

D1 Trawl Electronic Monitoring EFP

- The SSC *recommends* the EFP application be approved and looks forward to receiving an annual report on EFP development and results.
- The SSC noted that in prior studies EM detected higher at-sea discards compared to onboard observers and *recommends* that the EFP applicants work to get to the root of when, where, and why this discrepancy arose.
- The SSC *suggests* including a fish identification confidence rating data field during the video review process to ensure identifications are sound, as well as initiating a cross-company video review comparison study to ensure data are comparable.

D1 Trawl Electronic Monitoring EFP

- The SSC *recommends* that as the Council moves forward with operationalization of EM, consideration should be given to privacy issues associated with use of video recordings for purposes other than bycatch enumeration.
- The SSC found the EFP application to be very thorough and appreciated the substantial collaborative and adaptive efforts of the EFP Team with Observer Program and AFSC staff, especially given the scope of this multi-area and multi-fleet effort.
- The SSC notes that the EFP application benefits from lessons learned in the fixed gear sector, the Pacific whiting fishery EM program, and from the two ongoing projects funded through the National Fish and Wildlife Foundation in the BS, GOA, and WGOA.

C3: Observer 2020 Annual Deployment Plan

- The SSC appreciates the continued development of this program and the clear communication of complex analyses.
- The SSC remains concerned about funding levels for the Observer Program and **supports** the Joint Teams' recommendation that resources be allocated to fund this shortfall and that efficiency measures to deploy observers and EM systems continue to be pursued.
- The SSC **supports** 3 sampling strata for the observer trip-selection pool (hook and line, pot, trawl).
- The SSC **supports** discontinuing tender-specific sampling strata, but **requests** continuing evaluation of coverage levels achieved on vessels delivering to tenders in the Annual Report.

C3 2020 ADP – Continued

- For the observer trip-selection pool, the SSC ***supports*** the allocation strategy of 15% min + optimization based on discarded groundfish and halibut PSC, and Chinook PSC.
- The SSC ***agrees with*** authors' and Plan Teams' recommendations to support the addition of 30 vessels to non-trawl EM, if there is funding, and ***supports*** NMFS prioritizing vessels that are unlikely to introduce data gaps.
- The SSC ***recommends*** analyses to evaluate trade-offs between the number of vessels in non-trawl EM, the amount of video coverage in non-trawl EM, and the number of partial-observer trips necessary to mitigate gaps in information on average weights, biological samples, and discard estimation considering the expected funding available.

C3 2020 ADP – Continued

- The SSC ***supports*** the Plan Teams' recommendation to re-evaluate the fixed-gear EM vessel selection process to improve efficiency of funds relative to reducing potential biases and estimation uncertainty.
- The SSC continues to ***recommend*** that vessels <40' be in the EM pool and requests that some deployment options be put forward for discussion.
- The SSC greatly appreciates the outreach efforts of the OLE and supports the goal of focusing on additional outreach efforts to ensure a safe working environment for observers.

C4, C5, C6 Ecosystem Status Reports

- The **SSC received** preliminary reports on the status of the northern Bering Sea (NBS), the southeastern Bering Sea (SEBS) and the Gulf of Alaska (GOA)

- **Red flags included:**

Bering Sea: 2nd winter of low sea ice in the NBS;
gray whale Unusual Mortality Event;
major die-off of short-tailed shearwaters;
strandings of ice-dependent seals.

Gulf of Alaska: Continuing marine heat wave since 2018;
low abundance of larval fish
low CPUE of pollock and P. cod in the trawl survey

Other items of Importance:

NBS and SEBS: Large, lipid-rich zooplankton in low abundance

GOA: weak 2019 year classes of P. cod and pollock;

All regions: Continued unusually warm conditions into Spring 2020

C4 BSAI Crab Specs

Trawl Survey

- NMFS trawl survey was conducted in the eastern Bering Sea (EBS) and northern Bering Sea (NBS) in 2019
- **Highlights:**
 - Total mature male biomass (MMB) for all species combined was the 2nd lowest in the time series (only 1985 was lower)
 - **Bristol Bay red king crab** – continued decline over past 2 decades
 - **Pribilof Is. red king crab** – some improvement since 2018
 - **Norton Sound red king crab** – increase in immature males but sharp decline in mature males and legal males since 2017

C4 BSAI Crab Specs

Trawl Survey - Con't.

- **Highlights:**
 - **Pribilof Is. blue king crab** – overall stock remains very low
 - **St. Matthew blue king crab** – some apparent improvement in most stock components since 2018
 - **Norton Sound red king crab** – increase in immature males but sharp decline in mature males and legal males since 2017
 - **EBS Tanner crab** – downward trends in most stock components, including mature males. Most crab concentrated in Pribilof Is. region; few crab in eastern district
 - **EBS Snow crab** – increases in some stock components, declines in others. More mature males in the NBS than EBS – NBS-EBS boundary may not match distribution of this stock.

