

# Perspective on the Council's Risk Policy

Lisa Kerr (SSC Chair)

Risk Policy Working Group Meeting

April 11, 2023

# SSC Role in the Council Process

- One of our primary duties is setting ABCs that account for scientific uncertainty, prevent overfishing, and promote rebuilding.
- We also provide input on various other topics: rebuilding plans, harvest control rules, and new approaches to fisheries management (e.g. EBFM).

# Application of the Risk Policy by the SSC

- Reflected in our ToRs:
  - Recommend overfishing limits (OFLs) and acceptable biological catches (ABCs) that will prevent overfishing, meet the management objective to rebuild, are consistent with the **Council's ABC control rules and rebuilding plans**, and **consider the Council's Risk Policy Statement**.
- Materials provided to the SSC related to the risk policy:
  - Risk policy roadmap
  - Risk matrix

# Risk Policy Roadmap: SSC Call-outs

- Though informed by scientific advice from the **SSC**, the Council's risk tolerance is ultimately a policy decision, which is articulated in the Council's Risk Policy Statement.
- The Risk Policy Matrix, along with Fishery Performance Reports, would serve as tools to help the PDTs, the **SSC**, and the Council identify and manage risk.
- While there may continue to be refinements to the Risk Policy Matrix, the intent is to provide a relatively standardized format for communicating baseline conditions with respect to risk, uncertainty, and the management procedures to the **SSC** for ABC-setting and to the Council for risk-based decision-making.
- Over time, providing information about risks, uncertainty, consequences, and net benefits to the Nation to the **SSC** in a standardized format for all stocks/fisheries will improve consistency and clarity in the management process.

# Risk Policy Roadmap: SSC Call-outs

Regional examples to illustrate how the management system can consider stability in the face of uncertain information.

1. The **MAFMC SSC** recently recommended specifications that considered stability in the summer flounder fishery. Quota reductions were spread over multiple years to mitigate economic impacts on industry and to allow time for more data to be collected/evaluated in year 2 to reduce potential for errors.
2. Georges Bank (GB) haddock designated to Eastern Georges Bank is jointly managed with Canada. The stock has experienced large fluctuations primarily due to large recruitment events; the 2013 cohort has been estimated to be very large and was down weighted by the SSC. In recommending catch advice, the **SSC** considered the size of year classes, stock status (GB haddock is well above BMSY), and the impacts of overestimation.

# Risk Policy Roadmap: SSC Call-outs

- The RPWG recommends that PDTs and the **SSC** use the following set of questions as guidelines for this:
  - What is the purpose of their recommendation for ABC?
  - What is the information that is required to make the ABC successful?
  - What is the quality of that information?
  - What are the probabilities and severities of undesirable outcomes?
  - Does the benefit of achieving the purpose outweigh the risk?

# Risk Matrix

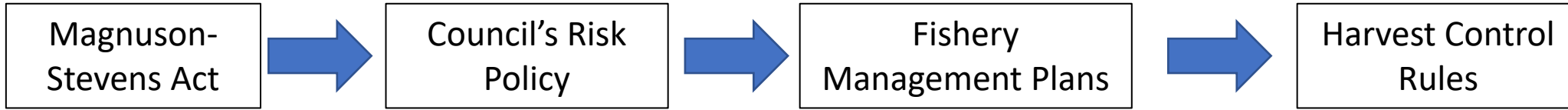
FMP  
STOCK(S)  
LAST ASSESSMENT

NORTHEAST MULTISPECIES (GROUNDFISH)  
Georges Bank Winter Flounder  
2022 Fall Management Track

