Risk Policy Report

#1

NEW ENGLAND FISHERY MANAGEMENT COUNCIL

MYSTIC, CT & WEBINAR

JUNE 24TH AND 25TH

WHAT ARE WE DOING TODAY AND WHY?

2023-2024 the Council reviewed its Risk Policy (2014) and Roadmap (2016).

- Revisions were needed. Too broad, increasing remands, lack resources to match vision (MSEs), changing environment.

Operating using a new Risk Policy, similar outputs to old Risk Policy (Matrix).

🎯 ***Proposed revisions will operationalize the Risk Policy Concept.***

- Brings policy preferences into assessment of risk.
- Avenue to directly consider climate and ecosystem and socio-economic impacts, along with biological considerations.

RISK POLICY REPORT

Wednesday, June 24th

Part 1: Risk Policy Concept

- Review Working Group Recommendations and Revised Concept

Final Action to approve Revised Concept and sunset the Risk Policy Working Group

Risk Policy Weighting

- Overview of the weighting process and instructions. Questions and Answers.
- Weighting completed in closed session.

Thursday, June 25th

Part 2: Risk Policy Weighting Results

- Review results of the Council weights.

Motion to approve Council weights for use.

- Discussion on the motion by Council members and public.

Risk Policy Toolkit

- Demonstration of online Toolkit that will be used to generate Risk Policy Matrix, calculate Z-scores, and apply results to Risk Tolerance tiers.

RISK POLICY WORKING GROUP

Risk Policy Working Group Members	
Megan Ware, ME, *Chair*	Dr. Lisa Kerr (SSC)
Dan Salerno, NH, Vice-Chair	Jonathon Peros (Council Staff)
Dr. Jonathan Deroba (NEFSC)	Dr. Naresh Pradhan (Council Staff)
Moira Kelly (GARFO)	Dr. Kevin St. Martin (SSC)
Melanie Griffin, MA	Dr. Joe Caracappa (NEFSC)
Dr. Jason McNamee (SSC)	Geoff Smith, ME
Bill Lucey, CT	Dr. Gareth Lawson (SSC)

Former members: Dr. Cate O'Keefe, Mr. Rick Bellavance, Ms. Cheri Patterson, Dr. Lindsey Williams

Contractors: Ms. Angelia Miller, Maris Collaborative LLC, Dr. Roger Brother, University of Maine

REVIEW OF RISK POLICY OBJECTIVES

- ☑ Overarching; not species or decision specific
  - Flexible, transparent, can be broadly implemented
- ☑ Use of factors which are weighted and scored.
- ☑ Can accommodate various factors that are important to consider in the context of risk (biology, climate change, social impacts, stability).
- ☑ Can produce qualitative and quantitative outcomes.

- → Will connect to ABC control rules, with an aim to improve implementation through clear linkages.
  - Will need follow-on actions (ABC control rules).

WEIGHTING, SCORING, LEVEL OF RISK

FACTORS

(Key elements to characterize risk)

WEIGHTING

(level of importance of a factor to the Council)

Policy Choice - Council

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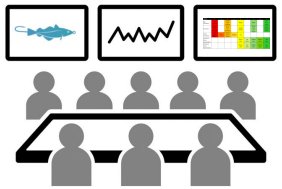
SCORING

(based on recent information)

Objective - PDT



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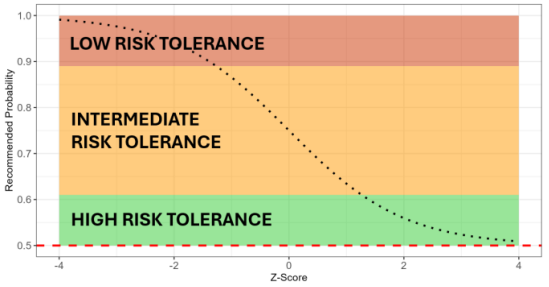
LEVEL OF RISK

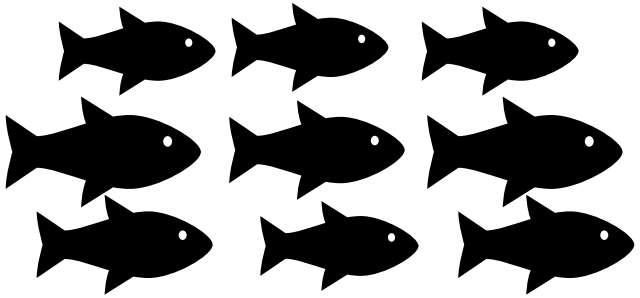
(added up across factors)



