

Groundfish Committee Report

Council

February 3, 2022



New England
Fishery Management Council

Recreational Groundfish Fishery Fishing Year 2022 Measures

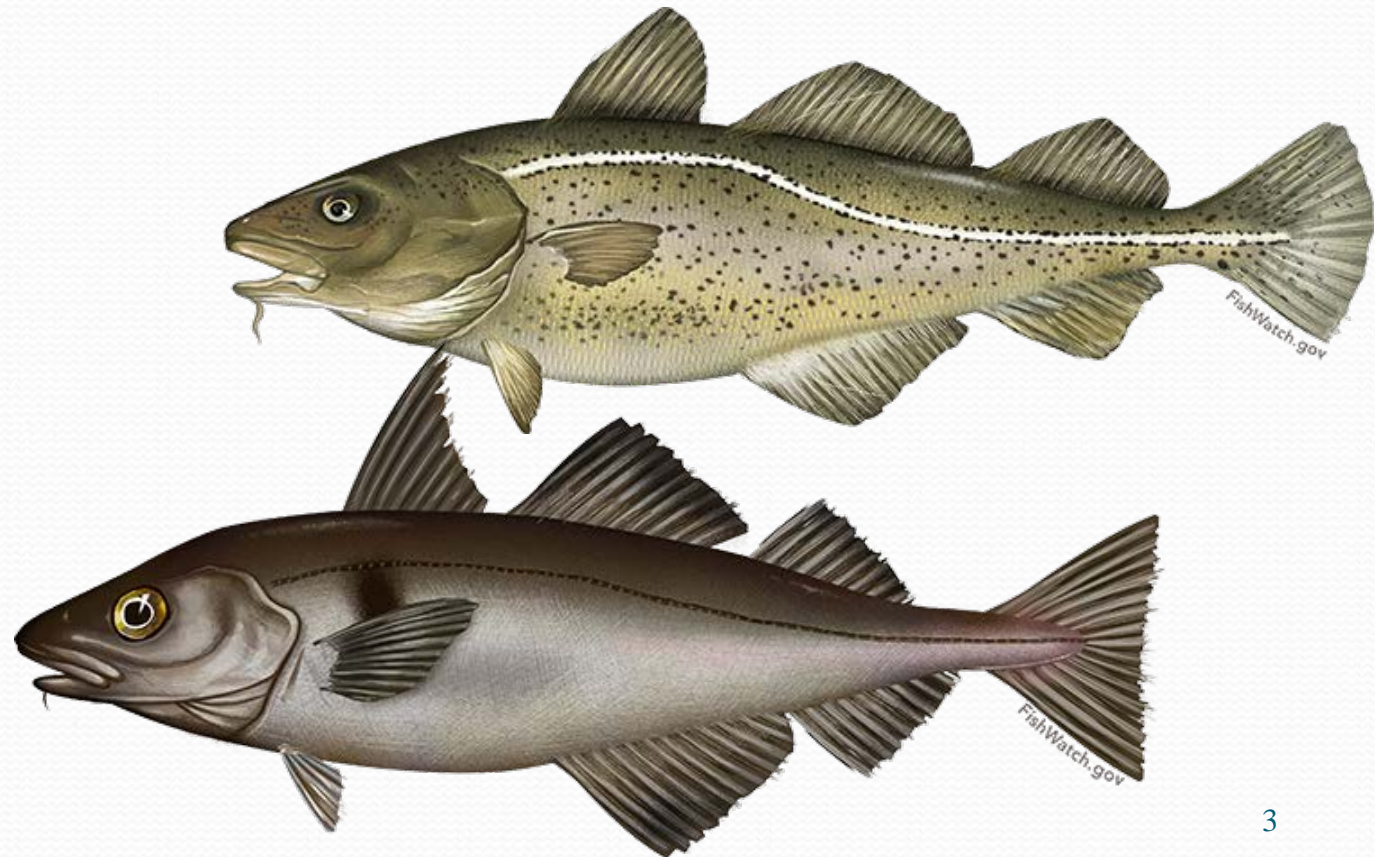


New England
Fishery Management Council

Meeting Goal

Develop recommendations to GARFO on fishing year 2022 recreational measures for:

- Gulf of Maine cod and
- Gulf of Maine haddock



Current Measures

Gulf of Maine Cod

Open season:

- Private Anglers - September 15-30; April 1 - 14
- Party/Charter Anglers - September 8 - October 7; April 1 - 14

Minimum size: 21 inches

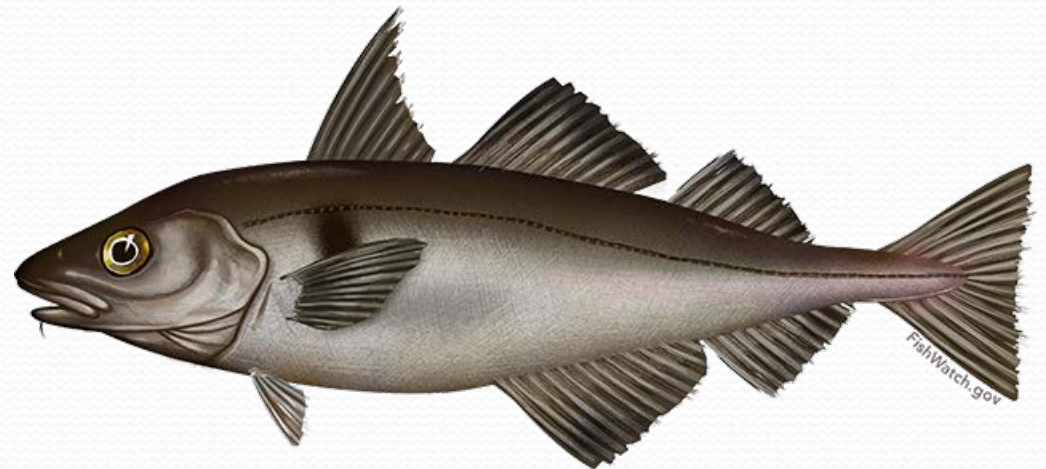
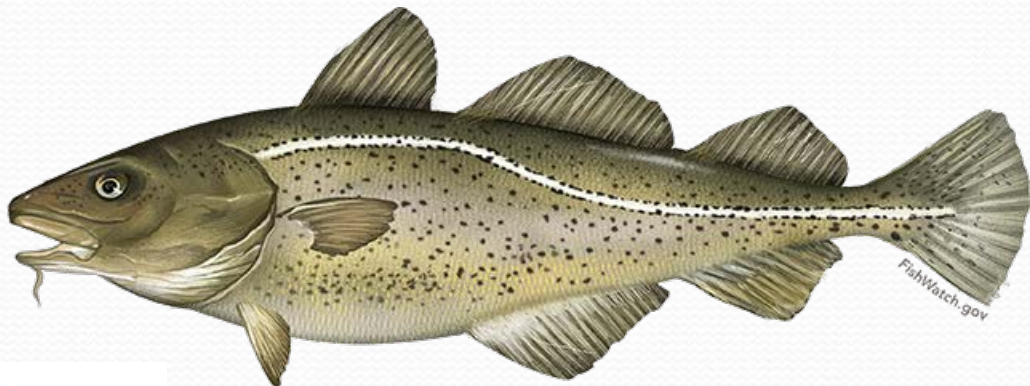
Possession limit: 1 fish per day

Gulf of Maine Haddock

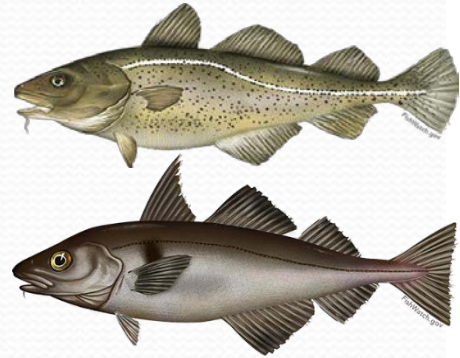
Open season: May 1–Feb 28/29; April 1–30

Minimum size: 17 inches

Possession limit: 15 fish per day



Recent Catches



Stock	Fishing Year	Recreational Catch				
		Catch	Landings	Discard	Recreational sub-ACL	Percent of Catch Limit Taken
		A + B	A	B		
GOM Cod	2018	146.9	4.3	142.6	220	66.8
	2019	79.8	23.3	56.5	220	36.3
	2020	184.0	41.5	142.4	193	95.3
	Average	136.9	23.0	113.8	211	64.9
GOM Haddock	2018	595.0	423.9	171.1	3,358	17.7
	2019	423.2	301.6	121.6	3,194	13.3
	2020	1,202.3	913.7	288.5	6,210	19.4
	Average	740.2	546.4	193.8	4,254	17.4

Recreational estimates based on Marine Recreational Information Program (MRIP) data.

FY 2020 GOM cod and GOM haddock recreational catch estimates are based on the Fishing Effort Survey (FES). FY 2018 & FY 2019 GOM cod and GOM haddock estimates are back calibrated from the FES to the Coastal Household Telephone Survey (CHTS) metrics.

Values in metric tons of live weight

Source: NMFS Greater Atlantic Regional Fisheries Office

November 15, 2021

These data are the best available to NOAA's National Marine Fisheries Service (NMFS).

