

# **Draft SSC Report June 2024**



**SSC Presentation to Council**

# SSC Administrative Discussion

- The SSC received administrative updates, including
  - Announcement of the in-person February 2025 meeting in Anchorage
  - Updates on the national SSC meeting (SCS8) in August
    - Members attending
    - Case studies to help with particular challenges (how to incorporate socio-economic information for sablefish, and temperature dependence of recruitment for pollock into mgt advice)
- The SSC **recognized** the contributions of departing NPFMC staff (Nicole Watson, Sam Cunningham, Sarah Rheinsmith-Gardiner, Sarah LaBelle) and expressed our gratitude for their work and assistance

# SSC Administrative Discussion

- The SSC noted the upcoming departure of two SSC members after 2024
- If the Council chooses to call for additional SSC members, the SSC **recommends** the addition of two members
  - 1) a social scientist with a background in anthropology, sociology, human geography, or a related field
  - 2) a scientist with broad expertise in quantitative ecosystem science and/or ecology with a specific expertise in marine mammals
- If, or when, filling these positions, the SSC also **recommends** that it would be beneficial to identify someone who also has experience working with Alaska fishing communities and who has scientific expertise with LKTK

# C1 Observer Annual Report

- The SSC was tasked to review the NMFS recommendations for the 2025 ADP (Chapter 6 in the Annual Observer Report) and **finds** the NMFS recommendations to be reasonable.
- NMFS recommends continuing the proximity allocation method for the partial coverage strata, excluding trawl EM, for 2025
  - The SSC **supports** continuing to use this allocation in 2025 to allow a comprehensive evaluation in future observer reports.
  - The SSC **continues** to support the objective of decreasing the variance of estimated catch and minimizing data gaps.
- The SSC **supports** the NMFS recommendation to assess how delayed or missing fixed-gear EM data impact the risk of exceeding catch, PSC limits or other thresholds.

# C1 Observer Annual Report

- NMFS recommends continuing with the current sampling strategy in the trawl EM sector for PSC monitoring and biological samples.
  - The SSC **requests** an analysis of whether increasing EM changes the spatial coverage or species composition of biological samples or genetic stock composition monitoring and whether samples adequately represent catches.
- The SSC notes the continued evidence of an observer effect and **encourages** additional statistical analysis to better understand the resulting degree of bias.
- The SSC **requests** tracking statistics on length and aging structures in the Annual Report.

# C1 Observer Annual Report

- The SSC **requests** efforts continue to try to resolve the current disconnect between the ODDS system and the eLandings system.
- The SSC **reiterates** its recommendation to develop cost/day calculations for EM coverage similar to those provided for observer coverage to evaluate operational/data tradeoffs
- The SSC **recommends** that an occasional CIE review be convened to review the ADP, prioritizing review of novel methodology such as the proximity allocation.
- Finally, the SSC **requests** the opportunity to review future ADPs if substantial changes are proposed.

# C2 BSAI Crab Harvest Specifications

## General BSAI Crab Comments

- The SSC requests the authors and CPT consider coordinating the approach to analyzing the BSFRF data for the Tanner crab, snow crab, and BBRKC stocks, and specifically consider developing the results as a prior on selectivity for use in the models.

# C2 BSAI Crab Harvest Specifications

## Aleutian Islands Golden King Crab

- The SSC supports the author's and CPT's recommendation to use Model 23.1 for both the EAG and the WAG
- The SSC agrees with the CPT for the OFL and a 25% buffer for the ABC
  - The buffer is based on seeing that the EAG model continues to exhibit a poor fit to the index data and a poor retrospective pattern in MMB.
  - Buffer is the same as that recommended by the PT and is the same as last year
- AIGKC is not overfished. Overfishing determination will be made in October 2024 when total catch is complete.



