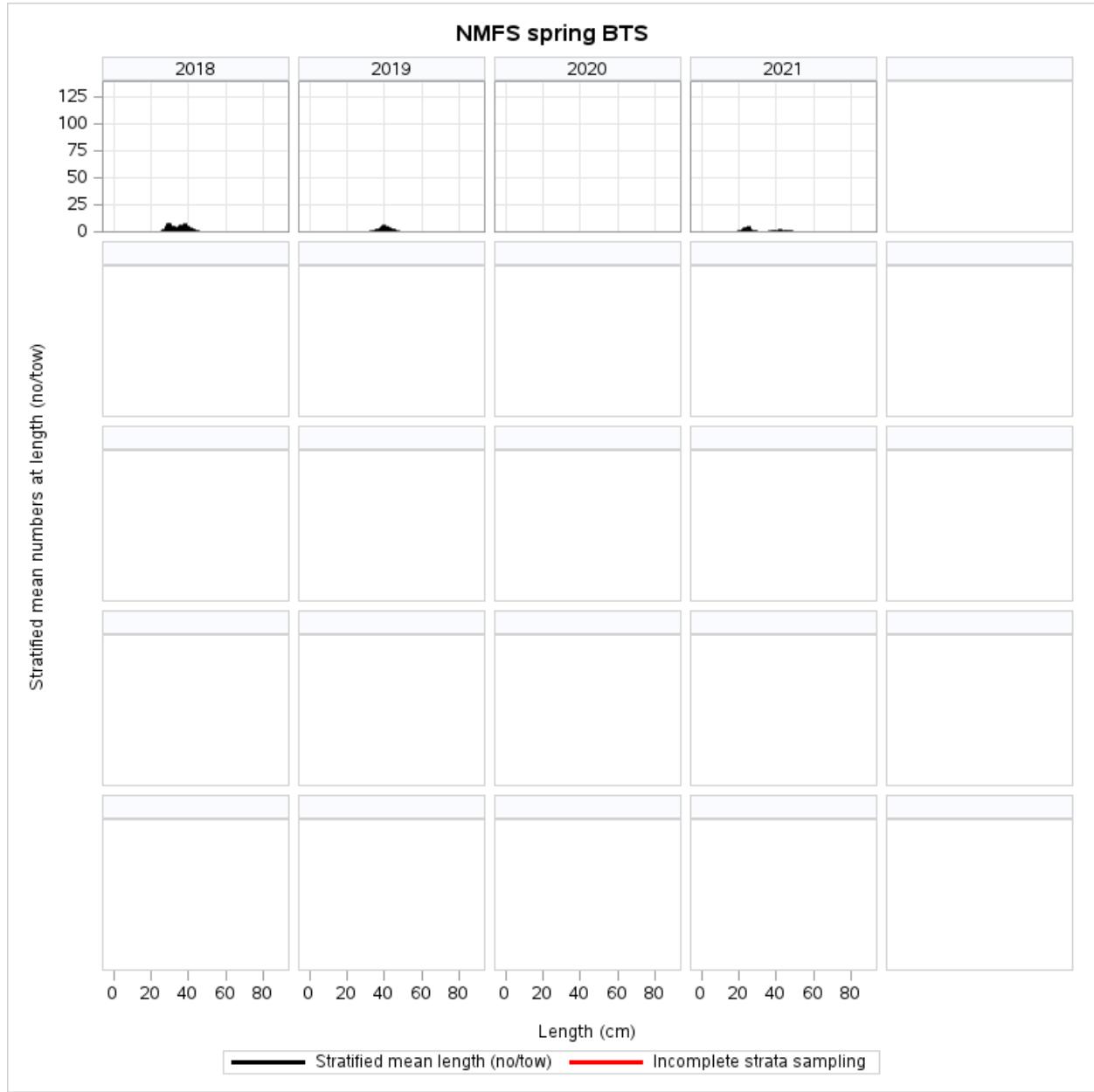


Figure 3- Stratified mean survey indices for GB haddock from the NMFS fall and spring bottom-trawl surveys, updated since the 2019 assessment.

