

Management Strategy Advisory Board (MSAB) Progress Report

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*IPHC Annual Meeting
January 23-27, 2017*

MSAB Progress Report

- MSAB met on May 9-10 and October 26-27

Discussion Topics

- Governance
- Work plan development
- **Intent of Goals and Objectives, and Performance Metrics**
- Modelling approaches - single area vs. multiple area operating models
- Examining bycatch limit scenarios - Abundance-Based Management PSC limits
- **Evaluation of Current Harvest Policy and Recommendation**
- Update on Outreach and Social Media Tools

Governance

- Terms of Reference developed and available upon request
 - Mandate, organization and membership, decision-making and reporting
 - Supported by MSAB and granted provisional support by the Commissioners September 2016
- Staff will propose changes to the MSAB Terms of Reference to standardize with IPHC rules of procedure
 - MSAB will continue to operate in accordance with the draft Terms of Reference until the staff proposal has been finalized
 - Membership renewal: 4 year terms are due for renewal in the first half of 2017

Work Planning

- Two year work plan developed
 - Prioritizes tasks, identifies necessary resources and inputs, timeline for each task
 - [http://www.iphc.info/MSAB%20Documents/meeting8/IPHC-2016-MSAB08-11-DraftWorkplanMSAB Oct2016 v6.0.pdf](http://www.iphc.info/MSAB%20Documents/meeting8/IPHC-2016-MSAB08-11-DraftWorkplanMSAB%20Oct2016%20v6.0.pdf)

Goals and Objectives

- Discussed and clarified the intent underlying fishery Goals and Objectives (originally developed in 2014)
 - Available upon request
- Given progress of model development, and trade-offs between single area vs. multiple area operating models, identified a need to refine the objectives and develop measurable outcomes (May 2017).
 - In particular, the spatial nature of objectives must be examined.

Scenarios and Management Procedures

- Considered abundance-based management of Halibut bycatch as a potential management procedure or scenario for the MSE process.
 - MSAB's mandate includes identifying management strategies (and thus a harvest policy) that are robust to bycatch
 - MSAB considered how to treat different levels of bycatch as scenarios in the MSE
- Completed a detailed review of the current and realized harvest policy following 2016 Annual Meeting directive from Commissioners

Harvest Policy Review

- Management has evolved considerably over recent decades, entailing mix of coast-wide and area-specific policy instruments.
- Management is complicated by multiple jurisdictions, conflicting objectives, and ecological interactions throughout the coast.
- The scaling of the current harvest policy revolves around an estimate of exploitable biomass (E_{bio}), which is then combined with apportionment estimates to determine catch limits for the different regulatory areas.

Harvest Policy Review

- Despite its central role in determining catch limits, EBio is problematic:
 - the concept is not transparent and well-understood by stakeholders;
 - the concept has been adapted since it was developed to fit within existing policy frameworks (i.e., area harvest rates);
 - EBio relies on selectivity curves, which are now outdated and not representative of the assessment results;
 - the application of the concept is not supportive of the complex management issues that the Commission (and the MSAB) are currently addressing; and
- All sources of mortality are not accounted for in the harvest policy: the mortality of U26 (under 26") fish could change without any difference to the harvest policy results in the current year, resulting in an overall fishing intensity (on all sizes in the population) that is unlikely to match what is desired.

Harvest Policy Recommendation

Findings

The current harvest policy is unresponsive to under 26" (U26) mortality, and selectivity curves used to define exploitable biomass (EBio) are outdated.

Recommendation

Alternative harvest policy approaches that address these shortcomings and take into account all sizes of fish, including a Spawning Potential Ratio (SPR) based harvest policy, should be evaluated.

Guidance Sought

- The MSAB seeks the Commission's affirmation on the notional guidance provided by the Commissioners in IPHC-2016-IM092-R:
- **Section 6.2**
 26. **NOTING** that the current IPHC harvest policy is unresponsive to under-26" (U26) mortality, and that selectivity curves used to define exploitable biomass (EBio) are outdated, the Commission **AGREED** that alternative harvest policy approaches that address these shortcomings and take into account mortality for all sizes and all sources be evaluated by the IPHC Secretariat and subsequently the MSAB. One approach that has the potential to account for mortality for all sizes and all sources which should be evaluated is a Spawning Potential Ratio (SPR) based harvest policy.
 27. **AGREED** that clear goals and objectives need to be developed and approved by the Commission regarding stock abundance levels to provide guidance for the IPHC Secretariat and MSAB to assess the long-term health of the stock. The intention would be for a range of objectives (e.g. through coast-wide or area-specific adjustments, setting harvest targets, examining the effects of bycatch levels) to be examined.
 28. **AGREED** that one possible objective to be examined would be to increase the stock size such that higher yields than those realized in recent years could be maintained, rather than maintaining a stable stock size.