# C2 BSAI Crab Harvest Specifications

## Aleutian Islands Golden King Crab

The SSC ***recommends*** the following:

- Prioritizing incorporating the cooperative survey data into the assessment as a separate fleet
- Prioritizing further consideration of data weighting
- Further examining the retrospective pattern
- Developing a more straightforward method for determining total catch, such as basing it on the average fraction harvested to date.
- The CPT consider whether to move the final AIGKC model review to the September/October meeting when catches are final\*

# C2 BSAI Crab Harvest Specifications

## EBS Snow crab - Model Runs & Currency of Management

- Efforts in this year focused on
  - A narrative explanation of the assessment model, including recent changes, and a rationale for those changes
  - Exploring potential alternatives to the current metric for reproductive output (e.g. currency of management),
- Replicated Clark's (1991) analysis (the basis for Tier 3 MSY proxy F35%) using snow crab biology and different measures of reproductive output:
  - Mature male biomass (status quo)
  - Biomass >95 mm

# C2 BSAI Crab Harvest Specifications

## EBS Snow crab - Model Runs & Currency of Management

- The SSC **recommends** the author bring forward a revised Clark's maximin analysis using both steepness and alternatives for the definition of reproductively active males, i.e., mature male biomass, crab >95 mm in the maximin calculation.
- These options will be considered for harvest specifications in the fall
- The SSC **recommends** that the author bring forward Tier 3 Model 23.3a for specifications in fall of 2024, in agreement with CPT and the assessment author
- The SSC **recommends** two tier 4 “fall-back” models :
  - Survey biomass decremented by natural mortality to time of fishery.
  - REMA smoothed biomass not decremented by natural mortality (standard Groundfish tier 5 approach)

# C2 BSAI Crab Harvest Specifications

## Bristol Bay Red King Crab - Model Runs

- The SSC **recommends** that the authors bring forward models
  - 23.0a (updated base model) and
  - 24.0c (updated base model with addition of removing the 1975-1980 time block for molting probability)
- The SSC **recommends** prioritizing the following for future model development
  - use of the BSFRF research as a prior on selectivity
  - selectivity time periods based on survey gear types used
  - time-varying selectivity in the fishery data relative to the survey data

# C2 BSAI Crab Harvest Specifications

## Tanner crab - Model Runs

- The SSC **recommends** Tier 3 model 23.03d in agreement with the CPT
  - 23.03d represents the last accepted model, with a change in the treatment of 2013-17 BSFRF survey data and the addition of 2018 BSFRF data
  - Tier 4 “fallback” model

# C2 BSAI Crab Harvest Specifications

## Tanner crab - Model Runs

- The SSC ***recommends:***
  - Resolving the parameter bounding issue that arose with the change in treatment to the BSFRF survey data.
  - Prioritizing a bridging analysis between the currently accepted model and GMACS as a next step in model development.
  - Continuing to explore geostatistical methods for developing survey indices

# C2 BSAI Crab Harvest Specifications

## St. Matthew Blue King Crab - Model Runs

- The SSC ***recommends*** model 16.1 (base) and new model 24.1 in agreement with CPT
  - **16.1** is the accepted 2022 model updated GMACS version, updated catch/ survey data, corrected errors and SSB estimation date.
  - **24.1** (16.1) with fixed value of M from the the 2023 BBRKC assessment (i.e., 0.23 yr<sup>-1</sup>)

# C2 BSAI Crab Harvest Specifications

## St. Matthew Blue King Crab - Model Runs

- The SSC **supports** CPT recommendations:
  - A research version of model 16.1 be presented in October 2024 with the NMFS trawl survey corner stations dropped from all years to provide retrospective insights into the impacts of the NMFS trawl survey not sampling these stations in 2024
  - Continued work to create a single index of abundance integrating data from both trawl and pot surveys using spatiotemporal approaches
  - Explore increasing the number of size bins used in the assessment models.
  - Examine the likelihood profile on selectivity



# C2 BSAI Crab Harvest Specifications

## Balance of CPT Report

- ESP Update: The SSC **supports** generalized ESP report cards that are relevant to all stocks within a region as a near-term alternative to full species-specific ESPs.
- Survey Update: The SSC **recommends** evaluating various time steps and methods for identifying sliding windows for smoothing changes in crab length-weight relationships over time (these relationships are used for computing OFLs)

