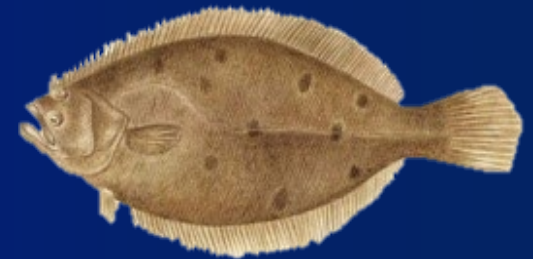


Summer Flounder 2023 Recreational Measures

Council and Board
December 13, 2022



Timeline of Recent Developments



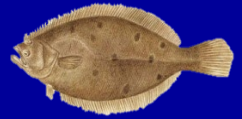
- **Oct. 20:** Letter from GARFO on AMs evaluation
- **Oct. 26:** First Monitoring Committee meeting to review Percent Change Approach and models
- **Nov. 15:** Monitoring Committee meets to recommend 2023 measures
- **Nov. 30:** Advisory Panel input
- **Dec. 6:** Council received updated outputs from Recreational Demand Model (RDM)
- **Dec. 8:** Letter from GARFO on recreational models

Council/Board Objectives



- Identify appropriate model to use for estimating 2023 harvest and resulting percent change needed under Percent Change Approach
- Adopt either:
 - Coastwide measures (bag, size, season)
 - Conservation equivalency, with non-preferred coastwide and precautionary default measures

2022 Recreational Measures



- Regional Conservation Equivalency
 - State measures control harvest; federal measures waived
- Non-preferred coastwide measures
 - Implemented in federal regulations, but waived
 - 18.5-inches, 4 fish, May 15-Sept. 15
- Precautionary default
 - “Deterrent” measures
 - 20-inch TL, 2 fish, July 1-August 31

2022 State Measures



	Min. Size (in)	Bag Limit	Season
MA	16.5	5 fish	May 21-September 29
RI	18	4 fish	
RI SHORE	18	2 fish*	May 3-December 31
	17	2 fish*	
CT	18.5	4 fish	May 1-October 9
CT SHORE SITES	17		
NY	18.5		
NJ	Slot limit 17-18	2 fish ^b	May 2-September 27
	18	1 fish ^b	
NJ SHORE SITE	16	2 fish	
NJ DE BAY	17	3 fish	
DE, MD, PRFC, VA	16	4 fish	
NC^c	15	1 fish	September 1-30

