



New England Fishery Management Council

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

MEMORANDUM

DATE: November 17, 2022

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 16, 2022, via webinar and discussed a review of the Georges Bank (GB) haddock sub-annual catch limit (ACL) in the directed midwater trawl Atlantic herring fishery.

Background on the Review Process

Framework Adjustment 59 (FW59) increased the midwater trawl (MWT) Atlantic herring fishery sub-ACL of Georges Bank haddock to 2% (up from 1.5% set by FW56). The measure aims to incentivize the midwater trawl (MWT) 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 accountability measures (AMs) for the midwater trawl Atlantic herring fishery (i.e., pound for pound payback provision and in-season closure) remain unchanged.

Framework 56 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 the information in the 2022 GB haddock assessment, additional biological information, and information provided by the Herring PDT (see Attachment).

1) Fishery catch performance

A summary of recent commercial (sectors and common pool) 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 2021 and preliminary in-season FY 2022. Sources: FY2010 – FY2021 final year-end multispecies catch reports, GARFO, and FY2022 in-season catch report, GARFO, November 10, 2022.

Groundfish Fishing Year	<i>Commercial Groundfish Fishery - Georges Bank Haddock</i>				
	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%
2017	52,620	3,526.3	564.2	4,090.5	7.8%
2018	44,659	4,708.6	435.1	5,143.7	11.5%
2019	53,276	5,070.9	223.2	5,294.1	9.9%
2020	121,864	6,409.3	80.1	6,489.4	5.3%
2021	76,622	3,071.2	45.3	3,119.7	4.0%
<i>In-Season 2022</i>	<i>75,381.9</i>	<i>1,463.7</i>	<i>38.0</i>	<i>1,501.7</i>	<i>2.0%</i>

2) Utilization

On average for the most recent three years (FY2019-FY2021), the catch of GB haddock by the commercial (sector and common poll) groundfish fishery has been 4,968 mt (6.4% average utilization of the sub-ACL). In general, commercial groundfish fishery catch of GB haddock is low relative to the groundfish fishery sub-ACL (range of 4.0% in FY2021 to 31.7% in FY2014 for FY2010 to FY2021), with catch only exceeding 5,500 mt once in the last ten years in

FY2020. In-season data for FY2022 indicates that the commercial 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

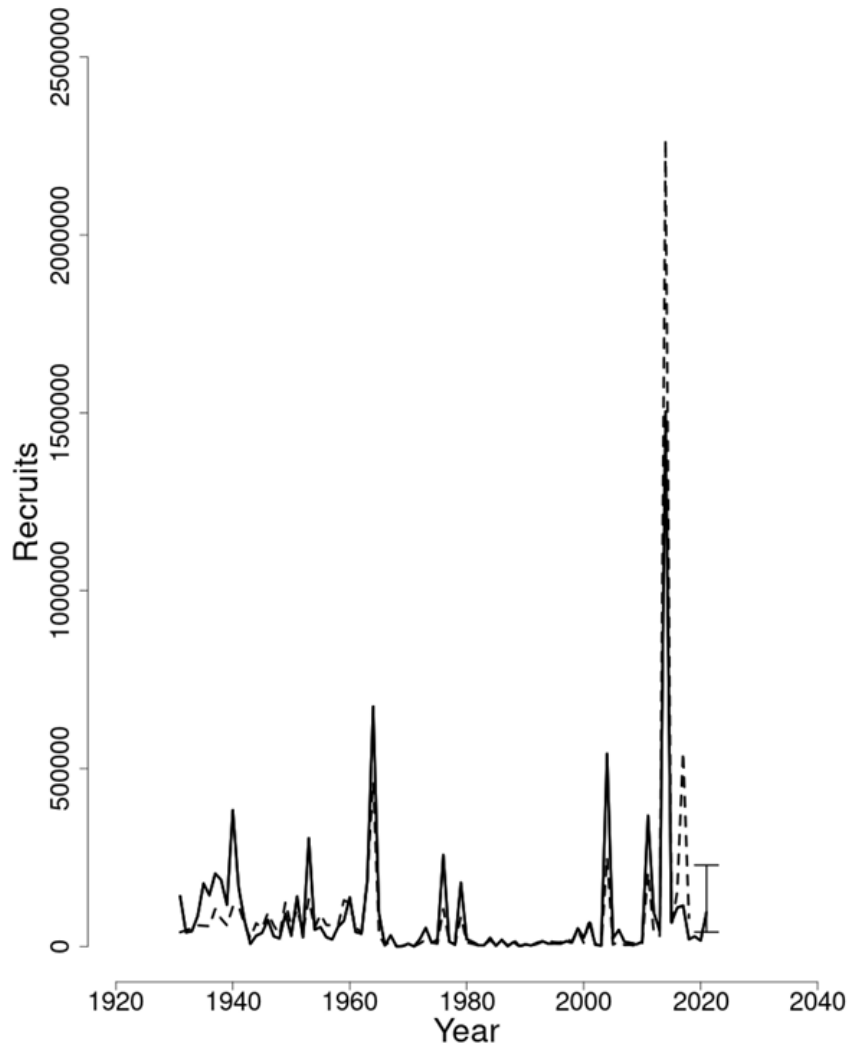
Based on the 2022 management track assessment and peer review, GB haddock is not overfished, and overfishing is not occurring. The 2022 assessment estimated SSB in 2021 to be 79,513, which is 66% of the biomass target. GB haddock is rebuilt.

