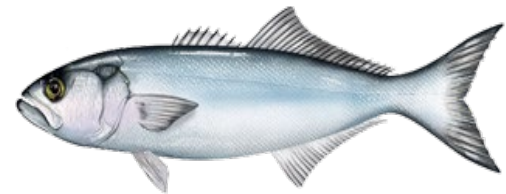
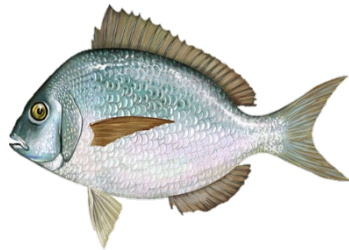
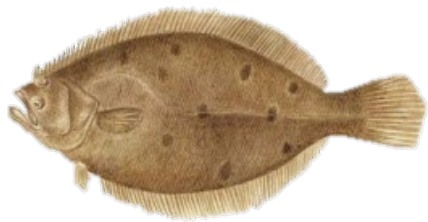


Recreational Measures Setting Process Framework/Addenda



Council and Policy Board Meeting
December 13, 2023

1. Review alternatives under consideration
2. Progress update
3. Next steps
4. Consider refining range of preliminary alternatives based on FMAT/PDT recommendations

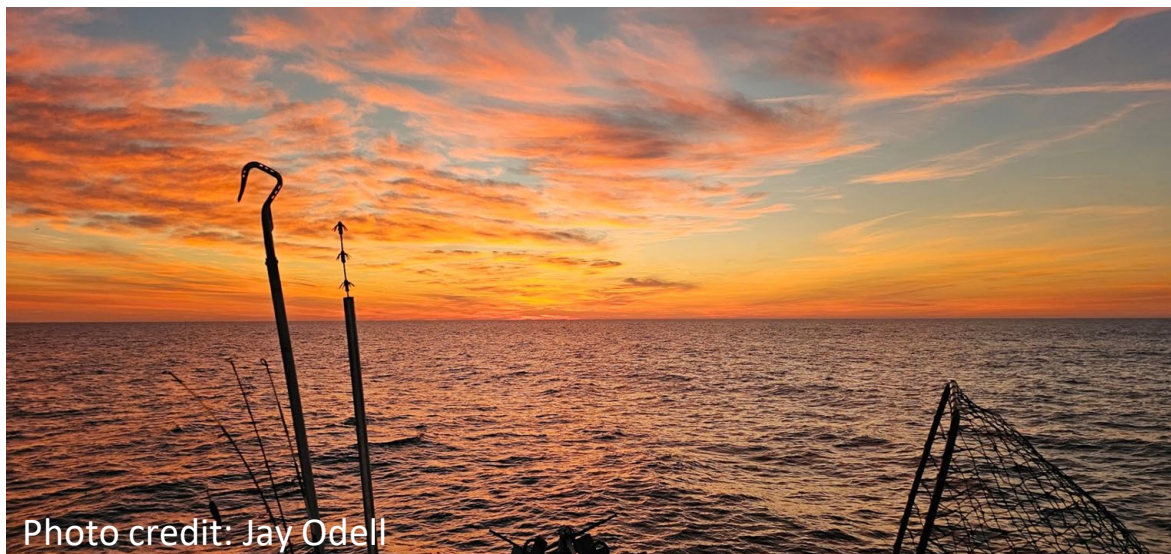


Photo credit: Jay Odell

Percent Change Approach

RHL vs Harvest Estimate	B/B _{MSY}	Change in Harvest
Future 2-year avg RHL > upper bound of harvest estimate CI	Very high (>= 150%)	Liberalization % = difference between harvest estimate and 2-yr avg RHL, <u>not to exceed 40%</u>
	High (100 – 150%)	Liberalization % = difference between harvest estimate and 2-yr avg RHL, <u>not to exceed 20%</u>
	Low (< 100%)	10% liberalization
Future 2-year avg RHL within harvest estimate CI	Very high (>= 150%)	10% liberalization
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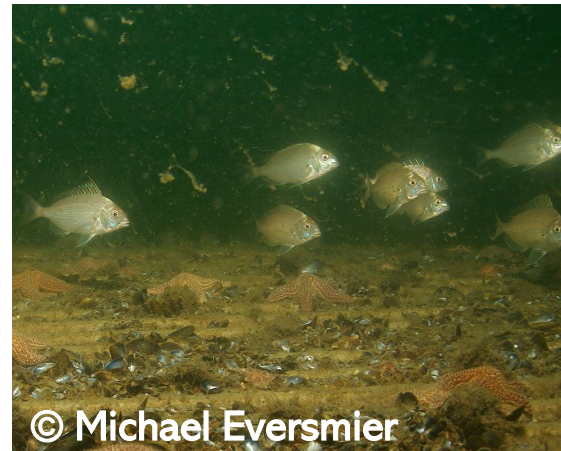
Biological Reference Point Approach

Biomass Compared to Target Level	Overfishing is Not Occurring	Overfishing is Occurring
Very High At least 150% of the target level	R↑ R↓ B↑ liberal B↓ default	R↑ R↓ Recent harvest limits not exceeded B↑ default B↓ restrictive Recent harvest limits exceeded B↑ restrictive and re-evaluate measures B↓
	1	4
High At least the target, but below 150% of the target level	R↑ R↓ B↑ liberal B↓ default	R↑ R↓ Recent harvest limits not exceeded B↑ default B↓ restrictive Recent harvest limits exceeded B↑ restrictive and re-evaluate measures B↓
	2	5
Low Below the target level, but at least 50% of the target level	R↑ R↓ B↑ default B↓ restrictive	R↑ R↓ Recent harvest limits not exceeded B↑ default B↓ restrictive Recent harvest limits exceeded B↑ restrictive and re-evaluate measures B↓
	3	6
Overfished Less than 50% of the target level	Most restrictive/rebuilding plan	
		7

Biomass Based Matrix Approach

B/B _{msy}	Biomass Trend		
	Increasing	Stable	Decreasing