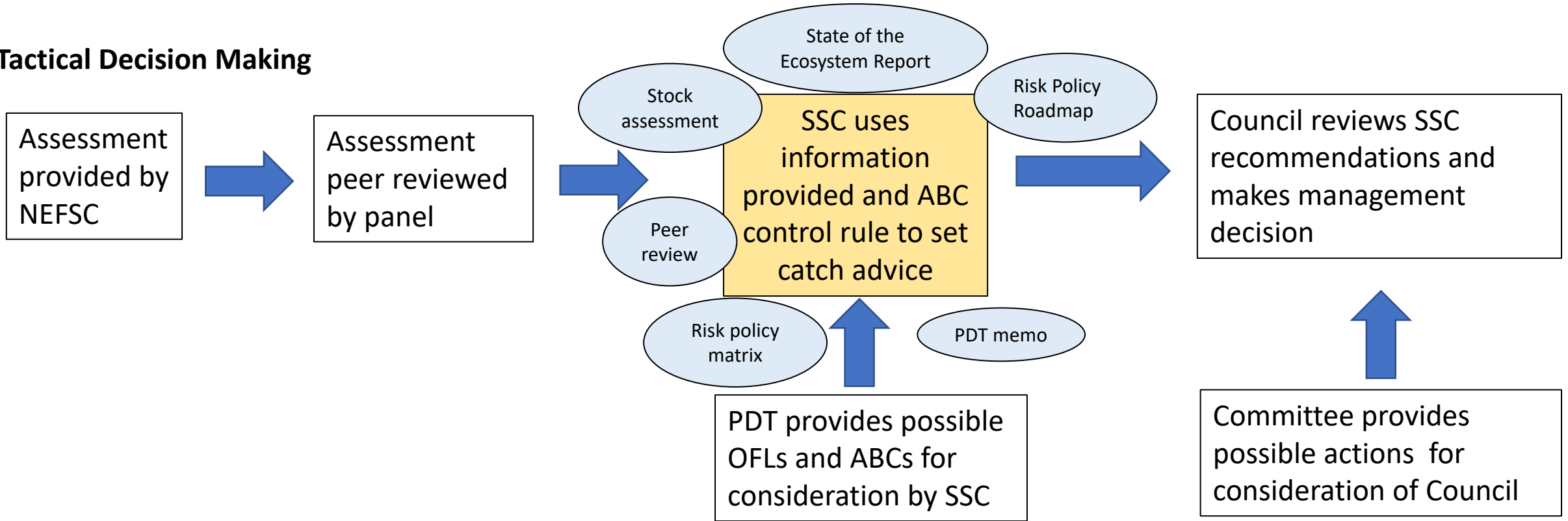
Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
VPA, 2021	Age-structured	No/No	Yes 2019-2029	974 mt in FY2022	Total ABC 634 mt and US ABC 608 mt in FY2022	563 mt in FY2022	N/A for groundfish
Variation in surveys from year to year. Uncertainties in Canadian catch information, particularly discards. Low recruitment in recent years compared to historic values.				MSY/OY	AMs	Discards	State Waters
				MSY = 2,757 mt	Inseason closures and lb-lb for commercial groundfish fishery	3.6 mt in FY2021	0 mt
Availability of Biological and Assessment Data		Updated data since last assessment: survey (2021 NEFSC fall survey and 2021 NEFSC spring survey - no surveys in 2020, 2021 DFO spring survey - no 2022 survey) and fisheries (commercial catches - US and Canadian) data					
Recent Performance Against Harvest Control Rule		Percent of total ACL caught: 59.1% in FY2018, 41.9% in FY2019, 56.6% in FY2020, and 44.8% in FY2021.					
Current Management Program		ABC is adjusted for Canadian catches. The Total ACL is divided between several sub-ACLs and sub-components. The commercial sub-ACL is further divided between the sector sub-ACL and the common pool sub-ACL. The majority of commercial permits participate in sectors, fishing under quotas. The common pool operates under days-at-sea, with trip limits and trimester TACs controlling catch. Other sub-component rounds out the final components of the total ACL. There is no state waters sub-component. Landings and discards from all fisheries count against the applicable sub-ACL and total ACL, which are monitored throughout the year. Accountability measures can be triggered if overages occur under certain conditions for components with sub-ACLs.					
Variability in Catch/Revenues?		Commercial Groundfish Revenue for GB winter flounder (2020\$): \$3.1 million in FY2018, \$2.0 million in FY2019, \$1.3 million in FY2020; \$3.5 million 3-year average GB winter flounder ex-vessel price/lb (2020\$/lb): \$3.37/lb in FY2018, \$2.97/lb in FY2019, \$2.07/lb in FY2020; \$3.19/lb 3-year average Total groundfish landings: 44.28 million pounds in FY2018, 42.66 million pounds in FY2019, 50.66 million pounds in FY2020 GB winter flounder catch (landings + discards): 465.1 mt in FY2018, 329.0 mt in FY2019, 308.3 mt in FY2020, 264.6 mt in FY2021					
Data - Vessels, Permits, Dealers, Processors, Employment		FY2020: 876 commercial groundfish permitted vessels, of those 590 vessels which received revenue from any species on a declared groundfish trip and 197 vessels with revenue from groundfish. 99 dealers reported buying groundfish.					
% Food, % Recreational		97% of the total ACL is allocated to the commercial groundfish fishery. There is no recreational sub-ACL.					
