



New England Fishery Management Council

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MEMORANDUM

DATE: September 14, 2018
TO: Groundfish Committee
FROM: Groundfish Plan Development Team
SUBJECT: **Development of Framework Adjustment 58 Draft Alternatives**

The Groundfish Plan Development Team (PDT) met on July 31, 2018 in Gloucester, MA and August 22, 2018 via webinar to discuss Framework Adjustment 58 (FW58). Anticipated implementation of FW58 is May 1, 2019.

Draft scope, objectives, and range of alternatives

Based on the conclusions of the June 2018 Council meeting:

The **scope** is 1) to revise or establish rebuilding plans for several stocks (Georges Bank (GB) winter flounder, Southern New England (SNE)/Mid-Atlantic (MA) yellowtail flounder, witch flounder, Gulf of Maine (GOM)/GB (Northern) windowpane flounder, and ocean pout), 2) to set specifications for fishing year 2019 for U.S./Canada stocks (Eastern GB cod, Eastern GB haddock, and GB yellowtail flounder), 3) to exempt vessels fishing in Northwest Atlantic Fisheries Organization (NAFO) waters from Northeast Multispecies Fishery Management Plan (FMP) commercial minimum fish sizes, and 4) to provide additional guidance on sector overages.

The **objectives** are to meet regulatory requirements to prevent overfishing, ensure rebuilding, and help achieve optimum yield in the commercial and recreational groundfish fishery.

The **range of alternatives** include:

1. Updates to Formal Rebuilding Programs and Annual Catch Limits
 - Formal Rebuilding Plans
 - Annual Catch Limits
2. Fishery Program Administration
 - Minimum Fish Size Exemptions for Vessels Fishing in NAFO Waters
 - Guidance on Sector Overages

PDT Discussion: Development of Alternatives

The PDT plans to produce draft alternatives for the Groundfish Committee to review after the Transboundary Management Guidance Committee (TMGC) and Steering Committee (SC) meet on September 11-13. The PDT expects the draft alternatives will be available to the Committee on September 14. At the Committee meeting on September 18, the Committee may wish to consider including all or some of the options under each alternative. The PDT plans to incorporate the Committee's recommendations into revised draft alternatives for the Council meeting. However, the Council would not receive the revisions in time for its standard deadline, as the Committee convenes on September 18, after the Council mailing deadline of September 14.

Rebuilding Plans

The Scientific and Statistical Committee's discussed the rebuilding plans options developed by the PDT for several groundfish stocks (ocean pout, GB winter flounder, witch flounder, Northern windowpane flounder, and SNE/MA yellowtail flounder) at its meeting on August 15, 2018 and included recommendations in its memorandum of September 4, 2018. The PDT considered the SSC's suggestions and offers these questions to the Committee.

1. Sub-Option 1 - The SSC suggested that rebuilding schedules could be based on a F_{MSY} rate lower than the $75\%F_{MSY}$ control rule to encourage a quick rebuilding timeline. A more conservative rebuilding plan option and the associated ABCs could therefore be based on a specific percent rate lower than $75\%F_{MSY}$. In its memo to the SSC, the PDT showed examples based on 25% and $50\%F_{MSY}$ to illustrate the results from projections.
 - a. **Does the committee want to consider such an option? If so, what rate should this alternative be based on?**
 - b. **If this alternative is developed, how long should the rebuilding schedule be under this newly defined rebuilding rate?** For example, GB winter flounder projections suggest rebuilding with a $50\%F_{MSY}$ rate is possible between 4 and 10 years. Keep in mind under this option $F_{rebuild}$ will not be calculated. Instead ABCs will be based on the updated defined F_{MSY} estimates during the rebuilding schedule.
2. Sub-Option 2- The Groundfish ABC control rule has an upper limit of ABCs being based on $75\%F_{MSY}$ regardless whether a rebuilding plan exists or not. The maximum time frame allowed is 10 years, when a stock can rebuild in that time frame according to the projections. **Does the committee want to develop the least conservative rebuilding schedule alternative based on a 10-year schedule at 50% probability?** In this option, it is assumed that ABCs will be based on updated $F_{rebuild}$ calculations from the most recent projections if the stock is not making adequate progress towards rebuilding by the end date. In other words, if ABCs based on $75\%F_{MSY}$ are not rebuilding the stocks as the original projections would suggest then $F_{rebuild}$ based ABCs will become lower than $75\%F_{MSY}$ ABCs as the end date approaches.
3. Sub-Option 3- **Would the committee want to consider an option in between the two options above?** For example, use $75\%F_{MSY}$ and a shorter time frame than 10 years.
4. The first two sub-options above could also be developed for empirical data poor assessments with the exception in the second sub-option of not being able to estimate $F_{rebuild}$. The PDT acknowledges that the second sub-option with empirical based assessments will essentially have no impact on the calculated ABCs from the control rule.

