

# Reports of the IPHC Scientific Review Board (2023)

Agenda item: 3.5  
IPHC-2023-SRB022-R  
IPHC-2023-SRB023-R  
(S. Cox)



# SRB IN 2023

SRB consisted of four (4) members, required to be independent of Contracting Parties



Dr. Sean Cox  
SFU

May 2013-current  
(10 years)



Dr. Kim Scribner  
Mich. State U

July 2017-Sept  
2023  
(6 years)



Dr. Olaf Jensen  
U Wisc, Madison

June 2020-current  
(3 years)



Dr. Anna Kuparinen  
University of Jyväskylä

Sept 2023--current  
(0.5 years)

# Jyväskylä

## YU-vah-skuh-lah

# SRB Meetings

- **SRB022:** 22<sup>nd</sup> Session of the IPHC Scientific Advisory Board was held from 20-22 June 2023 and focused on research
- **SRB023:** 23<sup>rd</sup> Session of the IPHC Scientific Advisory Board was held from 25-26 September 2023 and focused on FISS and MSE.



# SRB022





# ENDORSED FISS 2024 (PROVISIONALLY ENDORSED 2025 AND 2026 DESIGNS)



# RECOMMENDATIONS

## *Management strategy evaluation: Operating model updates*

SRB022–Rec.04 (para. 26) The SRB **RECOMMENDED** that reconditioning the operating model should be limited to situations where the stock assessment has changed significantly. This likely means a **three-year schedule for reconditioning the operating model** in the year following each full stock assessment..

# RECOMMENDATIONS

## *Management strategy evaluation: criteria for exceptional circumstances*

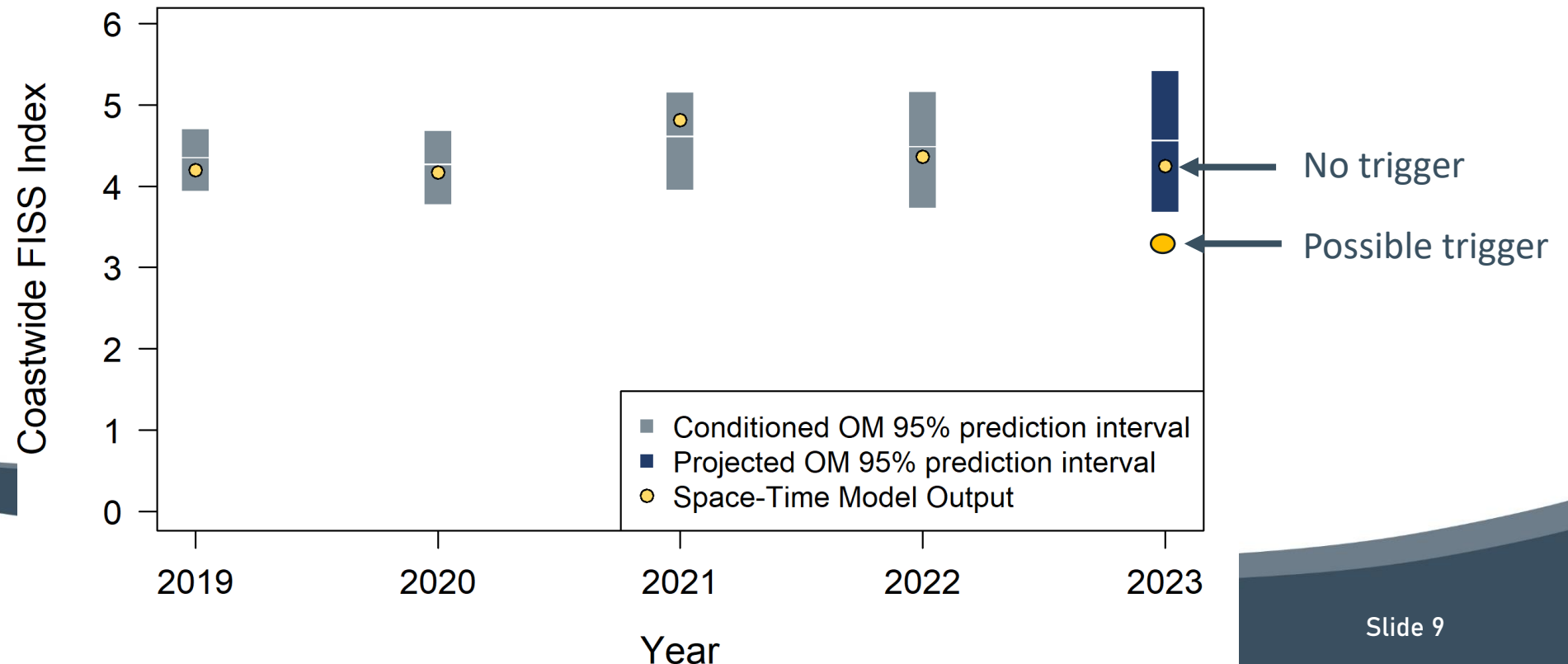
SRB022–Rec.06 (para. 28) The SRB **RECOMMENDED** that exceptional circumstance (i) be evaluated annually based on comparisons between the simulation distribution (e.g. a 95% interval) of FISS values from MSE simulations to the realized FISS estimates;