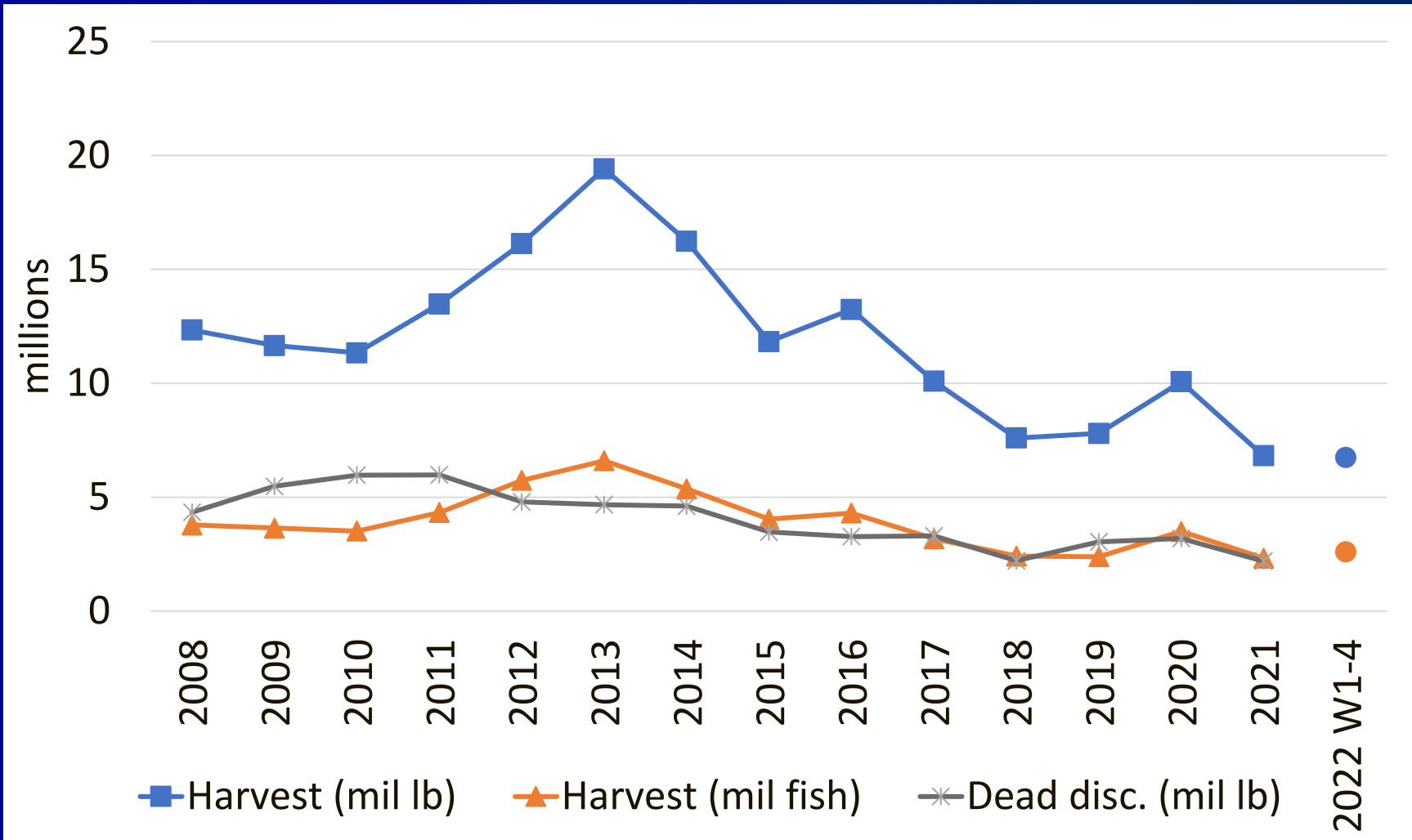
^a Combined limit of 4 fish, no more than 2 at 17 inches

^b NJ slot limit total possession limit