New England Fishery Management Council's Risk Policy Statement and Concept

Statement and Concept

Version 2 - Draft

Approved June XX, 2026

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New England Fishery Management Council (Council) Risk Policy Statement

The goal of the Council's Risk Policy is to implement a process by which the Council, and its subordinate bodies, accounts for the fact that all fishery management is based on uncertain information, fisheries and the surveys used to monitor marine resources are taking place in a changing environment, and that the decisions of the Council have social and economic impacts on fishing communities.

The purpose of the Council's Risk Policy is to:

1. Provide guidance to the Council and its subordinate bodies on taking account of risk and uncertainty in Fishery Management Plans and specification-setting;
2. Clearly communicate the priorities and preferences of the Council regarding risk and uncertainty, including using a common set of terms and definitions so it is accessible to a wide variety of audiences; and
3. Make the discussion of risk tolerance in the Council's decisions a more forward and fundamental aspect of the management process to support its consistent application.

The application of the Council's Risk Policy will be supported by the following strategic initiatives:

1. Clearly identify sources of uncertainty in management decisions. These could include environmental changes, imperfect fishery independent and dependent data, and unknown stock status.
2. Consider risk at all levels of the fishery management process. This Risk Policy provides overarching guidance to the Council's application of Fishery Management Plan (FMP)-specific Acceptable Biological Catch (ABC) control rules and/or harvest control rules.
3. Consider stability in the face of uncertain information and inherent variability in ecosystems. This can be achieved by:
    a. Ensuring all rebuilding plans have at least a 50% probability of success, while also acknowledging socio-economic stability.
    b. Minimizing large swings in annual specifications (both high and low) to the extent practicable, acknowledging the requirements of the Magnuson Stevens Act (MSA) and ongoing challenges with variable stock assessments.
    c. Promoting rebuilding within timeframes that allow functioning fisheries.
4. Provide a direct avenue to discuss the implications of ecosystem changes and socio-economic impacts throughout a Council management decision. This includes:
    a. Identifying topics for the Council and its subordinate bodies to consider for incorporating the risk policy early in the decision-making process.
    b. Outlining a process that works within available resources, including the resources of staff, the Council, and its subordinate bodies.

3.0 RISK POLICY

3.1.1 Need and Benefits of a Revised Risk Policy

The Risk Policy aims to:

1) Better integrate changing environmental conditions into the Council's assessment of risk.
    a. Factors in the revised risk policy allow for consideration of climate change and the dynamic environment in the Council decision process.
2) Develop a clear path to incorporate social and economic considerations.
    a. Factors in the revised risk policy allow for consideration of socioeconomic concepts in the Council decision process.
        - Establish a process that integrates the consideration of risk throughout the Council's decision-making process, rather than at the end.
        - A clear policy on risk tolerance can guide the development of catch advice and management measures before final decisions. A scoring and weighting method increases transparency in how the Council assesses risk, increases efficiency, and reduces time delays resulting from remands.
3) Support implementation of a revised risk policy with available Council resources.
        - The 2016 Risk Policy Roadmap relied on management strategy evaluations (MSE) to quantify risk. This approach was not successful due to the limited resources and the time-intensive nature of completing MSEs. The Council believes that the revised Risk Policy is a better match with available resources.
        - The Council remains supportive of the application of MSEs, as resources allow, as a tested method to identify common goals, evaluate performance, and analyze potential results of decision making.

3.1.2 Stability

The Council defines stability in the following way:

Stability can mean several things in fisheries management such as stability of the resource, stability in the management measures, or stability in the economics of the fishery. When assessing stability, baselines matter. Stability can also be considered as an absolute value or as a rate of change.

Given that the ecosystem is inherently dynamic, the Council is focused on considering stability to harvesters primarily by avoiding abrupt shifts in fisheries management. The Council notes that abrupt shifts can happen in both directions, leading to significant increases in harvest limits or very restrictive measures, both of which can have negative impacts on the fishing industry. Accounting for stability in decision making will be done in compliance with applicable laws and the ten National Standards. For example, as outlined in National Standard 1, phased-in changes to ABCs can occur over a time period (not to exceed three years) if overfishing is prevented each year. This strategic approach could provide a level of stability to the industry as they adapt to the short-term effects of large swings in catch advice.