# C2 BSAI Crab Harvest Specifications

## Balance of CPT Report

- Observer Program: The SSC **supports** continued monitoring of snow and Tanner crab hybridization given that climate change increases potential for stronger interaction between these species and looks forward to more information in October 2024.
- BSFRF Update: The SSC **supports** the BSFRF & collaborators continued research effort to capture inter-annual changes in winter crab distributions ocean conditions that are critical to understand variability in size- and sex-specific habitat use

## C4 Small Sablefish Release – Initial Review

- The draft EA/RIR includes a broad summary of the current sablefish fishery, an evaluation of how release mortality would be accounted for in the stock assessment, potential economic and social impacts, monitoring and enforcement changes that would be needed, and a simulation experiment to evaluate the effects of release and discard mortality on the long-term spawning biomass, landings and approximate gross revenue.
- The simulation analysis found that only a small fraction of the current catch consists of fish less than 22 inches in length, and therefore the population and fishery results showed only a small response to allowing release of fish less than 22 inches in length under all assumed discard rates.

## C4 Small Sablefish Release – Initial Review

- Simulation results show that with the application of the Tier 3 Harvest Control Rule none of the DMR scenarios evaluated had a large effect on the long-term spawning biomass, demonstrating that this potential action does not appear to have a substantive impact on conservation outcomes within the broader management approach.
  - The SSC found this result to be an important extension to previous equilibrium analyses.
- The SSC found that evaluation of the large set of results was enhanced by the interactive Shiny tool created to present the results of both the base simulations and the sensitivity analyses. The SSC encourages the further use of this approach for this and similar analyses.

## C4 Small Sablefish Release – Initial Review

- This social and economic analysis suggested that substantial aggregate revenue impacts are unlikely and that there would likely be differences among participants in terms of their ability to use discarding to improve profits. Specifically, potential benefits accruing to participants and costs born by participants may vary across locations and vessel classes.
- The focus of this analysis was mainly on current conditions and did not consider major changes in future ABC utilization, fleet behavior, future price trends and future price structure across fish size grades.
- While reasonable simplifying assumptions were made in the analysis, there is unknown and unavoidable uncertainty in these factors over time.

## C4 Small Sablefish Release – Initial Review

- The SSC ***finds*** the document sufficient for the Council to evaluate Alt. 1 (no action) and Alt. 2, Option 2 (voluntary release of fish less than 22 inches) after addressing SSC recommendations in the final action draft.
  - The SSC ***recommends*** that if the Council wishes to consider Alt. 2, Option 1 (voluntary release of any size sablefish) additional analysis would be required.
- The SSC ***expects*** that this analysis will be informative for the Council in the short term (over the next three to seven years, depending on the extent of changes), but may not be reliable over a longer time horizon, because the focus of this analysis was on current conditions and did not consider major changes in the fishery, fleet behavior, markets, or price that are likely to arise over the long term.

## C4 Small Sablefish Release – Initial Review

- Specifically, a bio-economic model as outlined by the SSC in April for future IRA project work, would be necessary to investigate more complex hypotheses about price responses to landed volume, size structure of the landings, fleet behavior, and the feedback between these factors with fishing practices and the underlying population structure.
- The SSC **provides** a number of recommendations as listed in the SSC report
- The SSC **recognized** that this potential action could move fisheries toward increased discarding, which differs from other Council actions and could potentially set a precedent for other fisheries.
- The SSC **suggests** development of clear measurable objectives and consideration of how and when measurable performance metrics might be developed to evaluate this potential action in the future.

## D2 BSAI Crab Rationalization Program Review

- The SSC received a summary presentation of the 17 Year Crab Rationalization Plan Review
- The SSC **finds** that this document is sufficient to serve as the required program review and the Allocation Review required under NOAA Fisheries' Allocation Policy Directive.
- The SSC **recommends** some changes to enhance the current document prior to the final review draft
- The Program Review finds that the Crab Rationalization Program has met most of the goals and objectives outlined, and has realized several conservation goals. However, some components of the plan have had mixed success.



