NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
Angel Drobnica, Chair | Diana Evans, Executive Director
1007 W. 3rd Avenue, Suite 400, Anchorage, AK 99501
Phone 907-271-2809 | www.npfmc.org

BSAI Crab Plan Team

REPORT

May 11-15, 2026

Virtual Meeting

Committee Members in attendance:

Katie Palof, **Co-Chair** (ADF&G-Juneau)
Mike Litzow, **Co-Chair** (AFSC-Kodiak)
Anita Kroska, **Coordinator** (NPFMC)
André Punt (Univ. of Washington)
Andrew Olson (NMFS-Juneau)
Ben Daly (ADF&G-Kodiak)
Brian Garber-Yonts (AFSC-Portland)
Caitlin Stern (ADF&G-Juneau)
Cody Szuwalski (AFSC-Seattle)
Erin Fedewa (AFSC-Kodiak)
Ethan Nichols (ADF&G-Dutch Harbor)
Ginny Eckert (UAF/CFOS-Juneau)
Tyler Jackson (ADF&G-Kodiak)
William Bechtol (UAF-Homer)
William Stockhausen (AFSC-Seattle)
Vacant, quantitative expert

All documents and presentations are available on the May CPT eAgenda, including final SAFE documents for Aleutian Islands golden king crab (AIGKC) and Pribilof Islands golden king crab (PIGKC).

Council updates

Anita Kroska (NPFMC) and Katie Palof (ADF&G; CPT Co-Chair) gave a summary of Council administrative updates, upcoming deadlines, and ongoing assessment and modeling activities. The CPT discussed outcomes from the January 2026 Modeling Workshop, including continued GMACS development, migration of GMACS to RTMB, and ongoing work on episodic natural mortality and scallop modeling approaches. Members emphasized the value of in-person collaboration for identifying model issues and advancing assessment work at the January Modeling Workshop and supported maintaining annual GMACS update reporting with centralized documentation of model version changes on an annual cycle.

The CPT also reviewed topics from the January special meeting, including harvest control rules and maturity workflow methods, and notified the CPT that the Western Aleutian Islands red king crab (WAIRKC) assessment was postponed to 2027 due to staffing limitations and competing workload priorities. Members noted the need for clearer SAFE guidance for interim-year reporting requirements. Discussion also focused on October 2025 SSC recommendations related to SAFE document consistency and incorporation of socioeconomic indicators. Brian Garber-Yonts (AFSC) explained that relevant data are available through the Human Dimensions Data Explorer, and the CPT discussed possible future incorporation of these indicators into risk tables or ESP-related materials for stocks without existing ESPs.

Finally, Tyler Jackson (ADF&G) presented concerns regarding reduced Scallop Plan Team membership and limited quantitative review capacity. The CPT discussed the possibility of integrating scallop topics into the Crab Plan Team review process given similarities in shellfish assessment approaches and co-management structures. Members generally viewed the proposal as a practical way to address staffing and expertise limitations while acknowledging existing workload constraints.

The CPT also discussed adjusting future CPT meeting schedules to align with revised Council timing (i.e., shifting the May 2027 CPT meeting to late April) and reviewed several upcoming June 2026 Council agenda topics relevant to crab management, including Gulf of Alaska Tanner crab protection measures, pelagic trawl gear research updates, and harvest control rule discussions.

SAFE Guidelines

Anita Kroska (Council staff) and Katie Palof (ADFG) led a discussion on an update to the BSAI crab SAFE guidelines, which were last significantly revised in January 2023. It was suggested the CPT consider a shorter document to allow a quicker review for assessment authors, minutes leads, and other internal reviewers. The current guidelines document also lacks guidance for components such as risk tables, appendices, and overfishing and overfished status. The CPT recommended against using the same guidelines for an assessment and proposed model reports to avoid redundancy, and to have a much shorter document (to be developed) focused on proposed models and responses to CPT and SSC comments. Anita had sent CPT members and assessment authors two new documents for review:

1) a quick reference document with reminders on SAFE report and presentation components, and
2) a SAFE guidelines checklist, modelled after the AFSC SAFE review checklist for groundfish stocks, with guidance distilled from the BSAI crab SAFE guidelines document, and general reminders from prior CPT and SSC minutes.

The checklist included a new table that will translate to SSC Table 1. The CPT discussed the number of decimal places to be used in tables, noting that the SSC tables use kilotons, but this may be difficult to display in a SAFE document for small stocks that have OFLs <1 million pounds. This can especially become an issue when tables are produced for the SSC after the CPT meeting, because the tables go into harvest specifications, and rounding differences for small stocks can lead to major differences in management quantities. The recommendation was the number of reported decimal places may vary across stocks but should be consistent across years for a given stock; Tyler Jackson will work on some draft guidance.

Following an SSC request, the CPT discussed stock projections under realistic TAC levels instead of the OFL. Currently, some Tier 3 assessments are providing 5-year projections in the SAFE documents, which are typically based on random recruitment sampling or MCMC under various levels of fishing mortality. The issue is that projections assume the OFL is taken, but the actual catch is often less than the OFL, which results in a lower projected future MMB that affects the next year's projection. The SSC asked for a more realistic catch than the OFL. For example, the Pacific Council considers TACs instead of OFLs for projections. Currently, the Tanner crab

assessment projects 20-years with five different levels of fishing intensity (F), ranging from 0 to the F_{OFL}. The CPT recommended that authors conduct projections for a range of F values that reflect recent utilization. Several options were discussed such as using the OFL, a fixed proportion of the OFL, the ABC, or the State harvest control rule, but recognize that recruitment is really a driving factor. This topic may be better suited to a January modeling workshop discussion.

Anita requested input on the SAFE Guidelines Checklist, noting that no guidance exists for appendices, and guidelines are similar to the AFSC internal checklist. She pointed out that the SSC has two tables that differ from the SAFE Executive Summary: (1) stock status; and (2) forward looking harvest specs. Discussion noted that SSC Table 2 derives directly from existing SAFE executive summary tables, but SSC Table 1 does not. Values are pulled from various places in the SAFE document, which can cause transcription errors, and sometimes values cannot be located. Sourcing the correct values is time consuming, especially as this happens after the CPT meeting is adjourned and preparations begin to present to the Council. A new SAFE Executive Summary 'Table 3' should be prepared for all models brought forward in the assessment in the event that the CPT recommends or the SSC selects another model; a column with model number needs to be added to aid model identification. A draft template for Table 3 was provided to stock assessment authors for review and will be included in the SAFE checklist.

The stock status table (SSC Table 1, CPT new Table 3) uses MSST and B_{MSY}, with MSST and BMSY originating from two different model years. The MSST is from the most recent model/assessment whereas the Bmsy value in this table is from the previous year/ assessment. Therefore, B_{MSY} from the previously accepted model is paired with the estimate of MMB in February after fishing in the current assessment from the just-completed fishing year to evaluate overfished status. This will require SAFE authors to provide estimates of MMB for the just-completed fishing year for all models the author brought forward.

It was also noted that in crab SAFE Executive Summary tables, Table 1 should show a 5-year history. However, less frequent assessments (e.g., 3-year cycle) should list the last 5 years along with all years the current assessment applies to. Additional detailed guidance will be included in the SAFE checklist and eventually in the BSAI crab SAFE guidelines document.

Similar documents are needed to provide guidance on proposed model runs and off-cycle responses for stocks on multi-year schedules. During New Business, a plan for Fall 2026 was presented to incorporate feedback from stock assessment authors on the SAFE checklist and SAFE reminders documents well in advance of the completion of final SAFE documents for the Fall. Updated guidance will include these topics (among others): rounding, model numbering and GMACS versioning, Executive Summary tables, appendices, risk tables, and buffer history tables. Guidance for proposed model runs and for stocks on multi-year schedules will be presented at the September meeting. Updates to the full-text BSAI SAFE Guidelines (2023) will be translated for review at a later date.

General ESP Updates

Erin Fedewa (NMFS, Kodiak) presented an update on Ecosystem and Socioeconomic Profile (ESP) indicator analyses including an overview of a causal modeling framework and dynamic structural equation modeling (DSEM) to compare benefits of DSEM versus Bayesian Adaptive Sampling. Erin described methods for the snow crab DSEM indicator analysis, including developing causal diagrams for drivers of snow crab recruitment and mortality, fitting dynamic structural equation model models using the DSEM R package, and model evaluation. Erin described relevant ecosystem indicators for recruitment DSEM including Arctic Oscillation, Chl-a concentration, cold pool extent, juvenile snow crab thermal niche, spring sea ice extent, juvenile snow crab disease prevalence, juvenile snow crab energetic condition, Pacific cod consumption, and benthic prey density. Most indicators were developed from the EBS bottom trawl survey so good temporal coverage exists, with the exception of snow crab energetic condition monitoring, which wasn't started until 2019. The recruitment response variable was the abundance of 40-50mm immature male snow crab from the EBS bottom trawl survey (i.e., external to the assessment). Erin then described the structural causal recruitment models with associated life history lags, which were informed by the assumption that this size class is ~4.5-5 years post-settlement.

There was a question about the lag associated with cod consumption, as cod consume multiple size classes, not just the size class used as the recruitment variable. Erin acknowledged there may be an improved way of approaching cod consumption by considering rolling averages of indicator time series in analyses. There was a question about using two crab size classes when evaluating consumption by Pacific cod with a 1-year lag, and Erin noted that she did some exploratory cohort progression models using a larger size class of recruits as the response variable, and this cohort progression model outperformed ecosystem models. Erin noted the limitations associated with survey gear selectivity on smaller size classes. A point was made that survey data may not inform cohort progression for some stocks where pseudocohorts fail to materialize each year (e.g., Tanner crab) and that DSEM might be an informative tool in these instances. There was a request to include plots that show the correlation between survey data recruitment estimates and estimated recruitment from the snow crab assessment model since this is an external DSEM.