3.1.3 Risk Policy Concept

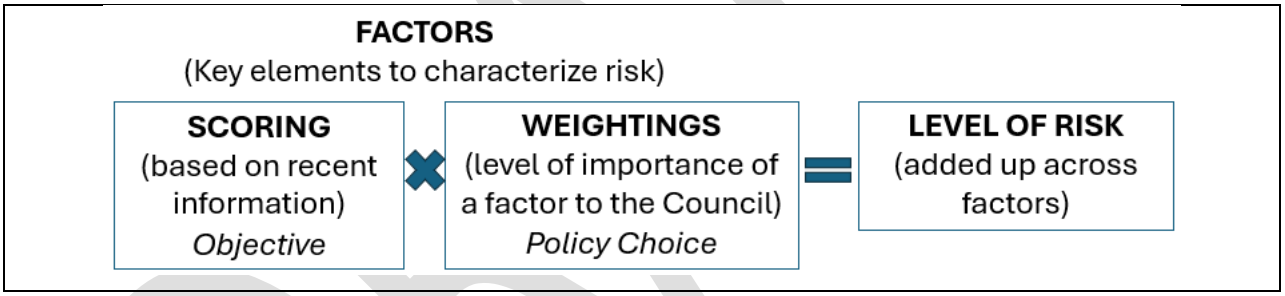
At its core, the Risk Policy aims to systematically account for risk using factors (e.g. climate vulnerability, stock status) that the Council deems important to determine how risk tolerant it wants to be in decision making.

The Council sees value in both a quantitative and qualitative assessment of its risk tolerance. A quantitative assessment of risk may be particularly helpful in discussions surrounding specifications (e.g. appropriate level of risk tolerance for Gulf of Maine haddock ABCs). A qualitative assessment of risk could be useful when considering a range of management measures (e.g. appropriate number of scallop days-at-sea).

3.1.3.1 Factors

The Risk Policy will be implemented by identifying factors, which are inputs the Council believes are important to determine its level of risk aversion in decision making. Each factor is scored using guidance that is applied by Plan Development Teams (PDTs). Factors also undergo a weightings process, which is used to signify the level of importance of a particular factor by the Council. Weightings are a policy choice determined by the Council, while the scoring by the PDTs is an objective assessment of agreed upon data.

Figure 1 – Outline of overarching risk policy concept, where factors are scored by PDTs and weighted by the Council to identify the Council's level of risk.



3.1.3.2 List of Risk Policy Factors

The Council has identified several factors foruse in applying the revised Risk Policy. Five factors were binned into three groupings:

Stock Status and Uncertainty

- Biomass (SSB) / Stock Status
- Recruitment

Climate and Ecosystem Considerations

- Climate vulnerability

Economic and Community Importance

- Commercial fishery characterization
- Recreational fishery characterization

This list may evolve as the Risk Policy is revisited.

3.1.3.3 Scoring Factors

Scores for each factor will be determined for a particular stock, species, or species complex (finest resolution of management). The scoring process is an objective assessment of agreed upon data conducted by the Council's PDTs. The score for each factor reflects the condition of the resource and fishery and is not a policy choice. Scores may range from -4 to 4, though the range and direction is specific to each factor. Positive scores are associated with more risk tolerance, and negative scores confer less risk tolerance.

The range of scores for different factors may vary, and all scores will not necessarily lead to a more risk tolerant outcome. The ranges of scores for a particular factor may be adjusted by the Council.

Instructions for scoring factors and data sources for completing the scoring are provided in Appendix I. It is the Council's policy that revisions to factors and the underlying data may continue to occur. It is anticipated that updated data streams, such as new climate information or refined indicators in the SOE, would be available for scoring without action by the Council. The process for identifying new data should occur early in the calendar year, well before scoring to support actions takes place. The Council envisions utilizing the State of the Ecosystem report and other products from the Northeast Fishery Science Center to support and streamline the application of the Risk Policy.

3.1.3.4 Weighting Factors

Weightings are a policy decision made by the Council that signifies the level of importance of a particular factor by the Council. Weightings are determined by the Council only, and are not developed through the Advisory Panel and Committee structure. It is recommended the weighting process take place at the April Council meeting, if possible. The weighting process is described in Appendix II.

The Council will determine the following details of its weighting process and may adjust the process as it deems necessary. Specifically, the Council will:

- Set guidelines around the participation of Council members in the weightings process. Only voting members are eligible to complete the weightings, and participation is compulsory for eligible Council members.
- Set guidelines on how many times a weight can be assigned to the factors. For example, the Council can determine how many times a Council member can weight factors as "very important."
- Set guidelines on the frequency of the Council setting weights. It is currently recommended that weightings occur every three years.
- If weightings are not completed by paper ballot, determine appropriate technology/software to support the polling process.

3.1.3.4.1 Scale of Weightings

The scale of weightings does not necessarily need to mirror the scale at which factors are scored. Factors are to be scored at the level at which the stock assessment occurs (finest management resolution). An exception to this is skates, which would be best scored at the complex level given a single ABC is set for the multiple skate species. In contrast, weightings can occur at a higher order. The Council will weight each factor generally, to be applied across all FMPs ("global" approach). It is the policy of the Council that it may revisit this approach to weighting in the Risk Policy.

3.1.3.4.2 Identification of Weightings at a Council Meeting

Identifying weightings is recommended to occur in conjunction with the April Council meeting. This Council meeting typically has fewer items scheduled for final action, which is important to minimize bias between management decisions and the identification of weightings. Further, the State of the Ecosystem report is typically presented at the April Council meeting and would provide useful context, particularly as it directly supports the scoring of factors.