of 3 fish: 2 between 17-18; 1 over 18

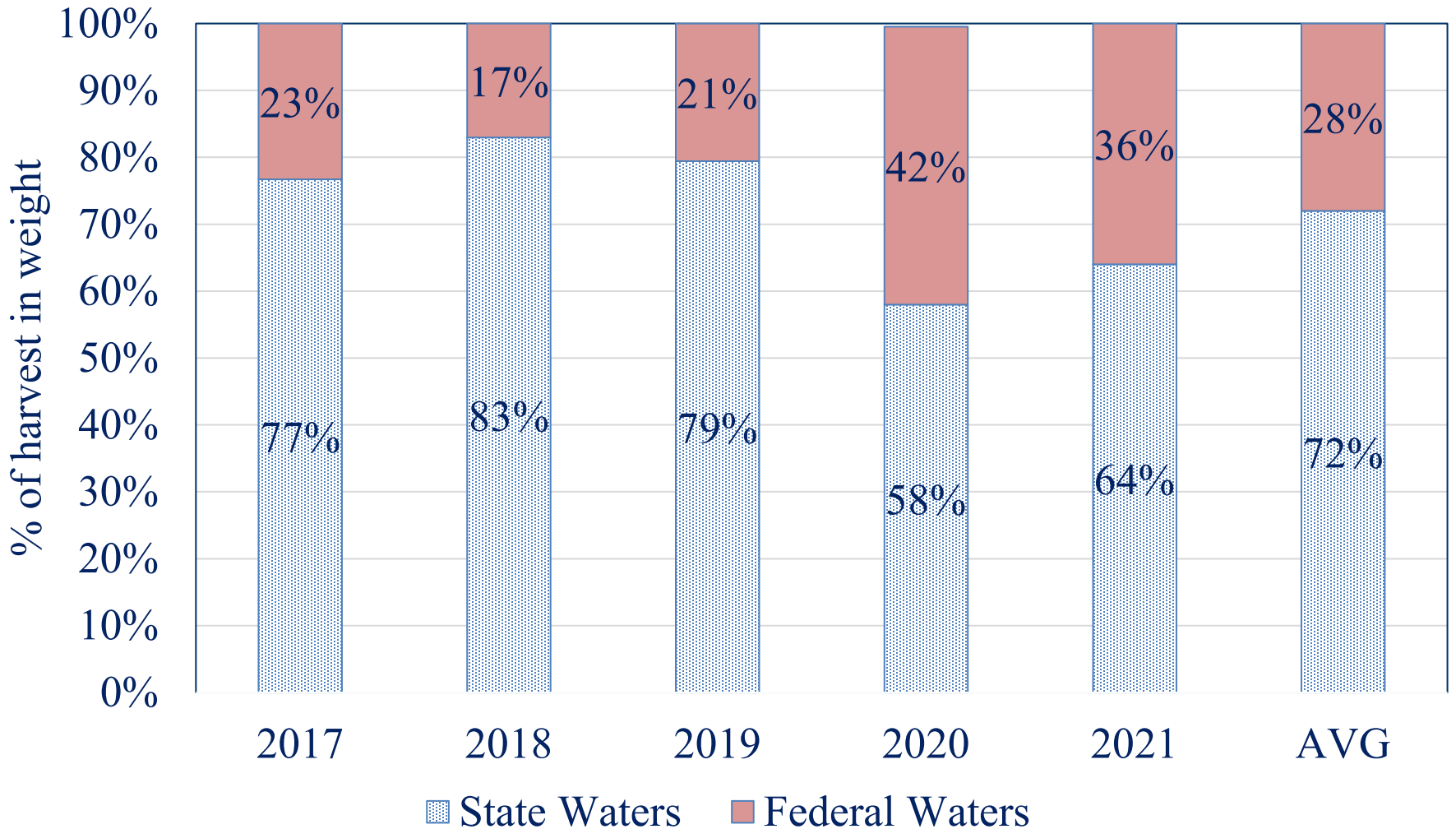
^c NC restrictions to reduce mortality on southern flounder