Very High >= 150%	Bin 1 (most liberal measures)		
High 100-150%	Bin 1		Bin 2
Low 50-100%	Bin 3		Bin 4
Overfished <50%	Bin 5		Bin 6 (most restrictive measures)

- Consideration of fishing mortality rates under Percent Change Approach
- Re-evaluation of 10, 20, 40% under Percent Change Approach
- Modified versions of Biological Reference Point and Biomass Based Matrix Approaches without pre-determined measures



- Target metric for setting measures
 - Harvest, dead catch, or fishing mortality targets (derived from RHL, ACL, F_{MSY} , or something else)
- Starting point for measures
- Example measures
- Management uncertainty
- Issue of “borrowing” from the commercial sector
- Accountability measures
- Considerations for conservation equivalency

- **Meeting #3 (September 19, 2023):** Discussed fishery and stock status indicators, associated thresholds, and resulting management responses, particularly in relation to those to be tested in the MSE model, formed sub-groups to further explore F-based approaches and percent change approach liberalization/reduction values
- **Meeting #4 – Joint with Commissioner & Council Member Work Group (November 2, 2023):** Discussed including F-based approaches in alternatives, potential for including pre-determined measures in alternatives, and management uncertainty

- Coupled modeling approach incorporates stock dynamics, regulations, and angler behavior.
- FMAT/PDT have met with MSE modelers and planned for analysis.
- MSE modelers have begun preparing the model per FMAT/PDT direction.
- Initial focus on thresholds defining the boundaries between the bins under each alternative.
- **Goal:** Use results of MSE to inform Council/Policy Board August 2024 decision on final range of alternatives for public hearings.

- Fishing mortality as an alternative to the RHL vs. CI threshold in the Percent Change Approach:
 - Recreational fishing mortality rate (F) expected to result from status quo measures
 - Compared to a recreational F threshold
- Consider F under other alternatives in addition to Percent Change Approach?