Erin next described the statistical significance of the various causal linkages: temperature, cold pool, sea ice extent, and energetic condition had significant causal linkage to recruitment. There was a request from CPT to back-transform causal effects for easier interpretation. Including sea ice and energetic condition causal pathways (juvenile food availability model) resulted in an 84% decrease in estimated recruitment variance. A question was asked about random effects for a particular variable, and it was noted that caution should be taken when incorporating datasets with short timeseries when determining causal linkages. In particular, the anomalous 2019 datapoint in the energetic condition timeseries occurred during the population collapse, thus, given the short timeseries, energetic condition may be better suited as a contextual indicator, or causal inference should be limited to the time period that encompasses the shortest indicator time series for this DSEM (i.e., 2019 - 2026).

Erin also ran more complex DSEM models with linkages between sea ice extent, energetic condition, cold pool extent, snow crab temperature occupied, and snow crab recruitment with and without energetic condition included to evaluate the sensitivity of the short energetic condition

time series. Both model versions had similar directionality, but the sea ice causal effect in the simplified model was not statistically significant, likely due to a reduction in statistical power with increased model complexity. Erin described model diagnostics including a self-test simulation that simulates data and tests whether the DSEM can correctly recover its own parameters from the simulated data. The diagnostics test whether the model is unbiased (i.e., recovers true parameters correctly) and quantifies overall estimation error. Discussion noted that models may struggle to predict novel conditions and events such as the 2019 collapse. Erin described causal mortality models that used time varying mortality estimates from prior work (Szuwalski et al., 2023) and yielded results similar to the recruitment models. It was noted that DSEM will replace Bayesian Adaptive Sampling results to place emphasis on ecosystem indicators with predictive capacity in risk tables. Erin highlighted that DSEM directionality of causal effects was as expected, and the importance of cold temperature and sea ice was confirmed. Erin proposed using the significant causal DSEM results for categorizing predictive versus contextual indicators instead of Bayesian Adaptive Sampling.

For September 2026, the CPT supports the use of recruitment DSEM for the snow crab ESP and risk table, but recommended using Bayesian Adaptive Sampling for BBRKC and Tanner crab, and that a transition to a recruitment DSEM approach for other stocks should occur incrementally with diagnostic analyses presented to the CPT in subsequent meetings. The CPT also recommended that ESP authors not invest substantial time in developing additional diagnostics for Bayesian Adaptive Sampling given the anticipated transition to DSEM for these three crab ESPs in the near future.

Research update: Changes in snow crab size-at-maturity

Emily Ryznar (NOAA Fisheries) presented research to evaluate patterns and drivers of changes in size-at-maturity for EBS snow crab. Large individuals contribute disproportionately to reproductive output, so shifts in size-at-maturity can potentially influence the reproductive capacity and resilience of a stock. All *Chionoecetes* crabs undergo a terminal molt to maturity. The abundance of industry-preferred size males has remained depressed following the 2018-2019 heatwave collapse, there have been unusual female maturity patterns in the past three years, and there are concerns about the status of the stock. Long-term maturity patterns were last assessed in 2017.

The first research objective was to test for directional trends in size-at-50%-mature, the proportion of mature males that are ≥101 mm CW, and the proportion of females 55-65 mm CW that were mature. Male and female size-at-50%-mature were derived from sdmTMB maturity ogives. Using linear models that account for autocorrelation, there is a negative trend in male size-at-50%-mature and in the proportion of mature males ≥ 101 mm CW. While there is no detectable trend in female size-at-50%-mature, there is a negative trend in the proportion of females 55-65 mm CW that were mature (i.e., a proportional increase in immature females in historically large female size classes), which is likely driven by data from the last three years. The CPT noted that it may be useful to examine female maturity in other size bins.

The second objective was to evaluate drivers of maturity parameters, including cohort effects, competition, mate availability, and temperature/ice extent. Cohort effects evaluated the influence of the abundance of newshell crab reaching the size classes marking the onset of terminal molt (40-60 mm CW for males and 35-45 mm CW for females). Competition effects evaluated the influence of large ≥ 95 mm male abundance (for male models) and mature females (for female models). Mate availability evaluated the role of large ≥ 95 mm CW male abundance as a potential driver of female maturity patterns. Temperature evaluated the influence of winter/spring sea ice extent and summer bottom temperature occupied. Each of these drivers was evaluated with lags of 0-3 years (except cohort effects which had no lag), and the top two lags based on cross-correlation were used. The analysts fit GAM(M)s over a candidate covariate grid and selected the best fitting models. Results showed that both male size-at-50%-mature and the proportion of mature males ≥ 101 mm CW decreased with cohort strength (i.e., size at maturity declined as larger cohorts entered the terminal molt window) and increased with competition (i.e., size at maturity increased when large males were abundant). No model explained the female size-at-50%-maturity well, which was consistent with the absence of a trend in this time series. However, the proportion of females 55-65 mm CW that were mature decreased with cold temperature and increased with large male abundance.

The third objective was to simulate how exploitation rates on large industry preferred crab affect the number of crab maturing at that size. The simulation is a six-step process, where the starting immature population is drawn from recruits (32 recruitment years) that undergo mortality, exploitation on ≥101 mm CW, and growth, either to another immature size or a terminal molt. The immature population continues through these steps again. The simulation was run for five exploitation rates (0, 0.2, 0.4, 0.6, 0.8) for 50 time steps (years). The CPT asked if the simulations were re-fit to the GAM(M)s to see if you get out what you put in as a model check; Emily did not but will look at this in the future. The simulation indicated that increased exploitation decreases the proportion of males maturing at the industry-preferred size.

Overall, the study demonstrates declining male size-at-50%-mature and proportion maturing ≥101 mm CW. The abundance of large males is a significant driver of maturity parameters for both sexes. The simulation results indicate that high exploitation rates on large males may create a feedback loop of declining average size at maturity for males. During the discussion, a question was asked about the occurrence of large immature female snow crab in other populations; Erin responded that there do not appear to be large immature crab in the Canadian snow crab data. Further questions related to the spatial overlaps of large immature females with males. Researchers responded that seasonal data constraints preclude examining spatial overlap during the mating season, but it would be possible to analyze trends in summer overlap over time. Responding to questions on the influence of hybrids, Emily noted there is a spatial component among snow and Tanner crab and hybrids, but size-at-maturity has not been evaluated. Other questions related to the costs and benefits for females to delay maturation under mate limitation; this is a topic for further study.

Risk Table Discussion

The afternoon session of the first day of the meeting was dedicated entirely to risk tables, with the goal of reaching a consensus framework for the September 2026 assessment cycle. The SSC had previously urged the CPT to align more closely with the groundfish risk table process rather than continuing to develop a parallel crab-specific approach. Groundfish colleagues (Cindy Tribuzio, Stephani Zador, Kalei Shotwell, NOAA-AFSC) joined to share their experience and answer questions. They emphasized that the risk table development process was and is iterative, and a link was provided to a 2024 document on the development and history of groundfish risk tables.

The core challenge for crab is structural: unlike groundfish, where the risk table is occasionally used to reduce the ABC below the maxABC value set by the harvest control rule (HCR), ABC for crab stocks is always set below the maximum ABC, because for crab, the maximum ABC is equivalent to the OFL. The groundfish HCRs essentially have a built-in buffer between maximum ABC and OFL, which is not the case for crab. For crab, a buffer is based on a qualitative assessment of uncertainty that may affect the likelihood that the “true” OFL is below the estimated OFL in a given year. These differences in process for buffer decision-making between crab and groundfish stock assessments may mean that the groundfish protocol will need to be adapted for crab in the future.

The groundfish process uses a three-level risk scoring system across four categories (assessment-related, population dynamics, ecosystem, fishery performance). Level 1 = normal/expected concerns, Level 2 = increased concern, Level 3 = extreme concern warranting consideration of an ABC reduction. Risk scoring levels reflect the author's judgment of how bad a concern is in the current year — a persistent concern (e.g., missing a survey for years) can still be Level 1, 2, or 3 depending on severity, and can change year to year. Scoring levels are not fixed if a concern has been present before. The groundfish system has an implicit baseline buffer from the harvest control rule (i.e., maxABC) and the risk table is used to identify deviations from that baseline (i.e., an additional buffer), not to build up from zero each year. This distinction became central to the crab discussion. In particular, all BSAI crab stocks have persistent sources of uncertainty that are present for every assessment, which result in stable ABC buffer levels that persist from year to year. Examples include the lack of a stock-recruit relationship (for all stocks) and persistent low recruitment that creates uncertainty over whether the full recruitment time series is suitable for setting harvest specifications (BBRKC).

Two broad approaches for crab were discussed at length:

1. **Build up from zero** — each year, start with a 0% buffer and use risk table entries to assign levels and justify a buffer percentage from the bottom up.

2. **Start from a historical buffer that is aligned with the previous year’s buffer, use the table for deviations** — acknowledge that each stock has a historically

established buffer (e.g., BBRKC has been ~20% for years, and has not dropped below 10%), record historical buffer considerations that are persistent, ongoing uncertainties related to stock specific or model-specific considerations not accounted for in the model, and use the risk level system to capture changes or extraordinary circumstances that would justify adjusting from that base. This approach was favored by CPT as a more tractable way of implementing risk tables.

Diana Stram (Council staff) clarified an important regulatory constraint: a formal base buffer percentage cannot be codified without an FMP amendment — so any "base buffer" concept must remain informal/narrative, not a formal control rule.

The CPT agreed on a two-part risk table structure for crab stock assessments to reflect both the persistent sources of uncertainty that are characteristic of data-related or assessment-related uncertainties and current-year conditions, relative to the previous year, that might motivate a change in the recommended buffer. It was explicitly recognized that buffers should be equally likely to increase or decrease in a given year, depending on whether sources of uncertainty are magnified or reduced. The proposed approach is illustrated in Fig. 1.

The top row of the proposed structure would document persistent, long-standing, model-specific and/or stock-specific assessment uncertainties relative to the OFL, maxABC, and tier-level information that underpin the historical buffer, which can be defined as the average buffer applied in the last 5 assessments — considerations such as the lack of a stock-recruit relationship, borrowed life history parameters, absence of a fishery-independent survey, and persistent retrospective patterns. These are listed in the table for transparency but are *not expected to change year to year* unless there are extraordinary discoveries or events for that stock. This section provides the link between the table and the baseline historical buffer.

The bottom row would then be used to document anything new, elevated, or exceptional relative to the normal baseline historical buffer. The bottom row would also be used to note a change in one of the considerations that was previously documented in the top section. This information will be used to document rationale for buffer adjustments each year relevant to the risk table categories and similar to the groundfish approach. Risk scoring levels and scoring category names will follow those used in the groundfish risk table process and in past crab risk tables.

