



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: November 3, 2017
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: **A review of the Georges Bank haddock sub-annual catch limit in the directed midwater trawl Atlantic herring fishery**

The Groundfish Plan Development Team (PDT) met on November 1, 2017, via webinar and discussed a review of the Georges Bank haddock sub-annual catch limit (ACL) in the directed midwater trawl Atlantic herring fishery. The Herring PDT chair and another member of the Herring PDT were also present for the discussion.

Background on the Review Process

Framework Adjustment 56 increased the midwater trawl Atlantic herring fishery sub-ACL for Georges Bank haddock to 1.5% (up from 1%). The measure aims to incentivize the midwater trawl fleet to minimize the incidental catch of GB haddock to the extent practicable in the midwater trawl Atlantic herring fishery while providing the opportunity for the fleet to fully harvest its herring sub-ACL for Herring Management Areas 1B and 3. The measure would reduce the potential for negative impacts on the herring and Atlantic mackerel fisheries caused by reductions in fishing opportunities in Areas 1B and 3, and avoid potential market interruptions for the supply of herring as bait for the lobster fishery. The GB haddock AMs for the midwater trawl Atlantic herring fishery (i.e., pound for pound payback provision and in-season closure) remain unchanged.

The measure also established a sub-ACL review process. Such that following an assessment of the entire GB haddock stock, the Groundfish PDT would conduct a review of the sub-ACL to recommend to the Council a sub-ACL for the midwater trawl Atlantic herring fishery of up to 2% of the U.S. ABC. FW56 states that the review of the sub-ACL would include a range of 1% up to 2% of the U.S. ABC. The review for GB haddock would consider but not be limited to: fishery catch performance, utilization, status of the resource, recruitment, incoming year-class strength, and evaluation of the coefficient of variation (CV) of the GB haddock incidental catch estimates for the Atlantic herring midwater trawl fishery.

The Council/Committee would then review the work of the PDT and determine if a change in the sub-ACL (up or down) would be considered in the action in which specifications for GB haddock would be adopted following an assessment of the entire GB haddock stock. Therefore,

the review process would allow for consideration of the most recent stock assessment and fishery information to allow for an adjustment of the sub-ACL. The review process would not take place following the assessment of only the EGB haddock stock.

Results of the Review

The Groundfish PDT reviewed information in the 2017 GB haddock assessment, additional biological information, and information provided by the Herring PDT (see Attachment).

1) Fishery catch performance

A summary of recent groundfish fishery catch performance for GB haddock is provided in Table 1.

Table 1- Summary of recent catches (mt) of Georges Bank haddock by the US commercial groundfish fishery, groundfish FY 2010- FY 2016 and preliminary in-season FY 2017. Sources: FY2010 – FY2016 final year-end multispecies catch reports, GARFO, and FY2017 in-season catch report, GARFO, October 26, 2017.

Groundfish Fishing Year	<u>Commercial Fishery- Georges Bank Haddock</u>				
	Sub-ACL	Landings	Discards	Catch	Percentage of sub-ACL
2010	40,440	8,299.2	41	8,340.2	20.6%
2011	30,580	3,758.5	82	3,840.5	12.6%
2012	27,438	926.8	270.7	1,197.6	4.4%
2013	26,196	2,696.4	281.1	2,977.5	11.4%
2014	17,171	4,975.3	473.7	5,449.1	31.7%
2015	21,759	4,217.9	856.7	5,074.7	23.3%
2016	51,667	3,445.7	945.6	4,391.3	8.5%
<i>In-season 2017</i>	<i>52,620</i>	<i>1,678.3</i>	<i>405.1</i>	<i>2,083.4</i>	<i>4%</i>

2) Utilization

On average for the most recent three years (FY2014-FY2016), utilization of GB haddock by the groundfish fishery relative to the groundfish fishery sub-ACL is 21.2%. In general, groundfish fishery utilization of GB haddock is low relative to the groundfish fishery sub-ACL (range of 4.4% to 31.7% for FY2010 to FY2016). In-season data for FY2017 indicates that the groundfish fishery utilization is expected to remain low.