Annual Catch Limits

The PDT plans to incorporate TMGC/SC recommendations on U.S./Canada total allowable catches for Eastern Georges Bank (GB) cod, Eastern GB haddock, and GB yellowtail flounder in the draft alternatives to the Committee.

In addition, the PDT completed a preliminary abbreviated sub-component analysis for six groundfish stocks (GB cod, GOM cod, GB winter flounder, GOM winter flounder, witch flounder, and Atlantic halibut). These six stocks were selected by the PDT due to: 1) being a special case identified by the Council in FW56 or FW57 (GB cod, GOM cod, GOM winter flounder, witch flounder, Atlantic halibut) or 2) much lower 2017 catches than previously estimated for the 2016 stock assessments used in the rebuilding plan option projections for GB winter flounder. The PDT compared the current other or state waters sub-component percentage (and associated value) to the updated three-year average (2015-2017) to come up with recommendations (Table 1). See Appendix #1 for tables supporting the sub-component analysis. The PDT offers some additional information when considering the sub-component recommendations using the three-year average:

- GOM cod
 - State sub-component: The Commonwealth of Massachusetts is considering measures to reduce commercial catches of GOM cod. Therefore, increasing the state sub-component may not be necessary in the short-term.
Other Sub-Component: The 2017 catch in the other sub-component included 22.3mt of research catch. The PDT is uncertain if future catches in this bin. By comparison in 2015 and 2016, research catch was 5.5mt and 5.6mt, respectively. Therefore, increasing the other sub-component may not be necessary in the short-term.
- GB winter flounder
 - Other sub-component: Scallop fishery catches of this stock is a source of uncertainty. The recommended percentage could be too low.
- GOM winter flounder
 - State sub-component: The Commonwealth of Massachusetts is considering measures to reduce commercial catches of GOM winter flounder. Therefore, increasing the state sub-component may not be necessary in the short-term.
- Atlantic halibut
 - Other sub-component: The PDT did not consider the change to discards mortality rates for trawl, gillnet, and long line when evaluating this component, as changes to discard mortality rates will not be applied until 2018 catches. Therefore, increasing the other sub-component may not be necessary in the short-term.
 - State sub-component: Preliminary dealer reports from the State of Maine indicate that state and federal landings are at 21.1. The State of Maine changed its management of halibut in 2017 and 2018 (e.g., closed areas, shortened the season, reduced the number of hooks). Expected catches are anticipated to be lower than in recent years. Therefore, increasing the state sub-component may not be necessary in the short-term.

Table 1- Comparison by stock of the current sub-component values and the PDT's recommendation using the three-year (2015-2017) average and justification.

Stock	Sub-Component – Percentage of ABC					
	State waters (%)			Other (%)		
	FY18-20	Recommendation	Justification	FY18-20	Recommendation	Justification
GB cod	1% 18mt	1.5% 27mt	Increase by 0.5% to cover the 2015-2017 average catch of 24.7mt, as modified for the recreational catch target	9% 143mt	8% 146mt	Decrease by 0.5% to cover the 2015-2017 average catch of 149.5mt, as modified for the recreational catch target
GOM cod <i>(Percentage of commercial ABC)</i>	10% 47mt	15% 70mt	Increase by 5% to cover the 2015-2017 average catch of 68.6mt	2% 9mt	3% 14mt	Increase by 1% to cover the 2015-2017 average catch of 15.1mt
Witch flounder	4% 40mt	4.5% 45mt	Increase by 0.5% to cover the 2015-2017 average catch of 45.6mt	6% 60mt	No change	The recent 2015-2017 average catch is 54.8mt.
GB winter flounder				7% 57mt	1.5% 12mt	Decrease by 5.5% to cover the 2015-2017 average catch of 11.8mt
GOM winter flounder	15% 67mt	27.5% 123mt	Increase by 12.5% to cover the 2015-2017 average catch of 122mt	1% 4mt	2% 9mt	Increase by 1% to cover the 2015-2017 average catch of 6.4mt
Atlantic halibut	20% 21mt	39% 41mt	Increase by 19% to cover the 2015-2017 average catch of 40.2mt	2% 2mt	4% 4mt	Increase by 2% to cover the 2015-2017 average catch of 4.2mt

