



New England Fishery Management Council

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DRAFT MEMORANDUM

DATE: May 27, 2016
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
CC: Herring Committee, Herring Plan Development Team
SUBJECT: **Modifications to the sub-ACL and AM for Georges Bank haddock in the Atlantic herring fishery**

The Groundfish Plan Development Team (PDT) met on May 26, 2016 via webinar to discuss modifications to the sub-ACL and AM for Georges Bank haddock in the Atlantic herring fishery. The Groundfish PDT focused its discussion on modification of the sub-ACL and to a lesser extent modifications to the AM. *Version 1 of this memo summarizes background information. The PDT plans to update this memo in time for the June Groundfish Committee meeting in version 2 of this memo.*

A. Background

1. Status of Georges Bank haddock

Population Status. The GB haddock stock is a transboundary stock co-managed by the U.S. and Canada. The stock is not overfished and overfishing is not occurring (NEFSC 2015). The fishing mortality rate for this stock has been low in recent years. There has been a steady increase in SSB from ~15,000 mt in the early 1990s, to about 182,000 mt in 2007 to 163,000 mt in 2013. Two exceptionally large year classes (2003 and 2010) contributed to this growth.

Retrospective adjustments were made to the model results from the 2015 operational assessment, due to a major retrospective pattern in SSB and F. The retrospective adjustment changed the 2014 SSB from 225,080 to 150,053 and the 2014 F_{Full} from 0.159 to 0.241. Spawning stock biomass (SSB) in 2014 was estimated to be 150,053 (mt) which is 139% of the biomass target (SSB_{MSY} proxy = 108,300). The 2014 fully selected fishing mortality was estimated to be 0.241 which is 62% of the overfishing threshold proxy (F_{MSY} proxy = 0.39).

In the past, extremely large year classes were considered anomalies (e.g., 1963 and 2003). However, since 2003, two more extremely large (2010 and 2013) and one very large (2012) year classes occurred. Uncertainty remains as to the size of the 2013 year class, which could be even stronger than the 2003 and 2010 year classes. The current model estimate for the 2013 year class is 3.4 billion fish. Experience suggests that estimates of year class strength are usually revised downward with additional years of information. For example, the 2003 year class is now

estimated to be only 28% of its initial model estimate, while the 2010 year class is now estimated to be 63% of its initial estimate. Given that only 5 years of data are available to estimate the 2010 year class, it is possible that there may be further revisions to the magnitude of this year class estimate with more years of data (NEFSC 2015).

Spawning. Haddock are highly fecund broadcast spawners, spawning over various substrates including rocks, gravel, smooth sand, and mud. On Georges Bank, spawning occurs from January to June, usually peaking from February to early-April. This is the principal haddock spawning area in the Northeast U.S. Shelf Ecosystem, concentrating on the northeast peak of Georges Bank. In the Gulf of Maine, spawning occurs from early February to May, usually peaking in February to April.

Figure 1 to Figure 3 are from the Habitat Omnibus Amendment 2, section 4.4.2 of volume 1 of the FEIS (affected environment). Figure 1 maps the spring distribution of large spawner hotspots for haddock in the Georges Bank/Southern New England region identified from examining multiple surveys (i.e., 2002-2012 NEFSC, MADMF, ME-NH, and IBS trawl surveys). The majority of Georges Bank haddock large (> 50 cm) spawner hotspots are identified on Eastern Georges Bank with some additional hotspots on the western portion of the bank within Closed Area I and its vicinity. Figure 2 plots the distribution of haddock by small (35-50 cm) and large (> 50 cm) mature fish size classes during spring and summer surveys of Georges Bank during 2002-2011. Large Georges Bank haddock are predominately on Eastern Georges Bank, the western portion of the bank within Closed Area I, and to a lesser extent the northern and southern flanks of Georges Bank. Small Georges Bank haddock exhibit the greatest concentrations on Eastern Georges Bank. Figure 3 maps the distribution of haddock by maturity stage during 2002-2011 surveys. The majority of Georges Bank haddock in spawning condition (i.e., ripe, eyed, running ripe, and spent) during the spring surveys are located on Eastern Georges Bank and to a lesser extent on the western portion of the bank in Closed Area I.

Figure 1- Seasonal distribution of large spawner hotspots for haddock in the Georges Bank/Southern New England region identified from 2002-2012 NEFSC, MADMF, ME-NH, and IBS trawl surveys.