With respect to the midwater trawl directed Atlantic herring fishery, see information provided in the Herring PDT report attached.

3) Status of the resource

Based on the 2017 operational assessment and peer review, GB haddock is not overfished, and overfishing is not occurring. GB haddock is rebuilt.

4) *Recruitment*

The trend in recruitment is provided from the 2017 operational assessment report for GB haddock (see pp. 55, Figure 21)¹. For the terminal year, the confidence interval indicates the large uncertainty in the 2016 recruitment size estimate.

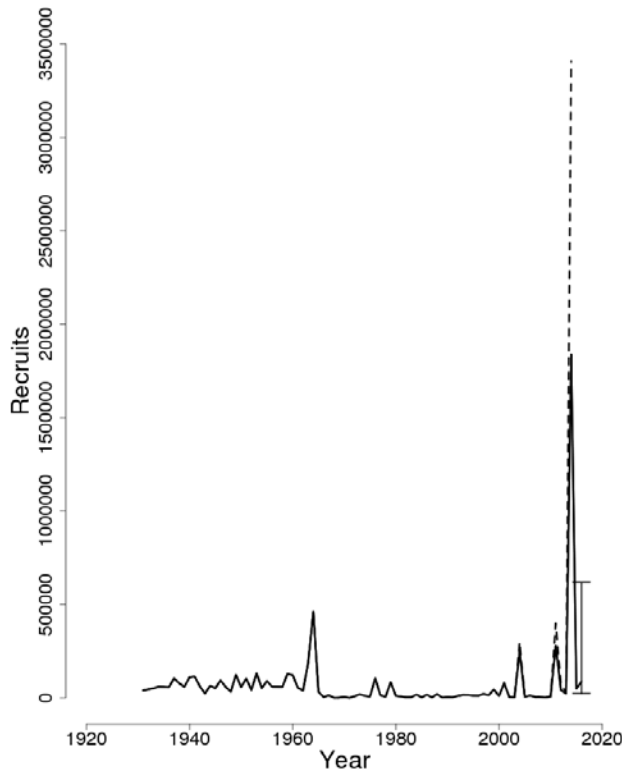


Figure 21: Trends in Recruits (age 1) (000s) of Georges Bank haddock between 1931 and 2016 from the current (solid line) and previous (dashed line) assessment. The 90% bootstrap probability intervals are shown.

5) *Incoming year-class strength*

The 2013 year-class accounts for a substantial portion of catch and SSB in projections. The 2017 operational assessment did not estimate any strong year-classes since the 2013 year-class. However, an examination of the length-frequencies of the fall 2016 survey showed some evidence for a stronger incoming year-class but that year-class did not materialize in the spring 2017 survey. Therefore, the PDT felt the potential for a recent stronger year-class remains uncertain. This uncertainty is also reflected in the terminal year recruitment estimate of the 2017 operational assessment model.

¹ See 2017 Georges Bank haddock operational assessment, available at:
https://www.nefsc.noaa.gov/publications/crd/crd1717/georges_bank_haddock.pdf

6) Evaluation of the coefficient of variation (CV) of the GB haddock incidental catch estimates for the Atlantic herring midwater trawl fishery

See information provided in the Herring PDT report attached.

7) Other information

The PDT also notes the following other relevant information for future tracking in the next review:

- A benchmark for Atlantic herring is scheduled for 2018.
- Results from an electronic monitoring pilot on mid-water trawl vessels will be available in 2018.
- Monitoring options for the Atlantic herring in the Industry-Funded Monitoring Amendment will be discussed by the Council in 2018.

PDT Recommendation

Based on the review, the Groundfish PDT recommends that the Committee/Council could allocate up to 2% of the U.S. ABC to the mid-water trawl directed Atlantic herring fishery. No biological information supports the need for lower sub-ACL in terms of potential impacts on the GB haddock stock.