- Further consideration needed to define recreational F and recreational F threshold
 - Management does not currently use or assign fishing mortality rates or fishing mortality targets for the recreational sector
 - E.g., calculate F associated with the recreational ACL by applying the recreational allocation percentage to the F rate associated with the ABC
 - Currently available analysis tools (e.g., RDM) are not configured to predict F in upcoming years based on specified measures

- Biological Reference Point and Biomass Based Matrix Approaches.
- Measures assigned to all bins through the specifications process the first time the approach is used.

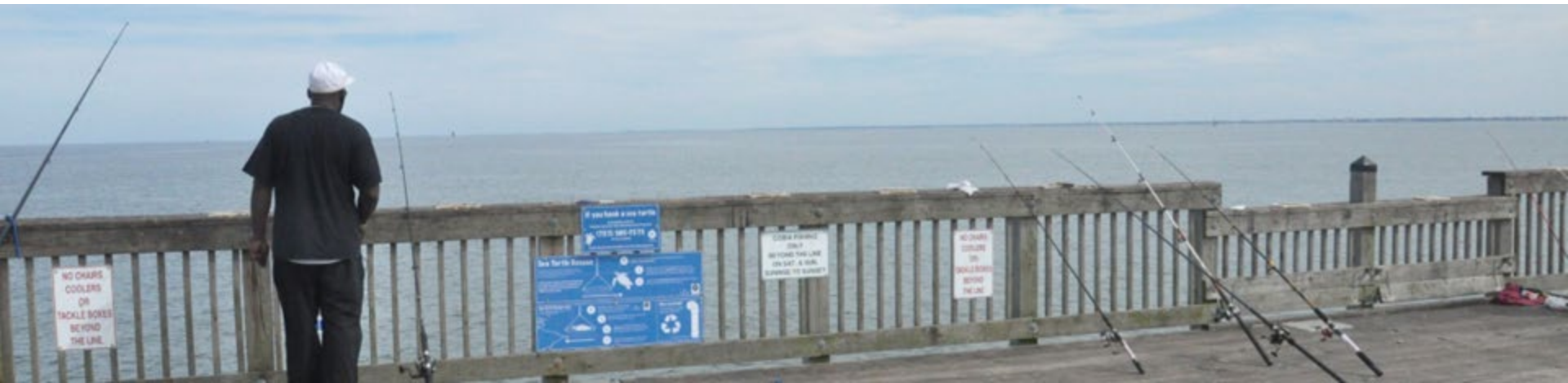
Biological Reference Point Approach

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Low Below the target level, but at least 50% of the target level	R↑ R↓ B↑ default B↓ restrictive	R↑ R↓ Recent harvest limits not exceeded B↑ default B↓ restrictive Recent harvest limits exceeded B↑ restrictive and re-evaluate measures B↓
Overfished Less than 50% of the target level	Most restrictive/rebuilding plan	

Biomass Based Matrix Approach

B/Bmsy	Biomass Trend		
	Increasing	Stable	Decreasing
Very High ≥ 150%	Bin 1 (most liberal measures)		
High 100-150%	Bin 1		Bin 2
Low 50-100%	Bin 3		Bin 4
Overfished <50%	Bin 5		Bin 6 (most restrictive measures)

- Council/Policy Board agreed to consider modified versions where measures are not pre-determined.
 - Thresholds defining boundaries between bins would be triggers for changing measures.
 - Measures would still need to achieve the appropriate target.



- MSE analysis will use % changes in harvest or catch, rather than pre-determined measures, to make the analysis more straightforward.
- Concern with the feasibility of assigning measures to bins for fishery and stock conditions that are very different from current conditions.
- Concern with amount of analysis needed to develop measures for all bins.
- **FMAT/PDT Recommendation:** Remove the pre-determined measures concept from the range of preliminary alternatives.

- One advisor supported using trend data in the alternatives (e.g., biomass and/or recruitment trends).
- One advisor recommended incorporating recreational CPUE into the alternatives.
- Concern about use of MRIP data given issues with the Fishing Effort Survey.
- One advisor expressed hope that this action will improve mgmt (e.g., cuts in scup and black sea bass do not make sense when biomass is so high).