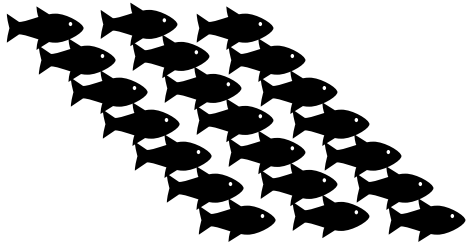
- The results for each factor are aggregated into a “Z-score” for level of risk that is plotted along the Risk Policy curve.

RISK POLICY FACTORS (5)

SSB / Stock Status



Recruitment



Climate Vulnerability

Commercial Fishery Characterization

Recreational Fishery Characterization

Risk Policy Tool / ABC Control Rules

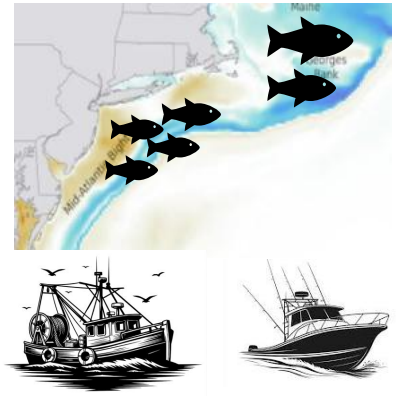
Risk Policy Concept (Tool)

Factors (5)

1. Global Weighting

Weights apply to all stocks

2. Scoring (data)



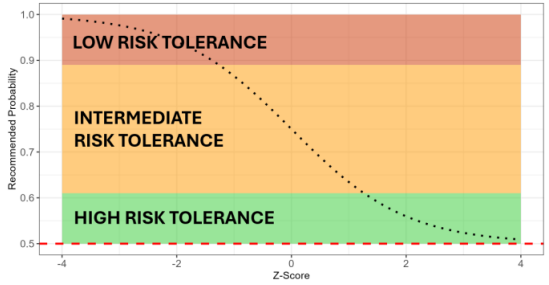
3. Z-Score

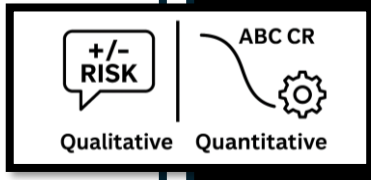
Combination of weights and scores.

$$Z = \sum (w_i s_i)$$

w = weights
s = scores

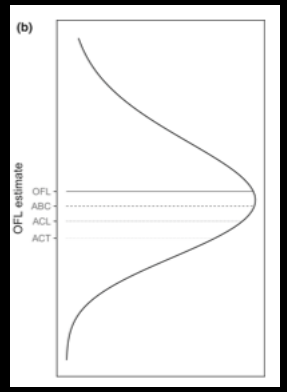
4. Risk Tolerance





ABC Control Rule

5. Set ABC using Risk Policy + HCR (Example)



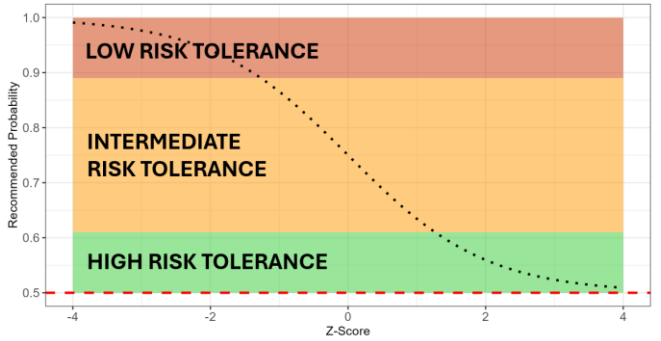
HOW WILL THE RISK POLICY BE USED IN 2026?

More information, Standardized Outputs

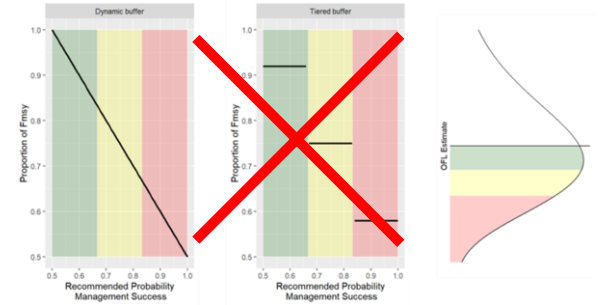
- Risk Matrix (similar to what was used in 2025).
- Level of Risk Tolerance.