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DRAFT MEMORANDUM

DATE: November 3, 2017
TO: Groundfish PDT
FROM: Herring PDT
SUBJECT: Analyses to support Groundfish PDT analysis of GB Haddock sub-ACL review

The Groundfish PDT had a meeting on November 1, 2017 including one agenda item about the new sub-ACL review process established in Groundfish Framework 56 (FW56) for GB haddock. sub-ACL for the herring midwater trawl fishery. Framework Adjustment 56 increased the midwater trawl Atlantic herring fishery sub-ACL for Georges Bank haddock to 1.5% (up from 1%). The GF PDT is also required to conduct a review of the sub-ACL and recommend to the Council a sub-ACL up to 2% of the U.S. ABC. As part of that review, two Herring PDT members participated in the meeting and the Herring PDT was requested to provide supporting analyses. This memo includes those analyses.

The Groundfish PDT specifically requested the following information:

1. Herring fishery catches by CY from 2013 to in-season 2017 by management area
2. An update to a previous table provided last year including recent catches of GB haddock by the MWT fishery including CVs and observer coverage rates.
3. Summary of previous work done by the Herring PDT on using portside data in the estimate of haddock incidental catches, if available.

Herring Fishery Catches

The GF PDT requested herring catch by area, including % utilized for the last five years. The herring fishing year starts on January 1, and is monitored based on a calendar year, compared to the sub-ACL of GB Haddock, which is allocated and monitored based on the Groundfish fishing year (May 1 – April 30). Table 1 includes herring sub-ACL allocations, catch, and % utilized by herring management area for FY2013-2017 to date. FY2017 data is through November 1, 2017. Overall, the herring fishery is variable from year to year in terms of utilization of area specific sub-ACLs. However, Area 1A quota is almost always fully utilized, and area 1B has been exceeded in several years in part because it is a relatively small quota that is typically fished very quickly, thus challenging to monitor and close real time. In more recent years, the utilization of Area 2 and Area 3 available quota has declined for a variety of reasons, including GB haddock AMs that were triggered in 2015.

Table 1 – Herring sub-ACL, catches, and % utilized by herring management area (FY2013-2017 to date)

Year	Area	sub-ACL (mt)	Catch (mt)	% Utilized
2013	1A	29,775	29,820	100%
2013	1B	4,600	2,458	53%
2013	2	30,000	27,569	92%
2013	3	42,000	37,833	90%
2014	1A	33,031	32,898	100%
2014	1B	2,878	4,399	153%
2014	2	28,764	19,626	68%
2014	3	39,415	36,323	92%
2015	1A	30,580	29,406	96%
2015	1B	4,922	2,889	59%
2015	2	32,100	15,214	47%
2015	3	44,910	33,256	74%
2016	1A	30,524	27,806	91%
2016	1B	2,844	3,624	127%
2016	2	31,227	14,594	47%
2016	3	42,765	18,777	44%
2017*	1A	30,820	22,461	73%
2017*	1B	4,825	2,672	55%
2017*	2	31,227	3,461	11%
2017*	3	43,873	14,122	32%
Source: NMFS.				
* Preliminary data – Date pulled November 1, 2017				
Note: Shaded rows indicate overages.				

The Herring PDT has also provided a longer time series of herring catch by area because it was easily accessible. Figure 1 and Table 2 show a more historical trend of herring catch by management area.

In addition, the GF PDT was interested to learn more about the seasonal distribution of herring fishing within herring management area. Figure 2 shows herring catch by month and area for FY2011-2015. Overall, the seasonal trends within each herring management area are fairly consistent between years; Area 1A catch is typically concentrated between June – October, Area 1B is not as consistent, but in more recent years is typically all fished in May when the area first opens to the fishery on May 1, Area 2 fishing typically takes place in the winter (December – February), and Area 3 tends to increase in late spring through the fall.