Harvest & Discards 2008-2021

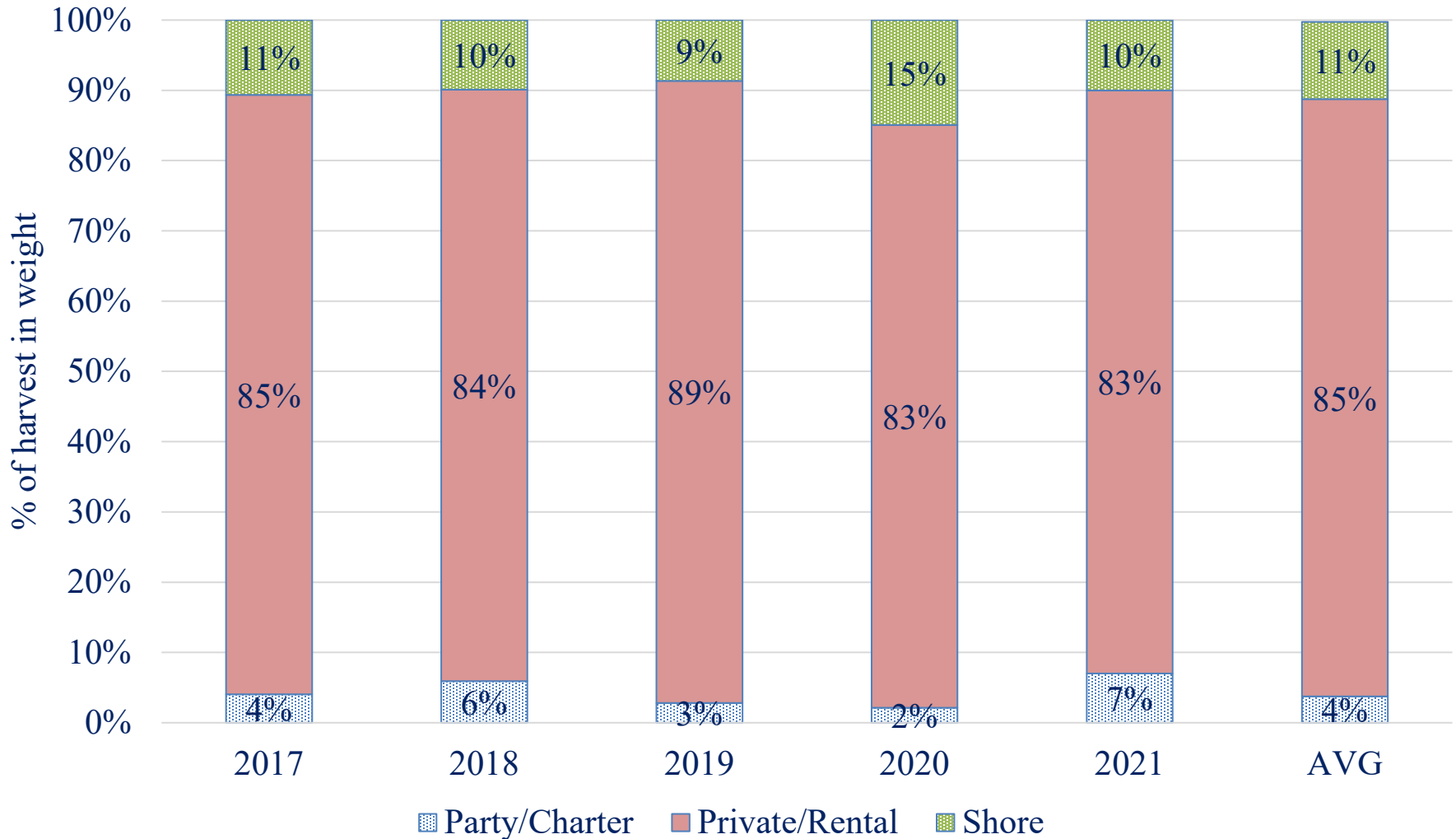
With 2022 Waves 1-4



State vs. Federal Waters Harvest (lb)



Harvest (lb) by mode



<i>Column 1</i> 2023 RHL vs expected harvest under 2022 measures	<i>Column 2</i> Biomass compared to target level (SSB/SSB_{MSY})	<i>Column 3</i> Change in Harvest
RHL greater than upper bound of expected harvest CI (RHL underage expected)	Very high greater than 150% of target	Liberalization % = difference between harvest estimate and 2023 RHL, not to exceed 40%
	High at least target, but no higher than 150% of target	Liberalization % = difference between harvest estimate and 2023 RHL, not to exceed 20%
	Low below target stock size	Liberalization: 10%
RHL within expected harvest CI (harvest expected to be close to RHL)	Very high greater than 150% of target	Liberalization: 10%
	High at least target, but no higher than 150% of target	No liberalization or reduction: 0%
	Low below target stock size	Reduction: 10%
RHL less than lower bound of expected harvest CI (RHL overage expected)	Very high greater than 150% of target	Reduction: 10%
	High at least target, but no higher than 150% of target	Reduction % = difference between harvest estimate and 2023 RHL, not to exceed 20%
	Low below target stock size	Reduction % = difference between harvest estimate and 2023 RHL, not to exceed 40%

2023 Expected Harvest vs. RHL



- **Percent Change Approach Step 1:**
Compare 2023 RHL to confidence interval around expected 2023 harvest under current (2022) measures

Column 1
2023 RHL vs
expected harvest
under 2022 measures

RHL greater than upper
bound of expected
harvest CI (RHL
underage expected)

RHL within expected
harvest CI
(harvest expected to be
close to RHL)

RHL less than lower
bound of expected
harvest CI
(RHL overage expected)

MC Model Recommendation

- MC recommends use of **RDM** for estimating 2023 harvest under current measures, and adjusting measures
 - Model performs well for summer flounder
 - RDM was used in summer flounder MSE
 - RDM can model slots
- RFDM is not currently able to model slot limits: overpredicts harvest given NJ 2022 slot
 - Also concerned about large confidence intervals for summer flounder with RFDM

Confidence Interval Recommendation



<i>Column 1</i> 2023 RHL vs expected harvest under 2022 measures
RHL greater than upper bound of expected harvest CI (RHL underage expected)
RHL within expected harvest CI (harvest expected to be close to RHL)
RHL less than lower bound of expected harvest CI (RHL overage expected)

- MC recommends use of **80% CI** for all 3 species in 2023
 - Recommended by Harvest Control Rule FMAT/PDT based on evaluation of MRIP data
 - Higher percentage CIs result in wider range of values; may result in action under Percent Change Approach that is not appropriate for “true” fishery condition
- MC supported continued discussion of this topic in 2023 for setting measures for 2024 and beyond