4) Recruitment

The trend in recruitment is provided from the 2022 management track assessment report for GB haddock¹. Recruitment for haddock is episodic. Extremely large year classes in the last 20 years have led to a record high SSB in the last decade, but as strong year classes age out of the population abundance has returned to levels last observed in the early 2000s.

¹ See pp.6, figure 3 of the 2022 Georges Bank haddock management track assessment, available at: [Georges_Bank_haddock_Update_2022_10_12_124337.pdf \(noaa.gov\)](https://www.noaa.gov/media/2022/10/12/124337.pdf)

Figure 1. Trends in Recruits (age 1) (000s) of Georges Bank haddock between 1931 and 2021 from the current (solid line) and previous (dashed line) assessment. The 95% confidence intervals are shown.



5) *Incoming year-class strength*

Recruitment is highly variable and difficult to predict. 2021 recruitment appears to be close to the average (~96 million) but estimates of year-class strength are still uncertain. In the projections for FY2023-2025, the 2020 year-class is expected to constitute between 33%-41% of the fishery catch.

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

See the information provided in the Herring PDT report attached.

7) *Other information*

The PDT also notes the following other relevant information:

- MWT Atlantic herring fishery catches of GB haddock have been relatively low in recent years. From 2016-2017 the herring sub-ACL for Georges Bank declined, and herring caught in Area 3 declined from 18,631 mt to 4,054 mt. It is therefore not surprising that GB haddock catches in this fishery have also declined (see Attachment).
- The Atlantic herring ACLs for 2023-2025 will likely be higher than the ACLs set for 2021-2023² which may result in increased herring effort and catch of GB haddock.
- The GB haddock AMs for the midwater trawl Atlantic herring fishery state if the MWT herring fleet catches the total GB haddock catch cap, herring MWT vessels may not fish for, possess, transfer, receive, land, or sell herring in excess of 2,000 lb per trip in the Herring GB Haddock AM Area.³

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 a lower sub-ACL in terms of potential impacts on the GB haddock stock. Given the decline anticipated in the GB haddock ACL for FY2023-FY2025 relative to recent years and potential increase in Atlantic herring ACLs and catch over the same period, allocating less than 2% may increase the chance the MWT herring fishery triggers the GB haddock AM, which would close the directed herring fishery in-season in the AM area. Given the commercial groundfish fishery's historic utilization of the stock, allocating 2% to the mid-water trawl fishery is not expected to limit the commercial groundfish fishery's catch of GB haddock, even under the lower ACL.

² See Draft Atlantic Herring Fishery Management Plan 2023-2025 Specifications: [3a 220926-2023-2026 Herring Specifications SIR DRAFT-UPDATED.pdf \(s3.us-east-1.amazonaws.com\)](#)

³ See 50 CFR 648.201(a)(2)



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

MEMORANDUM

DATE: May 25, 2022
TO: Groundfish PDT
FROM: Herring PDT
SUBJECT: Analyses to support Groundfish PDT analysis of GB Haddock sub-ACL review

The Groundfish Plan Development Team (GF PDT) is required to conduct a review of the midwater trawl (MWT) Atlantic herring sub-ACL of Georges Bank (GB) haddock and recommend a sub-ACL to the Council up to 2% of the U.S. ABC. In 2019, Framework Adjustment 59 (FW59) increased the midwater trawl (MWT) Atlantic herring fishery sub-ACL of Georges Bank haddock to 2% (up from 1.5% set by FW56). As part of the review, the Herring PDT generally provides supporting analyses. This memo includes analyses for the Groundfish PDT to take into consideration when it makes recommendations to the Groundfish Committee about the sub-ACL of GB haddock for the Atlantic herring fishery.