Accountability Measures

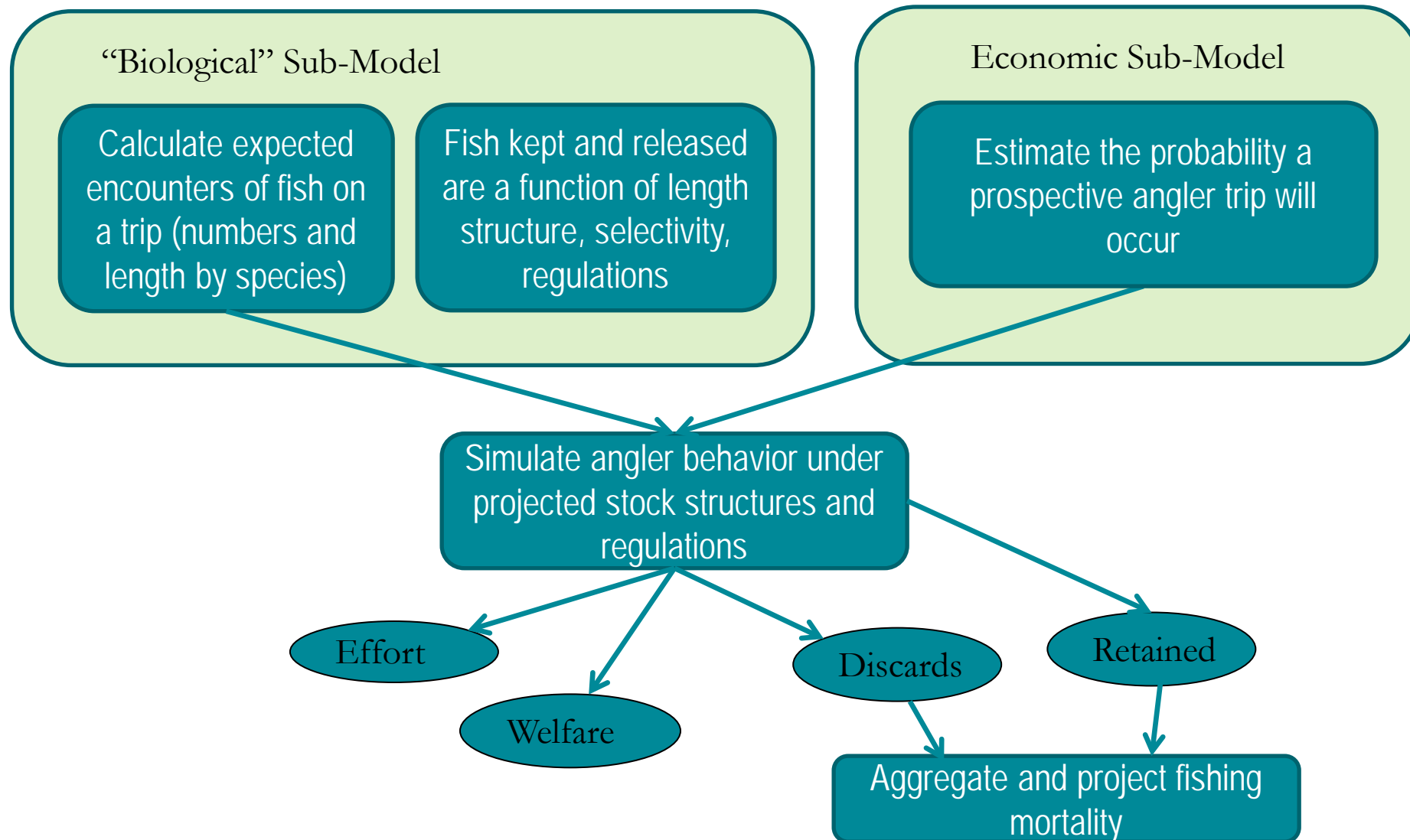
Proactive

- Can be adjusted by the Regional Administrator to ensure the recreational fishery will achieve, but not exceed, its sub-ACL.
- Changes are typically made prior to the start of the fishing year.
- The Regional Administrator consults with the Council, or the Council's designee, and tells the Council, or its designee, what recreational measures are under consideration for the upcoming fishing year.
- If time allows, the Council also provides the RAP an opportunity to meet and discuss the proposed management measures.
- These AMs require development in consultation with the Council, because the appropriate suite of measures (e.g., bag limit, minimum fish size, and season) depends on the sub-ACL specified.

Current and Proposed Catch Limits

<i>Stock</i>	<i>FY2021 sub-ACL (mt)</i>	<i>Council's Proposal FY2022 sub-ACL (mt)</i>	<i>% Change</i>
GOM Cod	193	192	-1%
GOM Haddock	5,295	3,634	-31%

Bioeconomic Model Overview



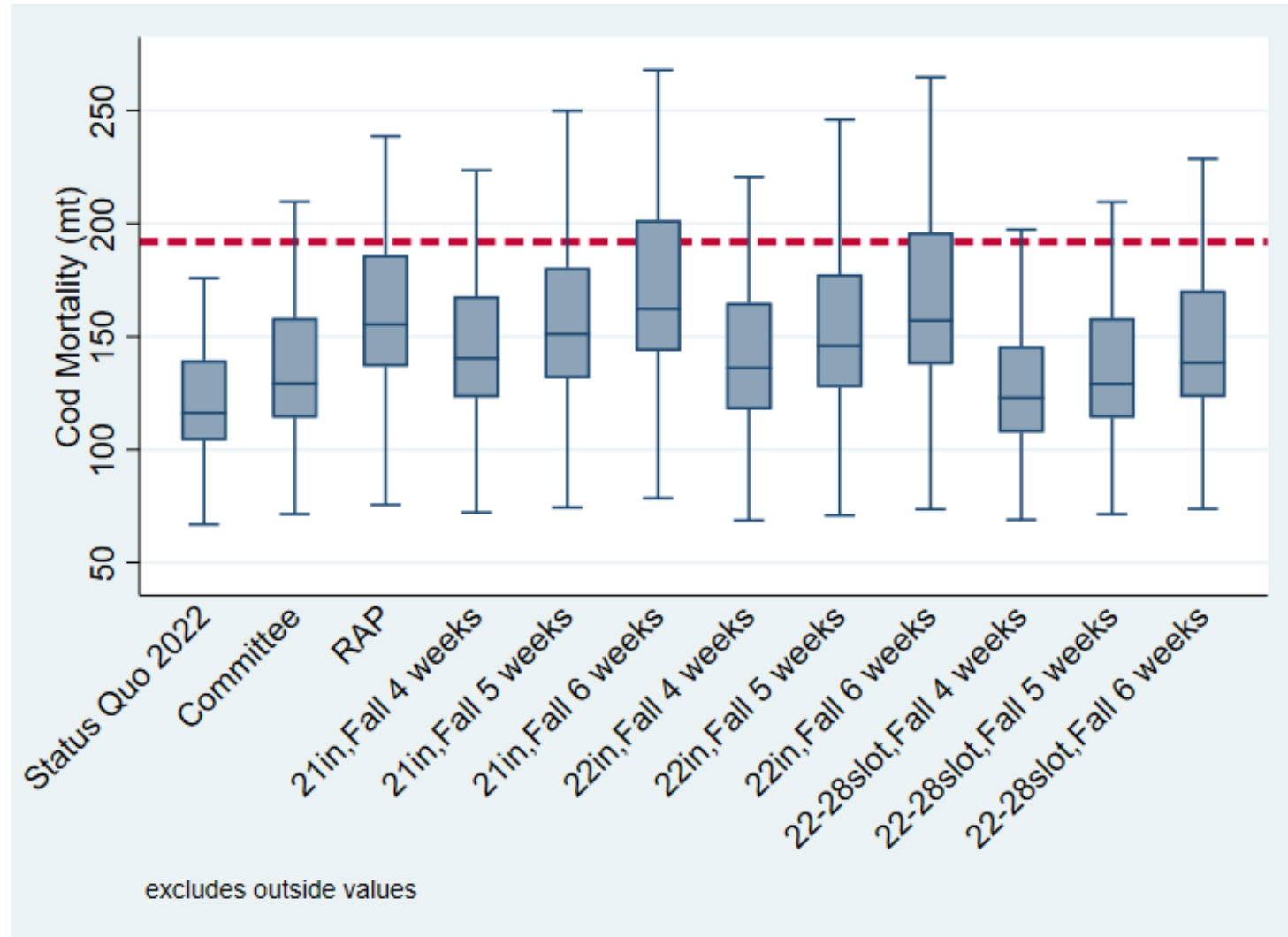
FY 2022 Mortality Projections

Groundfish RAP and Committee Recommended Options

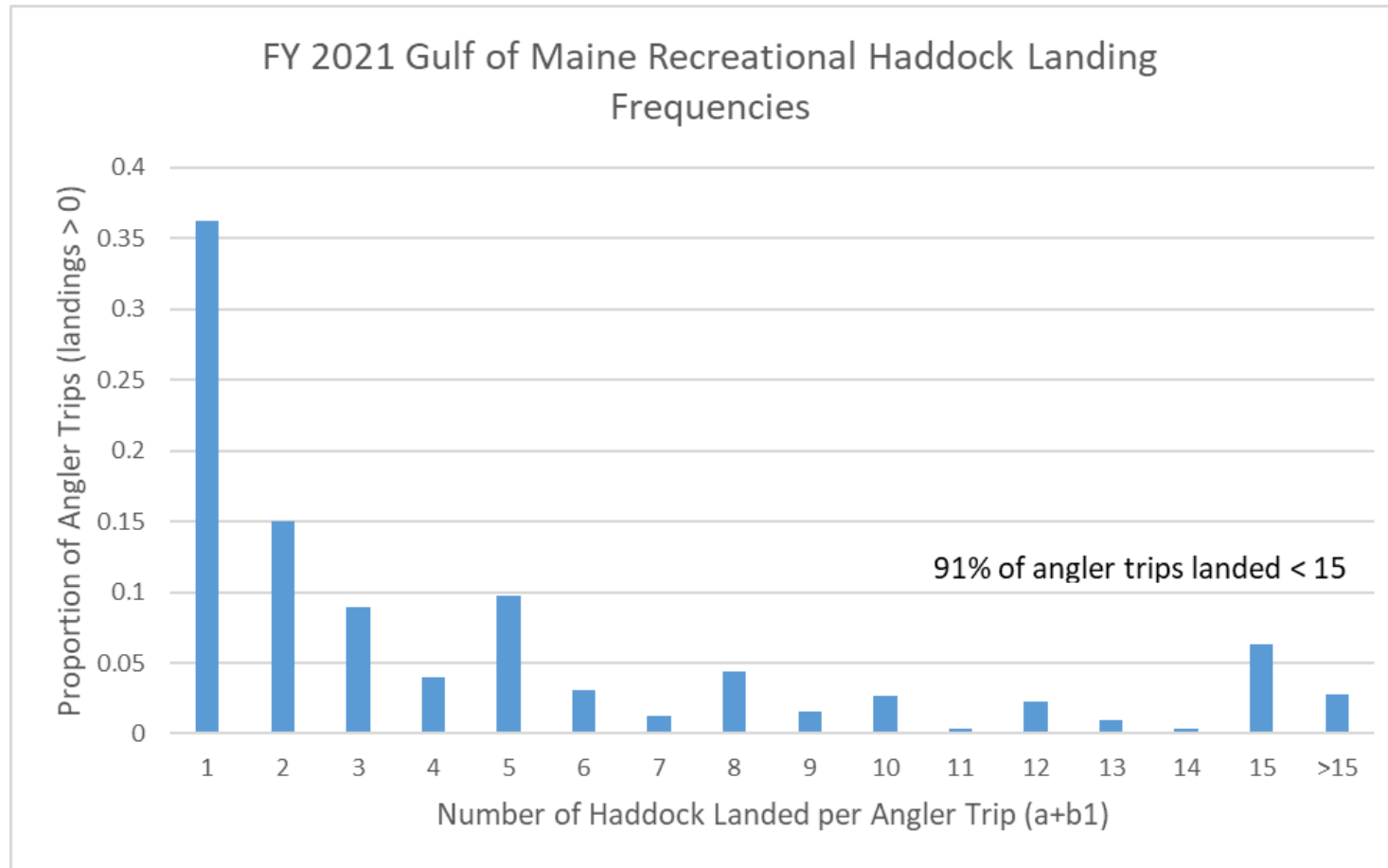
Option	Mode	Cod				Haddock					% Under Cod ACL (out of 100 Simulations)	% Under Had ACL (out of 100 Simulations)
		Cod Limit	Cod Size	Cod Open Season	Cod Total Mortality (Median)	Had Limit	Had Size	Had Open Season	Had Total Mortality (Median)	Angler Trips (Median)		
11 (RAP)	All	1	21"	Sep 1-Oct 7, Apr 1-14	155	20	17"	May-Feb28, Apr 1-Apr30	1,024	361,551	78	100
12 (Committee)	All	1	22-28"	Sep 1-Oct 7, Apr 1-14	129	20	17"	May-Feb28, Apr 1-Apr30	1,016	357,924	95	100