Model to Estimate 2023 Harvest



Column 1 2023 RHL vs expected harvest under 2022 measures
RHL greater than upper bound of expected harvest CI (RHL underage expected)
RHL within expected harvest CI (harvest expected to be close to RHL)
RHL less than lower bound of expected harvest CI (RHL overage expected)

- MC recommendations were based on model outputs as of 11/10/22
 - Updated output as of 12/6/22 (to be covered later in this presentation)
- Under MC recommendation to use RDM and 80% CI: RHL was greater than upper bound of expected harvest CI

	Median	80% CI	2023 RHL
RDM (prior outputs, 11/10)	8.38	7.56 - 9.52	10.62

MC Recommendations from 11/15: Resulting Percent Change for 2023



- 10% liberalization in harvest
- Applied to estimate of 2023 harvest under 2022 measures
- Under MC recommendation using RDM: 8.38 mil lb + 10% = **9.21 mil lb harvest target for 2023**

2023 RHL vs expected harvest under 2022 measures	Biomass compared to target level	Change in Harvest
RHL greater than upper bound of CI (RHL underage expected)	Very high	Liberalization % = difference between harvest estimate and 2023 RHL, not to exceed 40%
	High	Liberalization % = difference between harvest estimate and 2023 RHL, not to exceed 20%
	Low	Liberalization: 10%
RHL within CI (harvest expected to be close to RHL)	Very high	Liberalization: 10%
	High	No liberalization or reduction: 0%
	Low	Reduction: 10%
RHL less than lower bound of expected harvest CI (RHL overage expected)	Very high	Reduction: 10%
	High	Reduction % = difference between harvest estimate and 2023 RHL, not to exceed 20%
	Low	Reduction % = difference between harvest estimate and 2023 RHL, not to exceed 40%

Rec. Accountability Measures



- All values in new MRIP currency
- AMs not triggered for summer flounder – no additional adjustments needed

	Rec. Harvest (mil lb)	Rec. Dead Discards (mil lb)	Dead Rec. Catch (mil lb)	Rec. ACL (mil lb)	% Over/ Under ACL
2019	7.80	3.04	10.84	11.51	-6%
2020	10.06 ^a	3.19 ^b	13.25	11.51	+15%
2021	6.82	2.19 ^b	9.01	12.48	-28%
AVG	8.23	2.81	11.03	11.83	-7%

^a 2020 MRIP harvest estimate incorporated ~19% imputed data

^b 2020-2021 dead discard estimates not available using typical methodology; estimated using 2019 avg. weight of discarded fish and 2020-2021 MRIP discards in numbers

2023 MC Recommendations



- Recommend continuation of regional conservation equivalency in 2023
 - Federal measures waived; combination of regional measures designed to achieve harvest target

MC Recommendation: Non-Preferred Coastwide Measures



- Non-preferred coastwide measures required under CE; waived in favor of state regulations
- RDM suggests current NP coastwide measures (**18.5 in, 4 fish, May 15-Sept 15**) would be too restrictive for 2023

	RDM estimate of median harvest in 2023 (mil lb)	% of 2023 Target (9.21 mil lb)
Current NP Coastwide: 18.5 in, 4 fish, 5/15-9/15 (Prior RDM output, 11/10)	5.26	57%

MC Recommendation: Non-Preferred Coastwide Measures



- MC recommendation: **17.5 inches, 3 fish, May 1-September 30**
- Modified version of a set of measures evaluated through Council's summer flounder Management Strategy Evaluation (MSE)
 - MSE Management Procedure #6 (17 inches, 3 fish, May 1-September 30): harvest estimated from RDM was 17% higher than target
 - Staff/MC recommendation adjusted minimum size up 1/2"; estimated that this combination would be close to target

MC Recommendation: Precautionary Default Measures



- *Status quo* precautionary default measures of **2 fish, 20 inches, July 1-August 31**
- Sufficiently restrictive in all states
- No changes for 2023

Staff Recommendation: Measures Under Conservation Equivalency



- Council staff had recommended that under CE, the TC and Board to explore measures similar to either:

- **MP #2: 2019 regulations with 1-inch decrease**

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	16	5 fish	May 23-October 9
Rhode Island	18	6 fish	May 3-December 31
Connecticut	18	4 fish	May 4- September 30
New York	18		
New Jersey	17	3 fish	May 24- September 21
Delaware	16	4 fish	January 1- December 31
Maryland			
Virginia			
North Carolina	15	4 fish	January 1-September 3

