

The author selected Model 3b as his preferred model on which to base status OFL and ABC. It fit the growth data reasonably well and did not hit the bound for natural mortality. Model 0 fit the terminal year of survey MMB the worst of all the models and had suspiciously low estimates of trawl selectivity. Models 1, 2, and 3 had poor fits to the female growth data. Model 3a fit the terminal year of survey MMB best, but (among other concerns with the model) fit the survey size compositions poorly in some years, estimated catchability higher in recent NMFS surveys than was implied by the BSFRF surveys, estimated very high F 's in the directed fishery in recent years, and did not fit male growth.

The CPT concurred with Cody's preferred model and recommends that Model 3b be adopted for status determination and OFL setting. For Model 3b, $F_{35\%}$ is 1.91 and F_{OFL} is 1.14, OFL is 23,700 t, and maxABC is 23,700 t, the latter based on the p-star approach. Last year, the CPT rejected the author's preferred model because there was insufficient information for the CPT to determine the sources of potentially significant changes between several of the intermediate models leading to the author's preferred model. The CPT recommended using a 25% buffer to set the 2015/16 ABC "due to the model uncertainties and contradictions between model trends and survey and fishery observations." The concerns the CPT had last year have been addressed. **The CPT thus recommends setting ABC this year using the standard 10% buffer for Tier 3 stocks to account for remaining (but reduced) model uncertainties and contradictions between the model and data.** This is the buffer adopted for snow crab used in assessment before last year. A 10% buffer would result in $ABC = 21,300$ t.

CPT Recommendations for future work

- Review the SAFE guidelines to make sure all required tables and figures (e.g., estimated recruitment, MMB-at-mating, sample sizes, etc.) are included in the SAFE chapter, to the extent possible.
- Plot the relative proportion of new to old shell males to see how important the lack of fit to old shell males really is.
- Extract the bycatch mortality from the Tanner crab directed fisheries that is currently lumped into the groundfish trawl bycatch (in a table in the assessment chapter, not necessarily in the model).
- Examine whether or not the "converged" MLE solution agrees with the MCMC results.
- Currently, it is surprising that M for females is less than for males. Consider estimating M for females.
- Plot Bayesian posterior intervals for growth parameters.
- Document rationale for prior on M for immature crab.
- Try starting the assessment in 1982 to check the behavior of the survey q 's when the first survey stanza is excluded.
- Apply priors to the survey q 's so they are somewhat constrained.
- Provide more detailed MCMC chain diagnostics.

Economic SAFE

Brian Garber-Yonts (NMFS) presented a summary of three primary economic indicators that describe aggregate changes in gross volume and value of production, labor earnings, and employment in the processing and harvesting sectors, and harvest quota leasing activity in the BSAI crab fisheries. Due to the timing of economic data collection, the final 2016 BSAI Crab Economic Status Report (Economic SAFE) will be presented to the SSC in February 2017. The summary report is included as an appendix to the October 2016 SAFE. Final reports are available online at: <http://www.afsc.noaa.gov/REFM/Socioeconomics/SAFE/default.php>. In June 2016, the Council completed the 10-year review of the Crab Rationalization (CR) Program. The 10-year review included information on quota share ownership and, as requested by the Council, an analysis of changes in quota ownership over time will be incorporated into the final 2016 Economic SAFE.