This framework allows for transparency in the buffer setting process and to record risk, but does not include prescriptive formulas for adjusting risk table scores. Ultimately, the responsibility will be shared by the stock assessment author and CPT. Draft risk table guidance (updated from the May 2025 CPT meeting version), and a risk table template was provided to the CPT during New Business and will be included in SAFE guidance documents. It is expected that the updated guidance be applied for the September 2026 CPT meeting.

Draft Crab Risk Table Guidelines, to be applied for Fall 2026:

1. Assessment authors should identify a historical buffer based on long-term, persistent considerations that encompass uncertainty relative to the OFL and maxABC, and that also incorporates information specific to tier level. These persistent considerations should be documented in the top row of the risk table and carried over each year a new risk table is developed (Fig. 1).

2. The second row of the risk table should be used to evaluate uncertainty within a given year relative to the previous year and should capture uncertainties that are not already incorporated in the assessment model, tier level, or the OFL harvest control rule (Fig. 1).

3. No prescriptive formula will be used to adjust risk table scores, and an increase in risk table scores does not necessarily require an increase in the ABC buffer. The responsibility for making these decisions to recommend an ABC buffer will be shared by the assessment author and CPT.

4. Assessment authors should collaborate with ESP authors (and ESR authors when an ESP is not available) to complete risk tables. Given the very short timeline that is available for writing ESP documents between the end of the survey and the due date for SAFE documents, the CPT agreed that this collaboration need not take the form of a meeting, and might be as simple as the ESP author populating a draft risk table for consideration by the assessment author.

5. Risk tables should be conducted for all annual crab stock assessments (snow crab, Tanner crab, BBRKC, NSRKC, and AIGKC). A full risk table will be provided as an appendix in each individual SAFE chapter with rationale given for risk table scoring. If the stock has a buffer history appendix, the risk table will be combined with it. While the SSC has previously recommended that risk tables be developed for all crab SAFEs, the CPT noted that capacity remains very limited for work on crab assessments, and therefore made this recommendation of proceeding only with the annually-assessed stocks.

6. The CPT will develop a summary table in the full SAFE Introduction to track buffers for each stock.

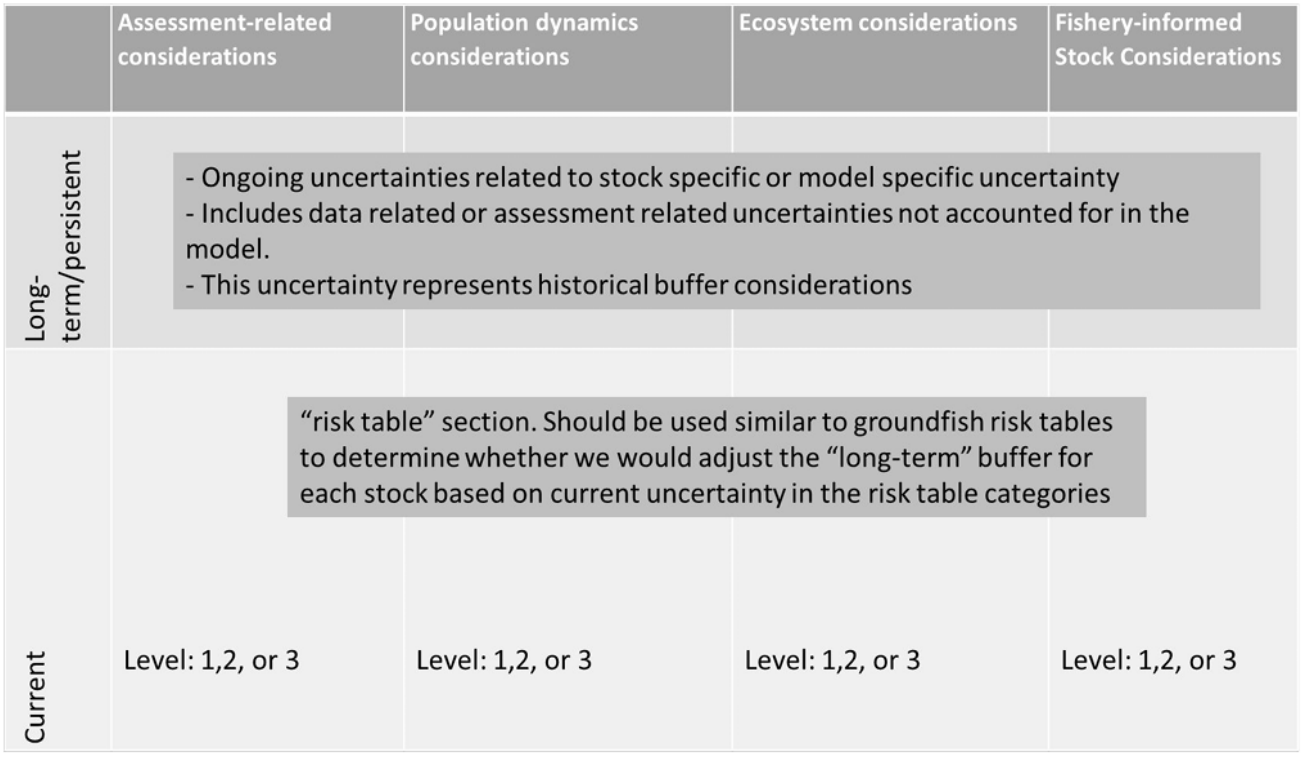

Figure 1. BSAI crab risk table format proposed for adoption in September 2026.

AIGKC Final 2026 SAFE

General issues arising

There is value in tables showing differences in the contributions to the objective function among models (e.g., Tables 8-10 for AIGKC). However, these tables would be easier to interpret if results were expressed as differences from a reference model. In addition, these tables should indicate which models are comparable (i.e., have the same data and likelihood function) and include a row that adds up the log-likelihoods for the data.

2026 assessment

Background and data updates

Tyler Jackson (ADF&G) presented the May 2026 assessment of the Aleutian Islands golden king crab to the CPT. The assessment was based on GMACS (version 2.20.34b). This assessment is finalized in May each year because the fishery for AIGKC opens in August.

The 2026 assessment responded to past SSC and CPT comments by exploring a model starting in non-equilibrium conditions, a new spatiotemporal model-based CPUE index (Appendix A of the assessment report), and a model with subdistrict-specific time-varying selectivity blocks as part of the continuing effort to address concerns with retrospective patterns (particularly for the EAG).

Unlike previous years, the directed fisheries were completed prior to the 2026 assessment but the groundfish fisheries were still ongoing. Tyler noted that there was a new and small State-waters fishery occurring within 3 miles of shore within the portion of the stock east 174° W longitude (EAG). The GHL for this fishery was 50,000 lb (22.7 t) and does not influence the size of the EAG TAC. Only one vessel made landings for the State-waters fishery, so catches are not included in the assessment as they would require the 2025/26 retained and total catches are confidential. Tyler highlighted the higher nominal CPUE for the WAG for the 2025/26 fishing year and that the high CPUE occurred in a smaller area than previous seasons based on a spatial extent analysis. The CPT noted the value of the spatial extent analysis but recommended that there would be value in extending that approach to quantify the uncertainty in estimates of spatial extent.

Compared to the 2025 assessment, the 2026 assessment updated total catch data for 1990-2025, updated total catch size-composition data for 1990-2025, updated the CPUE index through 2025, added retained fishery catch and retained and total size-composition information for the 2025/26 season, and used data on bycatch in the groundfish fisheries for the 2025 crab year.

Tyler updated the standardized CPUE index based on the application of GAM with a Tweedie error model and provided an index based on spatiotemporal GLMM (ST-GLMM). Unlike the previous index standardizations, the ST-GLMM analyses the full time-series of data for 1995-2025 (but the assessment estimated separate catchability parameters for 1995-2004 and 2005 onwards). The CPT had the following comments on this analysis: (a) it may not be necessary to include depth as a covariate given that a spatial random effect is estimated, and (b) consideration could be given to increasing the mesh resolution so that the islands are being "resolved" by the placement of mesh vertices. The resulting ST-GLMM index, while different from the nominal CPUE index, is very similar to the standardized index based on the Tweedie GAM. The CPT noted that considerable work has been directed towards creating a CPUE index for AIGKC and that resulting indices seldom differed among methods. **The CPT therefore recommended that it is not necessary at present to further attempt to refine the index standardization method so that research efforts can be directed at other tasks.** The index standardization method should be reconsidered once additional research on index standardization has been conducted.

Models, model selection, and buffers

Tyler examined four models for the EAG and WAG. Model 23.1c was the 2025 assessment model with updated catch and size-composition time series and a CPUE index based on fitting GAMs. This model started in 1960 in an equilibrium state, included three catchability periods (two for observer CPUE data, one for fish ticket CPUE data), knife-edge male maturity size at 116 mm CL, M set to 0.22 yr^{-1}, directed fishery discard mortality of 0.2 yr^{-1}, and a fixed period (1987–2022 updated from 1987-2021 in the 2024/25 assessment) for reference points calculation. Model 26.0 was model 23.1c with the CPUE based on a spatio-temporal index standardization approach, model 26.0a was model 26.0 with non-equilibrium initial (1981) conditions and equal emphasis on all catch likelihood components, and model 26.1 was model 26.0a with subdistrict-specific time-blocks for selectivity for the directed pot fishery post-rationalization.

Jitter analyses were undertaken for all models. The results of the jitter analysis for the EAG were considered satisfactory but those for the WAG indicated that the "best" model was one with anomalous high bycatch by the groundfish fishery in 1996. The CPT agreed to base management advice on a "suboptimal" (second best) model given that the results for the best model were implausible. However, there is a need to understand why the best fit corresponded to a very poor fit to the groundfish bycatch for one year.