Both Matrix and Risk Tolerance are qualitative, intended to inform decision making.

No changes to ABC Control Rules or Council process.



Qualitative Tiers that are considered as part of existing process.



<u>Integration</u> with ABC CRs will not be completed in 2026.
Developed in Groundfish FW68.

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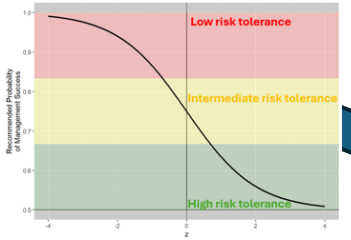
WHAT WILL THE PROCESS LOOK LIKE?

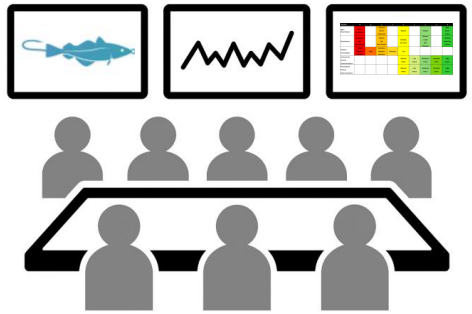
2026 PROCESS WITH OCTOBER SSC MEETING

June	July	August	September	October

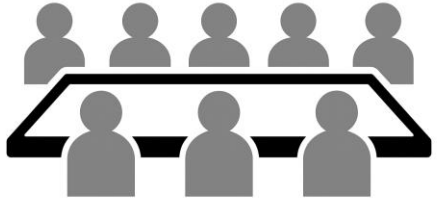
Council Weighting in June

Online Toolkit

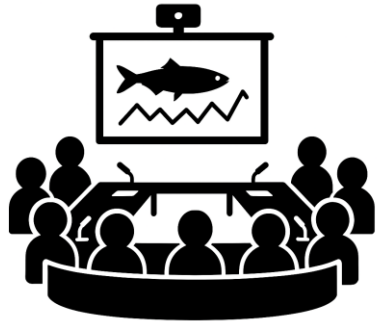




PDT Scoring in July / August



PDT Calculates Risk Tolerance using Risk Policy Toolkit, generates a Matrix document



SSC Applies <u>Current ABC CRs</u>

Considers Risk Policy along with other information

SSC recommends OFL/ABC

What can you & SSC expect to see later this year? Example: GOM Haddock

2026 Risk Policy Report for GOM Haddock

June 12, 2026

Factor	Value	Supporting Information
Assessment and Uncertainty	Assessment Type	The stock has an analytical assessment.
	Assessment Model	WHAM
	Terminal Assessment Year	2023
	Retrospective Pattern	There was minor retrospective pattern.
	Retrospective Values	0.22 for SSB and -0.17 for F
	Data Used	NMFS Trawl Survey (spring and fall) and NMFS Bottom longline survey (spring and fall)
	Missing Data	Spring 2023 NMFS Trawl Survey due to lack of samples in GOM haddock strata
	Uncertainty Sources	The level of survival of the above-average 2020- and 2021-year classes, which will determine population biomass in the short-term.
Biomass	Overfished	The stock is not overfished.
	Overfishing	Overfishing is not occurring for this stock.
	Rebuilding Plan	The stock is not in a rebuilding plan.
	Rebuilding Target	NA
	SSB	17,836
	Relative SSB	194
	Recruitment is estimated	Yes