FY 2022 rec sub-ACLs: cod = 192 mt, haddock 3,634 mt

Box Plots of FY 2022 Mortality Predictions



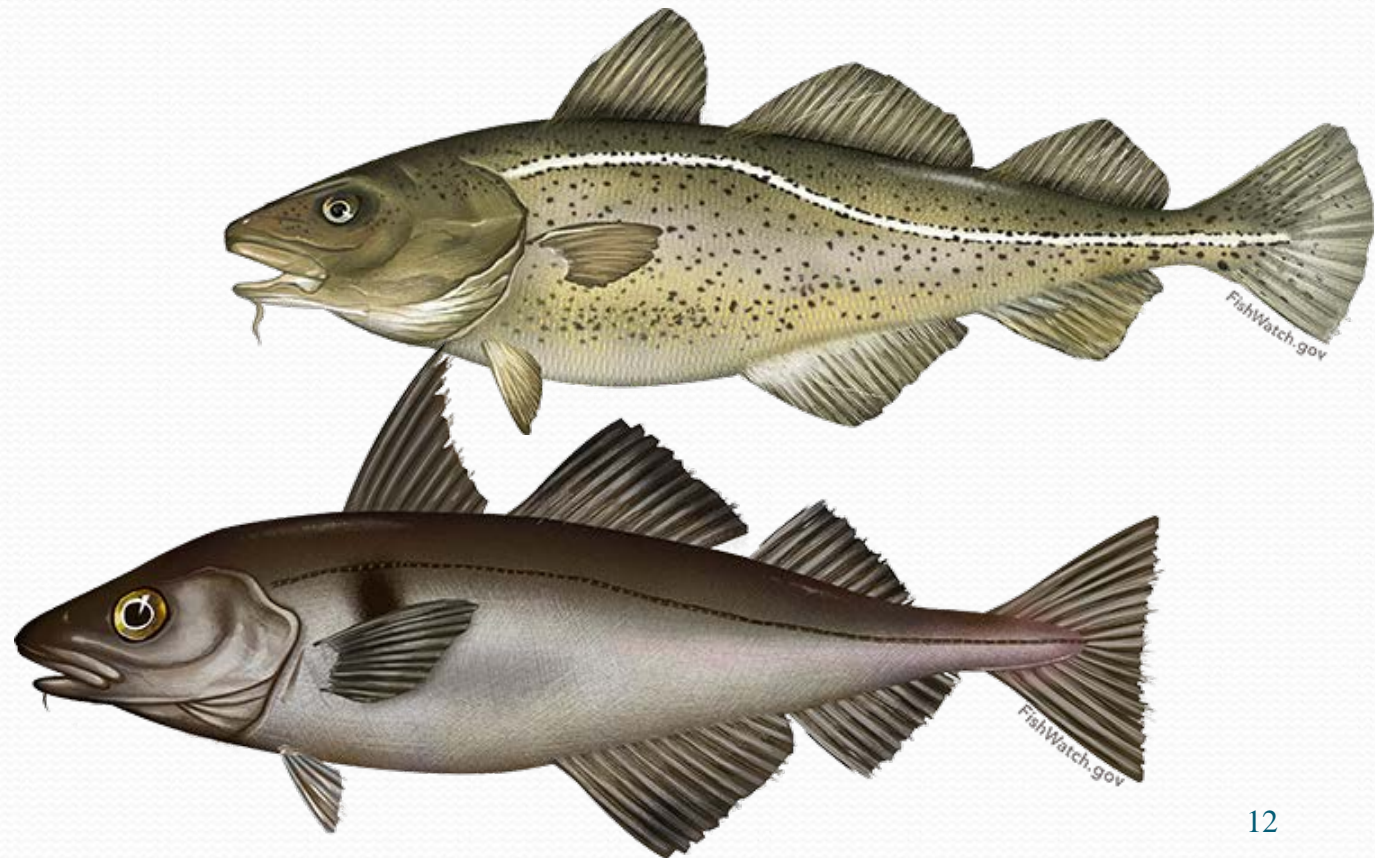
Gulf of Maine Haddock



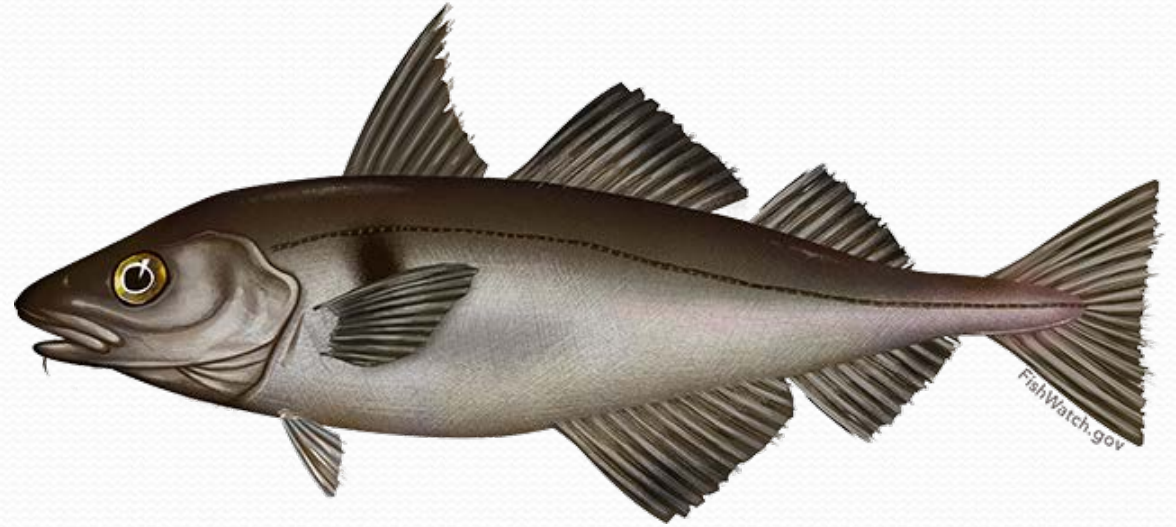
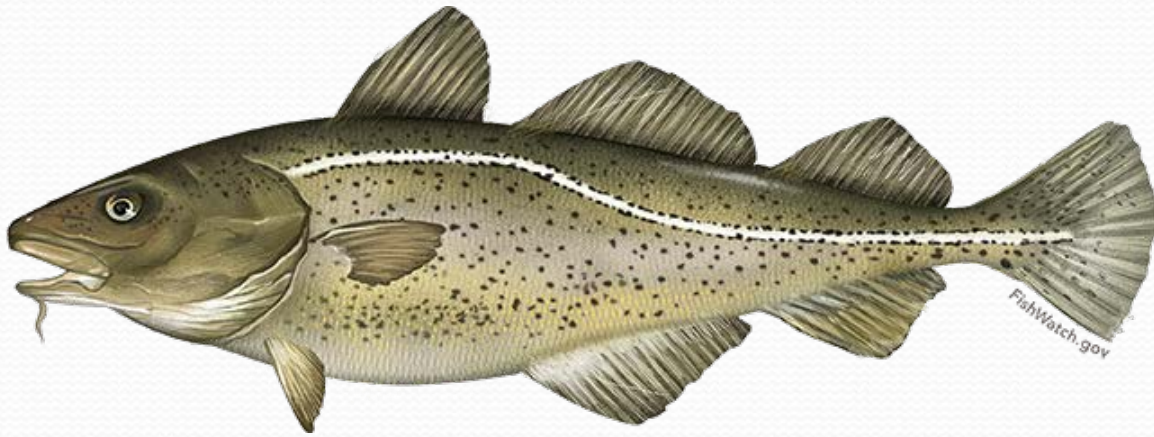
Meeting Goal

Develop recommendations to GARFO on fishing year 2022 recreational measures for:

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Additional Slides



Accountability Measures

Reactive

- If catches exceed the sub-ACL, NMFS determines the measures necessary to prevent exceeding the sub-ACL in future years following consultation with the Council
- Final measures are to be published no later than January.
- The three-year average of recreational harvest is compared to the three-year average of the recreational sub-ACL and if necessary, AMs are to be implemented in the year immediately following.
- The recreational AM is either/or adjustments to season, adjustments to minimum size, or adjustments to bag limits.
- Separate AMs can be determined for the private boat and party/charter components of the recreational fishery – that is, the AMs may be different for these two components.

Table 1. Gulf of Maine Recreational Catch Estimates¹

	FY2020	FY2021 ²	
Cod/Haddock Angler Trips ³	358,241	321,146	-10%
Cod Catch (numbers, a+b1+b2)	612,372	560,561	-8%
Cod Landings (numbers, a+b1)	17,926	14,552	-19%
Cod Released Alive (numbers, b2)	594,446	546,009	-8%
Cod Removals (numbers, a+b1+(b2*0.15))	107,093	96,453	-10%
Cod Removals (weight⁴, mt)	184	138	-25%
Cod Avg. Catch Per Trip (numbers)	1.7	1.7	2%
Cod Avg. Weight of Caught Fish (lbs)	3.57	2.91	-18%
Haddock Catch (numbers, a+b1+b2)	1,902,761	1,232,048	-35%
Haddock Landings (numbers, a+b1)	1,013,902	757,282	-25%
Haddock Released Alive (numbers, b2)	888,859	474,766	-47%
Haddock Removals (numbers, a+b1+(b2*season/size release mortality))	1,505,600	1,013,277	-33%
Haddock Removals (weight⁴, mt)	1,202	843	-30%
Haddock Avg. Catch Per Trip (numbers)	5.3	3.8	-28%
Haddock Avg. Weight of Caught Fish (lbs)	1.4	1.5	8%

¹Source: Available MRIP data as of Jan 4, 2022

²Wave 6, 2020 and Wave 2, 2021 used as a proxies for FY 2022.