C4 BSAI Crab specs

Tanner crab

- The SSC **supports** the PT and author's recommended model, OFL and ABC with 20% buffer, placing this stock in Tier 3b
- The scale of model results is revised upward relative to previous assessments; however, the trend remains downward in the raw survey data and model results
- The SSC **requested** further work on model convergence, the use of the Bering Sea Fisheries Research Foundation/NMFS side-by-side trawl data to inform selectivity and catchability, and other aspects of the analysis

C4 BSAI Crab Specs

Snow crab

- Eight model alternatives address previous comments by the CPT and SSC concerning uncertainties involving growth, natural mortality, and potential different size distributions for male and female recruitment
- The SSC ***agrees with*** the author's and CPT's recommendations to use model 19.7 to determine stock status and catch specifications for 2019/2020 under Tier 3. Further, the SSC ***agrees with*** the CPT to continue using a buffer of 20% for setting the 2019/20 ABC as used in recent assessments.
- Model 19.7 estimates higher M than indicated in previous assessments. Higher M is supported by: (1) model fits, (2) state-space models, (3) new empirical meta-analyses, and (4) survey data

C4 BSAI Crab Specs

Snow Crab – Con't.

- Issues:
 - Ongoing retrospective patterns
 - Distribution of snow crab across NBS-EBS boundary raises questions about the unit stock
- SSC recommendations:
 - Agree with author's and CPT's research recommendations, including priority to move assessment into Gmacs framework
 - Consider including NBS data into the EBS snow crab assessment
 - Additional work needed on M, growth, and incorporation of BSFRF data on catchability/selectivity; the SSC offered some advice on how to proceed

C4 BSAI Crab Specs

Pribilof Islands Red King Crab

- Biennial assessment cycle; last assessed in 2017
- Seven model alternatives include: three-year running average of MMB, random effects model, and five Gmacs models
- The SSC **agrees with** the author's and CPT's preferred model 19.4 because it (1) uses of all available data in Gmacs, (2) strikes a good balance between parsimony and complexity, (3) it uses a more defensible prior for M, and (4) provides a plausible fit to survey MMB
- The author calculated two estimates of the B_{MSY} proxy: (1) average MMB over 1991-present (status quo), and (2) average MMB over 2000-present. Among these two alternatives, the SSC **agrees with** the author and CPT to use option (2), as the fishery ended in 1998/99
- The SSC **agrees with** the author and CPT to use a 25% buffer on OFL for ABC estimation, consistent with other Tier 4 stocks

C4 BSAI Crab Specs

Pribilof Islands Red King Crab - Con't.

- SSC recommendations:
 - Consider whether it is appropriate to average MMB starting sometime after 2000 using a time lag to diminish fishing effects on the “unfished” stock
 - Add available ADF&G pot survey data to the assessment
 - Consider whether PIRKC are, in fact, a separate stock or if, instead, they exist as an EBS metapopulation. This question arose because of: (1) apparent lack of red king crab in the PI area in the 1970s and 1980s, (2) stock increases that do not seem biological plausible, and (3) distribution of red king crab outside both the Bristol Bay and Pribilof Islands management areas.

C4 BSAI Crab

Bristol Bay Red King Crab (BBRKC)

- 2019 trawl survey biomass estimates are low, similar to 2018
- The SSC *recommends* the use of a new model that uses the Generalized Model for Alaska Crab Stocks (Gmacs)
- Authors configured Gmacs as similar as possible to last year's model
- Continue using 20% buffer
- ABC down significantly from last year

C4 BSAI Crab

St. Matthew Island Blue King Crab (SMBKC)

- 2019 trawl survey biomass estimates up from 2018, but still low
- The SSC **recommends** the use of the same Gmacs model as last year
- 20% buffer from OFL
- ABC similar to last year
- Rebuilding plan update
 - SSC **recommends** further evaluation of recruitment regimes for reference point and projections
- Ecosystem and Socio-economic Profile produced for the first time may help guide the rebuilding plan

C4 BSAI Crab specs

Other CPT topics

- The SSC **supports** the determination that overfishing did not occur for Pribilof Islands Blue King Crab, Western Aleutian Islands Golden King Crab, and Pribilof Islands Golden King Crab
- The SSC was informed about progress on the assessments for Pribilof Islands Golden King Crab, Norton Sound Red King Crab, and Aleutian Islands Golden King Crab.
- The SSC **supports** the collaborative survey for Aleutian Islands Golden King Crab and looks forward to its use in this year's assessment
- The SSC was informed of several promising research programs undertaken by the Bering Sea Fisheries Research Foundation to improve the information available for crab assessments