Minimum size exemptions for vessels fishing in Northwest Atlantic Fisheries Organization waters

Brief overview of requirements to fish in the NAFO area

The principle species managed by NAFO are Atlantic cod, yellowtail flounder, witch flounder, Acadian redfish, American plaice, Greenland halibut, white hake, capelin, shrimp, skates, and *Illex* squid. NAFO specifies conservation measures for fisheries on these species occurring in its Regulatory Area, including TACs for these managed species that are allocated among NAFO Contracting Parties. The United States is a Contracting Party to NAFO. As a Contracting Party within NAFO, the United States may be allocated catch quotas or effort allocations for certain species in specific areas within the NAFO Regulatory Area and may participate in fisheries for other species for which we have not received a specific quota. For most stocks for which the United States does not receive a specific allocation, an open allocation, known as the “Others” allocation under the Convention, is shared access between all NAFO Contracting Parties.

U.S. applicant vessels must be in possession of, or obtain, a valid HSFCA permit, which is available from GARFO. All permitted vessels must comply with any conditions of this permit and all applicable provisions of the Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries and the Conservation and Enforcement Measures (CEM). NMFS can impose additional permit conditions that ensure compliance with the NAFO Convention and the CEM, the Magnuson-Stevens Fishery Conservation and Management Act and any other applicable law. The CEM provisions include, but are not limited to:

- Maintaining a fishing logbook with NAFO-designated entries (Annex II.A and Article 28);
- Adhering to NAFO hail system requirements (Annexes II.D and II.F; Article 28; Article 30 part B);
- Carrying an approved onboard observer for each trip consistent with requirements of Article 30 part A;
- Maintaining and using a functioning, autonomous vessel monitoring system authorized by issuance of the HSFCA permit as required by Articles 29 and 30; and
- Complying with all relevant NAFO CEM requirements, including minimum fish sizes, gear, bycatch retention, and per-tow move on provisions for exceeding bycatch limits in any one haul/set.

Further details regarding U.S. and NAFO requirements are available from the GARFO, and can also be found in the 2018 NAFO CEM (<https://www.nafo.int/Fisheries/Conservation>). Vessels issued valid HSFCA permits under 50 CFR part 300 are exempt from certain domestic fisheries regulations governing fisheries in the Northeast United States found in 50 CFR 648.

Specifically, vessels are exempt from the Northeast multispecies and monkfish permit, mesh size, effort control, and possession limit restrictions (§§ 648.4, 648.80, 648.82, 648.86, 648.87, 648.91, 648.92, and 648.94), while transiting the U.S. exclusive economic zone with multispecies and/or monkfish on board the vessel, or landing multispecies and/or monkfish in U.S. ports that were caught while fishing in the NAFO Regulatory Area. These exemptions are conditional on the following requirements: The vessel operator has a letter of authorization issued by the Regional Administrator on board the vessel; for the duration of the trip, the vessel fishes, except for transiting purposes, exclusively in the NAFO Regulatory Area and does not harvest fish in, or possess fish harvested in, or from, the U.S. EEZ; when transiting the U.S. EEZ, all gear is properly stowed and not available for immediate use as defined under § 648.2;

and the vessel operator complies with the provisions, conditions, and restrictions specified on the HSFCA permit and all NAFO CEM while fishing in the NAFO Regulatory Area.

A summary of management and stock status of selected NAFO managed species is provided (see Appendix 2).

Species that overlap the Northeast Multispecies (Groundfish) FMP and NAFO waters

Several of the same species are managed in Federal and NAFO waters, including cod, haddock, pollock, witch flounder, yellowtail flounder, American plaice, winter flounder, redfish, and white hake. Table 2 provides a comparison of the commercial minimum fish by species and Federal and NAFO waters, some of which have no minimum size under NAFO regulations. **Does the Committee want to exempt minimum fish sizes for all Northeast Multispecies or only certain species?**

Table 2- Comparison between Federal and NAFO waters of commercial minimum fish size by species.