³Angler trips = number of trips that targeted and/or caught cod or haddock

⁴All weights are based on round weights calculated from MRIP length frequencies and length to weight equations used in the assessments

Table 2. Gulf of Maine Angler Trips by Mode

	FY2020			FY2021		
	Cod & Haddock Angler Trips ¹	All Angler Trips ²	% Cod & Haddock Angler Trips	Cod & Haddock Angler Trips ¹	All Angler Trips ²	% Cod & Haddock Angler Trips
Head	44,281	67,342	66%	37,738	60,412	62%
Charter	12,682	50,659	25%	9,833	65,462	15%
Private	301,020	2,599,089	12%	273,574	2,623,124	10%
Shore	258	3,883,560	0%	-	3,479,984	0%
	358,241	6,600,650	5%	321,145	6,228,982	5%

¹Number of angler trips that targeted and/or caught cod or haddock

²All angler trips in the Gulf of Maine

Table 3. Percent of Gulf of Maine Cod and Haddock Recreational Removals by Mode (in terms of numbers of fish)

	FY2020	FY2021
Cod Removals (numbers, $a+b1+(b2*0.15)$)		
Head	12	12
Charter	7	4
Private	81	84
Shore	0	0
Haddock Removals (numbers, $a+b1+(b2*season/size\ release\ mortality)$)		
Head	16	16
Charter	7	9
Private	77	75
Shore	0	0

GOM Cod and Haddock Recreational Bioeconomic Model

- Used to help develop management options for GOM cod and haddock each year since 2013 (excluding FY 2021)
- Lee, Min-Yang, Scott Steinback, Kristy Wallmo. 2017. "Applying a Bioeconomic Model to Recreational Fisheries Management: Groundfish in the Northeast United States." *Marine Resource Economics* 32:2.

2022 Model Data

- Annual (FY 2021) MRIP length-frequencies
- Monthly MRIP catch-per-trip for cod and haddock
- FY 2022 estimated numbers-at-age for cod and haddock from the AGEPRO assessment projections
 - Median values taken from the combined M2 and MRAMP models
- Bottom trawl survey data from 2017-2019 used to form the age-length keys
- Updated economic parameters in the model

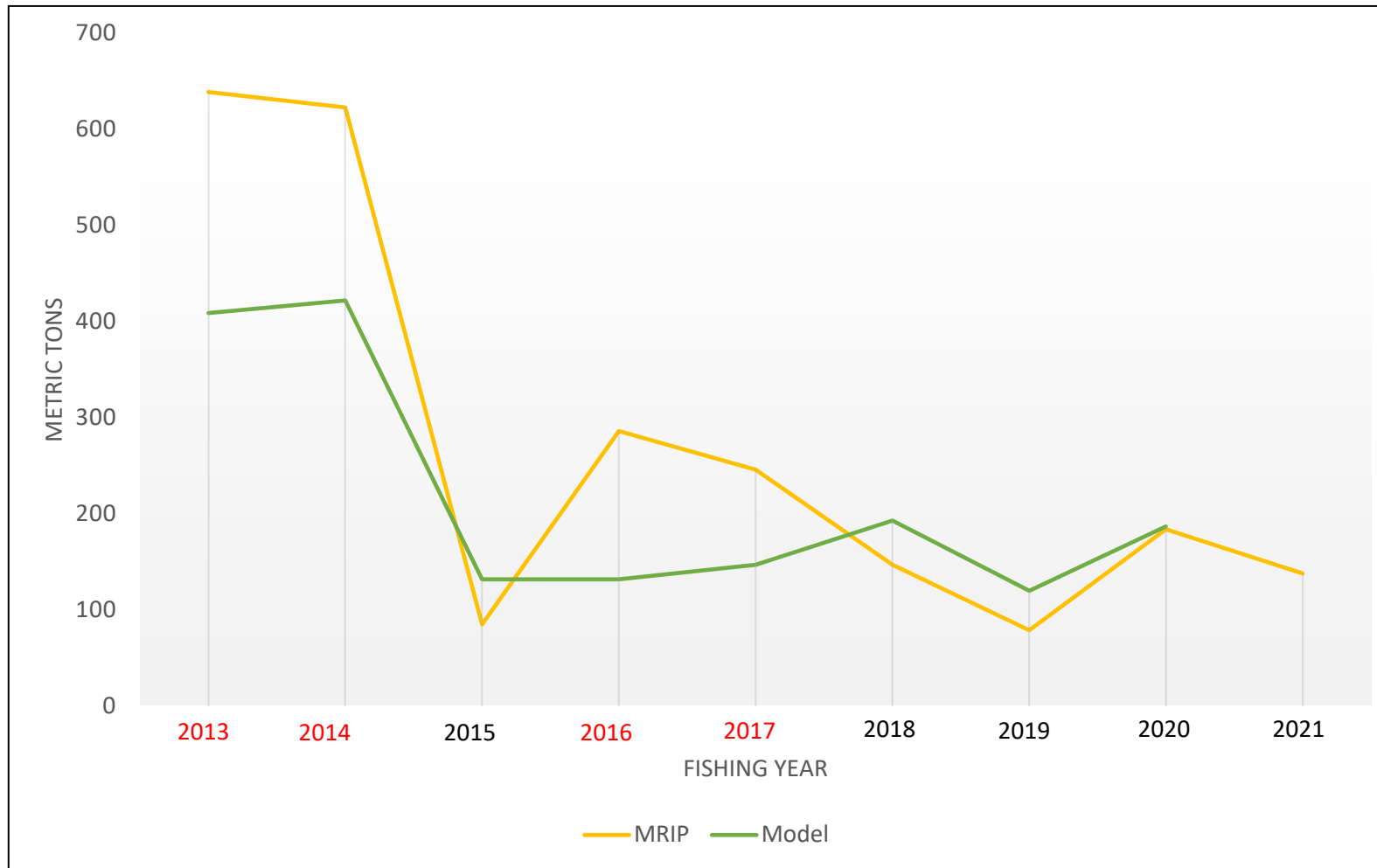
Updated Economic Parameters

- New economic survey of angler preferences for GOM cod and haddock conducted in 2019 (previous surveys administered in 2009 and 2014)

What we found:

- The value of keeping cod relative to haddock increased from 2014 to 2019
 - Anglers are now more responsive to policy-induced changes in cod harvest over changes in haddock harvest
 - Important to incorporate this preference change into the model

Model Predictions versus MRIP: GOM cod



Why FY 2022 Mortality Under Status Quo Regulations is Estimated to be Lower than FY 2021

Assessment Projections of GOM Cod by Age

year	age1	age 2	age3	age4	age5	age6	age7	age8	age9
2020	26.6%	20.1%	35.9%	8.0%	2.9%	2.5%	3.2%	0.4%	0.4%
2021	51.4%	13.2%	10.0%	17.5%	3.7%	1.3%	1.1%	1.4%	0.4%
2022	45.1%	26.1%	8.0%	5.9%	10.4%	2.2%	0.7%	0.6%	1.0%