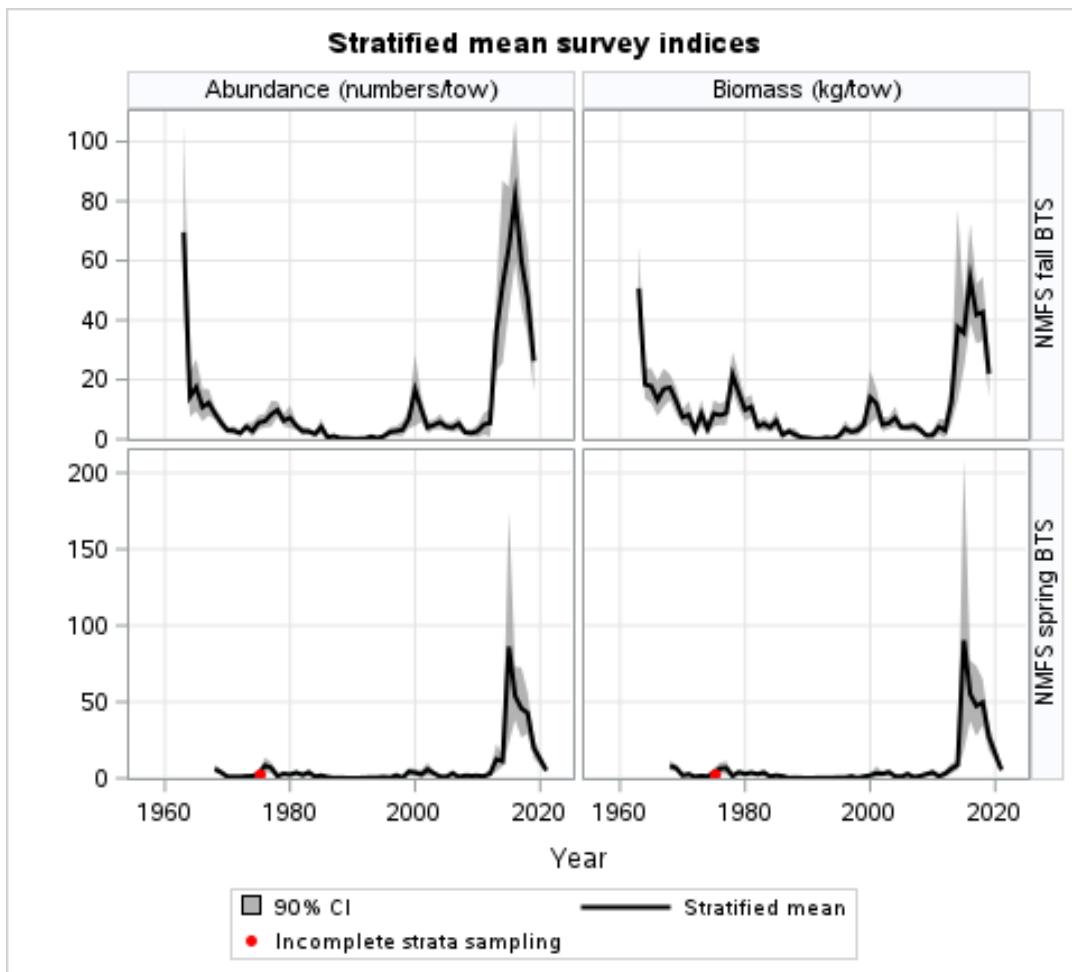