Species	Minimum Size	
	Federal Waters	NAFO waters
		Gilled and gutted fish whether or not skinned; fresh or chilled, frozen, or salted. Fish size refers to fork length for Atlantic cod; whole length for other species.
Cod	19 in. (48.3 cm)	41 cm (whole) 27 cm (head off) 22 cm (head and tail off) 27 cm/25 cm (head off and split)** **Lower size for green salted fish.
Haddock	16 in. (40.6 cm)	No minimum size
Pollock	19 in. (48.3 cm)	No minimum size
Witch flounder	13 in. (33 cm)	No minimum size
Yellowtail flounder	12 in. (30.5 cm)	25 cm (whole) 19 cm (head off) 15 cm (head and tail off)
American plaice	12 in. (30.5 cm)	25 cm (whole) 19 cm (head off) 15 cm (head and tail off)
Atlantic halibut	41 in. (104.1 cm)	Not applicable
Winter flounder	12 in. (30.5 cm)	No minimum size
Redfish	7 in. (17.8 cm)	No minimum size
White hake	No minimum size	No minimum size

Summary of recent allocations

The U.S. has allocation for redfish, ilex, and yellowtail flounder and also shares allocations with other NAFO Contracting Parties (Table 3). Access is on a first come, first served basis and directed fishing is prohibited by NAFO when the “Others” quota for a particular stock has been fully harvested. The draft alternatives provide options for the Committee to consider with respect to exempting U.S. vessels fishing exclusively in the NAFO regulated area from Northeast Multispecies minimum fish sizes.

Table 3- Summary of 2018 possible U.S. quota access by species in NAFO waters (US Allocation and NAFO “Others” Allocations).

Species	NAFO Division	US Allocation	Others Quota
Cod	3M		45
Redfish	3LN		85
	3M	69	NA
	3O		100
Yellowtail flounder	3LNO	1,000 <i>Sub-allocation from Canada</i>	NA
Witch flounder	3NO		11
White hake	3NO		59
Skates	3LNO		258
<i>Illex</i> squid	Squid 3_4 (Sub-Areas 3+4)	453	NA

Guidance on sector overages

When the Council first initiated Framework 58, the NEFS 9 ACE overages resulting from the criminal case of Carlos Rafael had yet to be determined or paid back. As a result, the Council included a placeholder item in Framework 58 to provide additional guidance on sector overages, should this be necessary once rulemaking was complete. Following the interim final rule approving Northeast Fishery Sector IX’s lease only operations plan (83 FR 34492, July 20, 2018), NEFS 9 reconciled the overages caused by the criminal misreporting. Existing regulations were sufficient to complete the action, and no immediate regulatory corrections or clarifications are required for Framework 58.

In the future, NMFS intends to compile all of the comments received on this issue related to sector management, including the November 2017 interim final rule (82 FR 55522; November 22, 2017) and the July 2018 interim final rule. If the Council wants to further consider these issues, or modify any provisions of the sector management program based on lessons learned, it may do so through a future action. The PDT anticipates the NMFS will update the Committee on this topic. The draft alternative in this section will cover the No Action only.

Appendix 1- Preliminary FY2017 catches by state waters component and other sub-component.

Table 1- Preliminary FY2017 Northeast Multispecies Estimated State Water Sub-Component Catch Detail (mt)

Stock	Total			Commercial			Recreational		
	Catch	Landings	Discard	Total Catch	Landings ¹	Discard ¹	Total Catch	Landings	Discard
	A+B+C+D	A+C	B+D	A+B	A	B	C+D	C	D
GB Cod	9.7	9.2	0.6	7.0	6.6	0.4	2.8	2.6	0.2
GOM Cod	69.5	68.7	0.7	69.5	68.7	0.7	-*	-*	-*
Witch Flounder	49.7	48.0	1.7	49.7	48.0	1.7			
GOM Winter Flounder	185.3	183.2	2.1	127.9	127.8	0.1	57.4	55.4	2.0
Halibut	31.7	30.0	1.6	31.7	30.0	1.6			
*Recreational catch of GOM cod and haddock in state waters is attributed to the recreational sub-ACL (see Tables 1 - 5), and so is not included above.									
¹ January through April 2018 commercial catches are estimated.									
State discard rate estimates based on discard rates on federal trips									
Values in metric tons of live weight									
Source: NMFS Greater Atlantic Regional Fisheries Office									
September 10, 2018, run date of August 31, 2018									
These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting; (4) Observers and at-sea monitors via the Northeast Fisheries Observer Program. Differences with previous reports are due to corrections made to the database.									