Scores and Weights

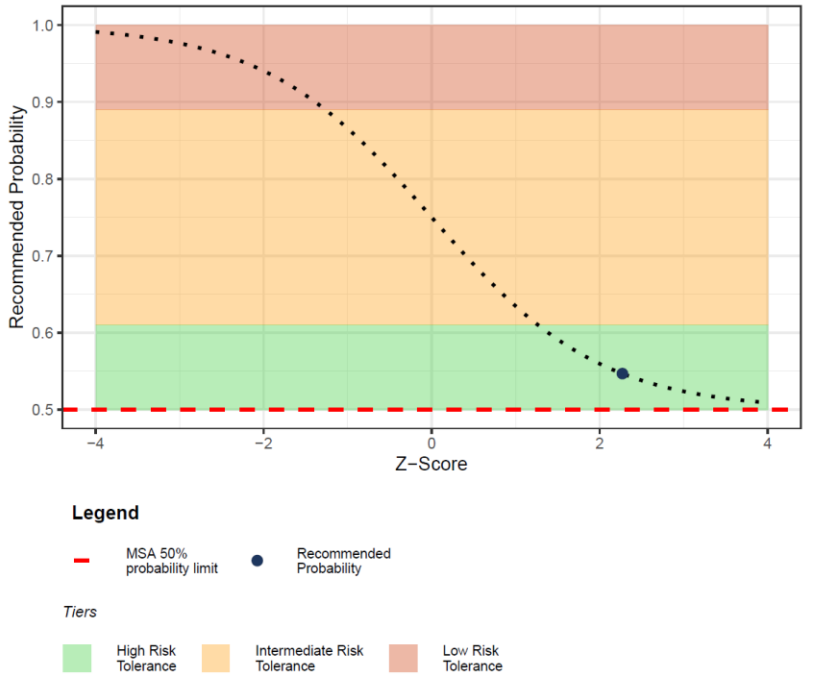
Report Year	Stock	Factor	Score	Average Weight
2026	GOM Haddock	Biomass	4	3.29
2026	GOM Haddock	Recruitment	4	3.00
2026	GOM Haddock	Climate	-1	2.95
2026	GOM Haddock	Commercial	2	3.24
2026	GOM Haddock	Recreational	2	1.90

The calculated z-score is **2.27**

The recommended probability is **54.7%**

Recommended Probability

The level of risk that should be considered based on the z-score and recommended probability for GOM Haddock is *High Risk Tolerance*.



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New England Fishery Management Council

RISK POLICY CONCEPT – WHAT WE WILL REVIEW TODAY

1. Global Weighting

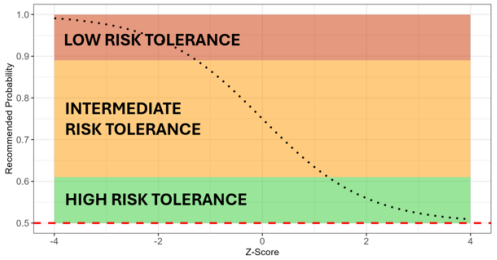
2. Scoring (data)

3. Z-Score

Combination of weights and scores.

$$Z = \sum (w_i s_i)$$

4. Risk Tolerance



Weighting Guidance	Scoring Guidance	☑	Qualitative Use
• Rules and Process	• Commercial and Recreational Factors • Scoring Methods		• Design of Tiers • Interpretation – What do the Tiers mean?

1. COUNCIL WEIGHTING PROCESS

- Policy choice.
- One weight per factor for all Council managed resources.
  - "Global Weighting"
- Done on paper.
- Only voting Council members participate.
- Participation is compulsory.
- Can only weight up to two factors as "critically important".
- Weights are averaged, then normalized.
- Council motion to approve weights for use.

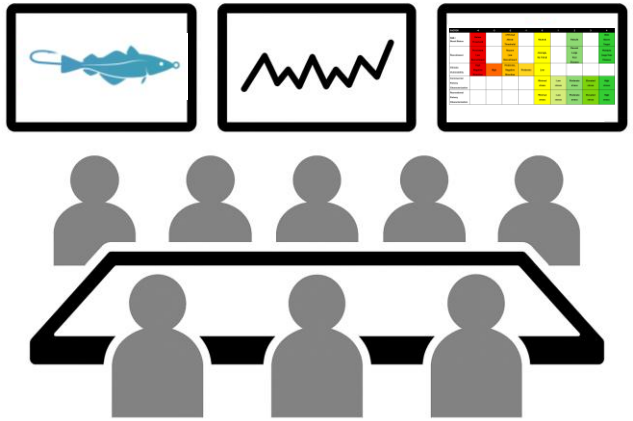
Factor	*Least Important* 0	*Slightly Important* 1	*Important* 2	*Highly Important* 3	*Critically Important* 4
Biomass/Stock					
Recruitment					
Climate Vulnerability					
Recreational Fishery Characterization					
Commercial Fishery Characterization					