# RECOMMENDATIONS

## *Management strategy evaluation: criteria for exceptional circumstances*

SRB022–Rec.06 (para. 28) The SRB **RECOMMENDED** that exceptional circumstance (i) be evaluated annually based on comparisons between the simulation distribution (e.g. a 95% interval) of FISS values from MSE simulations to the realized FISS estimates;



# RECOMMENDATIONS

## *Management strategy evaluation: criteria for exceptional circumstances*

SRB022–Rec.06 (para. 28) The SRB **RECOMMENDED** that exceptional circumstance (i) be evaluated annually based on comparisons between the simulation distribution (e.g. a 95% interval) of FISS values from MSE simulations to the realized FISS estimates; and (ii) be clearly distinguished from "unusual conditions". For example, exceptional circumstances should have a high threshold for persistent (i.e. more than a single year) deviation from MSE simulations.

# RECOMMENDATIONS

## *Management strategy evaluation: criteria for exceptional circumstances*

SRB022–Rec.06 (para. 28) The SRB **RECOMMENDED** that exceptional circumstance (i) be evaluated annually based on comparisons between the simulation distribution (e.g. a 95% interval) of FISS values from MSE simulations to the realized FISS estimates; and (ii) be clearly distinguished from "unusual conditions". For example, exceptional circumstances should have a high threshold for persistent (i.e. more than a single year) deviation from MSE simulations.



# RECOMMENDATIONS

## *Management strategy evaluation: initial response to exceptional circumstances*

SRB022–Rec.07 ([para. 29](#)) The SRB **RECOMMENDED** that an initial response to a suspected "exceptional circumstance" should include **presentation at the next SRB meeting** to establish whether the situation meets the definition of an "exceptional circumstance" and to formulate a response.

# RECOMMENDATIONS

## *Biological and ecosystem science program: seasonal reproductive timing*

SRB022–Rec.08 ([para. 32](#)) The SRB **NOTED** that the current maturity sampling design does not determine whether the high rate of individuals at the cortical alveoli stage in the southeastern portion of the study area is a function of differences in seasonal reproductive timing or in size/age at maturity. The SRB **RECOMMENDED** additional investigations on the region-specific seasonal reproductive cycles and evaluating the extent to which differences among regions can be explained by size or age of the sampled individuals.

# RECOMMENDATIONS

## *Management Supporting Information*

SRB022–Rec.21 ([para. 52](#)) The SRB **NOTED** the presentation demonstrating how secondary FISS objectives influence choices for future FISS designs that may have already been endorsed by the SRB based only on primary objectives. The SRB **RECOMMENDED** that the **MSE include some scenarios in which the FISS is skipped** (as also requested above in para. 30) because of occasional (or persistent) economic constraints on executing full FISS designs. Such simulation scenarios would provide some indication of the potential scale of impacts on MP performance of maintaining long term revenue neutrality of the FISS.