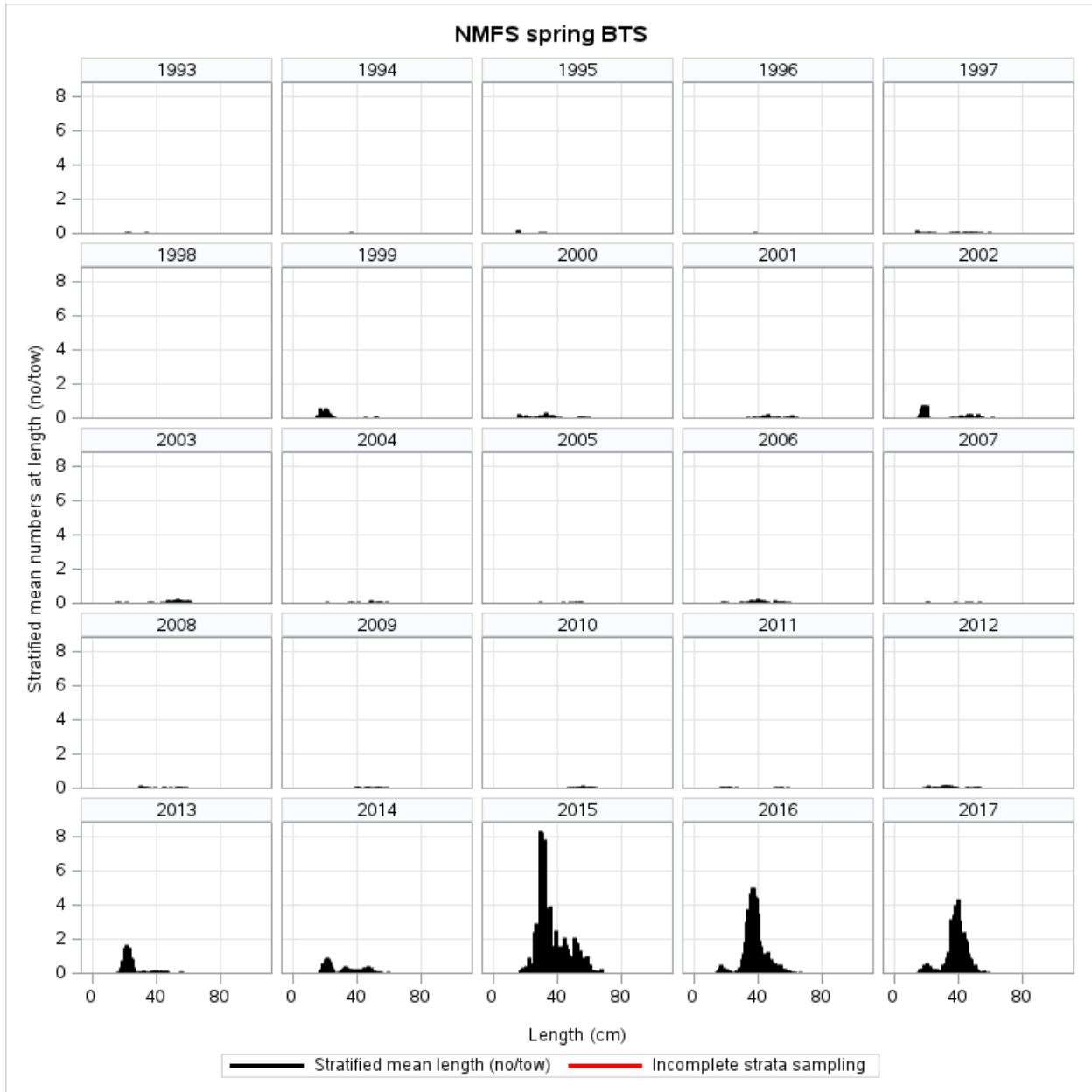