Risk Policy Mock Factor Weights (NEFMC mean)

Scale	SSB	Recruitment	Climate	Recreational	Commercial
Mean (0-4)	3.29	3.00	2.95	1.90	3.24
Normalized, Sum(weights)=1	0.23	0.21	0.21	0.13	0.23

2. RISK POLICY SCORING OVERVIEW

- Guidance contained in Appendix I.
  - Stock level.
  - Specific guidance for each factor.
- Scoring is conducted by Plan Development Teams.
  - Replicable and formulaic.
  - Adherence to guidelines, learn through iteration.
  - Criteria for deviating from scoring procedures, and documenting justification.
  - Document expert opinion and recommendations around alternative methods or data streams.
  - Consider potential for double-counting of uncertainty.

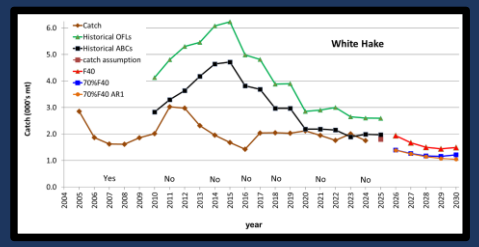


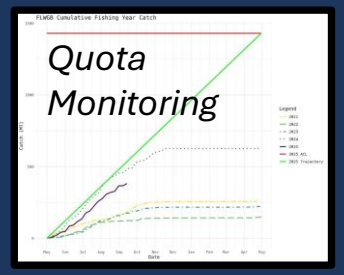
2. RISK POLICY SCORING MATRIX

FACTOR	-4	-3	-2	-1	0	1	2	3	4
SSB / Stock Status	Below Threshold		<75% but Above Threshold		Neutral		Rebuilt		Well Above Target
Recruitment	Persistent Low Recruitment		Recent Low Recruitment		Average, No Trend		Recent Large Year Classes		Multiple Large Year Classes
Climate Vulnerability	High Negative Direction	High	Moderate, Negative Direction	Moderate	Low				
Commercial Fishery Characterization					Minimal stress	Low stress	Moderate stress	Elevated stress	High stress
Recreational Fishery Characterization					Minimal stress	Low stress	Moderate stress	Elevated stress	High stress

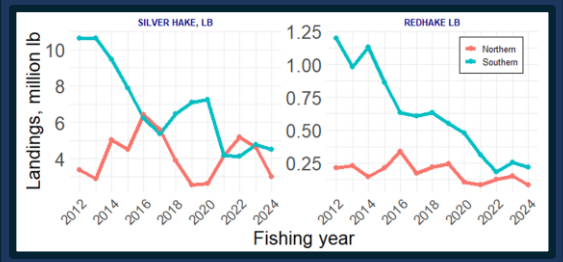
2. COMMERCIAL FISHERY CHARACTERIZATION

1. Resource Utilization
Landings – 80% of Limit?

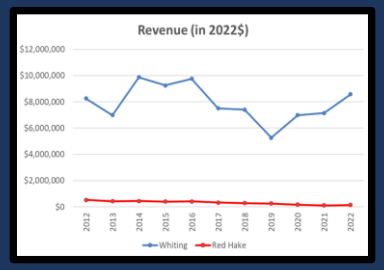




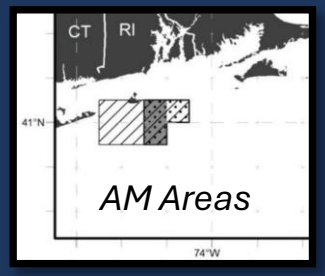
2. Fishing Communities
Dealers, Landings, Revenue, Active Permits



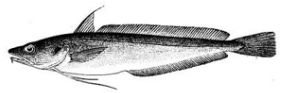
3. Revenue
Normalized $, Recent Years



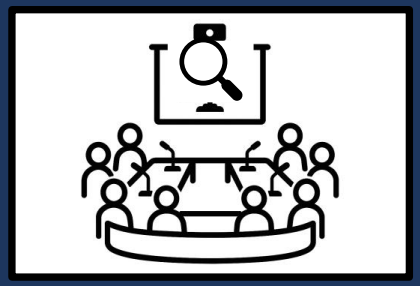
4. Fishery Interactions
Stock limiting harvest of other stocks/fisheries?