The analyses included in this memo include:

1. Herring fishery catches by FY for the last six years (2016-2021 preliminary) by herring management area, including percent utilized;
2. Herring fishing activity (spatial and temporal);
3. Recent catches of GB haddock by the MWT fishery including coefficient of variance observer coverage rates;

1. Herring Fishery Catches

This section summarizes herring catch by area, including the percent utilized for the last five years (and 2021 preliminary numbers). 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 FY2016-2021. FY2021 years are preliminary. Overall, the herring fishery is variable from year to year in terms of utilization of area-specific sub-ACLs. However, the Area 1A quota is almost always fully utilized. 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 in real-time. In 2020, this resulted in a 72% overage (Table 1 – Herring sub-ACL, catches, and % utilized by herring management area (FY2016-2020)). Overall, the total ACL for this fishery has declined dramatically since 2017. The 2020 ACL for all four areas was around 10% of the 2017

ACL. Table 2 shows a more historical trend of herring catch by management area in terms of percent utilized.

Table 1 – Herring sub-ACL, catches, and % utilized by herring management area (FY2016-2020)

Year	Area	sub-ACL (mt)	Catch (mt)	% Utilized
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	32,115	28,682	89%
2017	1B	4,825	2,639	55%
2017	2	31,227	3,617	12%
2017	3	43,873	14,134	32%
2018	1A	28,038	24,861	89%
2018	1B	2,639	2,211	84%
2018	2	8,200	7,071	86%
2018	3	11,318	9,7636	86%
2019	1A	5,223	4,916	94%
2019	1B	628	159	25%
2019	2	4,062	4,750	117%
2019	3	5,700	3,254	57%
2020	1A	4,244	4,353	103%
2020	1B	483	831	172%
2020	2	3,120	353	11%
2020	3	4,378	4,054	93%
2021*	1A	2,579	2,884	112%
2021*	1B	239	0	0%
2021*	2	652	220	34%
2021*	3	2,181	2,222	102%

Source: NMFS.
**Preliminary data pulled May 5, 2022*
Note: Shaded rows indicate overages

Table 2 – Percent utilization of herring sub-ACL by herring management area (2004-2020)*Shaded cells indicate overages of management area sub-ACLs*

	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	89%	55%	12%	32%
2018	89%	84%	86%	86%
2019	94%	25%	117%	57%
2020	103%	172%	11%	93%

2. Seasonal and spatial distribution of herring fishing effort

In addition, this memo includes information about the seasonal and spatial distribution of herring fishing. Figure 1 shows herring catch by month and area for the last five years, 2016-2020. Area 1A catch is typically concentrated between June – October but Area 1B is not as consistent, with fishing in 2016 and 2017 fishing taking place in late spring and 2018-2020 fishing occurring in late summer. Area 2 fishing typically takes place in the winter (December – February). In previous years, Area 3 fishing increased in late spring and again in early fall, but in 2020 all fishing occurred from January – June.

The herring fishery varies spatially from year to year, Figure 2 shows the kept catch for 2016-2020 combined, and Figure 3 shows vessel revenue for 2016-2020. In terms of potential overlap with GB haddock, the herring fishery primarily focuses along the northern flank of Georges Bank and southeast of Cape Cod.

Figure 1 – Herring sub-ACL use by month and herring management area (2016-2020)