Appendix 1- Preliminary FY2017 catches by state waters component and other sub-component.

Table 2-Preliminary FY2017 Northeast Multispecies Other Sub-Component Catch Detail (mt)

Stock	Total Catch	SCALLOP ¹	FLUKE	HAGFISH	HERRING	LOBSTER/ CRAB ²	MACKEREL	MENHADEN	MONKFISH	RESEARCH	SCUP	SHRIMP	SQUID	SQUID/ WHITING	SURFLAM	WHITING	UNCATEGORIZED	RECREATIONAL	
GB Cod	66.8	5.3	0.1	-	0.0	0.1	0.0	-	0.9	8.1	0.1	0.0	0.5	0.1	0.1	0.0	1.5	50.1	
GOM Cod	28.9	0.1	-	-	0.1	0.0	-	-	1.1	22.3	0.0	0.0	0.1	0.3	0.2	0.2	4.5	-*	
Witch Flounder	46.8	12.7	1.9	0.0	1.7	0.0	0.0	-	0.1	1.7	1.8	0.4	17.8	2.3	1.4	0.2	4.7		
GB Winter Flounder	13.3	8.7	0.0	-	-	-	-	-	-	0.0	-	-	2.6	1.9	0.0	-	0.0		
GOM Winter Flounder	9.0	3.8	-	-	0.3	0.0	-	-	0.0	2.1	-	0.0	0.2	0.9	0.2	0.5	0.8	0.2	
Halibut	7.5	0.5	0.0	-	0.0	3.5	0.0	-	1.0	0.1	0.0	0.0	0.3	0.0	0.1	0.0	1.9		
Values in metric tons of live weight	¹ Based on scallop fishing year March 2017 through March 2018 ² Landings only. Discard estimates not applicable. Lobster/crab discards were not attributed to the ACL, consistent with the most recent assessments for these stocks used to set the respective quotas. *Some or all catch attributed to separate sub-ACL as shown in Tables 1 through 5, and so is not included above.																		
Source: NMFS Greater Atlantic Regional Fisheries Office August 31, 2018, run date of August 21, 2018	These criteria are used by the Greater Atlantic Regional Fisheries Office (GARFO) to categorize trips to attribute groundfish catch for groundfish ACL accounting. By necessity these rules cannot capture the full complexity of categorizing every trip taken by vessels fishing in the Northeast. Further analysis should be completed to definitively attribute groundfish catch to an FMP for management purposes.																		
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Appendix 1- Preliminary FY2017 catches by state waters component and other sub-component.

Table 3- Preliminary FY2017 Northeast Multispecies Other Sub-Component Landings Detail (mt)

Stock	Total	SCALLOP ¹	FLUKE	HAGFISH	HERRING	LOBSTER/ CRAB	MACKEREL	MENHADEN	MONKFISH	RESEARCH	SCUP	SHRIMP	SQUID	SQUID/ WHITING	SURFLAM	WHITING	UNCATEGORIZED	RECREATIONAL
GB Cod	57.6	0.3	0.0	-	-	0.1	-	-	0.1	8.1	0.0	-	-	-	-	-	0.5	48.5
GOM Cod	22.7	-	-	-	-	0.0	-	-	0.0	22.2	-	-	-	-	-	-	0.5	-*
Witch Flounder	1.8	0.0	0.0	-	-	0.0	-	-	-	1.7	-	-	0.0	0.0	-	-	0.0	-
GB Winter Flounder	0.1	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GOM Winter Flounder	2.4	-	-	-	-	0.0	-	-	0.0	2.1	-	-	-	-	-	-	0.1	0.2
Halibut	5.1	-	-	-	-	3.5	-	-	0.4	0.1	-	-	-	-	-	-	1.1	-
Values in metric tons of live weight	¹ Based on scallop fishing year March 2017 through March 2018 ² Some or all catch attributed to separate sub-ACL as shown in Tables 1 through 5, and so is not included above.																	
Source: NMFS Greater Atlantic Regional Fisheries Office	August 31, 2018, run date of August 21, 2018 These criteria are used by the Greater Atlantic Regional Fisheries Office (GARFO) to categorize trips to attribute groundfish catch for groundfish ACL accounting. By necessity these rules cannot capture the full complexity of categorizing every trip taken by vessels fishing in the Northeast. Further analysis should be completed to definitively attribute groundfish catch to an FMP for management purposes.																	
These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting. Differences with previous reports are due to corrections made to the database.																		