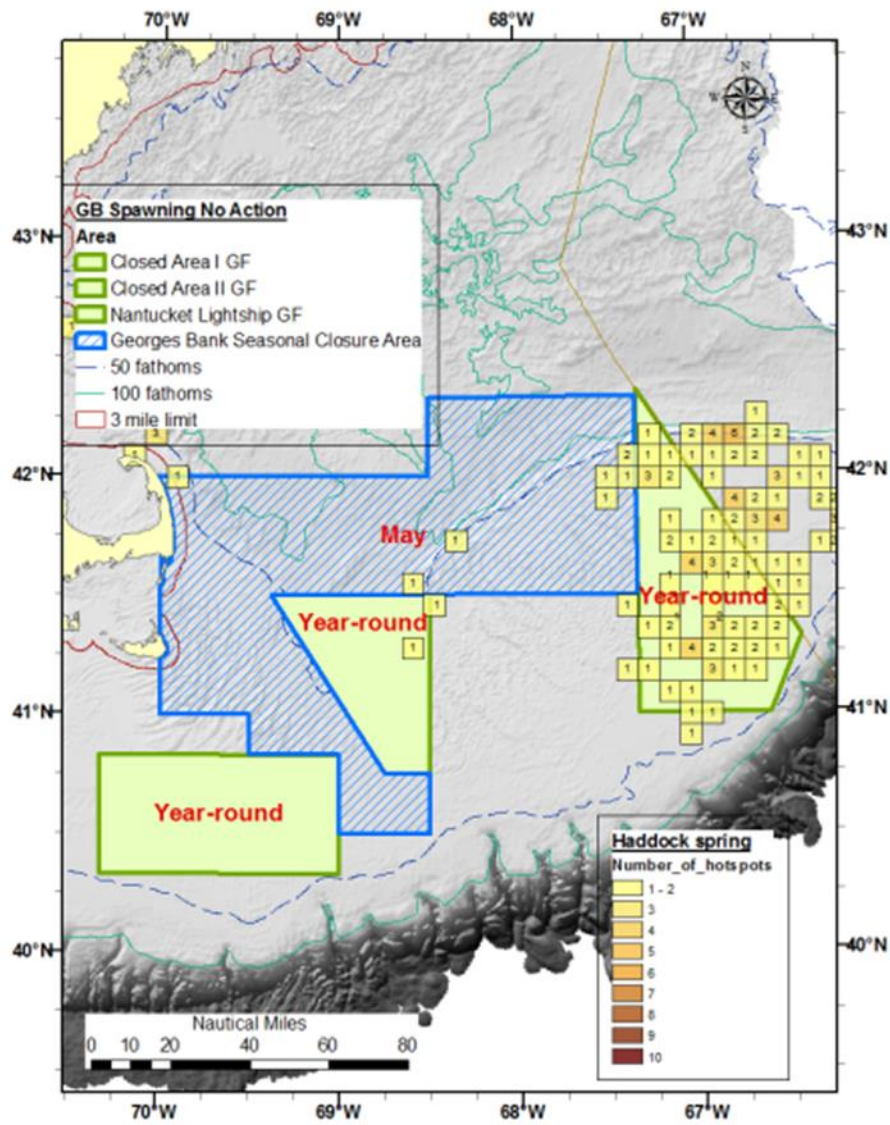


Figure 2- Distribution of haddock by small and large mature fish size classes during spring and summer surveys of Georges Bank during 2002-2011.