Fishing Communities		The top 3 ports based on the Groundfish-Specific Commercial Engagement Indicator (2004-2020) are Gloucester, MA; New Bedford, MA; Boston, MA; Narragansett, RI; and Portland, ME.					
Other Economic/Social Factors		ACE lease prices modeled using a hedonic price model from inter-sector leases for FY2017-2021: Strong seasonal trend with ACE leases prices estimated to be higher in first quarters of the fishing year and dropping to \$0 by the third or fourth quarter. Lease prices in quarters 1-2 were estimated at \$0.25-0.30 per pound in FY2017-2019, declining to \$0.23 per pound and lower in FY2020-2021.					
Major Sources of Scientific Uncertainty		Persistent retrospective bias; estimate of natural mortality; VPA assumption that catch is known without error when there are uncertainties in the catch data, particularly for Canadian discards; lack of length and age composition data for Canadian landings and discards; gaps in catch data at age or length that are filled using other data streams (e.g., Canadian spring survey age data); missing surveys (2020 NEFSC spring and fall, 2022 DFO)					
Major Sources of Management Uncertainty		3% management uncertainty buffer is applied to the commercial groundfish fishery.					
How is the probability of overfishing addressed?		At the last assessment in 2020 the SSC recommended that the first year ABC (at 70%Fmsy, based on the rebuilding plan) be held constant for 2021-2023 while allowing the OFL to follow the projection.					
What is the consequence of overfishing?		Reduction in biomass, yield, and net economic benefits over long-term.					
How are expected net benefits to the Nation currently measured/evaluated?		Yield (mt and \$)					
Interactions with Other Fisheries/Stocks, Bycatch Issues		No sub-ACLs. Other sub-component catches are almost entirely from the scallop fishery.					
Ecosystem Considerations: Trophic Interactions		Winter flounder are opportunistic/omnivorous predators. Polychaetes and crustaceans make up the bulk of their diet.					
Ecosystem Considerations: Habitat		Winter flounder are not known to rely on complex structures for shelter. The species moves inshore to spawn in late winter/early spring. Closures in place in the GB area include the GB Dedicated Habitat Research Area, Closed Area II, and a seasonal closure area.					
Ecosystem Considerations: Climate		Winter flounder are considered very highly vulnerable to climate change (very high climate exposure risk and high biological sensitivity).					
Other Important Considerations/Notes		The plan B assessment results indicate that biomass has increased since 2019. There are indications of improvement in stock condition. Catch weight at age has been increasing for the last few years and there are indications of a better than average recruitment class in 2020 in the CA spring survey.					