Figure 1 – Herring sub-ACLs (solid lines) and catch (dashed lines) by herring management area (2004-2016)

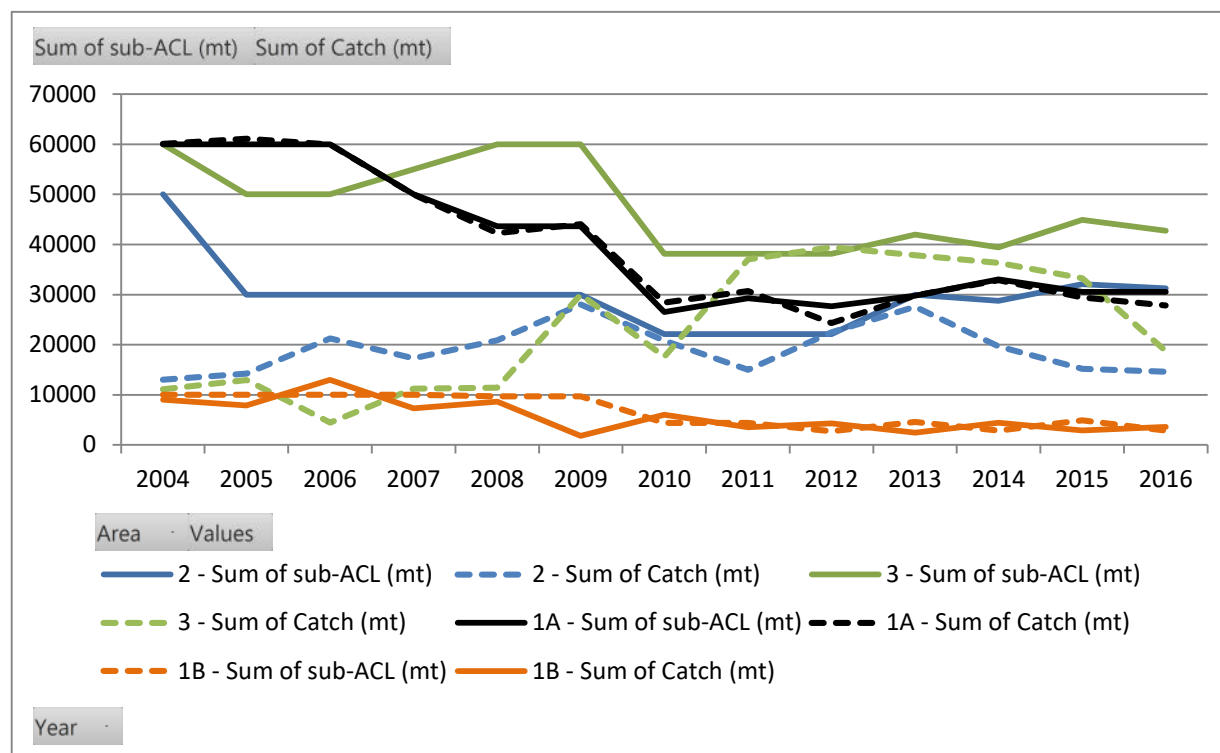
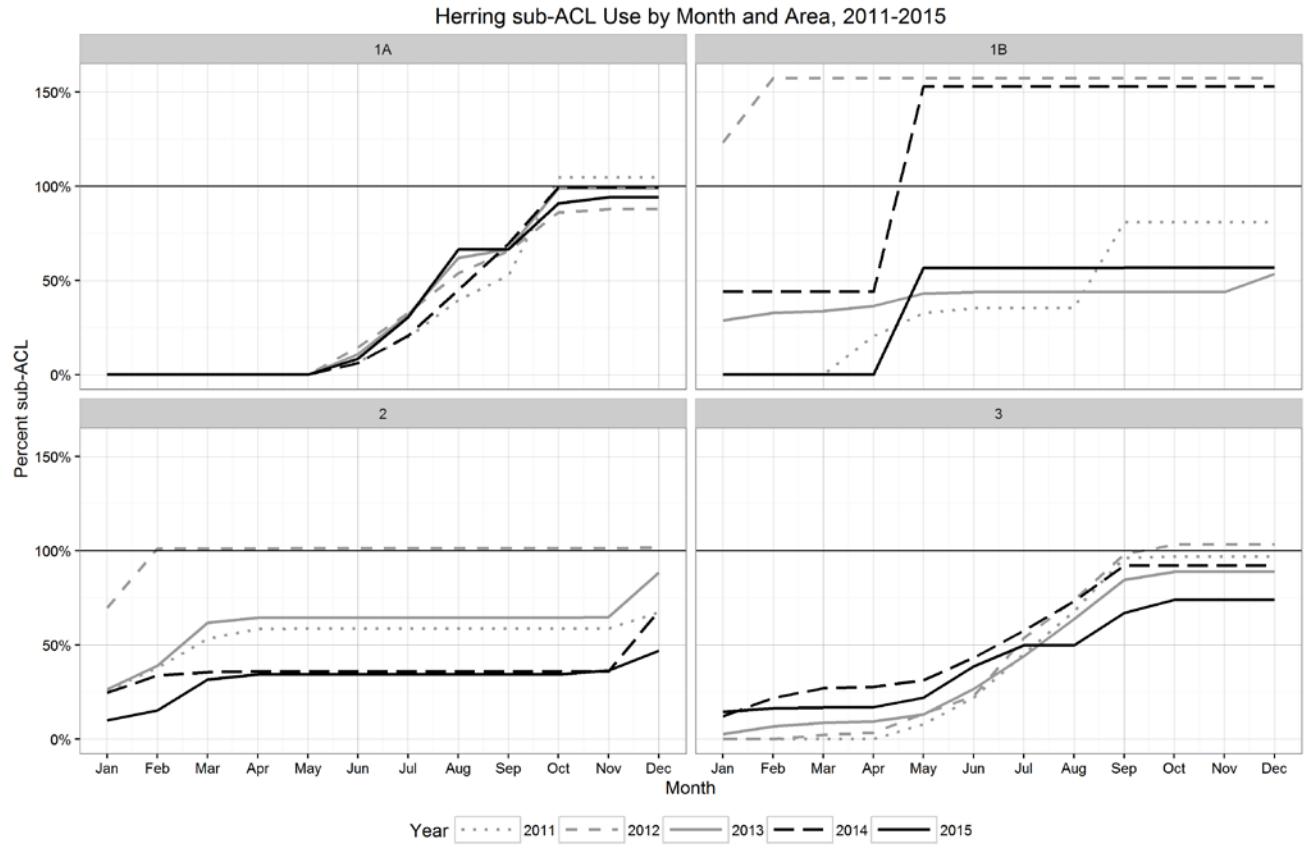


