

C6 BSAI CRAB STOCKS

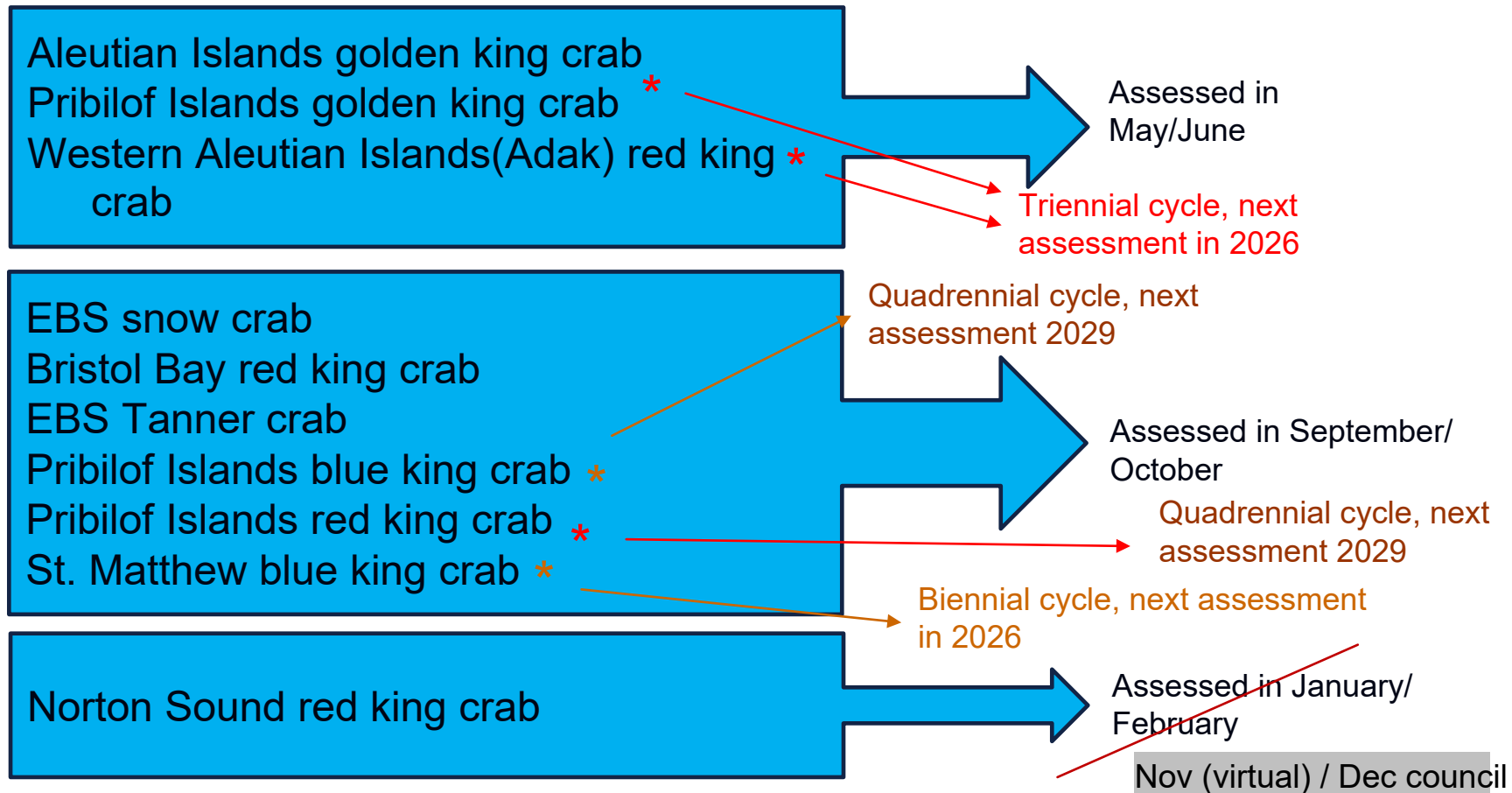
KATIE PALOF & MIKE LITZOW (CPT CGCHAIRS)

December 2025 NPFMC MEETING, Anchorage, AK

CPT MEETING MINUTES Nov 6th (VIRTUAL)



