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**Outcomes of the 96<sup>th</sup> Session of the IPHC Annual Meeting (AM096) and 6<sup>th</sup> Special Session of the Commission (SS06)**

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**PURPOSE**

To provide the MSAB with the outcomes of the 96<sup>th</sup> Session of the IPHC Annual Meeting (AM096), and the 6<sup>th</sup> Special Session of the Commission (SS06) relevant to the mandate of the MSAB.

**BACKGROUND**

The agenda of the Commission's 96<sup>th</sup> Session of the Annual Meeting (AM096) included an agenda item (Section 10) dedicated to Management Strategy Evaluation (MSE). The Commission also held a Special Session on 3 March 2020 to consider MSE related matters.

**DISCUSSION**

During the course of the 96<sup>th</sup> Session of the IPHC Annual Meeting (AM096) the Commission made a number of specific recommendations and requests for action regarding the MSE process. Relevant sections from the report of the meeting are provided in [Appendix A](#) for the MSAB's consideration.

**RECOMMENDATION**

That the MSAB:

- 1) **NOTE** paper IPHC-2020-MSAB015-06 which details the outcomes of the 96<sup>th</sup> Session of the IPHC Annual Meeting (AM096), and the 6<sup>th</sup> Special Session of the Commission (SS06), relevant to the mandate of the MSAB.

**APPENDICES**

[Appendix A](#): Excerpt from the 96<sup>th</sup> Session of the IPHC Annual Meeting (AM096) Report ([IPHC-2020-AM096-R](#)), and the 6<sup>th</sup> Special Session of the Commission (SS06)

**APPENDIX A**  
**Excerpt from the 96<sup>th</sup> Session of the IPHC Annual Meeting (AM096) Report**  
**(IPHC-2020-AM096-R)**

## **10. MANAGEMENT STRATEGY EVALUATION**

### **10.1 IPHC Management Strategy Evaluation: update**

75. The Commission **NOTED** paper IPHC-2020-AM096-12 which provided the Commission with an update on the IPHC MSE process including defining objectives, developing management procedures for scale and distribution, a framework for distributing the TCEY, and a program of work.
76. The Commission **RECALLED** the IPHC interim Management Procedure (<https://www.iphc.int/the-commission/harvest-strategy-policy>) includes the following components:
- a) A biological limit (SB20%), the minimum relative spawning biomass needed to meet conservation objectives;
  - b) A fishery trigger (SB30%), the relative spawning biomass below which the reference level of fishing intensity is reduced to avoid reaching the SB20% biological limit;
  - c) A reference level of fishing intensity, F46%, corresponding to a Spawning Potential Ratio (SPR) of 46%;
  - d) A control rule, reducing the fishing intensity linearly from the reference level at SB30% to no directed fishing at SB20%.
77. The Commission **NOTED** that non-directed fishing discard mortality is currently treated as a scenario in the MSE with a simulated level representing a reasonable range of potential non-directed fishing discard mortality based on recent observations and **RECALLED** paragraph 37 of IPHC-2017-AM093-R:
- “The Commission **NOTED** the presentation of an SPR-based harvest policy to update the current harvest policy, and that MSE will be used to evaluate alternative SPR values that are robust to possible bycatch scenarios.”
78. The Commission **AGREED** that although the relative spawning biomass has been retrospectively estimated to have fallen below SB30% over the period 2009-2015, it was not determined to be below the fishery trigger during that time period when the mortality limits were set.
79. The Commission **NOTED** the following recommendations from the MSAB and IPHC Secretariat, and **AGREED** to hold an inter-sessional meeting soon after the AM096 to provide direction:
- *Recommended that the primary coastwide biological sustainability objective of maintaining the female spawning biomass above a biomass limit of SB20% at least 95% of the time be used to evaluate management procedures.*
  - *Recommended primary coastwide fishery objectives to be used for evaluation of management procedures (Table 1), including:*
    - a) *maintain the female spawning biomass around a proxy target biomass of SB36%;*