Table 2 – Percent utilization of herring sub-ACL by herring management area (2004-2017 to date)

	1A	1B	2	3
2004	100%	90%	26%	18%
2005	102%	79%	47%	26%
2006	100%	130%	71%	9%
2007	100%	73%	58%	20%
2008	97%	89%	70%	19%
2009	101%	19%	93%	50%
2010	107%	138%	94%	46%
2011	105%	81%	68%	97%
2012	88%	158%	102%	103%
2013	100%	53%	92%	90%
2014	100%	153%	68%	92%
2015	96%	59%	47%	74%
2016	91%	127%	47%	44%
2017*	73%	55%	11%	32%

Figure 2 – Herring catch by month and area by herring management area (2011-2015)



Update of GB Haddock catches in the MWT Herring Fishery

Table 3 and Table 4 below were included in Groundfish FW56, but have been updated with 2016 year-end catch results.

Table 3 – Summary of recent catches (mt) of Georges Bank haddock by the midwater trawl Atlantic herring fishery, groundfish FY 2010- FY 2016. Sources: Groundfish FY2010 – FY2015 final year-end catch reports, FY2016 preliminary in-season report through 3/8/2017, GARFO, and CV and observer coverages rates for FY 2011- FY 2016 from GARFO personal communication November 3, 2017

Groundfish FY	<i>Midwater Trawl- Georges Bank Haddock</i>						
	Sub-ACL	Landings	Discards	Catch	Percentage of sub-ACL	CV on Catch	Observer Coverage % Trips
2010	84	69.2	0	69.2	82.3%		
2011	318	101.8	0	101.8	32.0%	17.6%	41.7%
2012	286	271.9	16.7	288.6	100.9%	12.3%	62.9%
2013	273	272.7	17.2	290	106.2%	21.3%	35.6%
2014	162	113.5	0	113.5	70.1%	20.5%	27.2%
2015	227	235.0	0.6	235.5	103.9%	61.4%	4.9%
2016	512	115.3	3.6	118.9	23.2%	42.9%	20.1%

Table 4 - GB haddock catch cap summary, FY 2011-FY2016. Years highlighted indicate when the catch cap was exceeded.