The CPT selected the author-preferred model (26.0a) for both subdistricts even though all models led to very similar trends in MMB and recruitment. Model 26.0a makes use of the spatiotemporal model approach to standardizing the catch and effort data, which is a more flexible way to develop an abundance index for use in the assessment. Model 26.0a also starts in 1981, which is closer to when index and size-composition data first became available. The assessment provided the relationship between fishing mortality rate and stock status and found that the fishing mortality for both stocks for the last year were retrospectively found to be below that expected under the Tier 3 harvest control rule. This has not been the case in recent years for the WAG. In not selecting model 26.1, which included multiple time blocks, the CPT noted that it appeared that this model was selecting selectivity patterns to better fit the CPUE index rather than the size-composition data, but could not confirm this from Table 18, which was missing some information.

The 2026 assessment included a risk table (Appendix B of the assessment report). The CPT made use of the information in this table as the basis for recommending a buffer between the OFL and the ABC, while also noting that the format for risk tables would be changed based on the recommendations from this meeting and the October SSC meeting. The CPT thanked the author for bringing forward a draft AIGKC risk table for this meeting.

The CPT followed the current buffer-setting process of assessing uncertainties utilizing previous years' concerns and reviewing the items in the risk table to determine if they should be included. The CPT agreed that the earlier concerns identified with the assessment, (a) it has no fishery-independent data, (b) the OFL is for the entire stock but the assessments are by subdistrict, and (c) there is a retrospective pattern for the EAG, are still present. **The CPT recommends a buffer of 25% as in previous years, resulting in an ABC of 2.620 kt.** Tyler outlined some ecosystem considerations noting that there is no ESP for AIGKC, that bottom temperatures appear within a normal range for crab survival, and that the benthic community, several coral species, and apex foragers are generally in decline.

The OFL was computed (outside of GMACS) by applying the OFL control rule based on the subdistrict-combined stock status estimates to the subdistrict-specific $F_{35\%}$ values. The subdistrict combined F_{OFL}s were then applied to compute OFLs by subdistrict and hence a total OFL for AIGKC. **The resulting OFL from the author-preferred and CPT-preferred Model 26.0a was 3.493 kt.**

Future work

Tyler identified several areas which will be a focus for work before the 2027 assessment.

- Further development of a subdistrict-combined model. Tyler had previously provided a model based on GMACS that analyzed data for the EAG and WAG simultaneously, but that model was not taken forward for this assessment. Care needs to be taken that GMACS correctly computes the OFL for a subdistrict-combined assessment.
- Development of a potential survey that could be used to provide an index of recruitment for use in the assessment given the lack of signal on recruitment in the size-composition data. This would involve fishing a small number of index areas with short soak times. The CPT was generally supportive of the proposal to develop such a survey and encouraged discussions with industry regarding logistics.
- Address past CPT/SSC comments on maturity data.

Minor editorial comments

- Table 18 has three duplicated columns that need to be corrected for the final version of the document.
- Slide 50 of the PPT file is missing results for model 26.1.
- The value in the "stock status" column in the "Basis for the OFL" tables for 2026/27 need to be corrected for the final version of the document.
- The year in the caption of the "Status and Catch Specifications" table (in the Management Performance section of the Executive Summary) needs to be changed (2026/27 rather than 2025/26).

Public comment

The CPT received input from John Hilsinger reporting on comments from the Alaska Trojan that highlighted the possible impacts of increased trawling on golden king crab in western Aleutian Islands. The CPT welcomed this comment and noted that it could be considered during the current EFH 5-year review cycle.

PIGKC Final 2026 SAFE

The Pribilof Island golden king crab (PIGKC) stock has assessments every three years, with the last full SAFE produced during May 2023. Tyler Jackson (ADF&G) presented an updated full SAFE for 2026. The Pribilof Islands Golden King Crab district is located north of the Aleutian Islands, centered around the Pribilof Islands and extending to the maritime boundary. The directed fishery opens annually by Commissioner's Permit under Alaska state management. The Guideline Harvest Level (GHL) has been set at 130,000 lbs (59 tons) since 2015. The fishery has had low participation since 2021, therefore directed fishery catch data for the current cycle are confidential and could not be shown. There is also sporadic, small bycatch in the snow crab, grooved Tanner crab, and groundfish (POP/rockfish trawl and cod longline) fisheries totaling roughly 0–5 tons annually.

Based on SSC recommendations from the last assessment cycle the specification setting is based on the Tier 5 groundfish approach, where natural mortality (M = 0.222 yr^{-1}, borrowed from the Aleutian Islands stock of golden king crab) is applied as an exploitation rate on mature male biomass (MMB), where maturity is determined to be 107 mm CL. The MMB estimate comes from

the average of historical NMFS slope survey data, which was overlayed on the Pribilof management area grid. A minor correction was discovered in how the grid was applied, resulting in a slight change to the OFL from the previous cycle. The resulting OFL is 112.6 tons. Notably, the CPT had recommended a different approach in 2023, but the SSC directed use of the groundfish Tier 5 method instead.

The CPT agreed with the recommended OFL (112.6 t) and had discussion on the appropriate ABC buffer. The author recommended buffer was 25%, which was the previously accepted buffer. The CPT proposed increasing the buffer to 30% based on the following reasoning:

- It has now been 10 years since new survey data were collected (up from 7 years at the last cycle), increasing uncertainty
- One-third of the MMB data used are interpolated values since crab in the early part of the time series were not measured, limiting distinction between total biomass and mature biomass
- Comparability/consistency with how other stocks are being treated — the same 25% buffer was just applied to Aleutian Islands Golden King Crab, which has a richer data stream
- The point was raised that the tier system was designed so OFLs across tiers are risk-neutral estimates of the same thing, with ABC buffers reflecting scientific uncertainty — making cross-tier buffer comparisons conceptually valid

Discussion cautioned that increasing buffers just because data are getting older could set a precedent that eventually closes fisheries with no new data, and noted it's a different situation from Pribilof Island blue king crab (which has annual surveys). The group also noted that a higher buffer provides added rationale to potentially create an incentive to have the slope survey in the future.

Ultimately, the CPT agreed to increase the ABC buffer to 30%, which resulted in an implied ABC of 78.8 tons.

NSRKC Proposed Models

Caitlin Stern (ADFG) presented five proposed models to the CPT for the November 2026 Norton Sound red king crab (NSRKC) assessment, as well as CPT and SSC priorities for the 2026 assessment cycle, a bridging analysis to an updated version of GMACS, and development of a spatiotemporal model-based index of abundance (MBI). The SSC and CPT priorities addressed in the document include further exploration of MBIs for the NSRKC stock and alignment of the spatial footprints of the MBIs and the size-compositions used in the assessment. Caitlin noted that work on other priorities, such as updating and documenting the fishery CPUE index, are underway but not yet complete.

Caitlin presented a bridging analysis to update the 2025 assessment model, 25.0a2, from GMACS version 2.20.20 to version 2.20.34a, which was completed just after the January 2026 Modeling Workshop. The GMACS-updated version of the assessment model was numbered 26.0 to simplify

assessment model tracking. The analysis demonstrated that Model 26.0 replicated the management quantities, recruitment time series, and MMB time series from model 25.0a2, so model 26.0 will be considered the "base" model for developing further candidate models for the 2026 assessment.

Caitlin next discussed development of a spatiotemporal model-based index (MBI) of abundance to be used in the assessment (see Appendix D for details). Currently, design-based indices of abundance from an historical NMFS Norton Sound trawl survey (1976-1991) and two contemporary surveys—the NMFS northern Bering Sea (NBS) trawl survey (2010-present) and the ADFG Norton Sound trawl survey (1996-present) are used when fitting the assessment model. While the design-based indices provide estimates of abundance over the area targeted for commercial harvest, survey observations suggest the stock range is larger than the commercial harvest footprint. In addition, the contemporary surveys do not occur at the same frequency or spatial resolution and the spatial extents are different. Thus, accounting for spatiotemporal variation in the survey catches was expected to provide more consistent estimates of stock abundance and can additionally align with the spatial footprint of available size-composition data. Caitlin fit geostatistical GLMMs with spatiotemporally independent and identically-distributed (IID) random effects to the data from the contemporary NMFS and ADFG surveys using the sdmTMB package developed for R. She evaluated models that included fixed effects for year, survey, and depth together with the Tweedie, delta gamma, and delta lognormal error distribution families. The models were evaluated using cross-validation with 10 randomly-selected folds, with the delta gamma model with year, survey, and depth as significant fixed effects selected on the basis of having the lowest total predictive out-of-sample negative log-likelihood value (by 100 likelihood units). Caitlin noted, however, that the delta gamma model without depth as a factor had a smaller RMSE and MAE. Depth had a strong effect on the resulting abundance index, substantially reducing the overall scale relative to an equivalent model without depth as a factor. CPT members expressed surprise that the effects of a static variable such as depth were not "soaked up" in the spatiotemporal component of the model.

Caitlin provided results from five potential models, in addition to model 26.0, for the CPT to consider for use in the 2027 assessment (November 2026). Four models incorporated the delta gamma MBI. Model 26.1 was 26.0 with catchability for the MBI fixed at 1, the catchability and selectivity for the historical Norton Sound survey estimated, and the ADFG and NBS survey selectivities mirrored. Model 26.2 estimated catchability for the MBI but was otherwise identical to 26.1. Model 26.3 built on 26.2 by estimating selectivities for all three trawl surveys while 26.4 was 26.2 but with the selectivities fixed for all three surveys. Model 26.5 reverted to 26.0 in that it included all three design-based indices but it also estimated catchabilities and selectivities for all three. Estimates of survey catchability were identical for models 26.0 and 26.5 and somewhat higher for the three CPUE indices in the models fitting the MBI relative to the estimates from the base model (26.0). Selectivities were almost identical across the models for the different fisheries and surveys. The CPT noted that estimating catchability for the MBI increased the associated uncertainty for all other estimated quantities (models 26.2, 26.3, 26.4). Fits to the CPUE indices and size-compositions were essentially identical across the models: differences were extremely small. Estimated recruitment and MMB time series exhibited relatively substantial differences in scale, but not in temporal pattern. The base model exhibited the highest scale, model 26.3

exhibited the lowest scale, and the remainder exhibited similar intermediate scales. On the basis of its Mohn's rho score, model 26.2 exhibited the best retrospective pattern: 26.3 and 26.4 exhibited similarly good scores while the remaining models exhibited somewhat worse retrospective patterns. Including the MBI in the models generally resulted in somewhat lower values for all management reference points; Caitlin attributed this to the MBI capturing information on abundance across more of the stock area than the design-based indices. She recommended bringing forward models 26.2 and 26.4 in addition to the base model, 26.0, for the fall assessment. Models 26.2 and 26.4 had better retrospective patterns than the base model; 26.4 estimated fewer parameters than 26.2. The CPT did not support using model 26.4 because the selectivities were fixed in that model based on the results of the other models. Instead, consensus suggested including 26.1 in order to provide a bridging step from the base model to 26.2.