Declining ACL, "Choke Stock"



5. Advisory Panel Input
Review of Scores



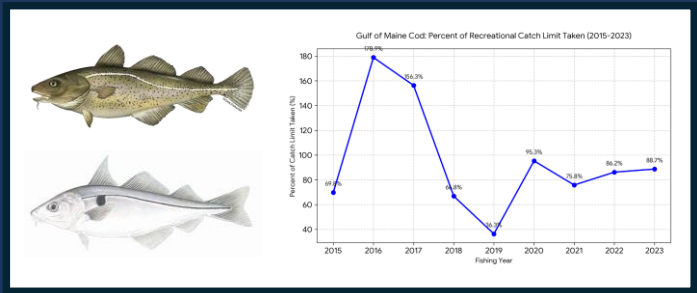
Five Questions, Answers translate to points (-1, 0, +1), sum for final score (Max: 4, Min: 0)

FACTOR	-4	-3	-2	-1	0	1	2	3	4
Commercial Fishery Characterization					Minimal stress	Low stress	Moderate stress	Elevated stress	High stress

2. RECREATIONAL FISHERY CHARACTERIZATION

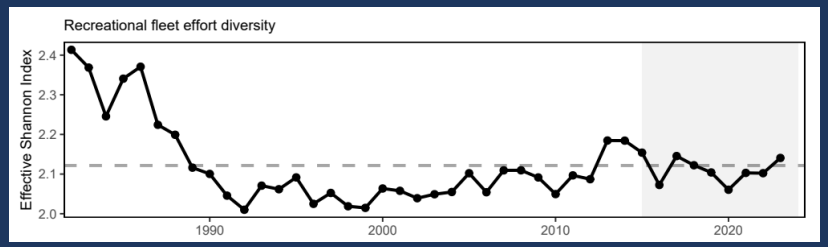
1. Sub-ACL Utilization

80% of Limit



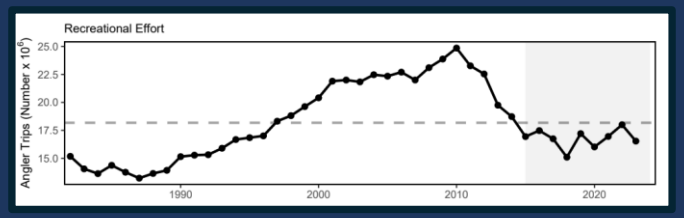
2. Fleet Diversity

Recent years relative to time series, from SOE



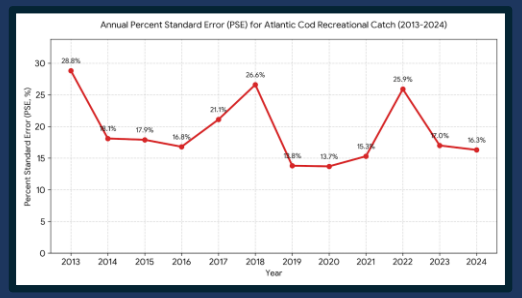
3. Angler Trips

Recent years relative to time series, from SOE



4. Data Quality (PSE)

MRIP, Annual



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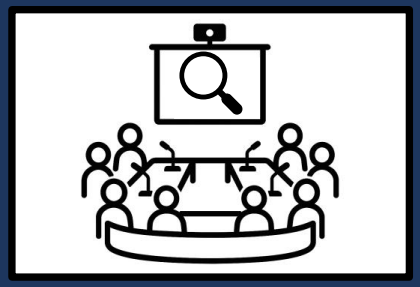
Review of Scores