Fishing Year	Fleet Trips	Observed trips	Obs. Coverage	Haddock Rate	CV (%)	KALL (mt)	Est. Haddock (mt) ¹	Catch Cap (mt)	Pct. Cap
2011	230	96	41.70%	0.002443	17.60%	41,323	101	318	31.70%
2012	237	149	62.90%	0.006675	12.30%	46,555	310.8	286	108.70%
2013	250	89	35.60%	0.00598	21.30%	48,857	292.2	273	107.00%
2014	202	55	27.20%	0.003063	20.50%	36,592	112.1	162	69.20%
2015	164	8	4.90%	0.008489	61.40%	28,018	237.8	227	104.80%
2016	179	36	20.1%	0.004731	42.9%	26,185	123.9	512	24.2%

Source: DMIS and OBDBS with FY2016 year end

¹Haddock estimate does NOT use replacement methodology and may not match GARFO quota monitoring reports

Summary of Haddock Catch Estimates from Portside Sampling

In February, 2016 the Council requested NMFS include portside sampling data in quota monitoring of catch caps in the herring fishery. The Herring PDT explored the potential use of portside sampling data for monitoring bycatch of river herring and haddock and NMFS completed a more formal evaluation of whether it was feasible and if it was expected to improve catch estimates. In April 2017, GARFO presented information to the Herring Committee followed by a summary presentation to the full Council by staff. One pertinent table from that evaluation has been included here to show that integration of portside sampling data is expected to improve catch estimates, and based on data evaluated to date may increase the overall estimates of haddock bycatch. NMFS is planning to potentially use portside data to monitor bycatch of river herring in the near future, but is not currently pursuing it for monitoring to haddock catch cap unless the Council considers it further in a future action to the GF FMP.

Table 5 compares the haddock catch cap performance based on NEFOP data only compared to NEFOP combined with portside data. Including both sources of data generally produces higher bycatch estimates. In addition, the coverage rates increase in all years and the coefficient of variation (CV) decreases.

Table 5 – Haddock catch cap performance comparison, NEFOP/Portside vs. NEFOP only

Catch Cap	Fishing Year	First Closure Date		Percent Caught		Sampling Coverage		CV	
		NEFOP Only	NEFOP/ Portside	NEFOP Only	NEFOP/ Portside	NEFOP Only	NEFOP/ Portside	NEFOP Only	NEFOP/ Portside
Georges Bank	2011			31.7%	36.7%	40.0%	45.2%	18.7%	16.0%
	2012	3/30/2013	4/20/2013	108.7%	100.2%	61.6%	69.2%	14.0%	13.2%
	2013	4/13/2014	2/25/2014	107.0%	120.6%	35.2%	45.2%	21.5%	16.4%
	2014			69.2%	68.4%	27.2%	43.6%	20.6%	15.5%
	2015	10/10/2015	9/25/2015	105.1%	215.1%	4.8%	20.6%	67.8%	27.8%
Gulf of Maine	2011			0.0%	0.0%	30.4%	36.2%	0.0%	0.0%
	2012			0.0%	0.0%	29.2%	45.8%	0.0%	0.0%
	2013			0.0%	4.4%	34.8%	60.9%	0.0%	69.5%
	2014		11/22/2015	0.0%	86.2%	46.3%	73.2%	0.0%	40.1%
	2015			0.0%	114.7%	8.6%	48.3%	0.0%	32.6%

Source: DMIS, OBDBS, MEDMR, and MADMF databases