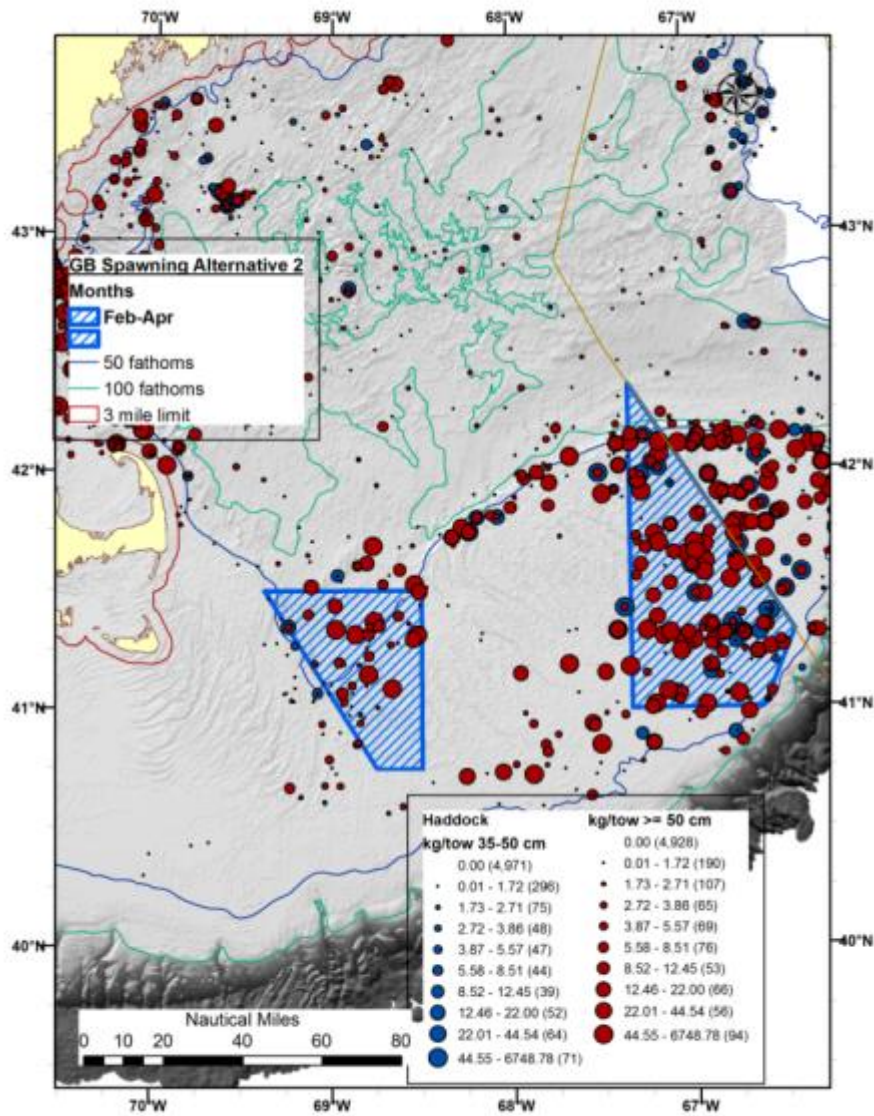
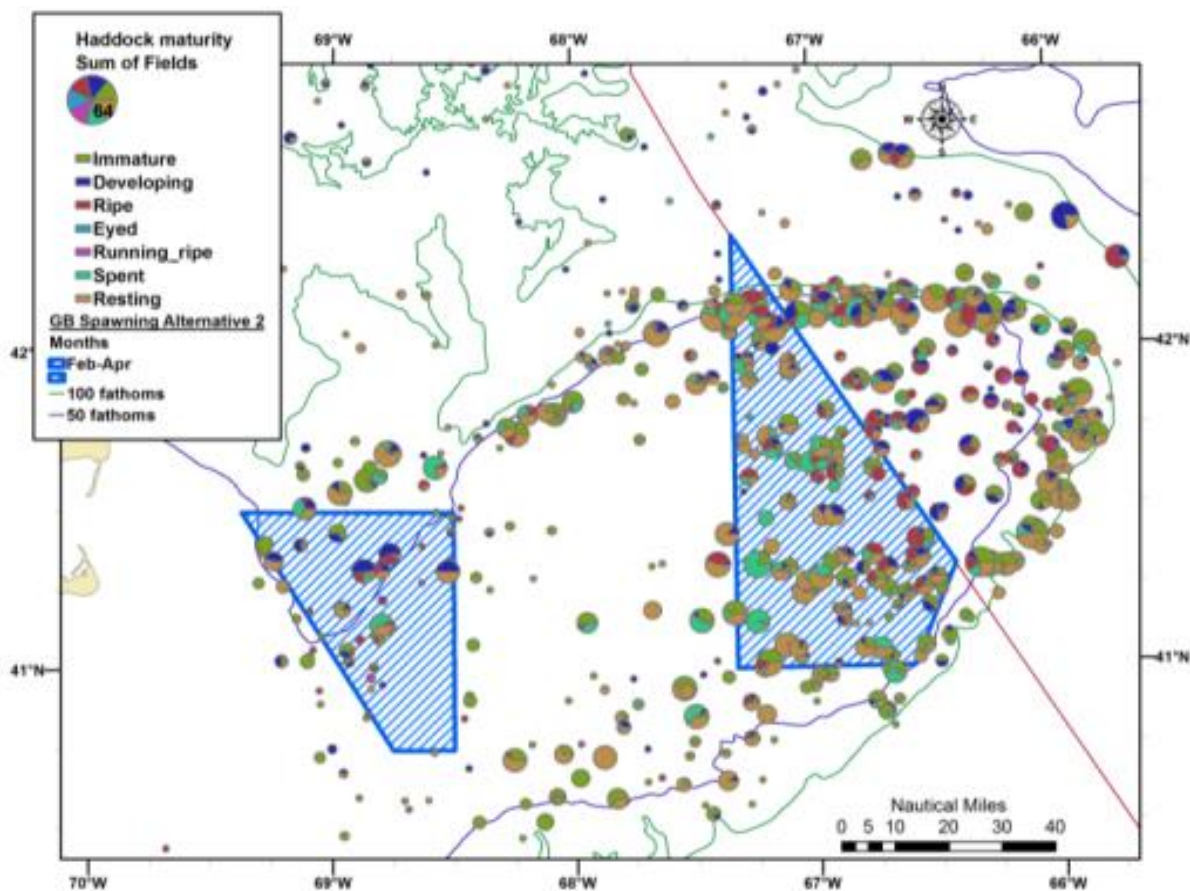