With regards to future work, Caitlin highlighted her desire to: 1) explore model-based estimation for the survey size-compositions, 2) update the fishery CPUE standardization methods, and 3) add subsistence catch data to the assessment. The CPT recommended that 1) be considered the highest priority because it would probably have the largest impact on the assessment while 3) should be given the least priority because its impact on the assessment would be minimal at best and potentially even misleading if the model overemphasizes fits to data for these fishery components.

For the assessment in November, the CPT recommended that the authors bring forward models 26.0, 26.1, and 26.2. It also requested that they revisit the MBI and **provide two model-based indices of abundance: one with and one without depth as a covariate**. For the MBI with depth as a covariate, a diagnostic plot of the marginal effect of depth should be provided (if possible: Caitlin noted she encountered difficulties in doing so for this meeting). **Assessment model results should be presented for each MBI for a total of five model runs to be presented for the November assessment (model 26.0; models 26.1 and 26.2 times 2 MBIs)**.

Snow Crab Proposed Models

Grant Adams (NOAA-AFSC) presented the proposed snow crab stock assessment model runs. The CPT welcomed the new lead stock assessment author and thanked him for his work on the presented model runs. The document addressed the following SSC and CPT priorities and recommendations from previous meetings: further exploration of model sensitivity to hybrid data, jittering, maturity ogive scenarios, and overlayed morphometric maturity/size distribution plots. For September, in addition to the CPT-recommended models, the authors plan to include likelihood profiles, updated morphometric maturity/size distribution plots with new maturity workflow, rebuilding analysis, and a tier 4 fallback model.

The base model brought forward was model 25.3 (which was mistakenly labeled as model 25 in the proposed model document and presentation), the author- and CPT-recommended model from 2025. The authors presented 13 additional exploratory model runs focused on four categories of what the authors termed 'axes of uncertainty': 1) updates to the GMACS version and and the total-male composition data file; 2) inclusion of an immature survey biomass index; 3) inclusion of a new workflow for survey male maturity data; and 4) model sensitivity runs with hybrid data

(as requested by the CPT and SSC). However, the authors did not provide recommendations for author-preferred model(s). Numbers for new models that were brought forward at this meeting were mistakenly labeled as corresponding to 2025 rather than 2026, and this will be corrected for the September CPT meeting.

The authors presented corrections to two errors in data inputs: 1) an error in the total male size-composition data, and 2) an error in the sizes included in the plus group. A third update was effectively an error correction: the authors presented model runs including the new maturity workflow developed by Emily Ryznar (NOAA), which corrected errors found in the legacy maturity workflow. **The CPT recommended that future Tier 3 models for the snow crab stock should include all three of these error corrections.**

Exploratory models included an immature crab index from the survey data and hybrid crab model sensitivity runs. The authors explored the effects of an immature crab survey biomass index and found that it removed bimodality observed in jitter analyses, but came with a substantially higher estimate of mature male *M*. The CPT recommended that the immature crab index should not be included in future model runs, since this is effectively using the same data multiple times, as the immature index is already used in the size compositions. The CPT's concerns about the immature crab index relate to a larger issue with differences in the ways that the snow crab and Tanner crab models use the maturity ogive data; this is a topic the CPT plans to take up at a future January modeling workshop.

The CPT did not request that model runs including hybrids be brought forward for September 2026, due to their small influence on output in the sensitivity runs and the larger issues in the Tier 3 snow crab models that need to be resolved. However, these models may be requested in the future, depending on hybrid abundance observed in the EBS bottom trawl survey, stakeholder interest, and other factors (see Hybrid topics section of this report for more detail).

Almost all of the model runs the authors presented showed evidence of the convergence problems that have troubled snow crab Tier 3 model runs in recent assessment cycles. The CPT appreciates that the new lead author attempted to explore some solutions to this issue by adding the immature male index, however exploration did not provide a workable solution. The CPT noted that the authors did not present an analysis the CPT had previously requested: a model run with only data through 2019 to test the hypothesis that the model convergence problems stem from difficulties estimating recruitment following the population crash and the lack of 2020 survey data. This could be done by changing the terminal year in GMACS and would effectively be the same as a retrospective analysis. **The CPT continues to request this analysis as the authors seek to understand the causes of the convergence problems.** As an additional step to investigate the convergence problems, **the CPT recommended that the authors take the following approach**: fix most of the model parameters that can be fixed, confirm that the model run with very few parameters converges, then add estimation of parameters sequentially and evaluate when convergence fails. The CPT also recommended that the authors look at the parameter covariance matrix, pull out the top two or three parameters that are highly correlated, and explore the effects of those parameters on model convergence.

For September 2026, the CPT would like to see the following:

- **Tier 4 analysis**. Given the model convergence issues, the CPT noted that using the Tier 4 approach for harvest specifications may be necessary.
- **Model 25.2c**. This model includes corrections to the errors discovered in the size composition and plus group data. The model also includes the new maturity workflow, which the CPT agreed should be adopted for both the snow crab and Tanner crab assessments because the legacy workflow included errors.
- **Model 25.2c with only males included**. CPT members noted that this sensitivity run is important to bring forward because simplifying the model in this way has the potential to resolve the persistent convergence issues seen with the two-sex model. The authors use a male-only model in research projects, including the snow crab Management Strategy Evaluation project that is underway. The male-only model may have improved stability relative to the two-sex model. The CPT does not envision that the SSC would need to review this model for harvest specifications at the SSC's October 2026 meeting unless the CPT concludes at the September 2026 CPT meeting that the male-only tier 3 model is the best available option for harvest specifications.

Hybrid Topics

At the September 2025 CPT meeting, NOAA summer trawl survey results indicated an unprecedented abundance for all size-sex categories of hybrid crab, with 20% of *Chionoecetes* males ≥ 101 mm identified as hybrid crab. In response to this event and SSC recommendations, the CPT received a series of presentations on hybrid Tanner-snow crab topics, including presentations on:

- State data collection and the TAC-setting process provided by Tyler Jackson and Ethan Nichols (ADF&G),
- hybrid identification methods used by NOAA in the EBS bottom trawl survey by Chris Long (NOAA, AFSC),
- model sensitivity runs of snow and Tanner crab stock assessments to inclusion of hybrid crab data by Grant Adams and Buck Stockhausen (NOAA, AFSC), and
- hybrid research from the Kodiak lab, presented by Mike Litzow (AFSC).

Although the CPT's purview is focused on the federal management process, a presentation on the State of Alaska data collection and management process, as well as the State response to 2025 hybrid crab abundance via the TAC setting process was requested to shed light on the interaction of the federal and State processes and the outcomes for the 2026 crab year. The CPT discussed future hybrid research and management approaches heading into Fall 2026.

State observer program and TAC setting

The ADF&G crab observer program classifies hybrids into three different types of hybrid crab for *Chionoecetes sp.*: hybrid-nonspecific, hybrid-*bairdi*, and hybrid-*opilio*. Type is determined using external characteristics such as eye color (red = Tanner crab, green = snow crab) and epistome shape (M-shape = Tanner crab). The ADF&G observer program has documented hybrids since 1989 and more recently the observer program requires that hybrids be photo-IDed to verify hybrid

identification. Historically, most hybrid crab in the ADF&G crab observer database were coded as hybrid-nonspecific, while more recent fishery observations are dominated by hybrid-*opilio*. Hybrid-*bairdi* make up only a small percentage of total hybrids.

Hybrids have always been included in retained catch data, and retention has always been allowed in either parent fishery, although incidental retention regulations have changed over time. Current State of Alaska regulations allow for a 35% incidental retention allowance of snow crab during the directed Tanner crab fishery, while conversely only a 5% incidental retention allowance of Tanner crab is allowed in the directed snow crab fishery. In addition, hybrids must be managed within the BSAI Crab FMP framework, meaning they are categorized as either Tanner crab or snow crab based using the legal definition of Tanner crab. Therefore, hybrid information is only collected by onboard observers, dockside samplers, and during surveys. Under current regulations, hybrids may be delivered in either fishery, but eye color and epistome shape determine whether the catch is categorized as Tanner crab or snow crab. Processors ultimately determine species composition using a *Chionoecetes* quick-reference identification guide. A crab that does not meet the strict Tanner crab definition is, by default, classified as snow crab. Incidental retention percentages are determined using fish ticket weights rather than observer counts or dockside sampling. Preliminary retained catch sampling results for 2025/26 indicate that low percentages of hybrids were retained in either the snow or Tanner crab fisheries (< 4%).

For the 2025/2026 snow crab season, due to the unprecedented high abundance of hybrid crab in the 2025 EBS bottom trawl survey, ADF&G increased the base snow crab TAC by an additional 1 million lbs to provide additional harvest opportunity on hybrid crab. ADF&G worked in coordination with the Bering Sea crab industry to identify a hybrid harvest area that contained the highest survey abundance of hybrid crab. At the time of this meeting, minimal hybrid crab had been harvested in the snow crab fishery, little of which was from the hybrid harvest area.

NOAA EBS bottom-trawl survey hybrid data considerations

Chris Long (AFSC) described hybrid identification methods that rely on seven morphological characteristics: carapace shape, epistome margin, carapace scalloping, rostrum notch, lateral rostrum angle, pterygostomian spines, and eye color. Identification protocols are based largely on Urban et al. (2002). However, while classification trees worked reasonably well for individual experts, there was a high variance among experts.

The 2025 NOAA EBS bottom-trawl survey revealed an unprecedented increase in male hybrid abundance that had a large effect on fishery and management discussions. In retrospect there were also some weak signals of increased abundance of male hybrids at smaller size classes in 2023 and 2024, but ID rates for hybrids decline at smaller size classes, which makes tracking pseudo-cohorts from smaller size classes challenging. There was no comparable signal of smaller size classes for female hybrids in previous years, likely due to the smaller body size and correspondingly lower hybrid ID rates for females. The survey group acknowledges that hybrid identification based on morphological characteristics is difficult. Identifications are based on seven characteristics, each of which exhibits a gradient between the parent species, and two or more hybrid characteristics are required for assigning a hybrid classification.