# REQUESTS

## *Management strategy evaluation*

SRB022–Req.03 ([para. 30](#)) The SRB **NOTED** that situations in which critical data streams (e.g. FISS index or age data) are unavailable for one or more years does not constitute an "exceptional circumstance" and **REQUESTED** that the MSE include evaluation of such missing FISS data scenarios for the SRB023.

# REQUESTS

## *Pacific Halibut stock assessment*

SRB022–Req.02 ([para. 18](#)) **NOTING** that analysis of whale depredation has clarified that the potential scale of removals from depredation is relatively small, except in IPHC Regulatory Area 4A, the SRB **REQUESTED** that updated analysis using USA observer data be presented at SRB023 to evaluate whether incorporation of whale depredation in the stock assessment is warranted.



# SRB023





# RECOMMENDATIONS

*International Pacific Halibut Commission 5-year program of integrated research and monitoring (2022-26)*

SRB023–Rec.01 ([para. 17](#)) The SRB **AGREED** that AI techniques may improve efficiency of age estimation and **RECOMMENDED** continued research and cross-validation of AI-based aging.



# RECOMMENDATIONS

## *Pacific Halibut stock assessment*

SRB023–Rec.02 ([para. 19](#)) **NOTING** that the inclusion of whale depredation in the assessment requires many assumptions and results in only small changes to the TCEY, the SRB

**RECOMMENDED** that whale depredation not be included in the 2023 stock assessment model.



# RECOMMENDATIONS

## *Management strategy evaluation*

SRB023–Rec.05 ([para. 24](#)) The SRB **RECOMMENDED** that an objective to maintain spatial population structure be added or redefined to maintain the spawning biomass in a Biological Region above a defined threshold relative to the dynamic unfished equilibrium spawning biomass in that Biological Region with a pre-defined tolerance. The percentage and tolerance may be defined based on historical patterns and appropriate risk levels recognizing the limited fishery control of biomass distribution.





# RECOMMENDATIONS

## *Management strategy evaluation*

SRB023–Rec.06 (para. 25) The SRB **RECOMMENDED** that the Commission re-evaluate the target objective for long-term coastwide female spawning stock biomass given that estimated 2023 female spawning biomass (and associated WPUE), which was well-above the current target B36%, in part triggered harvest rate reductions from the interim harvest policy. Such ad-hoc adjustments limited the value of projections and performance measures from MSE.

# RECOMMENDATIONS

## *Management strategy evaluation*

SRB023–Rec.08 ([para. 27](#)) **RECOGNIZING** the spatial variability of environmental factors that influence population dynamics, the SRB **RECOMMENDED** that an exceptional circumstance be defined based on regional as well as stock-wide deviations from expectations. For example, an exceptional circumstance could be declared if any of the following are met:

- a) The coastwide all-sizes FISS WPUE or NPUE from the space-time model falls above the 97.5th percentile or below the 2.5th percentile of the simulated FISS index for two or more consecutive years.
- b) The observed FISS all-sizes stock distribution for any Biological Region is above the 97.5th percentile or below the 2.5th percentile of the simulated FISS index over a period of 2 or more years.
- c) Recruitment, weight-at-age, sex ratios, other biological observations, or new research indicating parameters that are outside the 2.5th and 97.5th percentiles of the range used or calculated in the MSE simulations.

# RECOMMENDATIONS

## *Management strategy evaluation*

SRB023–Rec.09 ([para. 28](#)) The SRB **RECOMMENDED** that if an exceptional circumstance occurred the following actions would take place:

- a) A review of the MSE simulations to determine if the OM can be improved and MPs should be re-evaluated.
- b) If a multi-year MP was implemented and an exceptional circumstance occurred in a year without a stock assessment, a stock assessment would be completed as soon as possible along with the re-examination of the MSE.
- c) Consult with the SRB and MSAB to identify why the exceptional circumstance occurred, what can be done to resolve it, and determine a set of MPs to evaluate with an updated OM.
- d) Further consult with the SRB and MSAB after simulations are complete to identify whether a new MP is appropriate.