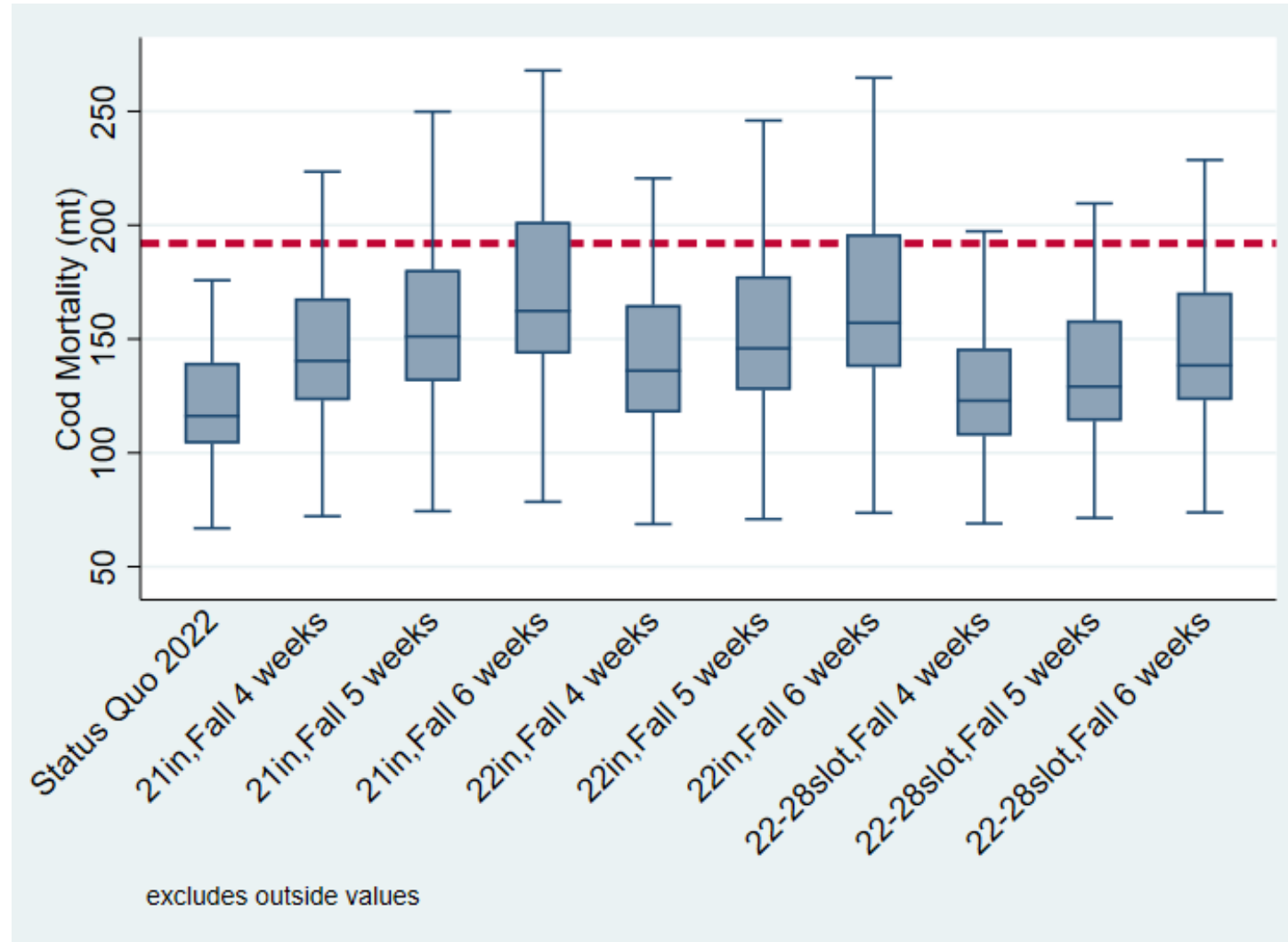
FY 2022 Mortality Projections

Option	Mode	Cod				Haddock				Angler Trips (Median)	% Under Cod ACL (out of 100 Simulations)	% Under Had ACL (out of 100 Simulations)
		Cod Limit	Cod Size	Cod Open Season	Cod Total Mortality mt (Median)	Had Limit	Had Size	Had Open Season	Had Total Mortality mt (Median)			
1 (Status Quo)	Private For-Hire	1	21"	Sep 15-Sep 30, Apr 1-14 Sep 8-Oct 7, Apr 1-14	116	15	17"	May-Feb28, Apr 1-Apr30	875	318,549	100	100
2 Cod open Sep 8-Oct 7 (private and for-hire)	All	1	21"	Sep 8-Oct 7, Apr 1-14	140	15	17"	May-Feb28, Apr 1-Apr30	958	345,711	90	100
3 Cod open Sep 1-Oct 7 (private and for-hire)	All	1	21"	Sep 1-Oct 7, Apr 1-14	151	15	17"	May-Feb28, Apr 1-Apr30	1,006	360,062	82	100
4 Cod open Sep 1-Oct 14 (private and for-hire)	All	1	21"	Sep 1-Oct 14, Apr 1-14	162	15	17"	May-Feb28, Apr 1-Apr30	1,050	375,081	70	100
5 Cod open Sep 8-Oct 7 (private and for-hire), cod min size 22"	All	1	22"	Sep 8-Oct 7, Apr 1-14	136	15	17"	May-Feb28, Apr 1-Apr30	955	344,636	91	100
6 Cod open Sep 1-Oct 7 (private and for-hire), cod min size 22"	All	1	22"	Sep 1-Oct 7, Apr 1-14	146	15	17"	May-Feb28, Apr 1-Apr30	1,003	358,743	84	100
7 Cod open Sep 1-Oct 14 (private and for-hire), cod min size 22"	All	1	22"	Sept 1-Oct 14, Apr 1-14	157	15	17"	May-Feb28, Apr 1-Apr30	1,048	373,655	72	100
8 Cod open Sep 8-Oct 7 (private and for-hire), cod slot limit 22" to 28"	All	1	22-28"	Sept 8-Oct 7, Apr 1-14	123	15	17"	May-Feb28, Apr 1-Apr30	952	343,192	96	100
9 Cod open Sep 1-Oct 7 (private and for-hire), cod slot limit 22" to 28"	All	1	22-28"	Sep 1-Oct 7, Apr 1-14	129	15	17"	May-Feb28, Apr 1-Apr30	1,000	357,455	95	100
10 Cod open Sep 1-Oct 14 (private and for-hire), cod slot limit 22" to 28"	All	1	22-28"	Sep 1-Oct 14, Apr 1-14	138	15	17"	May-Feb28, Apr 1-Apr30	1,043	372,076	90	100

FY 2022 rec sub-ACLs: cod = 192 mt, haddock 3,634 mt



Box Plots of FY 2022 Mortality Predictions



Recreational Advisory Panel – Jan 18

The Recreational Advisory Panel recommends to the Groundfish Committee:

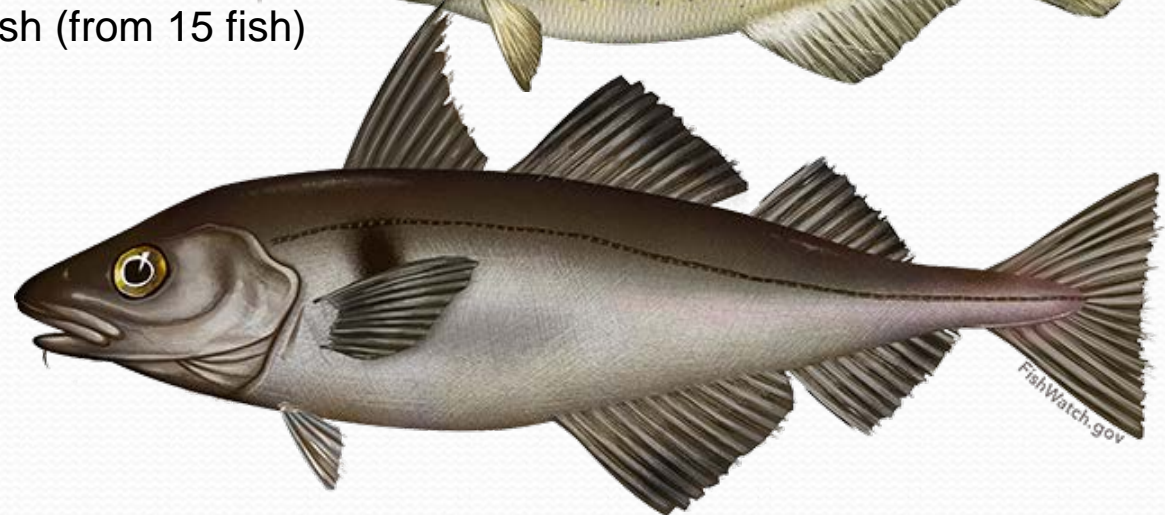
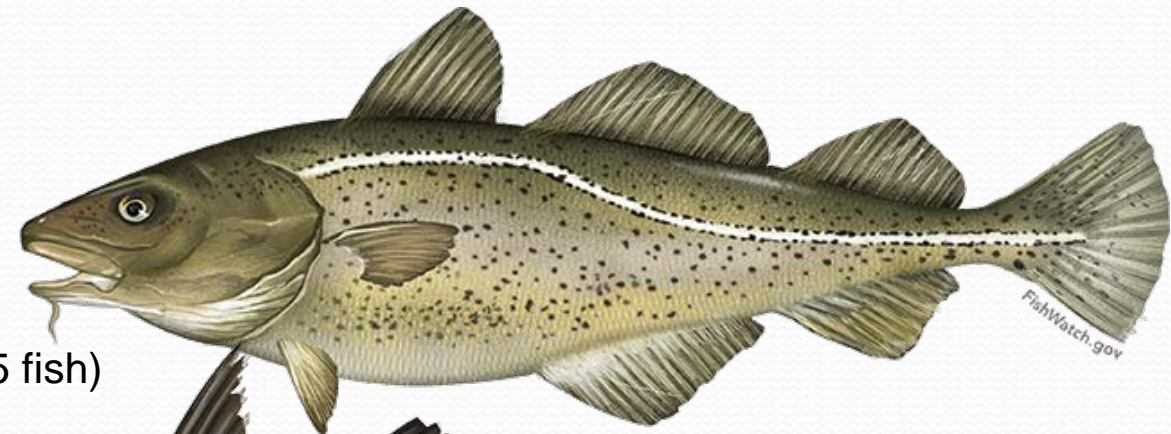
Gulf of Maine cod- Adjust the open season, same for all modes

- Open season: September 1 - October 7; April 1 - 14
- Minimum size: 21 inches
- Possession limit: 1 fish per day

Gulf of Maine haddock – Increase the bag limit to 20 fish (from 15 fish)

- Open season: May 1–Feb 28/29; April 1–30
- Minimum size: 17 inches
- Possession limit: 20 fish per day

Passed without objection.



Groundfish Committee – Jan 20

Move to recommend to the Council the following recreational fishery measures:

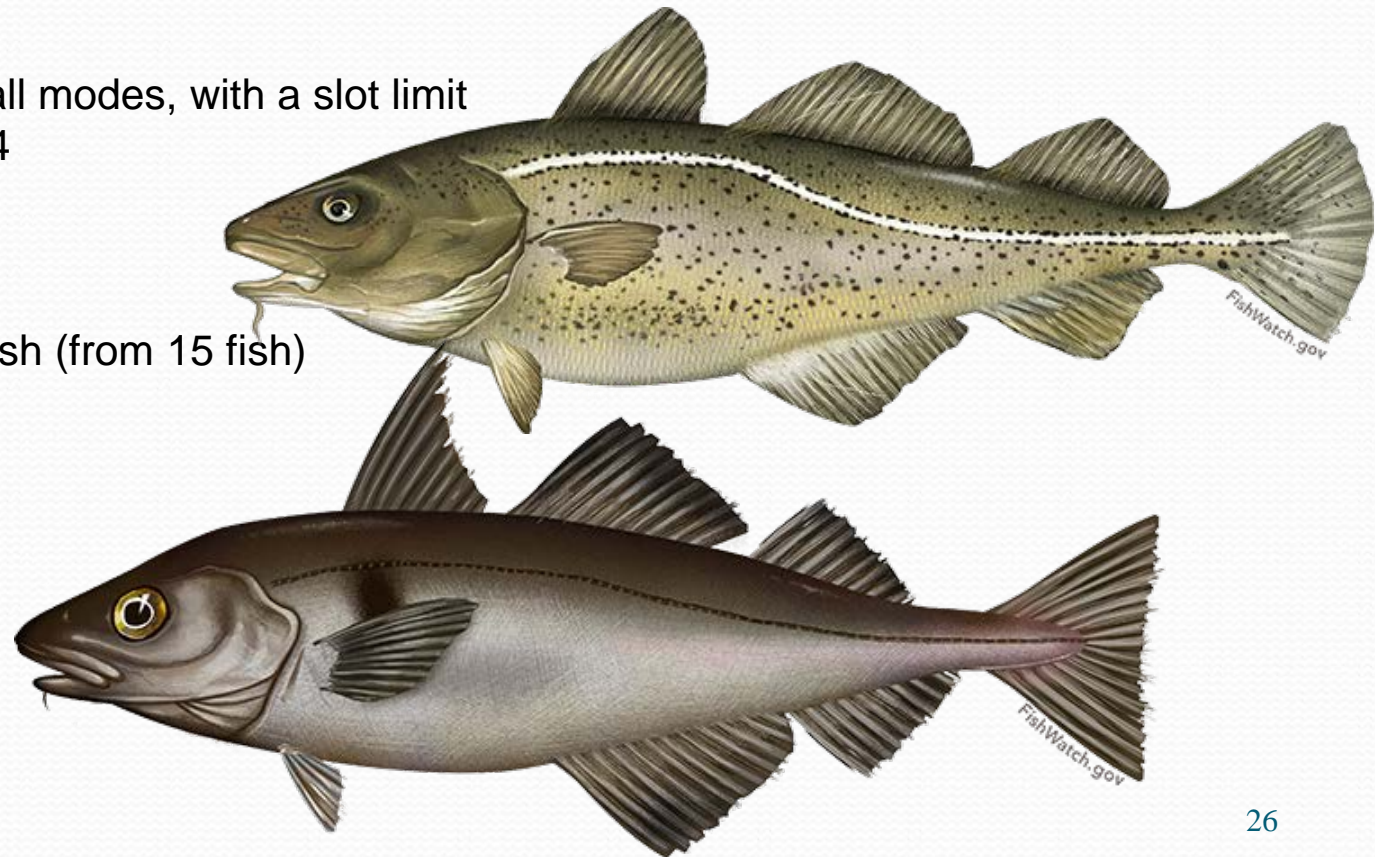
Gulf of Maine cod- Adjust the open season, same for all modes, with a slot limit