BSAI Crab Stocks Management Timing



November 2025 Agenda

- ✓ **NSRKC final assessment, OFL and ABC**
- ✓ AIGKC proposed model for May 2026
- ✓ HCR workshop intro and updates
- ✓ New business – Jan modeling workshop

*CPT did not have full membership attendance due to the federal government shutdown



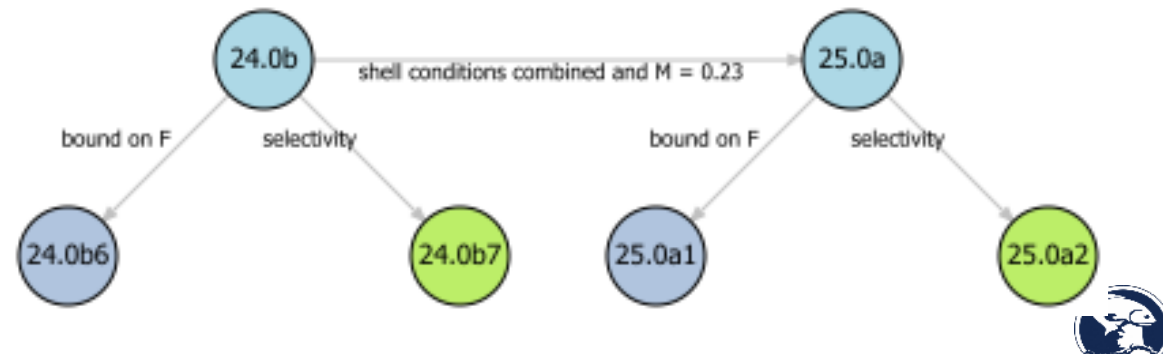
NORTON SOUND RED KING CRAB (NSRKC)

FINAL ASSESSMENT 2025



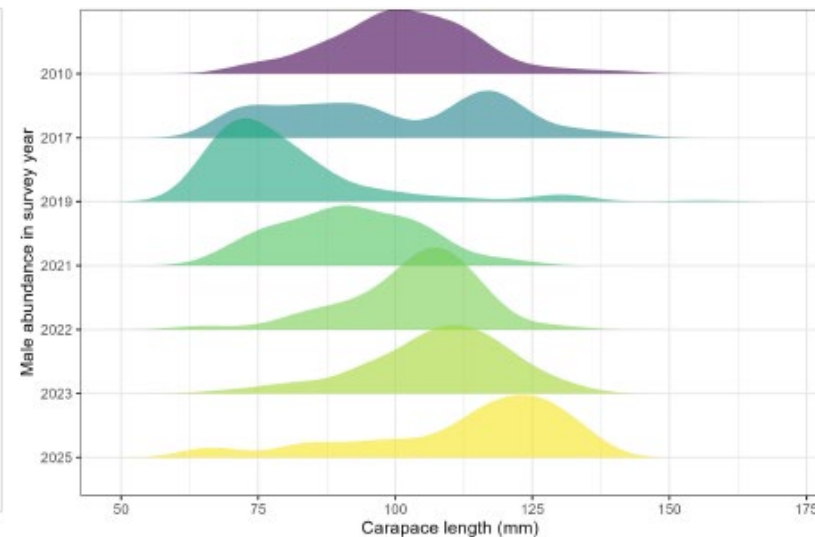
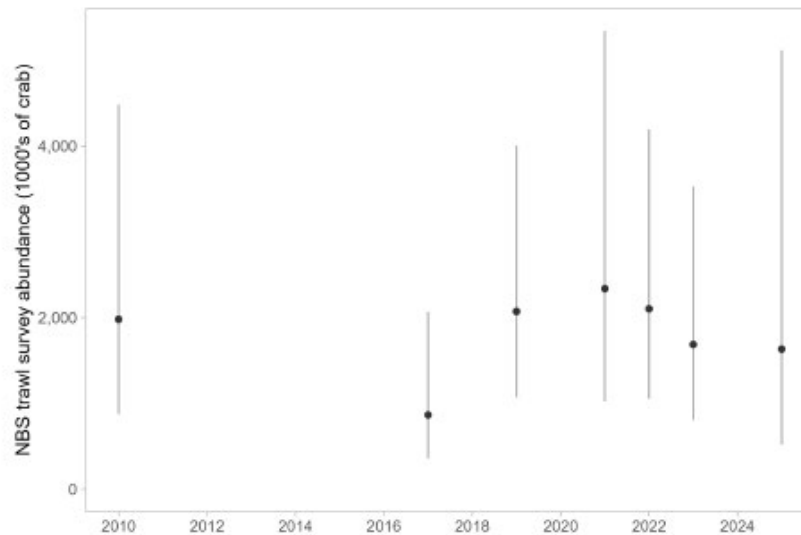
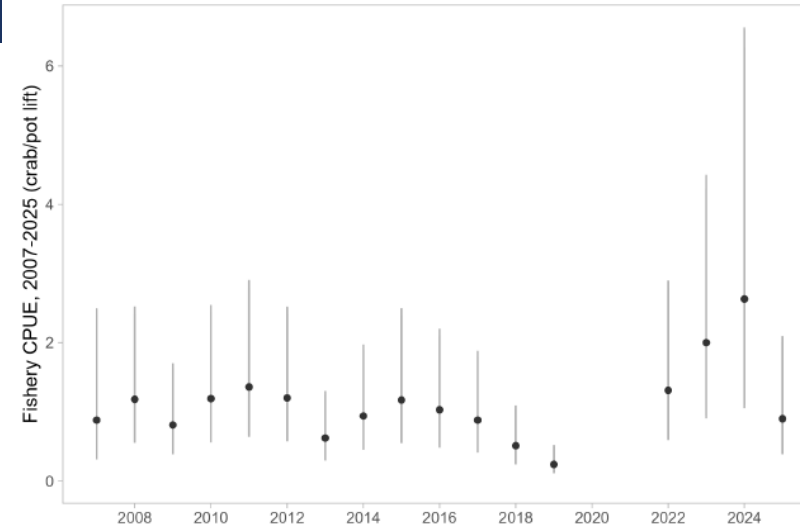
NSRKC overview