Survey limitations included: small original datasets used for developing identification criteria which were based on mature male crab; high error/observer bias for IDing small hybrid crabs (< 60 mm CW), a process that is difficult to standardize across biologists on the survey; high overlap in morphological characteristics for all three crab types (Tanner, snow, and hybrid), characteristics for which are more confounding for small crab; and lack of genetic confirmation. However, the large pulses of hybrids appear biologically real even if identification uncertainties persist. The CPT also discussed possible cross-breeding dynamics, with suggestions that larger male Tanner crab may be more likely to mate with female snow crab. Finally, the survey group is instituting a pilot study in 2026 to return hybrids to the lab to work on improved classification of morphological characteristics, as well as to confirm hybrid IDs with genetics.

Stock assessment sensitivity to inclusion of hybrid data for snow and Tanner crab

Grant Adams (AFSC) and Buck Stockhausen (AFSC) presented sensitivity analysis runs with the inclusion of hybrids in the snow and Tanner crab stock assessments. Results indicated that including hybrids had relatively small effects on outputs of the snow crab assessment. The CPT discussed that if hybrid data were not added to assessment models, hybrid removals could, if possible, be removed from retained catch estimates to maintain internally consistent Tanner and snow crab catch accounting. Sensitivity runs for Tanner crab similarly showed limited effects from hybrid inclusion, with variability estimated at roughly 5% or less when hybrids were excluded. Overall, the analyses suggested that the inclusion of hybrid data had relatively minor impacts on the results of assessment models for both species. Buck also noted that assessment models have no information on how hybrid crab affect population dynamics, and no growth or maturity information is available, therefore assuming that a hybrid crab is “equal” to either snow or Tanner crab is misleading and could have detrimental effects on the long term population sustainability. Buck suggested that perhaps hybrids should be separated from the data streams, and then, if warranted, uncertainty from those data be incorporated into the ABC buffer considerations.

Hybrid Research

Mike Litzow (NOAA, AFSC) presented a dynamic structural equation modeling (DSEM) approach to understand the cause of the sudden increase in hybrid crab abundance. Two models were analyzed with one focused on explaining the abundance increase in Tanner crab that has been observed in recent years and the other explaining the abundance increase of hybrids. The DSEM distinguished between direct and indirect effects of sea ice on snow crab abundance. Results from this research indicated that the decline in snow crab abundance in recent years appears to be a causal factor for the increase in Tanner crab abundance. The DSEM models for hybrid abundance were parameterized to distinguish between pre-mating and post-mating dynamics to explain the spike in hybrid abundance. This model also identified the decline in snow crab abundance, but not increased snow crab - Tanner crab overlap, as the cause of increased hybrid abundance

The analysts also used sdmTMB to evaluate potential changes in niche space for both parent species and hybrids, as well as changes in distribution and overlap. Results indicated that the hybrid center of gravity shifted substantially westward during the heatwave but remained stable

pre-and post-heatwave. Spatial overlap of snow and Tanner crab has declined since the heatwave. In addition, Tanner crab distributions have shifted deeper since the heatwave, hybrid distributions have shifted shallower, and snow crab are increasingly restricted to cold water.

Next steps for Fall 2026

The CPT recommended that hybrids from survey or total catch data streams should not be included in either the snow or Tanner crab assessment models at this time. Instead, the CPT recommends continued tracking of hybrid abundance via the annual NOAA survey tech memo, which is released in the Fall immediately before the September CPT meeting. The CPT recognized that since hybrids are included in the catch data that this creates some inconsistency in the data. The CPT discussed having ADF&G explore producing catch time series without hybrid data but no recommendations were made at this time.

In the October 2025 report, the SSC suggested the potential for a section in the ESP to track hybrids over time, with a focus on their interaction with Tanner crab. The CPT did not see a need for an ESP tracking mechanism at this time as the information is presented in the survey tech memo and there were minimal impacts to the Tanner crab assessment from the inclusion of hybrid data. The CPT also did not recommend the inclusion of any type of overlap metrics between snow and Tanner crab in the ESP because there does not seem to be any causal relationship with hybrid abundance based on the research presented at this meeting. Further clarity on the specific downstream application of an ESP hybrid section is needed.

The CPT also determined that if continued high hybrid abundance was seen in the future, additional model sensitivity runs may be requested from the snow crab assessment author, but not in the fall as there are other priorities for the assessment. Future Tanner crab model sensitivity runs were not seen as necessary as the majority of hybrid crab are landed as snow crab using the identification characteristics in State regulation (~98% of hybrid crab are classified as snow crab).

The CPT also discussed the potential of utilizing a REMA model as a tool for monitoring trends without formally changing the assessment structure, similar to a Tier 4 approach. However, with the minimal impacts of the hybrid data on snow and Tanner stock assessments, and constrained staff capacity, the CPT recommended that this approach may not be worthwhile at this time. The framework of the FMP provides flexibility to incorporate uncertainty around the “true” OFL for either parent stock stemming either from increases in hybrid abundance, or from the inclusion of hybrids in survey or catch data, in the ABC buffer and TAC-setting process. **The CPT recommends that this flexibility that is allowed by the FMP should be used for setting harvest specifications this upcoming fall, if appropriate.**

The CPT highlighted a need for modernized genetic identification as a high-priority research item to move beyond semi-subjective morphometric classifications and to better understand the long-term implications of hybridization in a warming Bering Sea.

BBRKC Proposed Models

Katie Palof (ADF&G) presented proposed model runs for Bristol Bay red king crab (BBRKC) using the GMACS modeling framework (v2.20.34a) and reviewed responses to several prior CPT and SSC comments regarding model diagnostics, selectivity, size composition treatment, and spatial considerations.

Katie reviewed updates to the GMACS framework, noting that updating from GMACS version 2.20.20 to 2.20.34a produced no substantive changes in model fit or output. However, an issue identified with the way in which aggregate size composition data are fit, that specifically applies to the bycatch in the Tanner crab fishery will be addressed with GMACS version 2.20.37 and updated for September. The accepted 2025 base model, 24.0c.2, was retained as the reference model for further explorations. She also summarized progress on SSC and CPT requests, including incorporation of One-Step-Ahead residuals, continued development of fallback Tier 4 approaches, and ongoing work examining BSFRF survey data as a prior on NMFS survey selectivity.

Katie discussed ongoing work examining spatial dynamics in the stock, including comparisons between Bristol Bay and the Northern Unstratified Area and preliminary development of model-based indices using sdmTMB. Katie noted that further work is planned to examine directed fishery CPUE trends, spatial aggregation, and comparisons between survey and fishery metrics.

The primary model exploration presented during this cycle focused on extending the upper size bins used in the assessment model. Previous CPT and SSC comments had highlighted accumulation of crab in the terminal plus groups, particularly for females. Model 26.0 extended the male plus group from 160 mm to 175 mm CL and the female plus group from 140 mm to 150 mm CL, increasing the total number of modeled size bins and requiring updates to all size composition datasets used in the assessment. The implementation of the extended size bins required assumptions regarding growth and molting in the new terminal size classes because the historical growth matrix data were not fully available for redevelopment. An intermediate model, 26.0a, was developed to isolate the effects of updated bycatch size composition datasets prior to implementing the expanded size ranges, producing only minor changes.

In contrast, Model 26.0 improved fits to most size composition datasets, particularly for the directed fishery and NMFS trawl survey compositions, while maintaining similar trends in mature male biomass, recruitment, and fishing mortality. Katie noted that the expanded size bins appeared to better capture the accumulation of large crab in recent years.

Katie also briefly reviewed previous explorations using BSFRF survey data as priors on NMFS survey selectivity. Earlier model runs incorporating these priors did not substantially improve overall model fit and relied on assumptions regarding the relationship between BSFRF and NMFS survey data that may not be fully appropriate for BBRKC. Further work on selectivity and catchability remains a priority for future assessment cycles.

Management quantities among the proposed models were generally similar, although Model 26.0 produced slightly higher mature male biomass and OFL estimates relative to the base model. Katie proposed bringing forward Model 26.0 for consideration in the September 2026 assessment

alongside Model 24.0c.2 as the reference model. Future work priorities include additional selectivity investigations, refinement of model-based indices, retrospective analyses, and continued development of a management strategy evaluation (MSE) framework for BBRKC.

The CPT recommended:

1. Support for Katie's model recommendations for September: models 26.0, 24.0c.2, and a tier 4 REMA fallback model.
2. Extending the size bins further. One way to explore how far to extend would be to look at the equilibrium size structure given the size transition matrix and molting probability and extend to encompass all size bins with crab. Tail compression could be used when fitting to improve estimation.
3. Clarifying points in the document on estimating sigma R, the recruitment_rb_females parameter, and when size comp reweighting has occurred so it is clear if likelihoods are comparable.
4. Obtaining all available growth data to inform estimation in the model would be useful, particularly with the change in size bins.

Skipper Survey Updates/Feedback

Cory Lescher (ABSC) provided the CPT with an overview of new developments and current-year results from Alaska Bering Sea Crabbers (ABSC) Skipper Surveys. Skipper surveys are broken down into seven static questions that are consistent across survey years to compare current-year observations to observations from the prior year. These standardized questions provide information on changes in fishing practices and perceived abundance of different size/sex classes. The second half of the survey can change among seasons and provides the opportunity to ask questions that identify patterns and trends (e.g., hybrid abundance), monitor species interactions and bycatch, identify additional research needs, and address questions relevant to specific management or stock author interests. Cory reiterated that conducting skipper surveys annually is challenged by fishery closures, difficulties in contacting skippers post-season, inconsistencies in annual skipper or vessel participation, and confidentiality restrictions. The CPT recommended that collaboration with other agencies to distribute surveys or distributing paper copies of the surveys when vessels are registering may help alleviate some challenges but recognized Cory's efforts to achieve high survey participation rates despite these challenges. The CPT recommended that responses from multiple skippers operating the same vessel could be weighted by the number of deliveries and/or the number of days fished. The CPT also emphasized that skipper surveys are an important data stream during fishery closures when it is important to document economic hardships experienced by the fleet. The CPT suggested skipper survey questions during fishery closures could include information on alternate employment, diversification and flexibility to target other fisheries, and additional hardships encountered (e.g., deferred vessel maintenance, loss of crew).