- Open season: September 1 - October 7; April 1 - 14
- Slot size: 22 inches to 28 inches
- Possession limit: 1 fish per day

Gulf of Maine haddock – Increase the bag limit to 20 fish (from 15 fish)

- Open season: May 1–Feb 28/29; April 1–30
- Minimum size: 17 inches
- Possession limit: 20 fish per day

Carried 8/0/4.



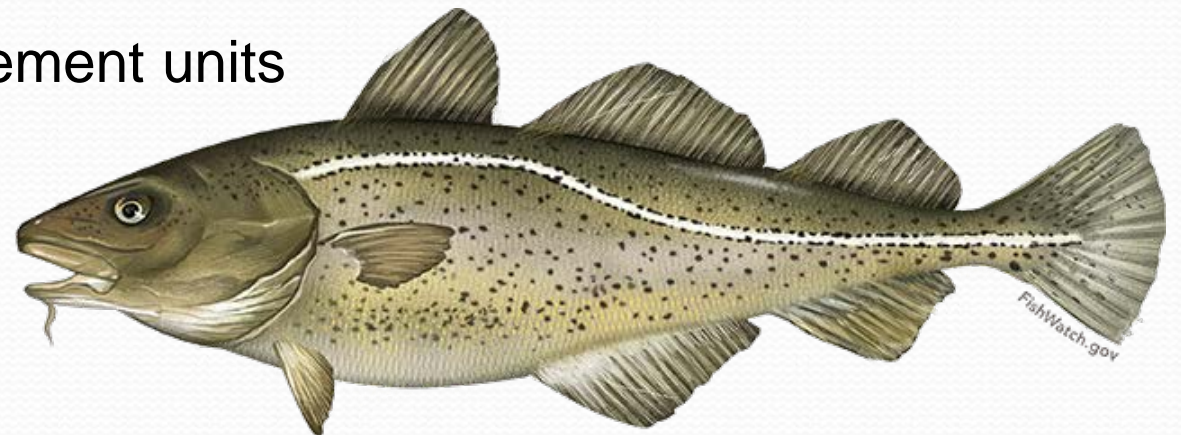
Atlantic Cod Stock Structure



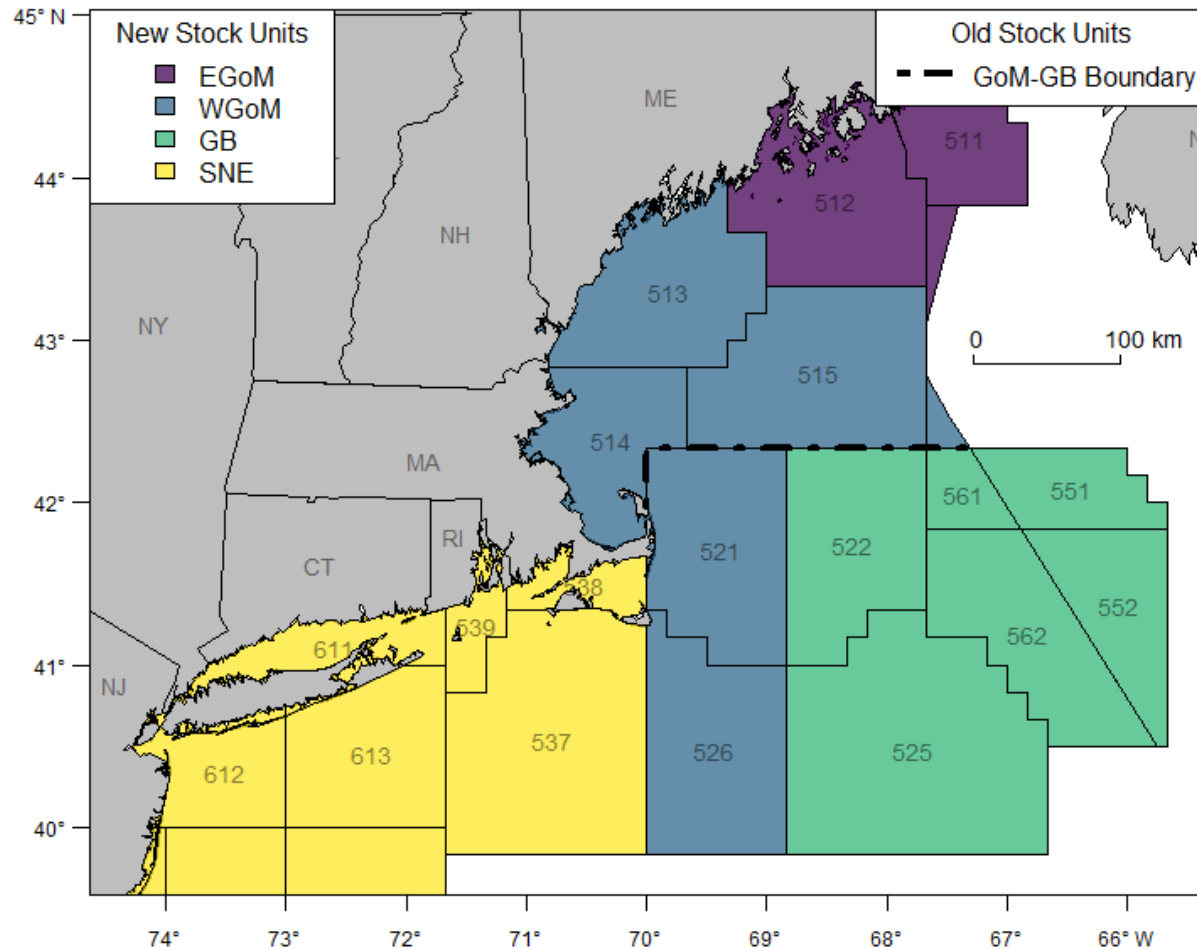
New England
Fishery Management Council

Meeting Goals

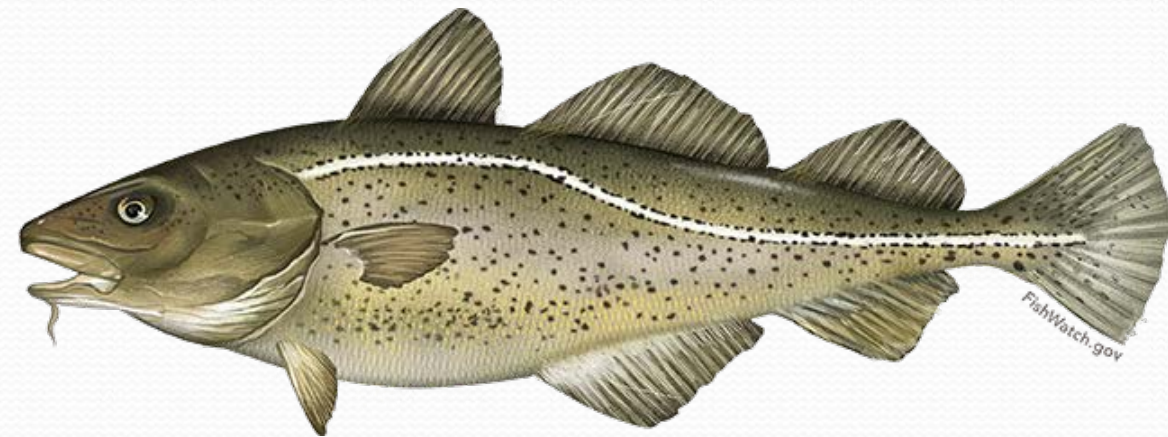
- Receive the final report on the 2021 Atlantic Cod Stock Structure workshops
- Receive an update from the Atlantic Cod Research Track Working Group
- Discuss management implications:
 - For today – hold a preliminary discussion of possible management units
 - For April 2022 – develop initial management units