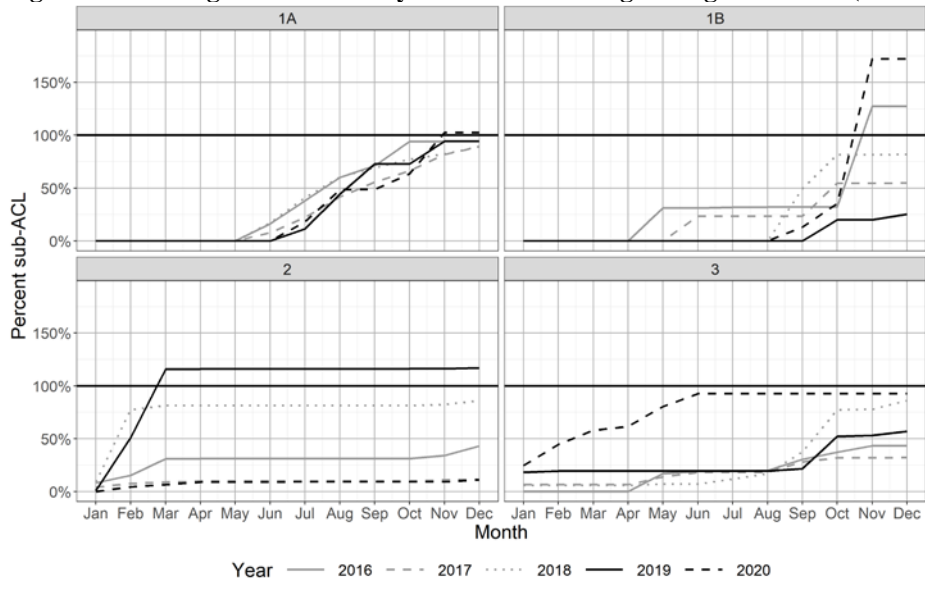


Figure 2. Fishing footprint for Atlantic herring fishery using model based estimate of fishing location from VTR, observer and dealer data combined (2016-2020). (DePiper et al, 2014 dataset)