Table 4- Preliminary FY2017 Northeast Multispecies Other Sub-Component Estimated Discards Detail (mt)

Stock	Total	SCALLOP ¹	FLUKE	HAGFISH	HERRING	LOBSTER/ CRAB ²	MACKEREL	MENHADEN	MONKFISH	RESEARCH	SCUP	SHRIMP	SQUID	SQUID/ WHITING	SURFLAM	WHITING	UNCATEGORIZED	RECREATIONAL
GB Cod	9.2	5.0	0.1	-	0.0	NA	0.0	-	0.7	0.0	0.1	0.0	0.5	0.1	0.1	0.0	1.0	1.6
GOM Cod	6.2	0.1	-	-	0.1	NA	-	-	1.1	0.2	0.0	0.0	0.1	0.3	0.2	0.2	4.0	-*
Witch Flounder	45.0	12.7	1.9	0.0	1.7	NA	0.0	-	0.1	0.0	1.8	0.4	17.8	2.3	1.4	0.2	4.7	-
GB Winter Flounder	13.2	8.6	0.0	-	-	NA	-	-	-	0.0	-	-	2.6	1.9	0.0	-	0.0	-
GOM Winter Flounder	6.6	3.8	-	-	0.3	NA	-	-	-	0.0	-	0.0	0.2	0.9	0.2	0.5	0.7	-
Halibut	2.4	0.5	0.0	-	0.0	NA	0.0	-	0.7	0.0	0.0	0.0	0.3	0.0	0.1	0.0	0.8	-
Values in metric tons of live weight	¹ Based on scallop fishing year March 2017 through March 2018 ² Discard estimates not applicable. Lobster/crab discards were not attributed to the ACL, consistent with the most recent assessments for these stocks used to set the respective quotas. ³ Some or all catch attributed to separate sub-ACL as shown in Tables 1 through 5, and so is not included above.																	
Source: NMFS Greater Atlantic Regional Fisheries Office	August 31, 2018, run date of August 21, 2018 These criteria are used by the Greater Atlantic Regional Fisheries Office to categorize trips to attribute groundfish catch for groundfish ACL accounting. By necessity these rules cannot capture the full complexity of categorizing every trip taken by vessels fishing in the Northeast. Further analysis should be completed to definitively attribute groundfish catch to an FMP for management purposes.																	
These data are the best available to NOAA's National Marine Fisheries Service (NMFS). Data sources for this report include: (1) Vessels via VMS; (2) Vessels via vessel logbook reports; (3) Dealers via Dealer Electronic reporting. Differences with previous reports are due to corrections made to the database.																		

NAFO Summary – Greg DeCelles – August 27th 2018

Canada transferred 1,000mt of yellowtail flounder in NAFO divisions 3LNO to the US fisheries. Along with the yellowtail flounder allocation, US fishermen can also plaice, cod, and witch flounder (subject to bycatch constraints). The maximum bycatch allocations for these species are: plaice = 150mt, cod = 50mt, witch flounder = 50mt, all unallocated stocks combined = 100mt.

Below is a summary of the minimum landing size requirements for fisheries operating in the NAFO area, and in US waters. Fish caught in the NAFO area are allowed to be landed “headed and gutted” provided that the skin of the fish is not removed. Vessels fishing in the NAFO area have a minimum mesh size of 130mm (5.1”), so their selectivity is much different than vessels in US waters, which fish with a 6.5 inch mesh codend. These vessels want to land their catch in US waters to supply the markets in Boston and New Bedford, but they are currently bound by the minimum size restrictions imposed by GARFO.

	NAFO		GARFO
	Whole Fish	Head Off - Gutted	Whole Fish
Atlantic Cod	41cm (16in)	27cm (10.6in)	48.3cm (19in)
Plaice	25cm (9.8in)	19cm (7.5in)	30.5cm(12in)
Yellowtail Flounder	25cm (9.8in)	19cm (7.5in)	30.5cm(12in)

Vessels fishing in the NAFO area are subject to 100% observer coverage, and must also have an operating VMS unit on the vessel. Vessel reporting is done electronically. There are a number of bycatch caps and “move on” rules that are used in the fishery to minimize bycatch.