Figure 3- Distribution of haddock by maturity stage during 2002-2011 spring surveys.



2. Recent catch information

Haddock comprises the largest component of groundfish bycatch by midwater trawl vessels, and the catch of haddock by these vessels is managed by the Council through a catch cap (Framework 46 to the Multispecies FMP) and increased sampling/monitoring (Amendment 5 to the Atlantic Herring FMP). Vessels issued a Category A/B Atlantic herring permit and on a declared herring trip, regardless of gear or area fished, and or a vessel issued a Category C permit and/or an Category D permit (open access) that fishes with midwater trawl gear in Areas 1A, 1B, and 3 are prohibited from discarding haddock at-sea (those haddock brought on the deck or pumped into the hold). These vessels are limited to possessing/landing up to 100 lb. of other NE multispecies. Atlantic herring processors and dealers are required to separate out, and retain such haddock for at least 12 hours for inspection by authorized NMFS officers. However, haddock or other NE multispecies separated from the herring catch may not be sold, purchased, received, traded, bartered, or transferred, or attempted to be sold, purchased, received, traded, bartered, or transferred for, or intended for, human consumption.

Table 1 summarizes Georges Bank haddock catch by the herring midwater trawl vessels from groundfish fishing years 2010-2014. Starting in 2011, data used to estimate/monitor the cap included observer data, vessel trip reports (VTR), and dealer reports. During the 2012 groundfish

fishing year, the haddock catch cap was fully utilized in the GB area. The 2013 Georges Bank haddock cap was slightly exceeded. As a result, the 2014 catch cap was adjusted downward from 179 mt to 162 mt to account for the overage. There remains very little catch of Gulf of Maine haddock by midwater trawl vessels in the Atlantic herring fishery.

For the purposes of comparison, Table 2 summarizes recent catches of Georges Bank haddock by the commercial groundfish fishery.

Table 1- Summary of recent catches (mt) of Georges Bank haddock by the midwater trawl Atlantic herring fishery, groundfish FY 2010- FY 2016. Sources: Groundfish FY2010 – FY2014 final year-end catch reports, FY2015 preliminary in-season report, and FY 2016 preliminary in-season report, GARFO, and CV and observer coverages rates for FY 2011- FY 2015 from GARFO personal communication May 23, 2016.

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			235.54	103.76%	61.4%	4.9%
2016	521			12.08	2.3%		
2016 - FW 55 value does not include deduction for FY 2015 overage; catch from 5/1/16-5/15/16							

Table 2- Summary of recent catches (mt) of Georges Bank haddock by the commercial groundfish fishery, groundfish FY 2010- FY 2016. Sources: Groundfish FY2010 – FY2014 final year-end catch reports, FY2015 preliminary in-season report, and FY 2016 preliminary in-season report.

Groundfish FY	<i>Commercial 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	4,240.0	861.3	5,101.2	23.4%
2016	51,667	398.4	73.5	471.9	0.9%

3. Specifications

FW 55 established specifications for FY 2016 to FY 2018. FY 2017 and FY 2019 specifications could be modified in future actions based on TACs in Eastern Georges Bank. In addition, FY 2019 default specifications were published by NMFS in the FW 55 final rule (note the final rule incorrectly reports the FY 2019 default specifications for GB haddock Table 3 displays the correction.) Table 3 summarizes specifications for GB haddock for FY 2016 –FY 2018 and partial FY 2019 (default specifications span May 1- July 31).