- **Tier 4 annual stock assessment, GMACS assessment** framework since Nov 2024; new authors: Caitlin Stern and Katie Palof
- Support summer and winter commercial fisheries as well as year long subsistence fishery
- Model features:
 - Male only (≥ 64 mm, 8 size classes)
 - Size dependent $M=0.18$ $CL \leq 123\text{mm}$, estimated for > 123 mm
 - Fishery selectivity: logistic for summer com., dome-shaped for others
- Models presented:
 - 24.0b (base model) options
 - 25.0a options (no shell, $M=0.23$)
 - High F values in winter com.
 - F bound (24.0b6, 25.0a1)
 - Selectivity change (24.0b7, 25.0a2)



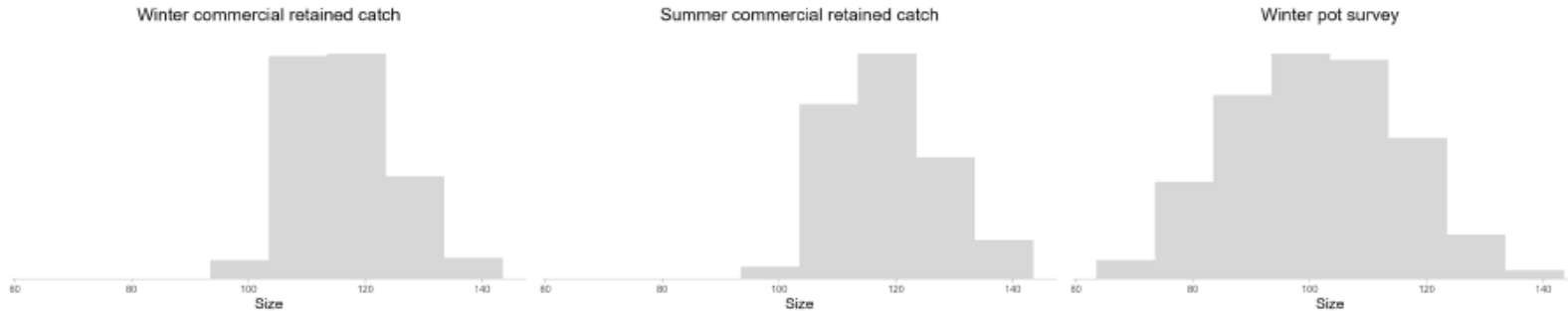
NSRKC data updates

- Data updates
- Fishery CPUE – low from last few years
- NBS survey data – similar to 2023, size comps reflect aging population?