# RECOMMENDATIONS

## *Management strategy evaluation*

SRB023–Rec.09 ([para. 28](#)) The SRB **RECOMMENDED** that if an exceptional circumstance occurred the following actions would take place:

- a) **A review of the MSE simulations to determine if the OM can be improved and MPs should be re-evaluated.**
- b) If a multi-year MP was implemented and an exceptional circumstance occurred in a year without a stock assessment, a stock assessment would be completed as soon as possible along with the re-examination of the MSE.
- c) Consult with the SRB and MSAB to identify why the exceptional circumstance occurred, what can be done to resolve it, and determine a set of MPs to evaluate with an updated OM.
- d) Further consult with the SRB and MSAB after simulations are complete to identify whether a new MP is appropriate.



# RECOMMENDATIONS

## *Management strategy evaluation*

SRB023–Rec.09 ([para. 28](#)) The SRB **RECOMMENDED** that if an exceptional circumstance occurred the following actions would take place:

- a) A review of the MSE simulations to determine if the OM can be improved and MPs should be re-evaluated.
- b) If a multi-year MP was implemented and an exceptional circumstance occurred in a year without a stock assessment, a stock assessment would be completed as soon as possible along with the re-examination of the MSE.**
- c) Consult with the SRB and MSAB to identify why the exceptional circumstance occurred, what can be done to resolve it, and determine a set of MPs to evaluate with an updated OM.
- d) Further consult with the SRB and MSAB after simulations are complete to identify whether a new MP is appropriate.

# RECOMMENDATIONS

## *Management strategy evaluation*

SRB023–Rec.09 ([para. 28](#)) The SRB **RECOMMENDED** that if an exceptional circumstance occurred the following actions would take place:

- a) A review of the MSE simulations to determine if the OM can be improved and MPs should be re-evaluated.
- b) If a multi-year MP was implemented and an exceptional circumstance occurred in a year without a stock assessment, a stock assessment would be completed as soon as possible along with the re-examination of the MSE.
- c) **Consult with the SRB and MSAB to identify why the exceptional circumstance occurred, what can be done to resolve it, and determine a set of MPs to evaluate with an updated OM.**
- d) Further consult with the SRB and MSAB after simulations are complete to identify whether a new MP is appropriate.

# RECOMMENDATIONS

## *Management strategy evaluation*

SRB023–Rec.09 ([para. 28](#)) The SRB **RECOMMENDED** that if an exceptional circumstance occurred the following actions would take place:

- a) A review of the MSE simulations to determine if the OM can be improved and MPs should be re-evaluated.
- b) If a multi-year MP was implemented and an exceptional circumstance occurred in a year without a stock assessment, a stock assessment would be completed as soon as possible along with the re-examination of the MSE.
- c) Consult with the SRB and MSAB to identify why the exceptional circumstance occurred, what can be done to resolve it, and determine a set of MPs to evaluate with an updated OM.
- d) **Further consult with the SRB and MSAB after simulations are complete to identify whether a new MP is appropriate.**

# RECOMMENDATIONS

## *Management strategy evaluation*

SRB023–Rec.10 ([para. 29](#)) The SRB **RECOMMENDED** evaluating fishing intensity and frequency of the stock assessment elements of management procedures and FISS uncertainty scenarios using the MSE framework. MP elements related to constraints on the interannual change in the TCEY and calculation of stock distribution may be evaluated for a subset of the priority management procedures as time allows.



# RECOMMENDATIONS

## *Management strategy evaluation*

SRB023–Rec.11 (para. 30) The SRB **RECOMMENDED** that the Commission consider revising the harvest policy to (i) determine coastwide TCEY via a formal management procedure and (ii) negotiate distribution independently (e.g. during annual meetings). Such separated processes are used in other jurisdictions (e.g. most tuna RFMOs, Mid Atlantic Fishery Management Council, AK Sablefish, etc.).