b) *limit annual changes in the TCEY; and*

c) *optimize directed fishing yield.*

- *Recommended that the primary biological sustainability objective of conserving spatial population structure across Biological Regions be used to evaluate management procedures.*
- *Recommended primary fishery objectives at the IPHC Regulatory Area scale for evaluation of management procedures (Table 1), including*
  - a) *limit annual changes in the TCEY for each IPHC Regulatory Area;*
  - b) *optimize the TCEY among IPHC Regulatory Areas;*
  - c) *optimize a percentage of the coastwide TCEY among IPHC Regulatory Areas;*
  - d) *maintain the TCEY above a minimum absolute level within each IPHC Regulatory Area; and*
  - e) *maintain a percentage of the coastwide TCEY above a minimum level within each IPHC Regulatory Area;*
- *Recommended that given the results from the coastwide MSE, the following elements from the scale (coastwide) component of the management procedure meet the coastwide objectives*
  - a) *SPR values greater than 40%;*
  - b) *A control rule of 30:20;*
  - c) *A constraint on the annual change in the TCEY do one of the following: limit it to 15%, use a slow-up, fast-down approach, or fix the mortality limits for three-year periods.*
- *Recommended a reference SPR fishing intensity of 43% with a 30:20 control rule and allocations to 2A and 2B, as defined in IPHC-2019-AM095-R paragraphs 69 b and c, be used as an updated interim management procedure consistent with MSE results for the development of 2020 stock assessment results pending delivery of the final MSE results at AM097.*

80. The Commission **NOTED** that various elements of the scale and distribution components of the management procedure, including those listed in IPHC-2019-MSAB014-R will be evaluated for consideration at AM097 in 2021.

81. The Commission **NOTED** that an independent peer review of the MSE will take place in April 2020 and August 2020 with a report supplied to the SRB, MSAB, and Commission.

82. The Commission **NOTED** that the SRB will review MSE results in September 2020, and these results including scale and distribution management procedures will be presented to the Commission at AM097 in 2021.

83. The Commission **NOTED** that MSE is the appropriate tool to evaluate management procedures related to discard mortality for non-directed fisheries (bycatch) because it can capture downstream effects, biological implications, and the management performance relative to objectives.

## **10.2 Reports of the 13<sup>th</sup> and 14<sup>th</sup> Sessions of the IPHC Management Strategy Advisory Board (MSAB013 and MSAB014)**

84. The Commission **NOTED** the Reports of the 13<sup>th</sup> and 14<sup>th</sup> Sessions of the IPHC Management Strategy Advisory Board (MSAB013 - IPHC-2019-MSAB013-R; MSAB014 - IPHC-2019-MSAB014-R) which was presented by Mr Adam Keizer (Canada) and Dr Carey McGillard (USA).

85. The Commission **NOTED** that the MSAB014 made five (5) recommendations to the Commission as follows:

### ***A review of the coastwide goals and objectives of the IPHC MSE process***

*MSAB014–Rec.01 (para. 34) The MSAB RECOMMENDED a coastwide fishery objective, in response to a request from the Commissioners, to maintain the spawning biomass above a target reference point of RSB36%, 50% of the time over the long-term.*

### ***Identification of goals and objectives related to distributing the TCEY***

*MSAB014–Rec.02 (para. 41) The MSAB RECOMMENDED the primary objectives and associated performance metrics detailed in Appendix V to be used for the evaluation of management procedures at MSAB015.*

### ***Performance metrics for evaluation***

*MSAB014–Rec.03 (para. 46) NOTING the current progress on evaluating coastwide fishing intensity, the MSAB RECOMMENDED that:*

- 1) a coastwide fishing intensity SPR of 43%, with a 30:20 HCR, and with one of two constraints 1) +/-15% maximum change in total mortality, and/or 2) slow up, fast down, be used in harvest strategy development process; and*
- 2) a range of management procedures including fishing intensity SPR of 40-46% be considered in light of implementation variability within the closed-loop simulations when investigating distribution.*

### ***Management procedures for coastwide scale***

*MSAB014–Rec.04 (para. 49) The MSAB RECOMMENDED that SPR values of 0.3, 0.34, 0.38, 0.40, 0.42, 0.46, and 0.50 with a 30:20 control rule be evaluated at MSAB015 along with constraints defined by a maximum change in the TCEY of 15%, a slow-up fast-down approach, and/or setting quotas every third year.*

### ***Management procedures for distributing the TCEY***

*MSAB014–Rec.05 (para. 56) The MSAB RECOMMENDED that the management procedures listed in Table 2 in Appendix VI be evaluated at MSAB015.*

86. The Commission **NOTED** that the MSAB will use the primary objectives and associated performance metrics detailed in Appendix V of IPHC-2019-MSAB014-R for the evaluation of management procedures.

87. The Commission **NOTED** that relative harvest rates will be evaluated as a component of management procedures at MSAB015 and MSAB016.

88. The Commission **NOTED** the MSE Program of Work (2019–21) and that the MSAB and IPHC Secretariat will continue its program of work with delivery of recommended

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management procedures at AM097.