- Bycatch Caps:
 - Plaice – the bycatch of plaice may not exceed 15% of the yellowtail landings
 - Atlantic cod in areas 3NO – cod catch may not exceed 1,000kg or 4% of the K_{all} for a given tow
 - Atlantic cod in areas 3M – cod catch may not exceed 1,250kg or 5% of the K_{all} for a given tow
 - Witch Flounder in areas 3NO – witch flounder catch may not exceed 1,250kg or 5% of the K_{all} for a given tow
 - All stocks without an allocation – The catch of these stocks may not exceed 2,500kg or 10% of the K_{all} for a given tow
- Move-on rules related to bycatch
 - If the bycatch cap is exceeded, the vessel must move at least 10 nautical miles before making their next tow.
 - If the bycatch catch is exceeded again on the next tow, the vessel is required to leave the division for a minimum of 60 hours.
 - After leaving the division for a minimum of 60 hours, the next tow the vessel makes must be less than three hours in duration.
- Move-on rules related to undersized fish

Appendix 2: NAFO Summary of Management and Selected Stocks

- If >10% of the catch is undersized for any regulated species, the vessel must move at least 5 nautical miles before making their next tow.

These are the length-weight conversions that Canada currently uses for flatfish that are landed in the NAFO areas. I am not sure if the US has established their own length-weight conversions or not, but these may be useful as a reference.

Yellowtail and Plaice

- Round - 1:1
- Gutted, head on - 1.1:1
- Headed and gutted - 1.4:1
- "Bobtailed" - 1:1
- "Slash" - 1:1

Winter flounder

- Headed and gutted - 1.6:1

Recent assessments

Yellowtail Flounder in Divisions 3LNO

- The stock is not overfished, and overfishing is not occurring. Recent catches have been less than the TAC.
- Recent declines in L50 have been noted for both males and females. The L50 for females is 30cm, and for males it is 23cm. The L50 has been declining over time, with unknown causes.
- Yellowtail flounder exhibit slow growth after fish reach 30-32cm.
- Below is figure 11 from the 2015 assessment report

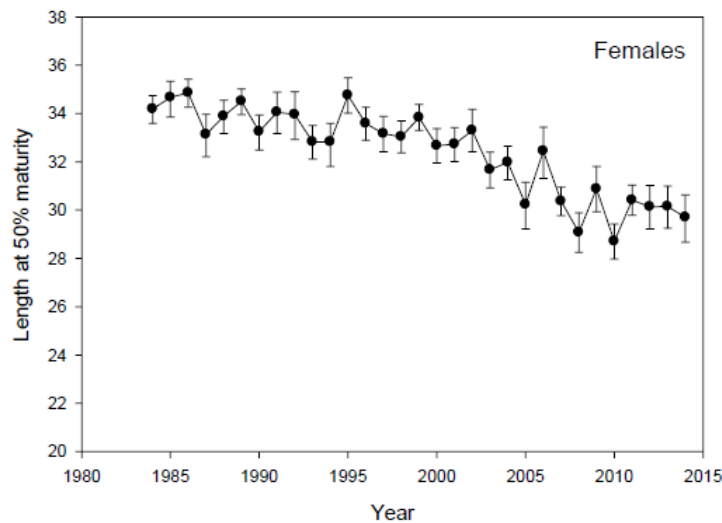


Figure 11. Length at 50% maturity of male and female yellowtail flounder from annual Canadian research vessel surveys of Div. 3LNO from 1984 to 2014.

Appendix 2: NAFO Summary of Management and Selected Stocks

Plaice in Divisions 3LNO

- The fishery has been under a moratorium (no directed effort) since 1995. Harvests are limited by bycatch caps on the directed yellowtail fishery.
- Recent rates of fishing mortality have been low, and overfishing is not occurring.
- SSB has increased to around 30,000mt, which is approximately 60% of the Blim reference point (50,000mt). The stock is overfished.
- L50 has declined over time for both sexes. L50 for males is currently 19cm, while for females L50 is approximately 34cm.

Cod in Divisions 3NO

- The stock is overfished, and SSB (25,000mt) is < Blim (60,000mt). The fishery has been under a moratorium (no directed effort) since 1994. Harvests are limited by bycatch caps on the directed yellowtail fishery.
- Overfishing is not occurring for this stock.
- L50 was not provided in the assessment report for either sex.

Cod in Division 3M

- The stock is not overfished, and overfishing is not occurring for this stock. The fishery re-opened after the 2009 stock assessment showed improvements in stock status and rebuilding.
- L50 was not provided in the assessment report for either sex.