# General SSC Process: ABC Setting

## Strategic Guidance



## Tactical Decision Making





# SSC View of the Risk Policy Roadmap

- One of the high-level guidance documents under which the SSC operates.
- Provides useful qualitative guidance.
- Roadmap emphasizes the role of MSE in potentially moving toward quantitative guidance.
- Vague in areas and open to interpretation.
- Does not address some of the situations that we encounter today.

# SSC View of the Risk Matrix

- Provided on a stock-by-stock basis in catch advice setting.
- Useful summary document on risk and uncertainty for a stock.
- Informative but not always actionable.

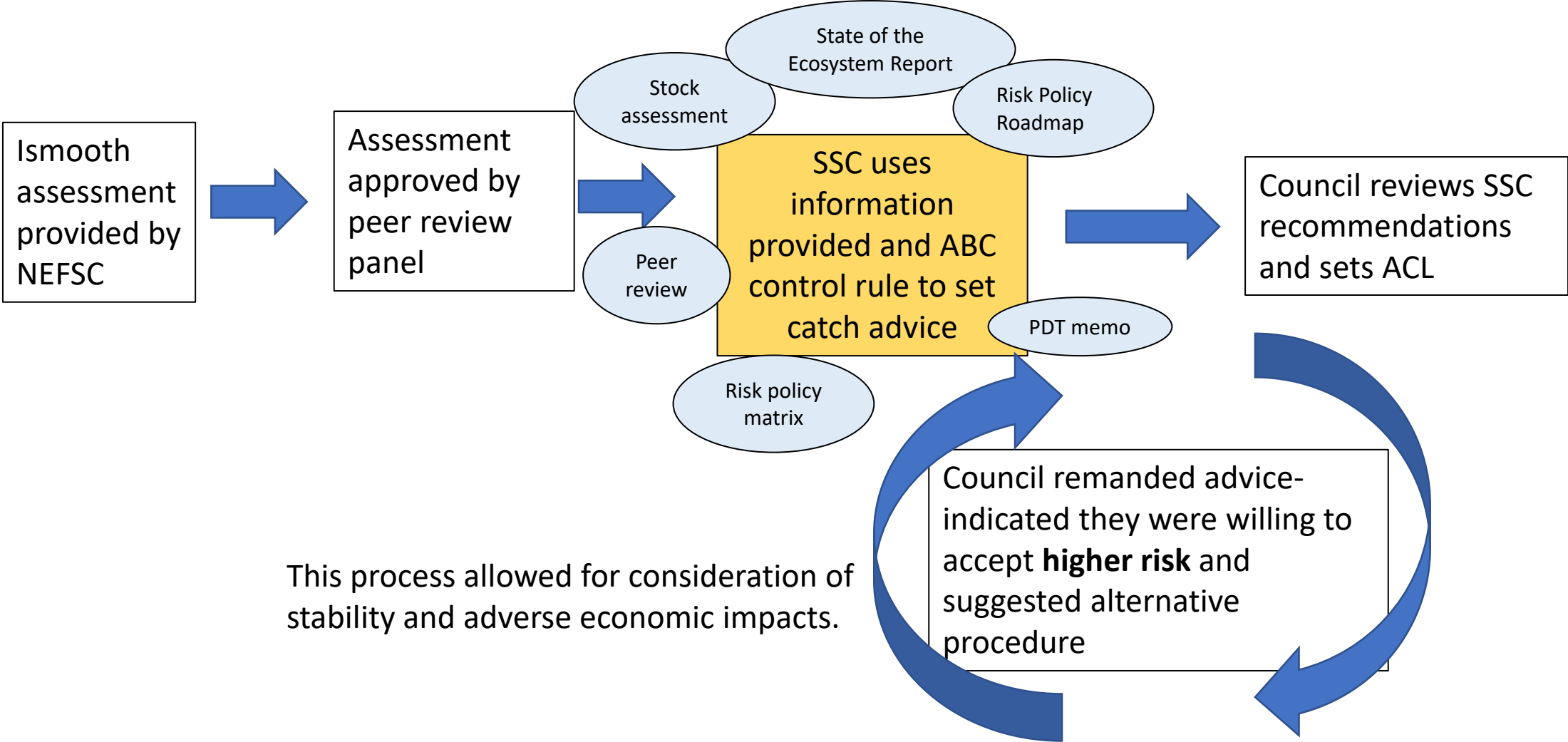
# Challenges for the SSC

- Decision making under uncertainty
  - Analytical assessments with high degree of inconsistency (retrospective patterns).
  - Index based assessments that do not have reference points (unknown stock status).
- Ecosystem Change
  - Documentation of climate impacts on stocks which may not be yet accounted for in the assessment, reference points, etc.
- Stability in catch advice
  - Large swings in catch advice year to year that are disruptive to industry.
  - Risk policy references stability and desire to avoid abrupt shifts in management .
  - Identify adverse outcomes of our decisions but have little flexibility to address.

# Challenges for the SSC

- Social, economic, and ecological objectives of management
  - SSC ABC setting is focused on ecological objectives (i.e., preventing overfishing, stock rebuilding).
- Harvest control rules
  - Effective in cases well-performing assessments, known stock status.
  - Challenging for data-poor assessments with unknown status and high uncertainty.
  - Don't prioritize stability
  - Uncertain of their robustness to climate/ecosystem change

# Monkfish Example



# What the SSC Wants from a Revised Risk Policy

- Additional guidance relevant to our current challenges.
- Coordination across our strategic guidance documents and rules that inform decision-making to ensure we can act on the information provided to best meet the Council's goals.

Magnuson-  
Stevens Act

Council's Risk  
Policy

Fishery  
Management Plans

Harvest Control  
Rules

- Ensuring risk policy is robust to future challenges (or on a regular update timeline).

# Next Generation Tools for Fisheries Decision Making

- Ongoing or upcoming processes that could influence how we think about risk and uncertainty in the future:
  - State Space Modeling Research Track (ongoing)
  - Ensemble Modeling Research Track (upcoming ?)
  - Dynamic reference points
  - Climate and Fisheries Initiative
  - Increased application of MSE
  - Review and revision of harvest control rules