C5 BSAI groundfish specifications

Plan Team Report

- The SSC *recommends approval* of the preliminary harvest specifications for 2020/2021 with a change to the sablefish specification (back to status quo)
 - As specified for 2019, the SSC **recommends** the sablefish OFL be apportioned into three areas: AI,BS, and GOA (see next slides).
- The SSC *supports* the Plan Team model recommendations detailed in their report regarding:
 - AI Pacific Cod
 - Northern Rockfish
 - Atka Mackerel
- Halibut DMR: The SSC *recommends* to maintain current methods and use the two-year reference period (2017-2018) for producing the 2020 and 2021 DMRs

C5 BSAI groundfish specifications

Sablefish

- SSC discussed OFL specifications for sablefish. Current OFL specification done for BS, AI, and GOA, with sub-area ABCs.
- NS1 status determination is done at the Alaska-wide level
- The PT recommended an evaluation of combining the OFLs be brought forward for its November meeting
 - Combined BS and AI OFL
 - Alaska-wide OFL
- The PT did not believe there was a conservation concern with combining the OFLs
- Sub-area ABCs would remain status quo

C5 BSAI groundfish specifications

Sablefish Continued

- SSC *supports the Plan Team request that* an evaluation of combining the OFLs be brought forward in December. The evaluation should consider the following:
 - The history of the area-OFLs and Alaska-wide assessment
 - A description of the conservation concerns as they relate to the need for sub-area OFLs versus those addressed with ABC apportionment
 - Whether management or policy measures outside of the specification process can address concerns

C5 BSAI groundfish specifications

Pacific Cod

- The SSC *agreed* with the PT to bring forward 19.x addressing various concerns and data issues from last years' assessment
- The modeling framework is structured to evaluate the following hypotheses:
 - Eastern Bering Sea (EBS) population only (hypothesis 1)
 - Northern Bering Sea and EBS population (hypotheses 2 and 3)
 - All models are expected to use the VAST model
- 6 new models: “simple” versus “complex”
 - A simple and complex model for each of the area-based hypothesis

C5 BSAI groundfish specifications

Pacific Cod Continued

- The SSC ***preferred*** that the “simple” model be last year’s model, using VAST and only addressing the NBS hypotheses, not other model changes
- The SSC ***recommended***, as time allows, that a version of last year’s accepted model (16.6i) be brought forward using the VAST indices addressing hypothesis 2
- Strong support for a single stock across NBS and EBS
- The SSC encouraged the Plan Team to reconsider the plausibility of hypothesis 1 (EBS stock only)
- SSC ***recommends*** down-weighting models in hypothesis 1 if used in an ensemble.

C6 GOA groundfish specifications

Plan Team Report

- The SSC ***supports*** the proposed harvest specifications as rolled over from the projected 2020 specifications
- Further, the SSC ***supports*** the Plan Team recommendations detailed in their report regarding:
 - Dover sole/flatfish CIE review
 - Shortraker rockfish random effects model
 - GOA pollock models and draft Ecosystem and Socioeconomic Profile (ESP)
 - Pacific Ocean Perch assessment models
- Additionally, the SSC ***recommended*** that full surveys of the GOA (three vessels) at least on a biennial basis, if not annually, are necessary

C6 GOA groundfish specifications

Pacific Cod

- Preliminary GOA survey biomass of Pacific cod was up from 2018 but still the second lowest on record
- The SSC **agreed** with the PT to bring forward models addressing various concerns and data issues from last years' assessment including:
 - Aging error and bias, use of IPHC survey data, maximum age bin
- The SSC also **recommended** the author bring forward models that connect climate with Pacific cod population dynamics
- ***The SSC notes that any model will show a stock below or very near to two key management thresholds ($B_{17.5\%}$ or $B_{20\%}$)***

C8 BSAI Pacific Cod Parallel Waters Limitation

- Alternative 2 is designed to address loopholes in previous Council actions by adding LLP and FEP requirements to Federal vessels fishing in the BSAI parallel fisheries.
- The SSC *recommends* the analysis be released for public review with the following additional analyses:
 - Costs and benefits for vessels who choose to come into compliance.
 - Costs and benefits of alternative fishing opportunities open to those vessels who choose not to comply or are otherwise unable to.
 - Downstream impacts of the transfer of TAC to compliant vessels in other sectors.
 - Discussion of the vessels at risk who may classify as small entities.
 - Qualitative assessments of anticipated impacts from the sectors where possible.