Qualitative Use Guidance – Interpreting Risk Policy Tiers

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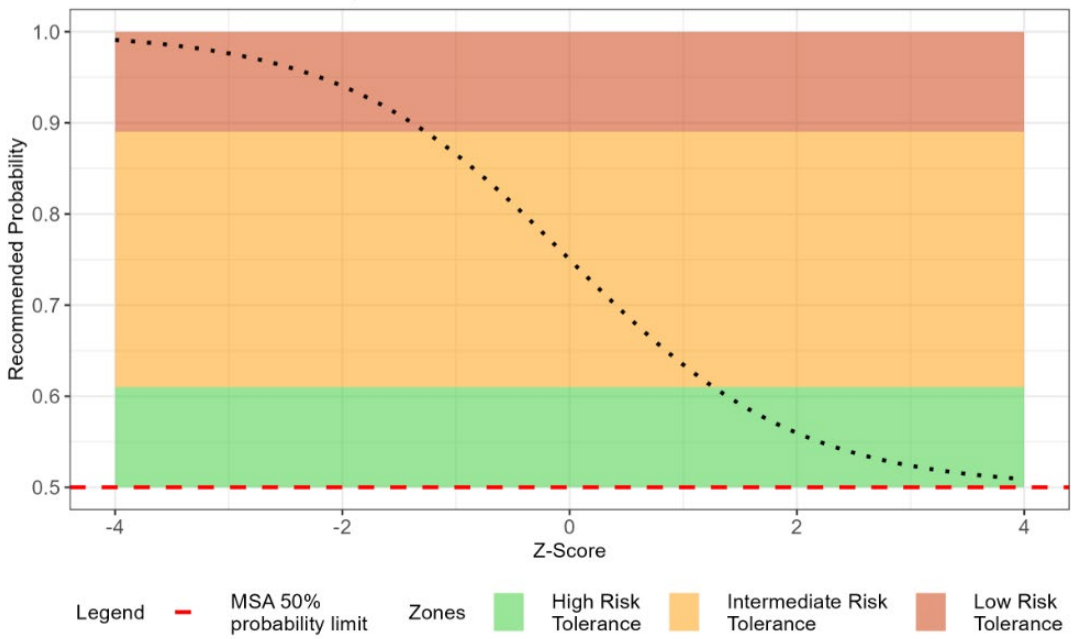
FOR REVIEW BY WORKING GROUP: 1) Risk Tiers and Design; 2) Descriptions for Use

When using the Risk Policy Concept qualitatively, the Council will consider Risk Policy outputs (Z-scores) in the context of three risk tiers, shown in the figure below.



Interpreting Risk Policy Outputs

The X-axis represents the calculated Z-score based on the Council's global factor weights and the technical factor scores. Lower Z-scores are associated with lower risk tolerance and require more certainty that actions will achieve objectives through a higher threshold for success (closer to 100% on Y-axis). Higher Z-scores are associated with higher risk tolerance, and the corresponding threshold for success is lower than 100%.

The Z-score is plotted on the Risk Policy curve, which as a logistic curve is naturally partitioned into three zones, with two flat tails and a steep transition. The design of the tiers is based on the points of the logistic curve where there is the greatest change in slope in the curve, signaling a transition from relatively flat and stable "ends" of the curve to an intermediate zone of faster transition. Advice to have "high" or "low" risk tolerance comes when the curve is relatively flat.

The Y-axis is a measure of the Council's "acceptable probability of success" and reflects the level of confidence that a management action will achieve its stated objectives. It represents a

decision threshold about the level of uncertainty the Council is willing to accept. Under the Council's Risk Policy Concept, the acceptable probability of success ranges from 50% to 100%. A 50% threshold indicates a high level of risk tolerance. As the threshold increases, the Council is expressing lower risk tolerance in favor of more reliable and predictable outcomes. A 100% threshold represents the least risk tolerant position, suggesting near certainty that the action will achieve its objectives.

Low Risk Tolerance

This tier is applied when a stock is below its biomass threshold, recruitment has been persistently low, and the stock is highly vulnerable to climate change. A low risk tolerance signals that managers should increase the threshold for success in decision making. In practice, this may result in wider buffers between the Overfishing Limit (OFL) and the Acceptable Biological Catch (ABC). To prioritize stability and sustainability, the Council could implement short-to-medium-term constant catch advice (e.g., 3-5 years). This tier is primarily reserved for depleted stocks with low productivity that are highly vulnerable to environmental conditions.

Intermediate Risk Tolerance

This tier is applied when a stock is above its biomass threshold but not well above its target, recruitment does not deviate substantially from average levels, and the stock has low or moderate vulnerability to climate. An intermediate risk tolerance signals that managers should consider a balanced threshold for success based on economic stability and biological sustainability. In practice, this may result in moderate buffers between the OFL and ABC. Management decisions should aim to avoid abrupt regulatory shocks, and the Council could apply "phase-in" approaches for revising catch advice (e.g., maximum allowable annual increases/decreases). The majority of Council managed stocks likely fall in this tier.

High Risk Tolerance

This tier is applied when a stock is well above its biomass target, recent recruitment indicates multiple large year classes, and the stock has low climate vulnerability. A high risk tolerance signals that managers should accept a lower threshold for success and aim to extract the Optimum Yield (OY) to fully support commercial and recreational fishing opportunities. The uncertainty buffer between the OFL and the ABC is minimized to allow for maximum sustainable harvest. The Council should consider relatively frequent evaluation of stocks to ensure that higher risk tolerance is sustaining acceptable success thresholds. This tier is reserved for highly productive, resilient stocks that are experiencing favorable environmental conditions.