Figure 4- Survey length frequencies for GB haddock, updated since the 2019 assessment. Note that no spring NMFS bottom trawl survey occurred in 2020.



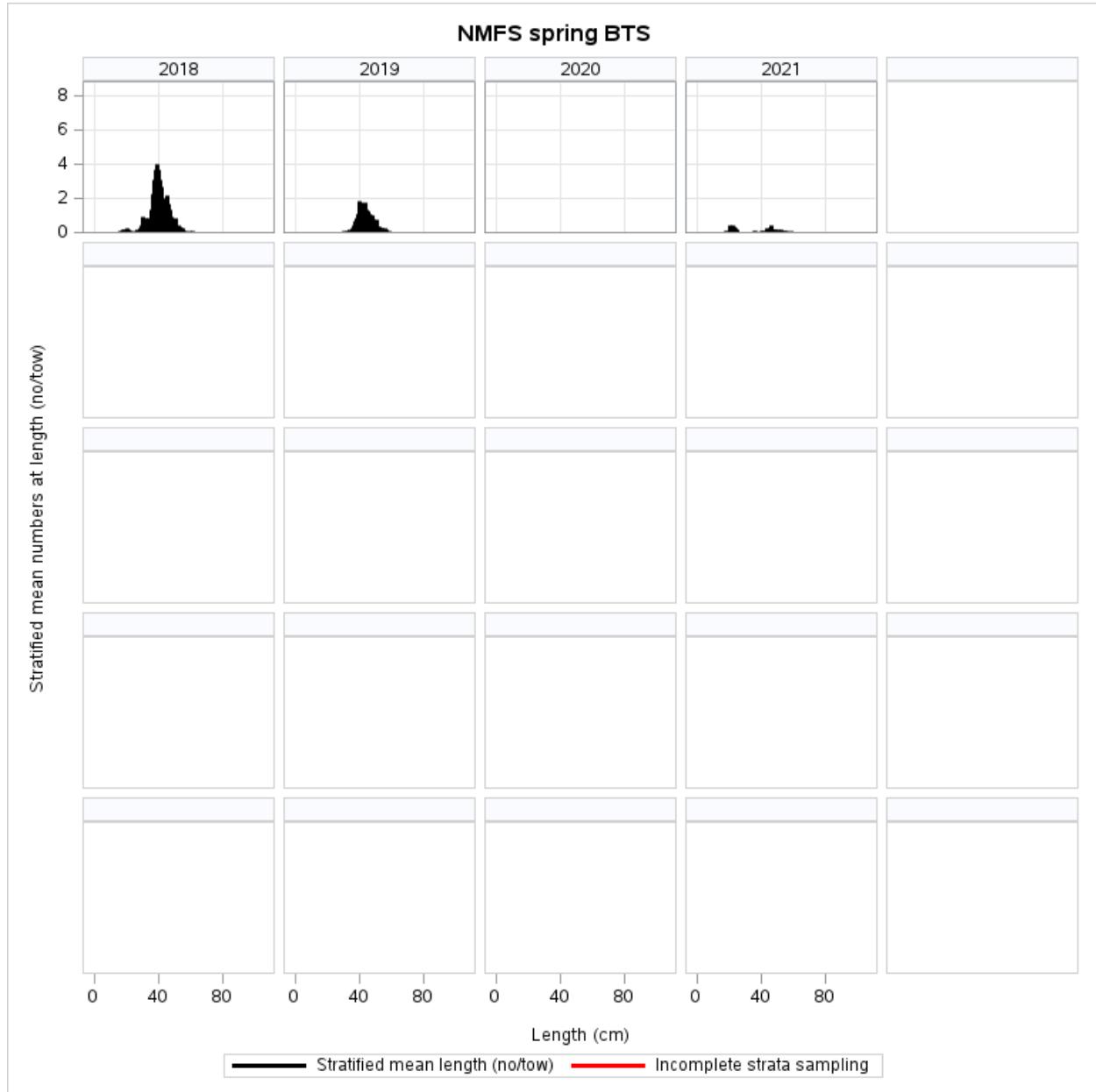


Figure 5- In-season utilization of GB haddock by the commercial (sectors and common pool) groundfish fishery.