- **MP #7: Modified coastwide slot**

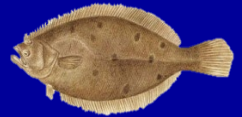
1 fish 16-19 inches; 2 fish over 19 inches, May 1-Sept. 30

MC Recommendation: Measures Under Conservation Equivalency



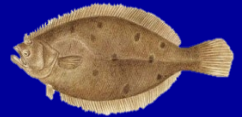
- MC instead supported giving each region flexibility to develop measures that achieve regional targets
- Did not support exploring coastwide options at this time due to equitability concerns
 - Some coastwide options would not allow some regions to liberalize equally or at all

AP Comments



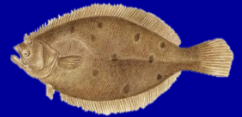
- At least one supported 10% liberalization
- A few concerned/confused that Percent Change Approach leads to a liberalization for summer flounder and reduction for black sea bass
 - Summer flounder stock health is more of a concern; black sea bass are incredibly abundant
 - This seems backwards

AP Comments



- Recreational models should consider changes in population dynamics and distribution such as changes in inshore migration patterns and regional depletions
- Question about why model confidence interval selected for summer flounder is much tighter than that for the other 2 species
- Two supported maintaining conservation equivalency – critical for flexibility in measures
 - One questioned need for regional CE

AP Comments



■ State measures

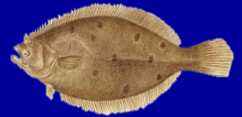
- Virginia should consider measures split by area to give river/inner bay fishermen ability to keep smaller fish
- Mixed opinions on NJ slot limit
 - One noted it was beneficial, but suggests changing to 1 fish in slot and 2 above
 - One said it was not helpful and has resulted in decreased catch

AP Comments



- Concern that based on MRIP numbers, this year's regulations appear to have had a negative impact on the for-hire sector and positive impact on private/shore harvest
- One questioned enforceability of regulations in federal waters under conservation equivalency

AP Comments



■ One requested:

- Consideration of a stock enhancement program
- Better use of best available science re: Big Old Fat Fecund Female Fish
- Consideration of a total length limit with mandatory retention
- Required private angler cell phone reporting

Updated RDM Results: 12/6

Species	Model used	Estimated 2023 Harvest Under Current Measures	80% Confidence Interval	2023 RHL	Stock Size Cat.	Resulting Percent Change Bin
Summer Flounder	RDM: Previous (Nov 10)	8.38	7.56-9.52	10.62	Low	10% liberalization
	RDM: Current (Dec 6)	10.92	9.23-12.94			10% reduction

- 2023 RHL is now within the confidence interval around 2023 estimate
- **Changes percent change outcome from 10% liberalization to 10% reduction**

Updated RDM Results: 12/6

- Updated target would be 10% reduction from 10.92 mil lb harvest estimate = **9.83 mil lb**
- Monitoring Committee and AP have not had the opportunity to meaningfully review/comment on these results

Non-Preferred Coastwide Measures

- RDM outputs (revised model configuration)
- MC has not reviewed with new model results or measures D through F below

NP Coastwide Measures	Median Estimate	% of revised target (9.83 mil lb)
A. Status quo (18.5 in, 4 fish, 5/15-9/15)	6.39	65%
B. 17 in, 3 fish, 5/1-9/30	13.87	141%
C. 17 in, 3 fish, 5/15-9/15	12.30	125%
D. 18 in, 3 fish, 5/1-9/30	10.34	105%
E. 18.5 in, 3 fish, 5/1-9/30*	8.48	86%
F. 18 in, 3 fish, 5/15-9/22**	9.72	99%

*Estimated by staff based on outputs by length bin from run E

**Calculated from outputs by 2-week period from run D

Summary

- MC recommended use of RDM
- Prior RDM outputs (11/10) indicated 10% liberalization; new outputs (12/6) indicate 10% reduction
 - New output: estimated 2023 harvest of 10.92 mil lb (under 2022 measures)
 - 10% reduction results in target of 9.83 mil lb
- MC recommended conservation equivalency
- Possible NP coastwide measures (revised RDM): 18 inches, 3 fish, May 15-Sept. 8
- MC recommended no change to precautionary default: 2 fish, 20 inches, July 1-August 31