Table 3 - Summary of FY 2016 – FY 2018 specifications and FY 2019 default specifications for GB haddock. Source: FW 55.

GF FY	OFL	ABC	Canadian TAC	US ABC	State waters Sub-Component	Other Sub-Component	<u>ACLs</u>		
							Commercial Groundfish sub-ACL	MWT Sub-ACL	Total ACL
2016	160,385	77,898	21,830	56,068	561	561	51,667	521	53,309
2017	258,691	77,898	29,500	48,398	484	484	44,599	450	46,017
2018	358,077	77,898	0	77,898	779	779	71,783	724	74,065
2019		27,264		27,264			25,124	253	25,923

The default specifications process was established in FW 53. The process allows the directed groundfish fishery to begin on-time in the event that specifications were not in place in time for the start of the fishing year by allowing 35% of the previous year’s specifications to rollover for three months (May 1- July 31) or when replaced by the new specifications. Delays in final rulemaking for specifications actions are anticipated to be minor, and the limited duration of the “rollover period” (August 1st end date) retains a timeline for rulemaking while allowing the fishing year to begin on time. In the event that there was a continued delay in rulemaking (beyond August 1st), there would be no fishing for stocks without specifications in place, nor any fishing for other groundfish stocks that share the same BSA as stocks with no specifications.

The Final Rule for FW 53 further clarifies that since the midwater trawl Atlantic herring fleet has sub-ACLs and in-season AMs for the two haddock stocks, the fishery is subject to the default specifications with similar consequences as the groundfish fishery. If for example specifications were not in place by August 1 of the groundfish fishing year for Georges Bank haddock, the midwater trawl Atlantic herring fishery would not be allowed to operate in the Georges Bank haddock stock area until specifications were in place.

Calculation of the sub-ACL

To determine the midwater trawl herring fishery sub-ACL, several steps are involved. First, the Canadian TAC in Eastern Georges Bank is deducted from the total ABC (for the Georges Bank stock), leaving a U.S. ABC. After the state and other sub-components are deducted, the remaining portion of the U.S. ABC is the amount available to the fishery components that receive an allocation (i.e., subject to accountability measures). Allocation are made first to non-

groundfish fisheries, and the portion of the U.S. ABC remaining is the commercial groundfish allocation. The MWT sub-ABC (1% of the remaining U.S. ABC) is further reduced by a management uncertainty buffer (7% - the default level for no possession stocks in the groundfish plan) to determine the MWT sub-ACL.

Other Component Catches of Georges Bank Haddock

Amendment 16 provides that the distribution to various sub-components can be modified in a framework or specification action. These adjustments are often made as more experience is gained with the ACL system adopted by Amendment 16. Changes can also be required if there are large changes in ABCs, particularly because the sub-components of the fishery are not subject to specific catch controls by the FMP and a specific percentage allocation has not been defined. This is the case for state waters and other sub-component catches. Unlike the case when a specific allocation has been specified, the PDT estimates the expected catch from these two components and then compares that amount to the ABC to determine the percentage that should be set aside to account for these catches. These sub-components are not subject to specific catch controls by the Groundfish FMP. As a result, the state waters and other sub-components are not allocations, and these components of the fishery are not subject to accountability measures if the catch limits are exceeded. Because the state waters and other sub-component values are based on expected catch, there is no downward adjustment for management uncertainty that applies to fisheries with specific allocations and accountability measures.

Table 4 summarizes the other sub-component percentages relative to the U.S. ABC for Georges Bank haddock, FY 2010 – FY 2018. Table 5 summarizes catches of Georges Bank haddock by fisheries included within the other sub-component.

Table 4- Summary of other sub-component percentages relative to ABC and values for Georges Bank haddock. Source: FW 50, FW 51, FW 53, and FW 55.

Fishing Year	U.S. ABC (mt)	Other sub-Component		Total	% of sub-Component Caught
		% of ABC	Value (mt)		
2010	44,903	4%	1,796	131.0	7%
2011	34,244	4%	1,370	305.8	22%
2012	30,726	4%	1,229	25.1	2%
2013	29,335	4%	1,173	56.5	5%
2014	19,229	4%	769	793.4	103%
2015	24,366	4%	975	262.4	
2016	56,068	1%	561		
2017	48,398	1%	484		
2018	77,989	1%	779		

Table 5- Summary of other sub-component catches of Georges Bank haddock by fishery. Source: Groundfish FY2010 – FY2014 final year-end catch reports.