Cory provided a timeline of the development and implementation of skipper surveys for BBRKC, Bering Sea snow crab, and the recent addition of AIGKC and East and West Tanner crab during

the 2025/26 season. Next, Cory presented survey results on perceived abundance of legal/industry-preferred males for the most recent and ongoing fisheries for all stocks with skipper surveys. The BBRKC 2025/26 skipper survey (83% participation) highlighted that perceived legal male abundance increased, and that 72% of skippers thought the TAC could have been higher. Preliminary survey results for the ongoing snow crab fishery were mixed, and responses varied for both perceived abundance and hybrid encounter rate. Cory mentioned that the range of responses were likely influenced by fishing location and whether vessels actively pursued the 1 million lb. hybrid TAC in the hybrid harvest area box designated by ADF&G. **The CPT recommended that questions on hybrid encounter rates be followed up by asking whether vessels were successful in targeting hybrids.** The Western Tanner crab skipper survey noted a substantial increase in perceived abundance of legal males, which is consistent with the highest nominal fishery CPUE on record. The pilot AIGKC skipper survey had 100% participation, and Cory noted that in the future, attempts will be made to split the survey between the EAG and WAG. The AIGKC survey also highlighted continued surveys and small web pots as important avenues for research identified by skippers.

When asked how the CPT should interpret differences in perceived abundance in skipper surveys relative to assessment and survey results, Cory emphasized that follow-up questions about changes in fishing practices are meant to help interpret conflicting results. In addition, full skipper survey results are shared with assessment authors and ESP authors. There was interest in comparing individual skipper responses to perceived abundance questions with vessel-specific CPUE data, but Cory mentioned that anonymity often encourages participation. The CPT asked about re-structuring the “Other” response option in the survey to include more informative options like “Unsure” and “Varied throughout the season”, but the skipper survey is currently limited to a Microsoft platform and a more flexible app-based survey design would require additional capacity. **The CPT suggested that skippers could be given the opportunity to voluntarily disclose their name and vessel, which could help in detecting potential non-response bias. The CPT also approved the approach utilized in the 2025 ESP where three representative questions from current-year skipper surveys were reported in the BBRKC and snow crab ESP report cards.** There was consensus that while time series data are of value as data collection continues, buffer and TAC setting likely benefit most from current-year indicators that capture trends in fishery performance and fleet behavior. **The CPT recommended that Cory present skipper survey results annually to the CPT during its May meeting, as this would offer the opportunity to pursue time series approaches to communicating skipper survey results in the future. The CPT also suggested that the agenda item in the future include a brief written summary of skipper survey responses as a document available for review.** Overall, the CPT thanks Cory and ABSC for their continued efforts in conducting skipper surveys, noting that the surveys capture valuable perspectives across fleets, including those skippers who may not directly engage in the management process.

Tanner crab Proposed Models

William “Buck” Stockhausen (AFSC) presented model explorations for Tanner crab. Buck addressed CPT and SSC comments, including the influence of the new NMFS EBS trawl survey maturity workflow, the addition of *Chionoecetes* hybrid data, and a bridging analysis to GMACS.

Models that included hybrid data were discussed in the broader CPT discussion on hybrids (see notes above) and were not further discussed here.

The primary difference in the maturity data was that the legacy version is design-based (and was erroneously weighted) and the new approach uses a spatiotemporal GLMM (implemented in *sdmTMB*) to estimate probability of maturity at size. Resulting maturity ogives differed slightly but were overall fairly similar. The new workflow produces uncertainty estimates unlike the design-based estimates. Buck noted some missing years of data in the new workflow, which NMFS staff suggest should be present. The CPT recommended investigating this disparity before the September final assessment. Using the model-based maturity estimates improved fits to data components and led to only minor changes to estimated quantities. The author noted, and the CPT agreed, that the new maturity workflow is an improvement (and correction) over the past design-based method and should be used for the final assessment.

Much improvement was made to the bridging analysis between TCSAM02 and GMACS, which involved adding several options to the GMACS framework that mirror parameterizations of TCSAM02. TCSAM02 generates numbers at size by building up the population from 1948 to the start of catch data (1965) using average recruitment and annual deviations that assume an AR1 process. In this case, the AR1 process was removed to align with GMACS. Updates to GMACS include new options for likelihood functions, how growth transition is modeled, and selectivity. Buck was able to adjust how GMACS handles calculating and extending size composition data to add functionality when there are sex-specific capture rates in the time between when the document outlining the proposed models was submitted and this presentation (see Tanner crab Addendum).

Comparing the bridging versions of TCSAM02 and GMACS with one function call (no estimation) resulted in highly similar predicted values, derived quantities, and reference points. Buck highlighted that TCSAM02 estimates target fishing mortality rates using an analytical calculation whereas GMACS uses a 200 yr projection to estimate equilibrium. F_{MSY} and F_{OFL} differed by less than 0.5% between the two models while the OFLs differed by about 7.5%. CPT discussion suggested the latter difference was reasonable even though the differences in F_{OFL} were small. Buck plans to take a closer look at priors and penalties to better align estimation between model frameworks, but the CPT cautioned against chasing diminishing returns if models are producing adequately similar results.

Buck and the CPT recommended bringing forward both TCSAM02 and GMACS models with the updated maturity workflow for the September final assessment, with the anticipation that the CPT will likely adopt the GMACS version for harvest specifications. The CPT also noted that Buck should ensure that the updated fishery catch time series is being used for the final assessment, anticipating that there may be some minor changes to early years. It was also recommended that the CPT discuss how and why maturity ogives are used differently by the snow and Tanner crab assessments at the next January modelling workshop. Lastly, the Tanner crab assessment will undergo a CIE review from June 9-11, 2026 at AFSC in Seattle.

Research update: Maturity workflow

Emily Ryznar (NOAA) first presented the new *Chionoecetes* maturity workflow at the January 2026 CPT meeting and a detailed explanation of the workflow goals and development appears in that meeting's report. At this meeting, Emily presented revisions to the maturity workflow made in response to comments from the January 2026 CPT meeting (see the updated report here). Models are now fit using a Bernoulli likelihood for each data point so there is no need for size binning when fitting the model. Bootstrapping is now used to account for the subsampling sampling fraction uncertainty and propagated through to ogive and SAM estimates within each sdmTMB simulation draw. Bootstrapping the sampling fraction led to small changes to uncertainty in ogives. A retrospective analysis was conducted evaluating whether withholding recent years of data changes ogive shape and/or uncertainty; results indicated that withholding years does not significantly change ogive shape and uncertainty. The proposed new workflow incorporates the recommended changes and is endorsed by the CPT. **The CPT recommends that this workflow should replace the legacy workflow for both *Chionoecetes* assessments.**

Research update: Tanner crab MSE

Madi Heller-Shipley (NRC, UW, BSFRF) provided the CPT with a research update on her graduate work focusing on whether "shortcut" management strategy evaluation (MSE) methods produce comparable results to a full MSE for crab stocks. Her work focused on Tanner crab since the work could build on her previous work on Tanner crab MSEs.

Madi provided the CPT with an overview of her approach, methods for both the full MSE and shortcut version, and the Tanner crab model set up she used for her MSE platform. She used the 2018 Tanner crab stock assessment models as the operating model with full estimation of the Tier 3 and Tier 4 harvest control rules (HCRs), along with the Tier 4 shortcut approach. The Tier 3 and 4 HCRs provide values for the Acceptable Biological Catch (ABC). Madi chose seven state harvest control rules that represented three groups of harvest options: male-only exploitation rates, female "dimmer" rules that scale harvest based on both male and female biomass, and exploitable-legal-male percentage rules. All of the state harvest control rules are capped at 50% of exploitable legal male biomass.

The state-derived TAC almost always exceeded the federal ABC when it was based on a Tier 4 approach (both full and shortcut) when uncapped — meaning state harvest rules would routinely set harvest above what federal law allows. This happens because the Tier 4 OFLs are inherently much smaller than Tier 3 OFLs ($F_{MSY} = M$ rather than $F_{35\%}$), and the shortcut additionally assumes survey cachability (q) = 1, which reduces estimated biomass by roughly 30% compared to the model-estimated q. In practice, the MSE's management module caps realized TAC at the ABC, so the shape of the state HCR does not actually influence outcomes in Tier 4 scenarios. Despite these limitations, the shortcut method has real value as a triage tool: because the shapes of uncapped TAC trajectories are broadly consistent between full and shortcut methods, the shortcut approach can quickly identify which HCRs are worth investing in full estimation — and which

(such as the most aggressive ELM_{50} rule) can be ruled out rapidly without spending months on a full MSE run.

The CPT provided Madi with feedback on her proposed next steps for her research, which includes testing with the gamma scalar in the Tier 4 harvest control rules as a proxy for some of the effects of assuming q=1 and removing the federal caps to rest model behavior under unconstrained harvest to explore at what exploitation level biomass starts to decline sharply. The CPT looks forward to hearing more about this research as a potential tool to increase the efficiency of MSE analyses for North Pacific crab stocks.

SMBKC Proposed Models

Caitlin Stern (ADF&G) presented proposed models for assessing the St. Matthew Island blue king crab (SMBKC) stock. This fishery has been closed since the 2016/2017 crab year, the stock was declared overfished during 2018 and a rebuilding plan was approved in 2020, and the last assessment for this stock was conducted in 2024. Priorities for this assessment cycle were to update the model to the latest version of GMACS, update data inputs, develop a model-based index for survey data, and to evaluate potential stock assessment models using the model-based survey index. Responses to CPT and SSC comments/requests from the previous assessment cycle were presented in the proposed models document. Caitlin proposed three models for the 2026 assessment:

- 26.1: base model with updated GMACS version and data
- 26.2: 26.1 using the model-based survey index and catchability for the survey index fixed at 1
- 26.3: 26.2 with catchability for the survey index estimated

The 2024 accepted model (model 24.1) is a male-only GMACS model with three size classes. The model fixes $M = 0.23yr^{-1}$ and estimates an elevated M for a 1998/99 mortality event. Survey selectivity is fixed at 1 for the largest size bin and is estimated for the other two size bins. Survey catchability is fixed at 1 for the NOAA bottom trawl survey, and is estimated for the ADF&G pot survey.