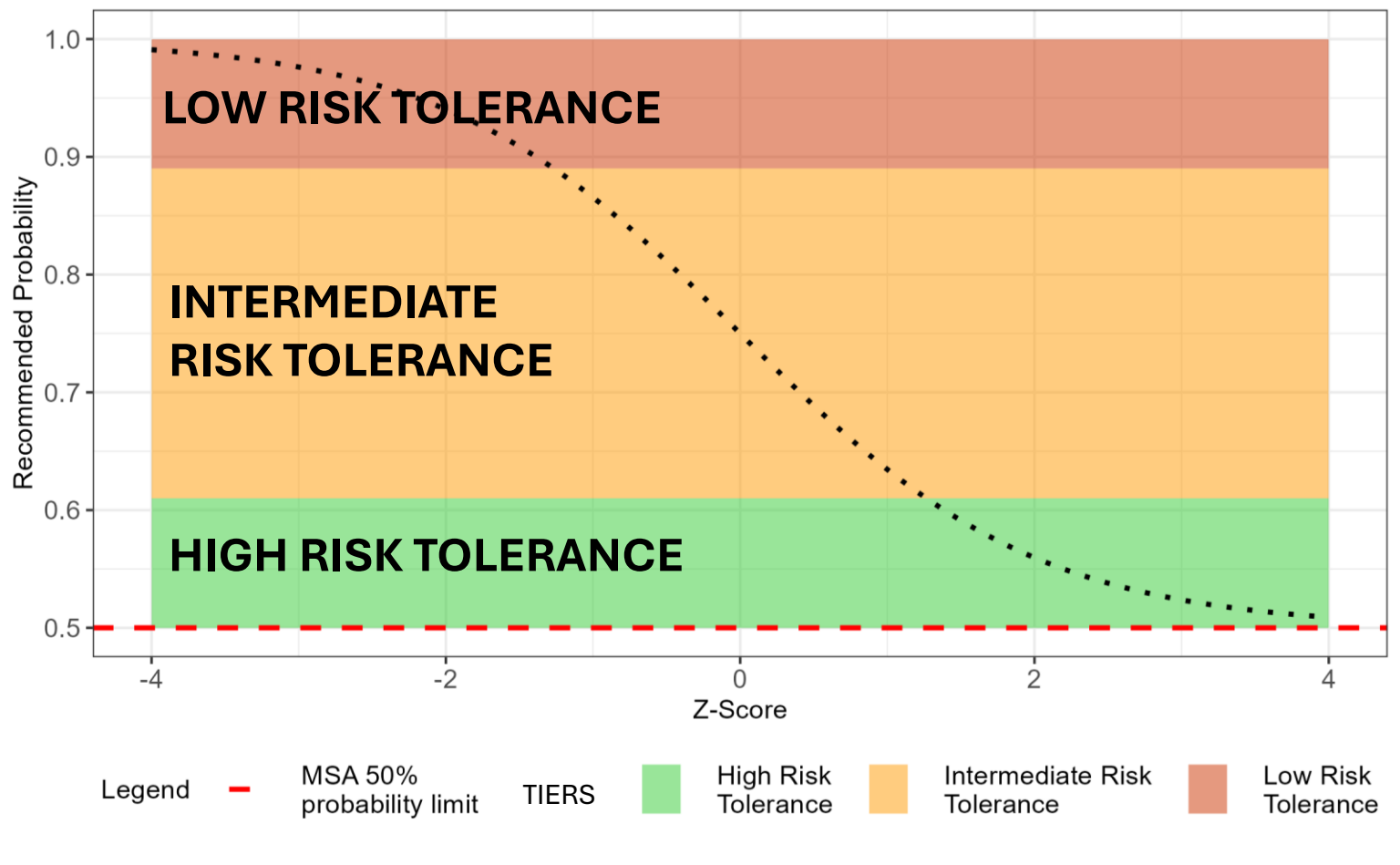


Only Score Stocks with a Recreational sub-ACL; Five Questions, Answers translate to points (-1, 0, +1), sum for final score (Max: 4, Min: 0)

FACTOR	-4	-3	-2	-1	0	1	2	3	4
Recreational Fishery Characterization					Minimal stress	Low stress	Moderate stress	Elevated stress	High stress

4. DESIGN OF TIERS

Tiers created at points where the change in slope is steepest



Objective: Apply a structured way to interpret Risk Policy outputs for management discussions.

Design of the Tiers:

- Follow shape of the curve.
- Flat areas reflect "Stability".
- Tiers transition at the greatest change of slope in the curve.

Application: Z-Scores (x-axis) plotted on Risk Policy curve translate to a recommended probability (y-axis).

Lower Z-scores mean lower risk tolerance.

4. QUALITATIVE USE

Recommended Probability (Y-axis)	Level of confidence that a management action will achieve its objectives.
LOW RISK TOLERANCE	Depleted stocks with low productivity that are highly vulnerable to environmental conditions. Candidate for frequent re-evaluation.
INTERMEDIATE RISK TOLERANCE	Signals that managers should consider a balanced threshold for success based on economic stability and biological sustainability. Management decisions should aim to avoid abrupt regulatory shocks. Most Council managed stocks likely fall in this tier.
HIGH RISK TOLERANCE	Applied when conditions are favorable, such as a stock is well above its biomass target, recent recruitment indicates multiple large year classes, and/or the stock has low climate vulnerability. Candidate for frequent re-evaluation.