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Next Steps

- At the 2017 Annual Meeting, the MSAB is seeking approval from the Commission to evaluate a coastwide fishing intensity-based approach (i.e., SPR) as one alternative harvest policy approach.
- The MSAB intends to evaluate alternative coastwide fishing intensities using MSE with guidance from the MSAB in 2017.
- The MSAB intends to make a recommendation at the 2018 Annual Meeting about an appropriate fishing intensity that meets the goals and objectives proposed by the MSAB.
- In 2018 and beyond, once a suitable MSE model to evaluate Regulatory Area objectives is in place and following the evaluation of a coastwide fishing intensity, the MSAB will begin to evaluate the parts of the harvest policy related to determining area-specific catches.

Next Meeting

- Next Meeting: Week of May 8, 2017

Preliminary Agenda Topics

- Update on multiple area model development
- Discuss and refine goals and objectives
- Identify Measureable Outcomes and Performance Metrics
- Develop scenarios (including ABM) and management procedures to evaluate an alternative harvest policy, including an SPR-based approach; anticipated reporting of results in October 2017 with potential alternative harvest policy in 2018

Additional slides

Harvest Policy Recommendation

The MSAB was tasked by Commissioners with reviewing the current harvest policy (“Halibut Commission Completes 2016 Annual Meeting” at <http://iphc.int/news-releases/447-nr20160208.html>). The MSAB reviewed the current harvest policy and found that the current harvest policy is unresponsive to under 26” (U26) mortality, and selectivity curves used to define exploitable biomass (EBio) are outdated. The forthcoming 2016 RARA will include a chapter describing the results of this review in greater detail. The MSAB recommends to the Commission that alternative harvest policy approaches that address these shortcomings and take into account all sizes of fish be evaluated. One approach that should be evaluated is a Spawning Potential Ratio (SPR) based harvest policy.

Draft Fishery Goals

1. Biological sustainability
2. Fishery (all directed fisheries) sustainability and stability
3. Assurance of access – minimize probability of fishery closures
4. Minimize bycatch mortality
5. Serve consumer needs

Draft Fishery Goals

Goal	Objective	Measurable Outcome	Probability	Time-frame	
Biological Sustainability	Keep biomass above a limit below which no fishing can occur	1) Maintain a minimum number [spawning potential ratio?] of mature female halibut coast-wide	0.99	Each year	<p>Ensure that conservation needs of the stock are met for long-term sustainability with a high degree of certainty</p> <p>Regularly monitor stock biomass (i.e., continuation and improvement of survey and stock assessment efforts) to detect changes in status and abundance</p> <p>Define reference points and harvest targets (e.g., MSY)</p> <p>Take a risk-averse approach when the stock is below the threshold</p>
		2) Maintain a minimum spawning stock biomass of 20% of the unfished biomass	0.95	Each year	
	Account for all sizes in the population?				
	Reduce harvest rate when abundance is below a threshold	3) Maintain a minimum spawning stock biomass of 30% of the unfished biomass	0.75	Each year	
	Risk tolerance and assessment uncertainty	When Limit < estimate biomass < Threshold, limit the probability of declines	0.05 – 0.5, depending on est. stock status	10 years	

Draft Fishery Goals

Goal	Objective	Measurable Outcome	Probability	Time-frame	
Fishery Sustainability and Stability and Assurance of Access – Minimize Probability of Fishery Closures	Maintain an economically sufficient level of catch (i.e., target) across regulatory areas	4) Maintain directed fishing opportunity	0.95	Each year	Ensure that the directed fishery has viable fishing opportunities every year
		5) Maximize [Optimize?] yield in each regulatory area	0.5	Each year	
		7) Maintain median catch within $\pm 10\%$ of 1993-2012 average	?	Within 5 yrs	Provide directed fisheries that are economically beneficial to individual participants, local businesses, and broader communities
		8) Maintain average catch at $> 70\%$ of historical 1993-2012 average	0.9	Each year	
	Limit catch variability	6) Limit annual changes in TAC, coast-wide and/or by Regulatory Area, to $< 15\%$		Each year	Support efforts to allow continued access to the halibut resource within acceptable conservation limits

Draft Fishery Goals

Goal	Objective	Measurable Outcome	Probability	Time-frame	
Minimize Wastage	Harvest efficiency	Wastage in the longline fishery < 10% of annual catch limit	0.75	Over 5 years	Support fishing practices that reduce wastage Regulatory revisions that promote efficiency
Minimize Bycatch and Bycatch Mortality ¹				Over 5 years	Support fishing practices that reduce bycatch and bycatch mortality
Serve Consumer Needs					Strive to avoid or minimize regulatory changes that result in large fluctuations in product availability