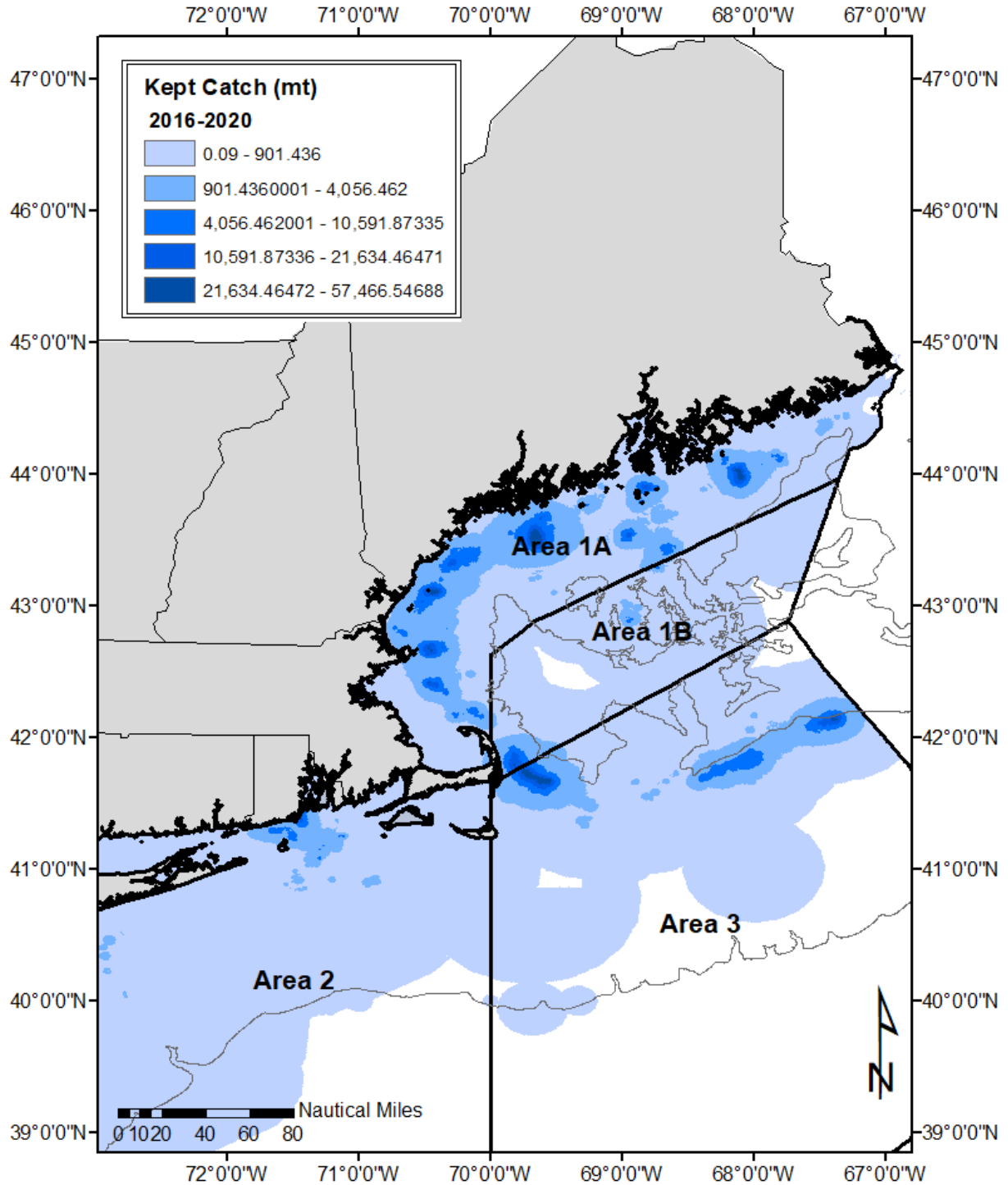
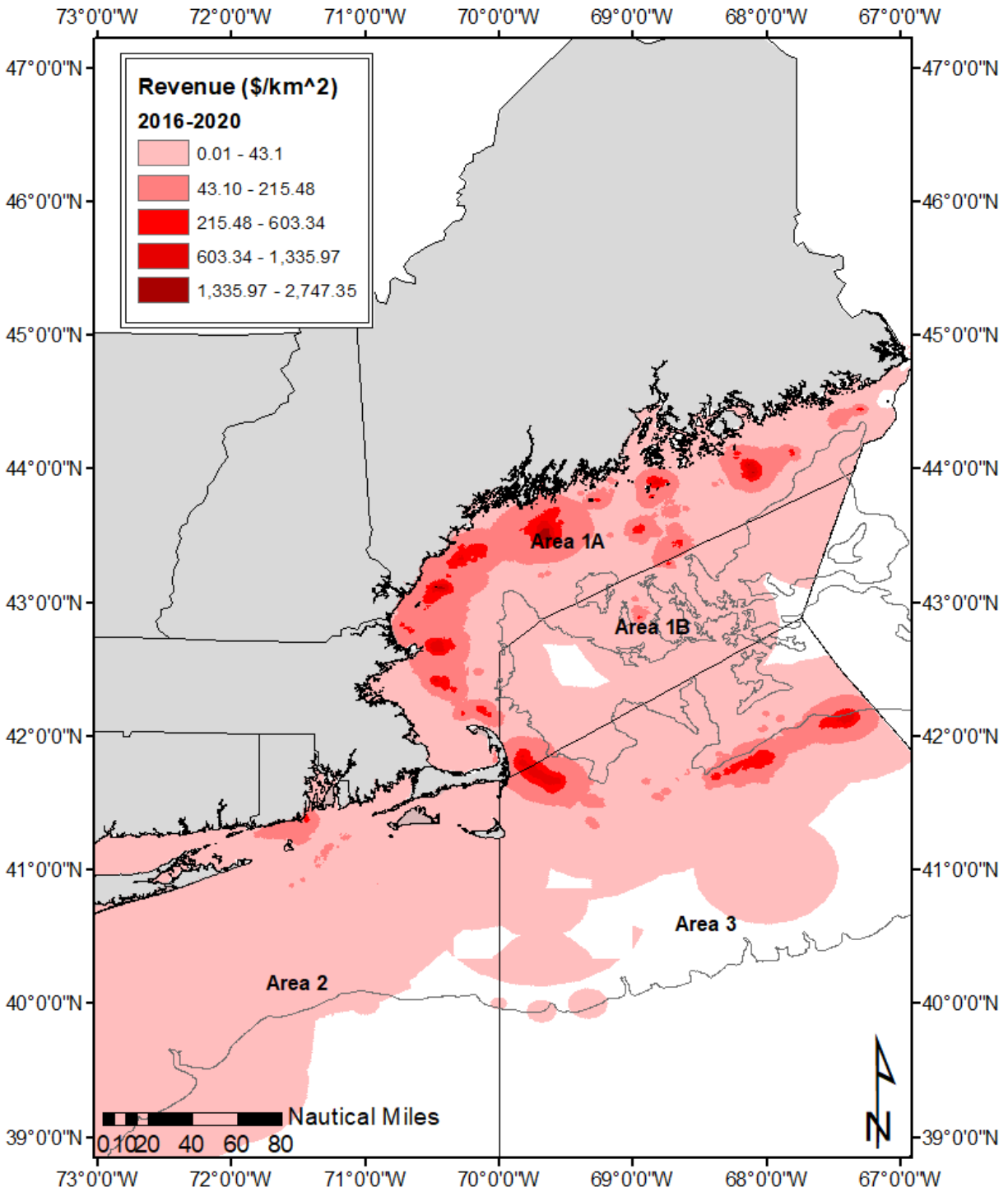