## D2 BSAI Crab Rationalization Program Review

- The Program Review identifies recent outside factors that have a large influence on the program's performance which include recent low TACs, fishery closures and world markets
- Declines in number of harvesting vessels and the number of processors have reflected the influence of outside factors and that some community protection features of the plan have not always been successful in meeting their objectives
- The SSC recognizes the significant impact of external factors, notes their relationship to climate change
- While the program has provided some resilience to external factors, the SSC recognizes the Council may consider future amendments and has the following suggestions for the document

# D2 BSAI Crab Rationalization Program Review

- The SSC ***recommends*** the following changes to the document:
  - Put key program elements in context with the program objectives and climate/environmental related instability highlighting both potential adaptive and maladaptive features of the program
  - In synthesizing outcomes associated with the program and elements, include discussion of outcomes that include beyond-crab fisheries outcomes (e.g. ease of diversification).
  - Expand Table 2.7 to include a brief description of the action and how it may relate to the program review requirement objectives
  - Include some reflection on how program elements have conferred resilience or been maladaptive to climate impacts experienced in this fishery

## D2 BSAI Crab Rationalization Program Review

- The SSC ***recommends*** the following changes to the document (cont.):
  - Emphasize the unexpected nature of events like COVID and the collapse of several crab fisheries and how that relates to the program structure
  - Include rationale for why the collaborative research programs are important and, in particular, that identification of stakeholders through a CR program facilitates collaboration between industry and agencies.
  - Identify whether the process of EDR data review was beneficial or could be improved in the future.
  - A Dashboard element that reflects the portion of fished quota that is leased in each fishery, as a reflection of intergenerational turnover

# D2 BSAI Crab Rationalization Program Review

- The SSC ***recommends*** the following changes to the document (cont.):
  - Revise the executive summary with additional organization and synthesis that can summarize the main outcomes associated with the program
  - For the key program elements, ensure there is synthesis and discussion of the performance of the program element relative to the case where the program was implemented but the program element was not
  - Add language to recognize the use of LK/TK in the qualitative analysis

## D5 Research Priorities

- The SSC approved a new research prioritization processes in June 2023.
- The SSC commends the Subgroup for refining and implementing the RP process.
- Appreciates the structured input from Plan Teams, the SSPT, the FEP Team and the public.
- Highlighted the excellent contributions of Nicole Watson (former NPFMC Staff) to the Subgroup.

# D5 Research Priorities

- The SSC RP Sub-group
  - Reviewed 2021 “top ten list, all new public submissions, and Plan Team recommended RPs.
  - Recommended 12 RPs for “top ten” consideration, as well as 12 alternative RPs.
  - Recommended the addition of a general statement regarding LKTKS to be included in the COM category.
  - Recommended 15 COMs (revised from 21 in 2021 and the additions from PTs recommendations this year).

# D5 Research Priorities

- The SSC ***recommends***:
  - ***Retaining all 12 Subgroup-recommended RPs (with minor additions).***
    - 4 RPs were discussed as candidates to “drop” to reach 10 RPs, but compelling rationales to keep them all.
  - ***Retaining the 2021 top COM priorities.***
    - Insufficient time for SSC review and public comment.
  - ***The addition of the general statement regarding LKTKS to be included in the COM category.***

# D5 Research Priorities

- Additional SSC **Recommendations**
  - Full review of both Research Priorities and COM priorities.
  - Consideration of an additional opportunity for Plan Teams (or PT chairs) to review the SSC Subgroup efforts to consolidate, reduce redundancy, and maintain the core essence of the top RPs to ensure fidelity to the Plan Team intent before full SSC review.
  - The subgroup review the “*Procedure for review of each research category*” from the SSC June 2021 Report: Appendix B.



# D5 Research Priorities

- Additional SSC Recommendations
  - Consider incorporating RPs from and engagement with groups outside the Council process (e.g., Alaska Scientific Review Group) to refine priorities specific to the Council mission.
  - Consider expanding the list of top research priorities to include research on the use of socioeconomic information to support Council decision-making (e.g. TAC setting), and research to advance stock assessment core capabilities (e.g. state-space modeling).
  - The SSC Subgroup, in collaboration with Council staff, reviews and recommends updates/revisions to the RP Database (e.g., when to “retire” an RP from the list).