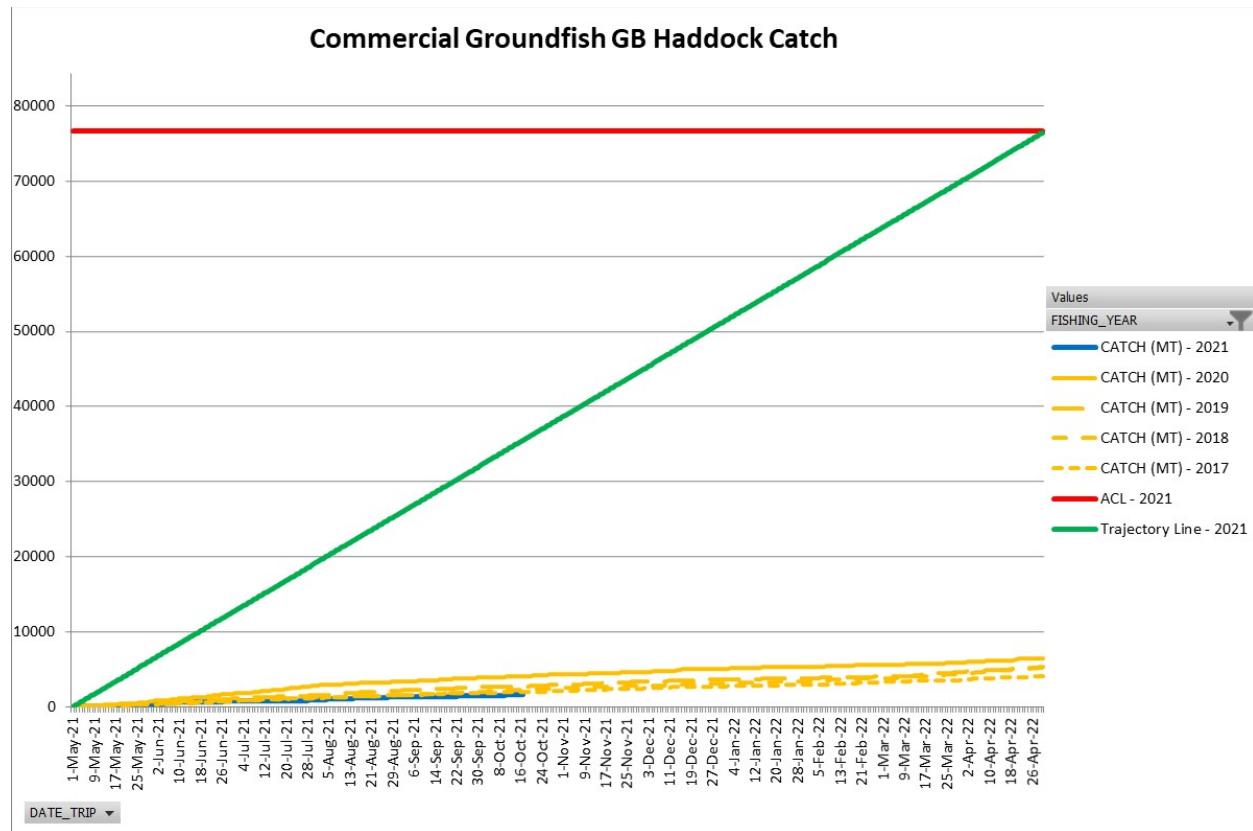


Figure 6- In-season utilization of GOM haddock by the commercial (sectors and common pool) groundfish fishery.