Figure 3. Fishing footprint for Atlantic herring fishery using model based estimate of fishing location from VTR, observer and dealer data combined (2016-2020). (DePiper et al, 2014 dataset)



3. Update of GB Haddock catches in the MWT Herring Fishery

The estimate of haddock catch in the herring midwater trawl fishery has been relatively low from 2017 - 2020 compared to previous years with less than 1% of the sub-ACL utilized in 2019 and 2020. Overall, the herring sub-ACL for Georges Bank has declined in recent years with herring catches from Area 3 decreasing from around 30,000 mt in 2015 to 14,000 mt in 2017 to under 10,000 mt in 2018 and to around 4,000 mt in 2020. Therefore, it is not surprising that GB haddock catches in this fishery have also declined. The haddock bycatch rate is a bit lower in recent years, but observer coverage has been quite low.

An industry-funded monitoring (IFM) program was established to create additional coverage and reduce uncertainty around catch estimates in the herring fishery. The IFM amendment was published in April 2020, and in 2020 the herring industry was required to notify using the Pre-Trip Notification System (PTNS) to support the more complex selection process defined by the IFM amendment. The monitoring component of the amendment was delayed until July 2021 due to the COVID-19 pandemic. The ability to accept trips and offloads by observer providers was low in the first year. This was limited by challenges recruiting and training new observers during the pandemic and deployment logistics in a new program.

Some herring vessels have the option of an exempted fishing permit (EFP) to use electronic monitoring and portside sampling instead of at-sea monitoring coverage to satisfy IFM requirements. Six MWT vessels participated in the EFP program in IFM year 2021 (July 1, 2021 – March 21, 2022) and the electronic monitoring (EM) program successfully recorded video on all declared herring trips that these vessels took. As of April 2022, 15 trips had a primary review and 11 trips had a secondary NMFS review. Four MWT vessels are participating in the current 2022 IFM year (April 1, 2022 – March 21, 2023).

Table 3 – Summary of recent catches (mt) of Georges Bank haddock by the midwater trawl Atlantic herring fishery, groundfish FY 2010- FY 2021 preliminary.

Groundfish FY	<i>Midwater Trawl - Georges Bank Haddock</i>						Observer Coverage % Trips
	Sub-ACL	Landings	Discards	Catch	Percentage of sub-ACL	CV on Catch	
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%
2017	801	47.9	0	47.9	6.0%	63.7%	14.0%
2018	680	43.9	0	43.9	6.5%	91.0%	5.6%
2019	811	0.15	0	0.15	0.02%	114%	7%
2020	2,447	10	0	10	0.41%	3%	5%
2021*	1,539	0.6	0.002	0.6	0.04%	17%	45%

Source: Groundfish FY2010 – 2020 final year-end catch reports

Note: Values include both Eastern and Western GB haddock estimates, combined.

*Initial in-season quota monitoring estimates as of April 21, 2022

Table 4 – Georges Bank haddock catch cap summary, FY 2011-FY2020.

Years highlighted indicate when the catch cap was exceeded, in-season AMs implemented in 2015.

Fishing Year	Fleet Trips	Observed trips in GB	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%
2017	100	14	14.00%	0.003232	63.72%	15,318	49.5	801	6.2%
2018	89	5	5.62%	0.003632	90.96%	12,163	44.2	680	6.5%
2019	70	5	7%	0.0002	114%	6,068	0.1	811	0.02%
2020	64	3	5%	0.00149	3%	8,446	12.6	2,447	0.51%
2021*	11	5	45%	0.00012	17%	2,059	0.2	1,539	0.02%

Source: DMIS and ODBBS

Note: Values include both Eastern and Western GB haddock estimates, combined.

*Initial in-season quota monitoring estimates as of April 21, 2022

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