RISK POLICY MAINTENANCE AND SUPPORT

- Risk Policy Working Group was formed in early 2023.
    - Reviewed old Risk Policy, recommend new concept and revisions.
- Following Council approval of the Risk Policy Concept, WG will have fulfilled the TORs, and the Working Group will sunset.

- Future work on Risk Policy will be determined by Council as part of priority setting process. EX: Changing the number of factors.
- Technical support for Risk Policy will come from an FMAT-type group.
- The Climate and Ecosystem Steering Committee will continue to support communication of the Risk Policy.

- Consideration of new data (e.g., climate vulnerability and port indicators) to be applied when scoring factors.

FINAL PRODUCT – WHAT YOU ARE APPROVING TODAY

RISK POLICY STATEMENT AND CONCEPT DOCUMENT

Risk Policy Statement

1. Purpose
2. Four Strategic Initiatives
3. Need and Benefits of a Risk Policy
4. Stability
5. Description of Concept
6. Process, Roles, and Responsibilities

Appendices

1. Factor Scoring Instructions
2. Factor Weighting Sheet and Instructions
3. Mechanics
4. Use Guidance
5. Decision Catalogue

Risk Tolerance Tiers for Qualitative Use

Risk Policy Factors (5): SSB/Stock Status, Recruitment, Climate Vulnerability, Commercial Fishery Characterization, Recreational Fishery Characterization

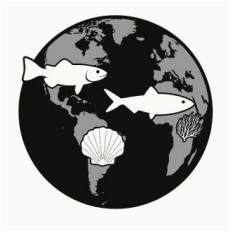
QUESTIONS?

WEIGHTING INSTRUCTIONS

- Council's Policy choice.
- Only voting Council members participate. Participation is compulsory. Weights are public records.
- Done on paper. Each person will receive a numbered folder that has one weighting sheet in it. The sheet in the folder should have the same number as the folder.
- Weights will be compiled and analyzed using number on the paper/folder. Your name is not attached to your weights.

COUNCIL WEIGHTING PROCESS

- Can only weight up to two factors as “critically important”.
- Hand in your folder to Council staff.
- Weights for each factor are averaged.
- Result: One weight per factor – Global Weighting
    - Used for all Council managed resources.



Factor	*Least Important* 0	*Slightly Important* 1	*Important* 2	*Highly Important* 3	*Critically Important* 4
Biomass/Stock					
Recruitment					
Climate Vulnerability					
Recreational Fishery Characterization					
Commercial Fishery Characterization					

PREPARING FOR THE EXERCISE

QUESTIONS TO THINK ABOUT:

- Is there a factor that you feel should have the most influence on the Council's decision making?

- When you have made past decisions at the Council, what has been the primary driver of whether you were willing to accept an option of higher or lower risk? And what had little influence on your decision?

WEIGHTING RESOURCES

- MSA National Standards and Guidelines
- State of the Ecosystem Reports for Northeast U.S. Shelf
- NEFSC Stock Assessment Landing Page

WHAT HAPPENS NEXT?

Wednesday Afternoon:

- Staff presentation on weighting, <u>opportunity for questions.</u>
- Council completes weights in closed session.

Thursday Morning:

- Council staff present the weighting results.
- Motion to confirm/approve weights.
  - Council member input.
  - Public input.

2026: Use weights to implement Risk Policy.

Factor	*Least Important* 0	*Slightly Important* 1	*Important* 2	*Highly Important* 3	*Critically Important* 4
Biomass/Stock					
Recruitment					
Climate Vulnerability					
Recreational Fishery Characterization					
Commercial Fishery Characterization					

	Risk Policy Mock Factor Weights (NEFMC mean)				
Scale	**SSB**	**Recruitment**	**Climate**	**Recreational**	**Commercial**
Mean (0-4)	3.29	3.00	2.95	1.90	3.24
Normalized, Sum(weights)=1	0.23	0.21	0.21	0.13	0.23

Council weights from the April 2025 Mock Exercise

QUESTIONS?