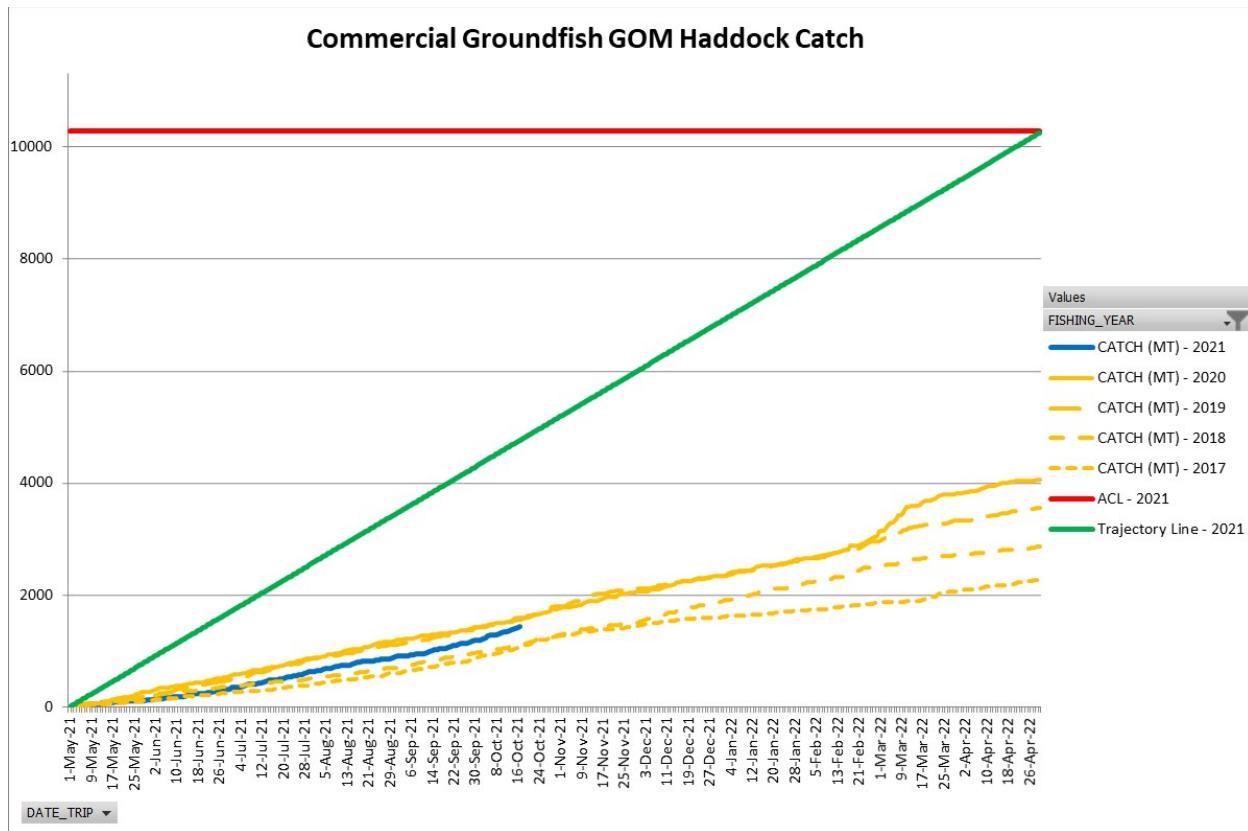


Figure 7- ACE lease prices estimated for GOM haddock for fishing years 2015-2019 using a hedonic price model. First quarter (May-July) lease prices are indicated by the vertical gray bars in the figure.

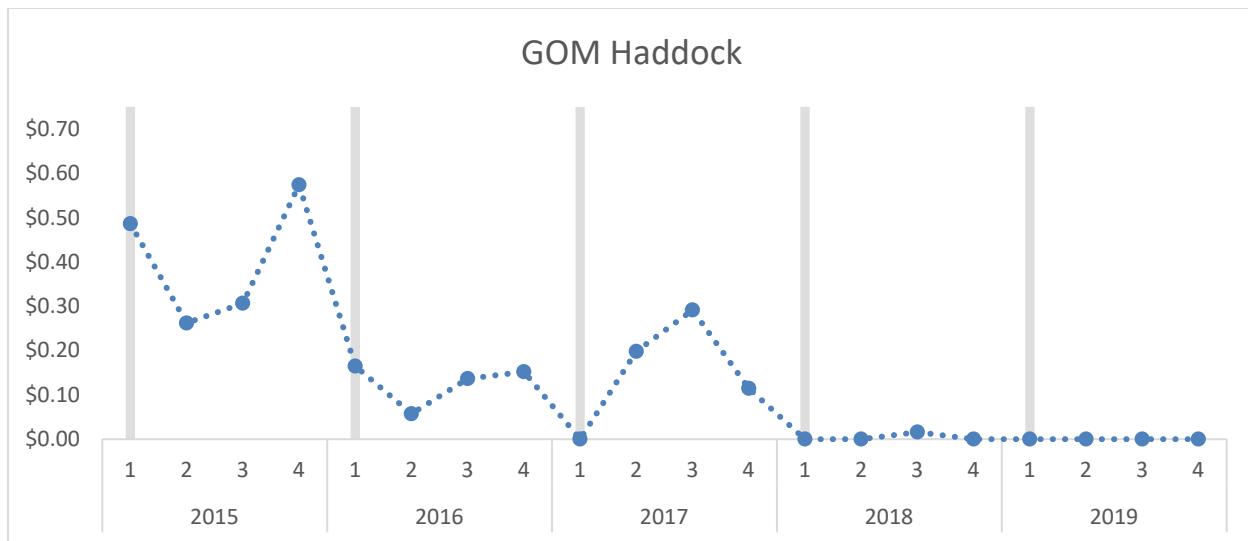


Table 60- Summary of Gulf of Maine haddock recreational catch performance and federal management (fishing years 2010–2020).