Model 26.0 is model 24.1 updated to GMACS version 2.20.34a. The likelihood components and management quantities were identical between 24.1 and 26.0. Model 26.1 is model 26.0 with the following data updates: 2025 NOAA trawl survey biomass and size composition, 2025 ADF&G pot survey relative abundance and size-composition, and 2024/25 groundfish trawl and fixed gear bycatch.

A model-based index is particularly important for this stock because of the discontinuation of high-density survey stations for St. Matthew Island since 2024. Caitlin presented a geostatistical Generalized Linear Mixed Model with spatiotemporally correlated random effects that was fit in sdmTMB utilizing a land mask for St Matthew Island. Candidate fixed effects in the model included

year and depth, and models were fit with delta-gamma, delta lognormal, and Tweedie error distributions. Model selection based on the negative log likelihood, root-mean square error, and mean absolute error from cross validation consistently identified year as a fixed effect and the delta gamma error distribution as the superior model formulation.

Caitlin then presented a comparison of model 26.1 (base model) and models 26.2 (model-based index) and 26.3 (model-based index with estimated survey catchability). Estimates of *F* and *M* were quite similar between models, as were the fits to survey biomass. Estimates of mature male biomass as well as OFL values were higher for models 26.2 and 26.3 than for the base model, and the index-based models fit the size-composition data slightly less well than the base model. Model 26.2 showed a better retrospective pattern than model 26.1, while model 26.3 showed a worse retrospective pattern than the other two models. Model 26.3 also showed an anomalous spike in estimated recruitment in the early 1980s.

The author recommended models 26.1 and 26.2 be brought forward for setting specifications in September and the CPT concurred with this recommendation. The author and CPT also discussed estimated trawl survey selectivity values greater than the bounded value of 1 for the middle size class, across all three models. The CPT recommended adding this issue for the January modeling workshop but is likely related to scaling of selectivity over size-classes. The CPT also agreed with the author's proposal to focus on exploration of model-based estimates of survey size-composition data and the development of a single model-based index to incorporate both the trawl and pot surveys as the highest-priority research directions for this assessment.

A rebuilding update for this stock will be presented in the final SAFE in September. The CPT noted that this stock might be usefully moved to a triennial schedule, with the next assessment due in 2029, in order to scale overall workload to match capacity in the CPT and SSC. The CPT recommended coordinating with the NMFS Regional Office to evaluate the implications of a triennial assessment schedule given current rebuilding updates are required biennially.

Research Update: BSFRF

Scott Goodman (BSFRF) provided an update on the BSFRF research portfolio, noting that while the foundation's research plans typically cover 3-4 years, current disaster relief funding has enabled a longer-term outlook through 2028. BSFRF is coordinating closely with NOAA and ADF&G on several large-scale projects. The Bristol Bay Red King Crab (BBRKC) Collaborative Pot Sampling (CPS) project focuses on seasonal distribution to inform management and voluntary industry actions to reduce crab impacts. In April, the 2026 CPS3 survey was canceled due to persistent ice coverage in the work area, despite gear and crews being staged in Dutch Harbor The revised plan schedules CPS3 for 2027 and CPS4 for 2028. The first full-scale version of the Opilio Surveys (OPS) project is slated for Fall 2026 with the primary goal to validate and calibrate Opilio catches between different survey gears at higher spatial densities. BSFRF is coordinating with pollock industry representatives to share dynamic closure options again, and they are also

supporting Sean Hardison's BBRKC fisheries overlap work (see summary below), which utilizes tagging data and movement vectors to develop projection modeling utilities.

Scott outlined plans for additional research, highlighting three projects. A simulated lost pot study for BBRKC, funded by disaster relief (in coordination with NPRB) will deploy 50-60 pots rigged with pop-up satellite tags and time-lapse cameras to record the timing of rock cord failure and crab activity. Ongoing habitat evaluation coordination with ADF&G and other partners includes juvenile habitat dive surveys and adult red king crab habitat evaluation near fishing activity. BSFRF is supporting efforts at the St. Paul crab hatchery, recently delivering 32 gravid female crabs. There was a question from the CPT about interagency coordination, noting a previous proposal to resurrect the interagency crab meeting, and Scott confirmed that BSFRF would hold its annual Research Symposium following the September CPT meeting. Coordination between the Kodiak lab and BSFRF on obtaining genetic samples from the Northern Bering Sea during future CPS surveys was discussed. Finally, Goodman noted that a summary of the BSFRF steering committee notes for the Opilio Management Strategy Evaluation (MSE) would be distributed soon.

Research update: BBRKC fisheries overlap

Sean Hardison (UAF, NOAA, BSFRF) presented a research update on an approach combining satellite tagging data with environmental covariates in movement models to predict the spring distributions of female mature Bristol Bay red king crab. Results indicated that, in early May, mature female BBRKC prefer medium-fine grain sand sediments, depths between 25 and 75 m, and bottom temperatures between 1 and 3 degrees C. Habitat preference results allow for designations of preferred habitat areas at this time of year depending on the bottom temperature regime. In years with warmer bottom temperatures, the distribution of preferred habitat occurs further to the northeast in Bristol Bay, while in years with cooler bottom temperatures the distribution of preferred habitat falls just to the north of the Alaska Peninsula and can extend southwest to Unimak Island. Habitat preferences were generally correlated with crab abundance in other data sets, including the CPS surveys and flatfish bycatch.

Sean plans to present this work at the Council June meeting, focusing on how movement models can be used for projections that inform dynamic closure area discussions. CPT discussion centered around the helpfulness of this work for the fleet to inform voluntary avoidance of areas predicted to have high abundance of female BBRKC. The CPT expressed interest in the next steps of this project, including analyses of the overlap between crab distributions and fishing gear once Catch-In-Areas (CIA) data become available from the Alaska Regional Office. The CPT also noted the importance of incorporating all of the available satellite tag data in the analysis, as well as collecting more tagging data given interannual variability in bottom temperature regimes.

New business

In new business, the CPT acknowledged Gretar Gudmundsson’s passing and his contributions to the Council process and his advocacy for crab fisheries.

The CPT congratulated Mike Litzow on his upcoming retirement. Council staff and Katie Palof (CPT co-chair) brought forward the need to fill the vacant co-chair position with a federal employee, as the federal and State co-chair positions mirror the current crab co-management structure and greatly improve efficiencies in the Crab Plan Team process. Inquiries have been made, but at this time it does not appear that there will be a co-chair appointed for the next few meetings, and at a minimum not prior to the September CPT meeting. Therefore, they discussed the need to prioritize the topics in September in addition to proposing a temporary vice-chair position. A vice chair position would commit to at least one CPT meeting to assist with administrative load - which includes creating the agenda, assigning minutes, tracking minute assignments, editing the minute documents (during and after the meeting), and assisting Katie with assembling the presentation for the SSC/AP/Council.

The CPT revisited the newly drafted risk table guidance (i.e., standard operating procedures, or SOPs) and a new risk table template for feedback. These are listed under the Risk Table topic above.

Crab SAFE guidelines were also revisited to present a plan for Fall 2026. Stock assessment authors are requested to provide feedback on the crab SAFE guidelines checklist and the SAFE reminders document, with plans to finalize those documents in July, well in advance for application to final SAFE reports in September. Updates will be translated to the full text BSAI Crab SAFE Guidelines document for review at a later meeting. See the SAFE Guidelines section above for more detail.

Tentative September 2026 meeting topics

- Final SAFEs
    - Tanner crab
    - Snow crab
    - BBRKC
    - SMBKC
- Tanner crab CIE review results
- NOAA Summer Trawl Survey results
- Fishery Summary
- EBS Ecosystem Status Report
- ESP
    - Tanner crab Report Card
    - BBRKC Report Card
    - Snow crab Report Card
- Overfishing status updates (AIGKC, PIRKC, PIBKC, WAIRKC)
- Council updates - with placeholder for any GMACS updates
- Document guidelines (SAFE and proposed models)

Tentative November 2026 meeting topics

- NSRKC Final SAFE
- AIGKC proposed models

Tentative January Modelling Workshop topics

- Differences between snow and Tanner use of maturity ogives
- GMACS updates
- Model-based size compositions

Upcoming CPT meeting dates and locations:

- Sept. 14th - 18th, 2026: Seattle, WA
- Nov 5, 2026: Virtual
- Jan. 12 - 14, 2027: January Modelling Workshop
- April 19-24, 2027: Virtual (T)

Others in attendance: **indicates presenter*

Grant Adams*
Rachel Alinsunurin
Jenefer Bell
Mariela Brooks
Meagan Bryan
Carlton Burnside
David Capri
Ruth Christiansen
Kevin Clark
Beth Concepcion
Diana Evans
Bridget Ferriss
Jen Gardiner
Jamie Goen
Scott Goodman*
Dana Hanselman
Melissa Haltuch
Sean Hardison*
Madison Heller-Shipley
Shannon Hennessey
Lenny Herzog
John Hilsinger
Jim Ianelli
Wesley Jones
Jeff Kauffman
Frank Kelty
Meghan Korte
Sarah La Belle
Gabriel Leiva-Gomez
Cory Lescher*
Tim Loher
Sandra Lowe
Cole Monnahan
Harrison Moore
Andy Nault
Mateo Paz-Soldan
Edward Poulsen
Fabio Prior Caltabellota
Serine Reeves
Jon Reum
Ella Rhodes
Lauren Rogers
Emily Ryznar
Kalei Shotwell*
Chris Siddon
Elizabeth Siddon
Nikolai Sivertstol
Jeff Steele
Ian Stewart
Mark Stichert
Diana Stram
Erin Strand
Henry Tashjian
Jim Thorson
Cindy Tribuzio*
Terrance Wang
Sarah Webster
Jared Weems
Doug Wells
Paul Wilkins
Chris Woodley
Stephani Zador*
Susie Zagorski