# RECOMMENDATIONS

## *Management strategy evaluation*

SRB023–Rec.11 ([para. 30](#)) The SRB **RECOMMENDED** that the Commission consider revising the harvest policy to (i) determine coastwide TCEY via a formal management procedure and (ii) negotiate distribution independently (e.g. during annual meetings). Such separated processes are used in other jurisdictions (e.g. most tuna RFMOs, Mid Atlantic Fishery Management Council, AK Sablefish, etc.).

# RECOMMENDATIONS

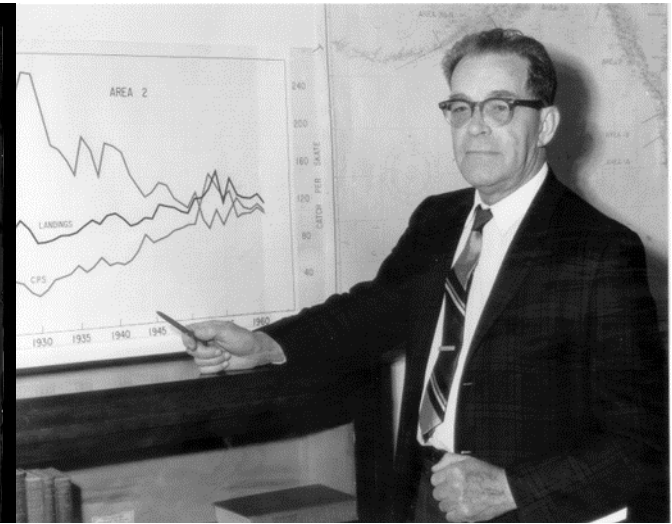
## *Management strategy evaluation*

SRB023–Rec.11 ([para. 30](#)) The SRB **RECOMMENDED** that the Commission consider revising the harvest policy to (i) determine coastwide TCEY via a formal management procedure and (ii) **negotiate distribution independently (e.g. during annual meetings)**. Such separated processes are used in other jurisdictions (e.g. most tuna RFMOs, Mid Atlantic Fishery Management Council, AK Sablefish, etc.).

# RECOMMENDATIONS

## *Biology and ecology*

SRB023–Rec.15 ([para. 45](#)) The SRB **RECOMMENDED** that the compensatory assumption of the stock recruitment models be critically evaluated via a MSE stress test scenario in which recruitment is depensatory at some low spawning biomass.





# REQUESTS

## *Management strategy evaluation*

SRB023–Req.01 ([para. 37](#)) **NOTING** that future applications of genomic data will necessitate more expansive sampling geographically and demographically to achieve IPHC goals, the SRB

**REQUESTED** that the Secretariat establish explicit long-term objectives for use of genomic data and work with staff, fishermen, and agency collaborators to establish a short and long-term sampling program and data and sample archival plan to ensure samples are available to address Secretariat objectives.

# REQUESTS

## *Management strategy evaluation*

SRB023–Req.06 ([para. 57](#)) The SRB **REQUESTED** that the Commission **NOTE** the addition of cost estimates to the presentation of alternative FISS designs. The short-term risk implications in 2024 to the stock and TCEY of a drastically reduced FISS design (e.g. approx. revenue neutral Design 9 with efficiencies) are probably not profound given that the estimated current abundance is still above the implied B36% target. Impacts may appear more in the estimates of stock distribution since unsampled areas will be more dependent on the space-time model than actual data.

# REQUESTS

## *Management strategy evaluation*

SRB023–Req.07 ([para. 60](#)) The SRB **REQUESTED** that the Commission **NOTE** that some longer-term (2025 and beyond) implications of reduced FISS designs are predictable and potentially consequential. For instance, higher FISS CVs will generally result in higher inter-annual variation in TCEY under the current decision-making process. This would occur for two reasons: (1) biomass estimates and projections from the assessment model will have greater uncertainty and therefore greater variability in outputs and (2) ad hoc management adjustments to the interim harvest policy recommendations would be more frequent and/or more variable for greater input uncertainty. The SRB therefore **REQUESTED** the following analyses for SRB024:...



INTERNATIONAL PACIFIC  
**100** years  
HALIBUT COMMISSION