Fishing Year	Sub-Annual Catch Limit (mt)	Catch (mt)	Percent of catch limit taken (%)	Minimum Size (inches)	Bag Limit Fish per angler - daily	Season Open	Season Closed	Additional Measures/Notes
2010	324	297.4	91.8	18	no limit	n/a	First year of sub-ACL 27.5% of ACL Groundfish Regulations: Only one line per angler, and Fillets landed by private recreational and charter/party vessels must have at least 2 sq. inches (5.08 sq. cm) of contiguous skin that allows for the ready identification of the fish species. Such fillets are required to be from legal-sized fish, but the fillets themselves would not need to meet the minimum size requirements in the regulations.	
2011	308			18	no limit	5/1/11 to 1/5/12	n/a	First Year: Gulf of Maine (Whaleback) Cod Spawning Protection Area: From April 1 through June 30 of each year, all recreational vessels, including private recreational and charter/party vessels, may only use pelagic hook-and- line gear, as defined below, when fishing in the Whaleback Cod Spawning Protection Area. ¹ Accountability Measure (AM) for 2010 overage

Fishing Year	Sub-Annual Catch Limit (mt)	Catch (mt)	Percent of catch limit taken (%)	Minimum Size (inches)	Bag Limit Fish per angler - daily	Season Open	Season Closed	Additional Measures/Notes
		238.5	77.4	18	no limit	4/20/12 to 4/30/12	n/a	AM lifted after re-evaluation of data showing no 2010 overage
2012	259	280.7	108.4	18	no limit		n/a	
2013	74	231.5	312.2	21	no limit		n/a	
2014	173	658.6	380.7	21	3	5/1/14 to 8/31/14 and 11/1/14 to 2/28/15	9/1/14 to 10/31/14 and 3/1/15 to 4/30/15	<i>See Cod interim action</i>
2015	372	381.9	102.7	17	3	5/1/15 to 8/31/15 and 11/1/15 to 2/29/16	9/1/15 to 10/31/15 and 3/1/16 to 4/30/16	
2016	928	887.0	95.6	17	15	5/1/16 to 2/28/17 and 4/15/17 to 4/30/17	3/1/17 to 4/14/17	

Fishing Year	Sub-Annual Catch Limit (mt)	Catch (mt)	Percent of catch limit taken (%)	Minimum Size (inches)	Bag Limit Fish per angler - daily	Season Open	Season Closed	Additional Measures/Notes
2017	1,160			17	15	5/1/17 to 2/28/18 and 4/15/18 to 4/30/18	3/1/18 to 4/14/18	Replaced by final rule effective 7/27/17
		795.0	68.5	17	12	5/1/17 to 9/16/17 and 11/1/17 to 2/28/18 and 4/15/18 to 4/30/18	9/17/17 to 10/31/17 and 3/1/18 to 4/14/18	
2018	3,358	595.0	17.7	17	12	5/1/18 to 9/16/18 and 11/1/18 to 2/28/19 and 4/15/19 to 4/30/19	9/17/18 to 10/31/18 and 3/1/19 to 4/14/19 and 4/15/19 to 4/30/19	First Year: Winter Massachusetts Bay Spawning Protection Area: From November 1 through January 31 of each year, all recreational vessels, including private recreational and charter/party vessels, may only use pelagic hook-and-line gear, as defined below, when fishing in the Winter Massachusetts Bay Spawning Protection Area. ¹

Fishing Year	Sub-Annual Catch Limit (mt)	Catch (mt)	Percent of catch limit taken (%)	Minimum Size (inches)	Bag Limit Fish per angler - daily	Season Open	Season Closed	Additional Measures/Notes
2019	3,194	423.2	13.3	17	15	5/1/19 to 2/29/20 and 4/15/20 to 4/30/20	3/1/20 to 4/14/20	Previous year's regulations were in effect until July 5, 2019, when these measures were implemented. The possession limit increased from 12-15 fish, and the fall closure has been removed to increase access to this healthy stock.
2020	6,210			17	15	5/1/20- 2/28/21 and 4/1/21- 4/30/21	3/1/21- 3/31/21	