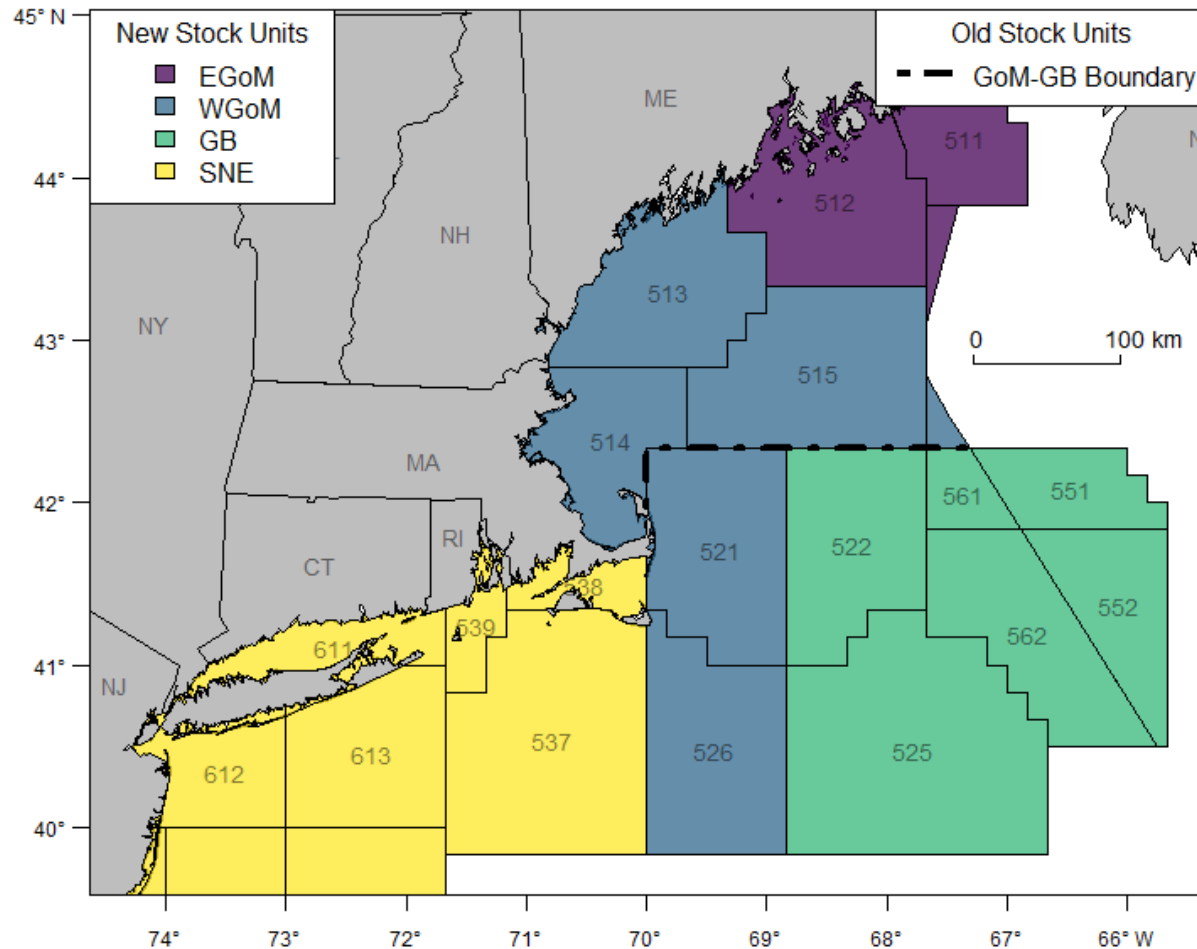
Preliminary Discussion: Main Question



Does the Council support the Atlantic Cod Research Track Working Group's initial proposal for 4 biological units as the new paradigm for management units?

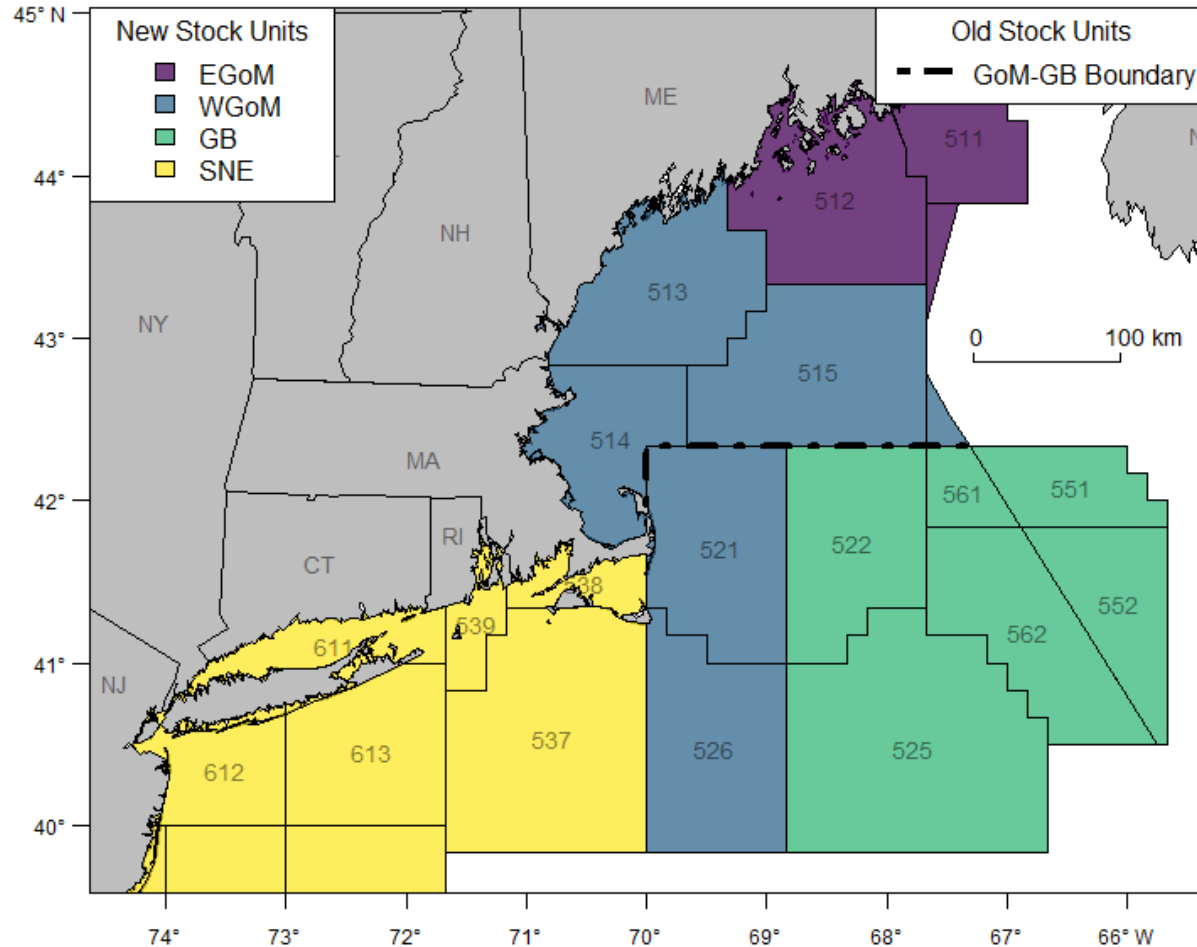


Preliminary Discussion Questions



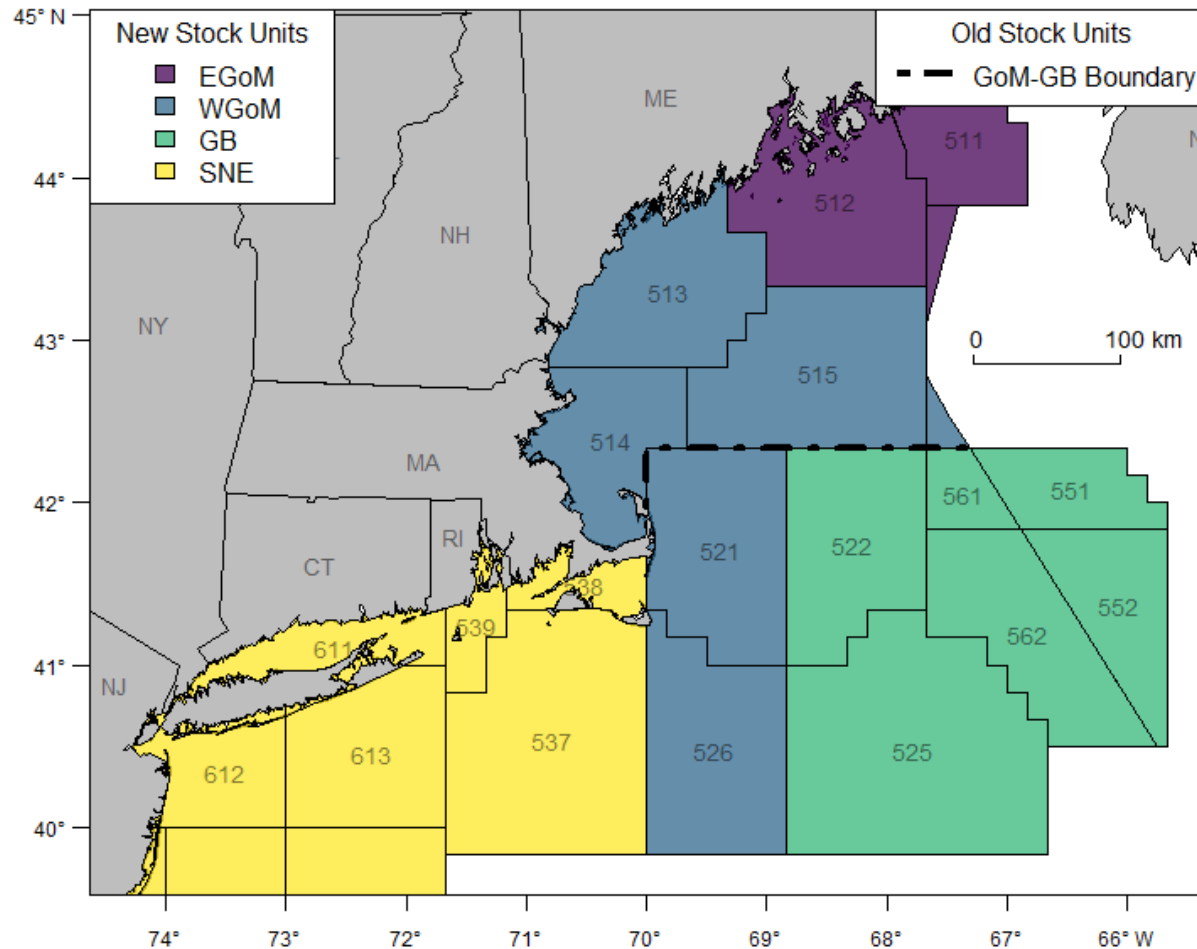
1. Given the information, what makes this difficult to discuss at present?
2. What needs to be clarified at this point? Elaborate.
3. Is there a maximum number of management units the Council should consider?
4. Are there combinations of biological units the Council cannot support?
5. Do you prefer fewer stocks with analytic assessments, or more stocks even if that means several have empirical assessments?