It is recommended that the Council complete the weightings process every three years. It is not expected that weightings would dramatically change from year to year. Conducting weightings every 3 years also balances the time the Council spends on the revised risk policy versus other important priorities.

3.1.3.5 Measure of Risk Tolerance

A combination of the scores and weights for each factor are used to measure risk tolerance (Figure 1). The outputs from the scoring and weighting processes can be interpreted both qualitatively and quantitatively. For qualitative applications of the Risk Policy, the Council can develop and use thresholds to distinguish between levels of high, medium/neutral, and low risk tolerance (). Stability can also be accounted for in this application.

3.1.3.6 Connection to ABC Control Rules

The Council is unique nationally among other fishery management councils in that it has different ABC CRs for each of its fishery management plans. Over time, the Council aims to incorporate the quantitative application of the Risk Policy into its ABC CRs.

It is important to note that the Risk Policy will be used as an independent tool that is separate and distinct from ABC CRs. The Risk Policy's quantitative outputs can be directly integrated with ABC CRs, or can be used qualitatively in decision making.

When integrating and updating ABC CRs, the Council aims to assess the use of the Risk Policy to adjust the buffer between the OFL and ABC. The National Standards specifically mention a Council's risk policy when determining a stock or stock complex's ABC (see definitions at end of document). Therefore, there is a clear connection between the risk policy and the ABC. An advantage of using the quantitative output of the risk policy to inform the ABC is that it allows for consideration of a more dynamic buffer between the OFL and ABC. This approach could provide clearer and more timely guidance to the SSC on the Council's risk tolerance.

As noted above, having an ABC CR that can receive the quantitative output of the Risk Policy will require modifications to existing control rules. As a result, a phased approach to integrating the quantitative output of the revised risk policy with the Council's various ABC control rules is needed. Because both a qualitative and quantitative assessment of risk is possible under this Risk Policy, qualitative assessments of risk tolerance can be more quickly and broadly applied to Council decision-making going forward.

The Council does not currently recommend changes to the herring ABC control rule to integrate quantitative outputs of the Risk Policy into the control rule. The existing herring ABC control rule was developed through an extensive MSE process and is already accounting for many factors that the Council is including in the risk policy.

3.1.3.7 Process, Roles and Responsibilities

This section outlines roles and responsibilities for implementing the Council's Risk Policy.

3.1.3.7.1 Plan Development Teams

PDTs are responsible for the scoring of factors and following guidelines provided in Appendix I. This may include procuring the information needed to complete scoring. PDTs should follow the steps for scoring factors outlined. By scoring the factors, the PDTs are contributing to the goal of integrating discussions of risk throughout the Council's decision-making process.

3.1.3.7.2 Science and Statistical Committee

The SSC is responsible for using the Risk Policy and considering risk tolerance, which is a combination of the scoring and weighting of the factors, during its deliberations. This is particularly pertinent when considering ABCs for Council managed species.

3.1.3.7.3 Council

Voting Council members are responsible for weighting the importance of factors through polling. In this process, the Council should consider comments from the public and the fishery industry. Council members are also responsible for integrating the consideration of risk throughout its decision-making process.

3.1.3.7.4 Northeast Fisheries Science Center (NEFSC)

The Council anticipates that the NEFSC will continue to provide timely updates to the State of the Ecosystem report and stock assessment products for use by Plan Development Teams in the completion of factor scoring. The Council also encourages increased collaboration with the NEFSC on Risk Policy data needs and the development of data products that can directly assist with the Risk Policy's implementation. This could include clearer identification of factors (i.e., climate change impacts, recruitment assumptions) in stock assessment reports.

3.1.3.7.5. Stakeholders

Stakeholders are encouraged to build familiarity with the revised risk policy as it is implemented across the Council's FMPs. Stakeholders are also responsible for providing written or oral comments during the Council weighting process and integrating the discussion of risk into Advisory Panel discussions.

4.0 DEFINITIONS

Acceptable.biological.catch.(ABC) - a level of a stock or stock complex's annual catch, which is based on an ABC control rule that accounts for the scientific uncertainty in the estimate of OFL, any other scientific uncertainty, and the Council's risk policy. [from eCFR]

Factors – Broad categories which are relevant to characterizing risk and uncertainty for a stock or stock complex, such as 'Recruitment' and 'Commercial Fishery Characterization'.

Measure.of.risk.tolerance.– The output metric resulting from application of the risk policy, as a product of plotting the Z-score on the Risk Policy curve.

Scores – The stock specific (or stock, complex) answer to factors. Scores are not policy choices but reflect the stock status, assessment, or other pertinent data sources. Scoring is completed by the Council's Plan Development Teams.

Weightings – A measure of how important each factor is to the managers when assessing risk. Weightings are a policy decision and completed by the Council.