Fishery	<i>Fishing Year</i>					Average Catch
	2010	2011	2012	2013	2014	
Scallop	2.6	2.4	3.4	3.5	5.5	3.5
Fluke	0.6	8.2	0.0	0.1	31.1	8.0
Herring (non-MWT)	45.1	14.4	1.8	5.2	40.1	21.3
Lobster/Crab	0.2	2.3	0.6	0.0	0.8	0.8
Menhaden	1.5	0.0	0.5	0.0	0.5	0.5
Monkfish	0.0	0.1	0.0	0.0	0.1	0.0
Research	0.0	18.1	3.4	0.5	5.6	5.5
Scup	0.2	5.5	0.0	0.1	38.3	8.8
Shrimp	0.1	0.1	0.0	0.0	6.3	1.3
Squid	23.4	98.8	6.7	14.8	194.8	67.7
Squid/Whiting	17.1	52.0	3.9	15.5	149.5	47.6
Surf Clam	0.0	0.0	0.0	0.0	23.6	4.7
Whelk/Conk	0.0	0.0	0.1	0.0	0.0	0.0
Whiting	0.1	0.9	0.0	0.0	0.1	0.2
Unknown	40.0	102.9	4.7	16.7	297.2	92.3
Total	131.0	305.8	25.1	56.5	793.4	262.4

4. Impacts of the In-Season AM in FY 2015: excerpt from Framework Adjustment 55 – Biological and Economic Impact Analysis

Biological Impacts Analysis

Impacts on other species

The ABCs and ACLs under Option 2 include specification of sub-ACLs for other fisheries with catches of groundfish species including GB yellowtail flounder, SNE/MA yellowtail flounder, southern windowpane flounder, GOM haddock, and GB haddock.

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Lastly, sub-ACLs are designed to limit the incidental catch of GOM and GB haddock by mid-water trawl herring fisheries, and exceeding the allocations results in triggering AMs in-season. The sub-ACLs may affect fishing mortality and stock size of Atlantic herring by restricting herring fishing in areas before quotas are reached.

Economic Impacts Analysis

Atlantic herring fishery

Option 2 would have positive impacts on the Atlantic herring fishery relative to No Action and FY 2015. The sub-ACLs for GB haddock and GOM haddock would be increased from FY 2015

under Option 2. The GB haddock sub-ACL would be increased from 227mt to 521mt and the GOM haddock sub-ACL would be increased from 14mt to 34mt. These increased sub-ACLs should provide a better opportunity for the Atlantic herring fishery to avoid triggering AMs, which the herring fishery is operating under for exceeding the sub-ACL for GB haddock in-season from October 22, 2015 until the end of the 2015 groundfish fishing year. These AMs implemented a 2,000 lb. possession limit for most of the GB stock area, resulting in revenue decreases for the Atlantic herring fishery.

To estimate the loss in revenue from the FY 2015 AMs, average annual Atlantic herring revenue from herring trips to statistical areas currently under AMs (521, 522, 525, 561, and 562) for the months of November-April during FYs 2011-2014 was calculated. Table 6 shows that average herring revenue from these stat areas during this six month duration is nearly \$2,000,000. The average volume of herring landings on the considered trips was slightly over 360,000 pounds (16,434,386/44), 180 times the 2,000 lb. legal possession limit under the AMs.

Table 6- Atlantic herring trips, landings, and revenue from statistical reporting areas 521, 522, 525, or 652 from November through April during groundfish FY 2011-2014. Trip locations from VTRs. (Table 116 in FW 55)

Groundfish Fishing Year	# of Herring Trips (In stat areas 521, 522, 525, 561, or 562 during Nov-Apr)	Herring Landed	Herring Revenue (2010\$)
2011	27	10,320,385	\$1,112,396
2012	43	11,934,138	\$1,498,469
2013	69	27,199,795	\$2,859,290
2014	38	16,283,224	\$1,731,738
Avg. 2011-2014	44	16,434,386	\$1,800,473

The AMs, in place to limit incidental catch of GB haddock in FY 2015, likely offer no long term economic benefit to the groundfish fishery at this point. The GB haddock stock is well above B_{MSY} and utilization rates have been low in recent fishing years. During May-October 2015, incidental catch of GB haddock by the Atlantic herring fishery totaled 291 mt. This number is more or less insignificant when considering the commercial groundfish sub-ACL for GB haddock is nearly 22,000 and utilization rates in recent fishing years have been well below 50%.

B. PDT Analysis

To be provided.

C. PDT Discussion

To be provided.