Preliminary Discussion Questions



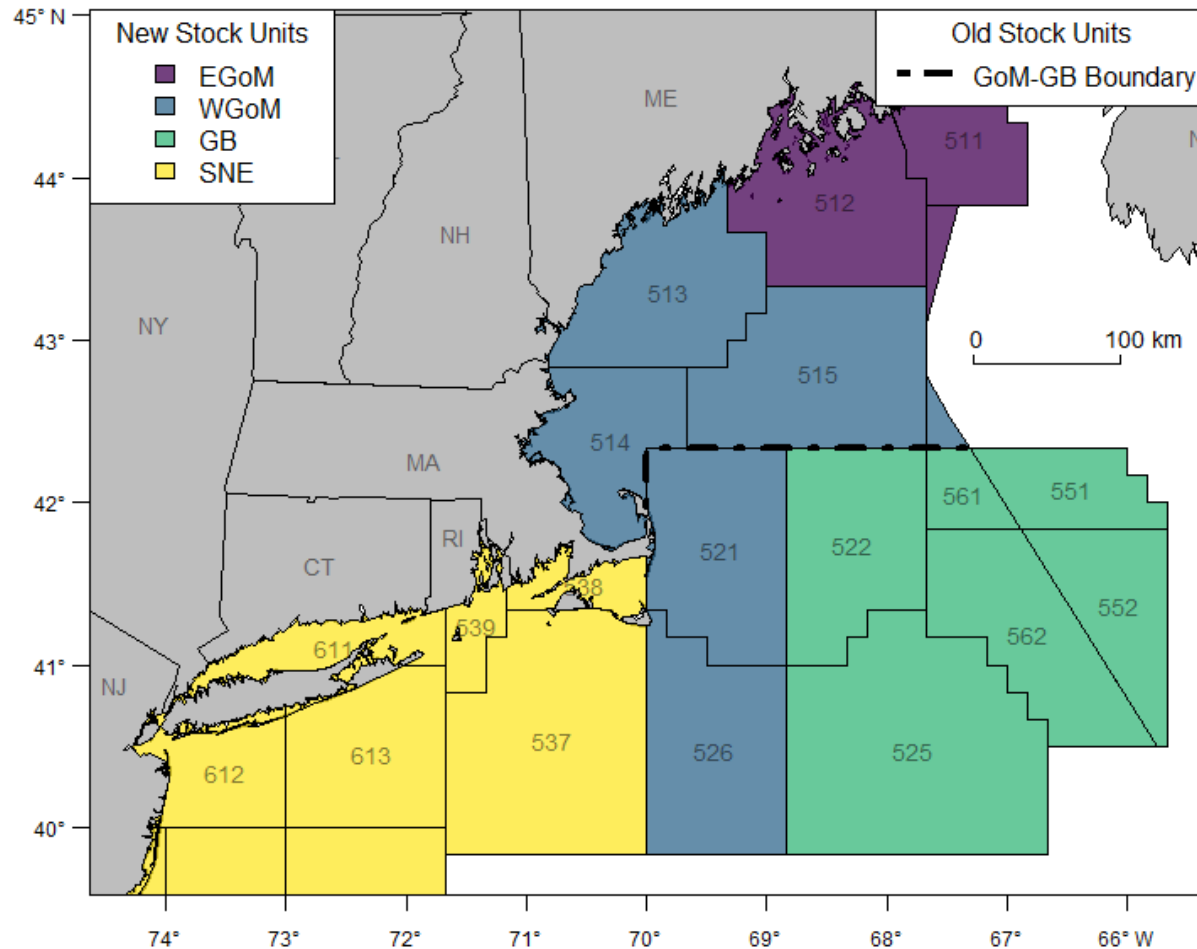
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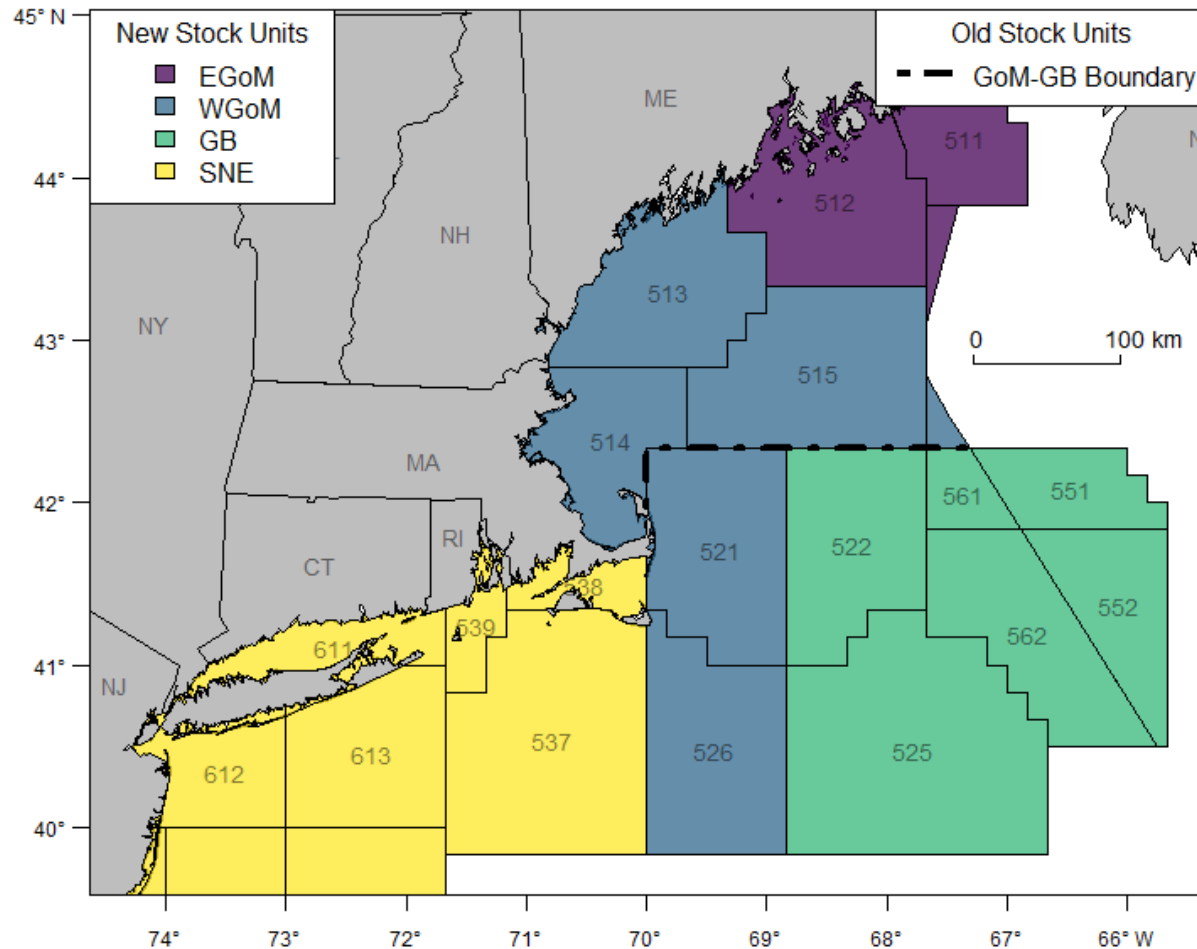
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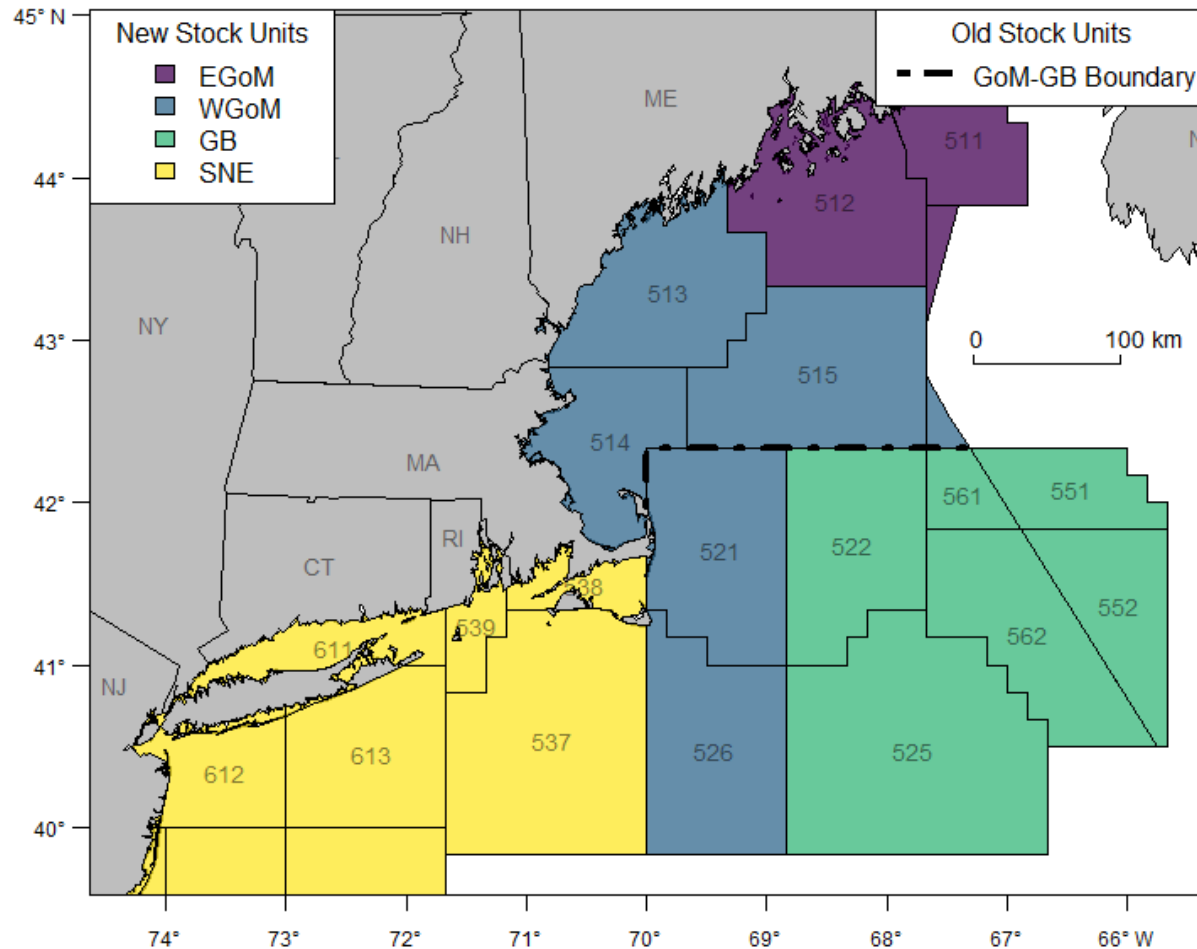
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