89. The Commission **REQUESTED** the MSAB to confirm the proposed topics of work beyond the 2021 deliverables in time for the Interim Meeting (IM096), including work to investigate and provide advice on approaches for accounting for the impacts of bycatch in one Regulatory Area on harvesting opportunities in other Regulatory Areas.

**RESULTS AND ACTION ITEMS FROM  
THE 6<sup>th</sup> SPECIAL SESSION OF THE IPHC (SS06)**

**(IPHC-2020-CR-007)**

**I. Management Strategy Evaluation (MSE)**

**IPHC-2020-ID001:** The Commission **RECOMMENDED** that the primary coastwide and area-specific objectives outlined in Table 1 of [Appendix A](#) be used for evaluating MSE results conditional on future consideration of the objectives after preliminary MSE results are presented at MSAB015 in May 2020.

**IPHC-2020-ID002:** The Commission **RECOMMENDED** a reference SPR fishing intensity of 43% with a 30:20 control rule be used as an updated interim harvest policy consistent with MSE results pending delivery of the final MSE results at AM097, noting the additional components intended to apply for a period of 2020 to 2022 as defined in [IPHC-2020-AM096-R](#) paragraphs 97 b, c, d, and e. Specifically, these additional components are allocations to 2A and 2B, accounting for some impacts of U26 non-directed discard mortality, and the use of a rolling three-year average for projecting non-directed fishery discard mortality.

## APPENDIX A

**Table 1.** Primary measurable objectives, evaluated over a simulated ten-year period. Objective 1.1 is a biological sustainability (conservation) objective and objectives 2.1, 2.2, and 2.3 are fishery objectives. Reproduced from [IPHC-2020-AM096-12](#).

GENERAL OBJECTIVE	MEASURABLE OBJECTIVE	MEASURABLE OUTCOME	TIME-FRAME	TOLERANCE	PERFORMANCE METRIC
1.1. KEEP FEMALE SPAWNING BIOMASS ABOVE A LIMIT TO AVOID CRITICAL STOCK SIZES AND CONSERVE SPATIAL POPULATION STRUCTURE	Maintain a female spawning stock biomass above a biomass limit reference point at least 95% of the time	$SB < \text{Spawning Biomass Limit } (SB_{Lim})$  $SB_{Lim} = 20\%$ unfished spawning biomass	Long-term	0.05	$P(SB < SB_{Lim})$
	Maintain a defined minimum proportion of female spawning biomass in each Biological Region	$p_{SB,2} > 5\%$ $p_{SB,3} > 33\%$ $p_{SB,2} > 10\%$ $p_{SB,2} > 2\%$	Long-term	0.05	$P(p_{SB,R} < p_{SB,R,min})$
2.1 MAINTAIN SPAWNING BIOMASS AROUND A LEVEL THAT OPTIMIZES FISHING ACTIVITIES	Maintain the coastwide female spawning biomass above a biomass target reference point at least 50% of the time	$SB < \text{Spawning Biomass Target } (SB_{Targ})$  $SB_{Targ} = SB_{36\%}$ unfished spawning biomass	Long-term	0.50	$P(SB < SB_{Targ})$
2.2. LIMIT CATCH VARIABILITY	Limit annual changes in the coastwide TCEY	Annual Change (AC) > 15% in any 3 years	Short-term		$P(AC_3 > 15\%)$
		Median coastwide Average Annual Variability (AAV)	Short-term		Median AAV
	Limit annual changes in the Regulatory Area TCEY	Annual Change (AC) > 15% in any 3 years	Short-term		$P(AC_3 > 15\%)$
		Average AAV by Regulatory Area (AAV <sub>A</sub> )	Short-term		Median AAV <sub>A</sub>
2.3. PROVIDE DIRECTED FISHING YIELD	Optimize average coastwide TCEY	Median coastwide TCEY	Short-term		Median $\overline{TCEY}$
	Optimize TCEY among Regulatory Areas	Median TCEY <sub>A</sub>	Short-term		Median $\overline{TCEY}_A$
	Optimize the percentage of the coastwide TCEY among Regulatory Areas	Median %TCEY <sub>A</sub>	Short-term		Median $\left(\frac{TCEY_A}{TCEY}\right)$
	Maintain a minimum TCEY for each Regulatory Area	Minimum TCEY <sub>A</sub>	Short-term		Median Min(TCEY)
	Maintain a percentage of the coastwide TCEY for each Regulatory Area	Minimum %TCEY <sub>A</sub>	Short-term		Median Min(%TCEY)