- Several advisors opposed allowing the recreational sector to “borrow” quota from the commercial sector.
 - Transferring quota between sectors is not under consideration through this action; however, the language used to describe other topics raised concerns.
 - Concern about differences in reporting requirements for commercial vs. recreational.
 - “Borrowing” condones RHL overages.



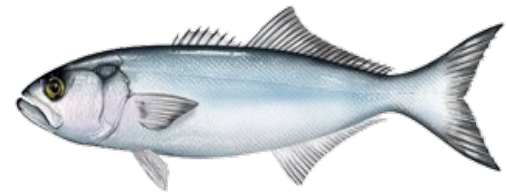
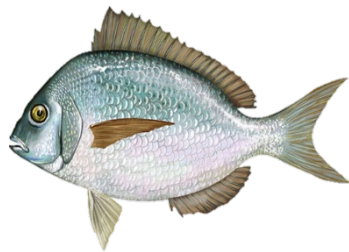
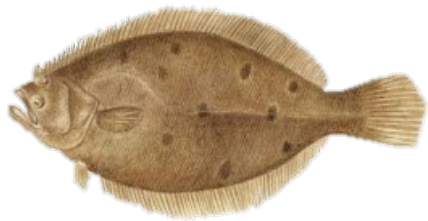
Timeline



Early 2024 - Summer 2024	<ul style="list-style-type: none">Continued analysis and development of alternatives.Development of draft document for public hearings.
August 2024	<ul style="list-style-type: none">Council/Policy Board approve final range of alternatives and draft document for public hearings.
Fall 2024	<ul style="list-style-type: none">Public hearings.
Late 2024/Early 2025	<ul style="list-style-type: none">FMAT/PDT and AP meetings to provide input to Council and Policy Board prior to final action.
April 2025	<ul style="list-style-type: none">Council/Policy Board final action.
Spring-December 2025	<ul style="list-style-type: none">Development, review, and revisions of framework/addenda documents.Federal rulemaking.MC/TC use new process to set 2026 recreational measures.
Late 2025 or early 2026	<ul style="list-style-type: none">Effective date of implemented changes.

Decision point:

FMAT/PDT recommendation to remove pre-determined measures concept from the range of alternatives.





Extra Slides



As approved and implemented:

RHL vs Harvest Estimate	B/B _{MSY}	Change in Harvest
Future 2-year avg RHL > upper bound of harvest estimate CI (harvest expected to be lower than RHL)	Very high ($\geq 150\%$)	Liberalization % = difference between harvest estimate and 2-yr avg RHL, <u>not to exceed 40%</u>
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		RHLs exceeded B↑ restrictive B↓
Overfished Less than 50% of the target level	Most restrictive/rebuilding plan	

- Ex. B/B_{msy} to define target level of harvest, catch, or F
- Bin 1: 200%
 - Bin 2: 140%
 - Bin 3: 75%
 - Bin 4: 100%
 - Bin 5: 75%
 - Bin 6: 60%
 - Bin 7: 25%

Biomass Based Matrix Approach

B/Bmsy	Biomass Trend		
	Increasing	Stable	Decreasing
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Overfished <50%	Bin 5		Bin 6 (most restrictive measures)

Ex. B/Bmsy to define target level of harvest, catch, or F

Bin 1: 150%
Bin 2: 100%
Bin 3: 75%
Bin 4: 60%
Bin 5: 40%
Bin 6: 20%

- Annual Catch Targets (ACTs) can be set less than or equal to the Annual Catch Limits (ACLs) to account for management uncertainty.
- Reducing due to mgmt uncertainty reduces the RHL.
- Under all alternatives in this FW/addenda, measures are partially decoupled from the RHL and ACL.
 - Mgmt uncertainty buffer will only impact measures if it changes the bin that is selected.
- How should this disconnect be considered through this action?
- How should management uncertainty be thought about in the context of these alternatives?