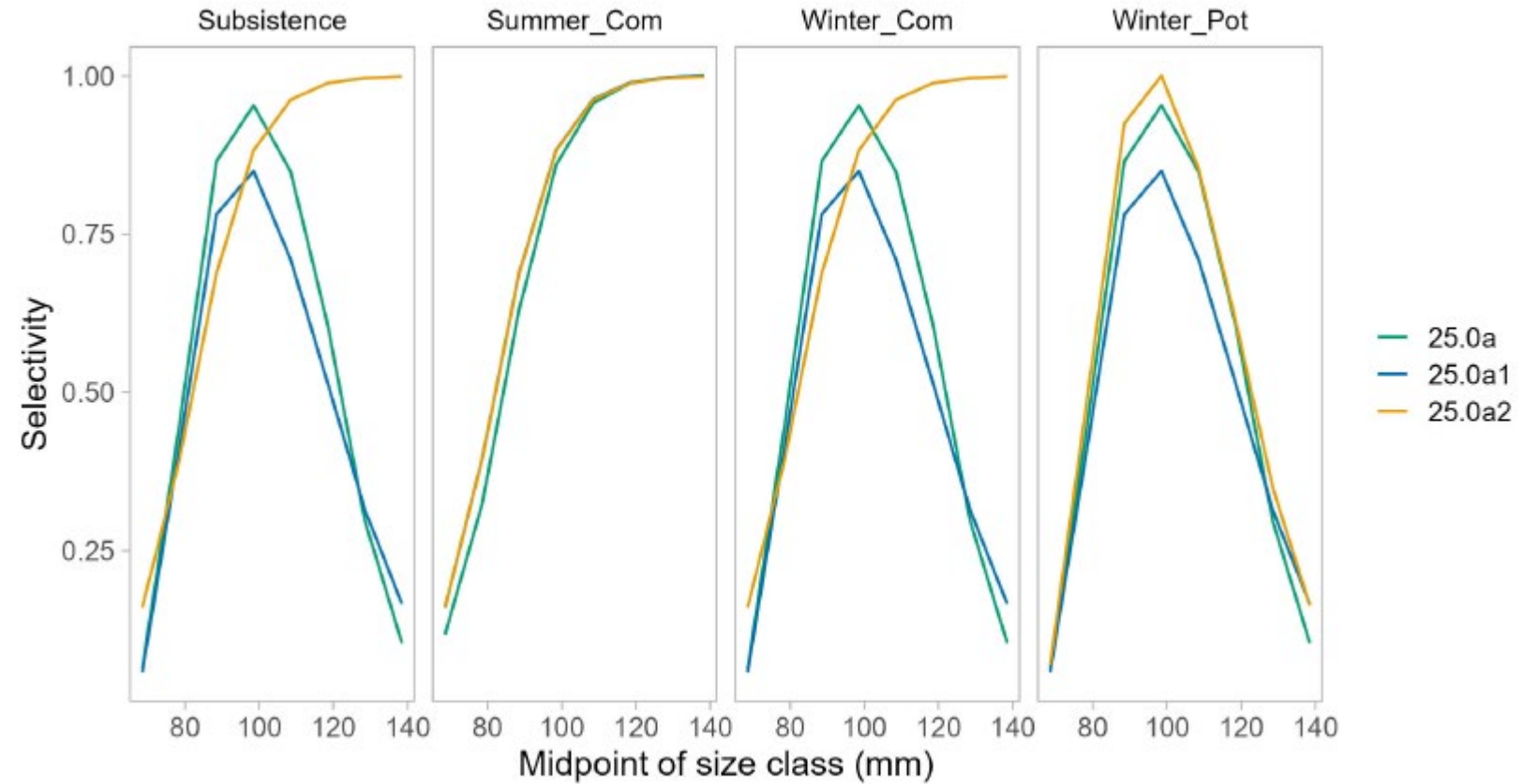
NSRKC model choice

- High F values in winter com.
 - F bound (24.0b6, 25.0a1)
 - Borrowed from BBRKC, lack biological reasoning
 - Selectivity change (24.0b7,25.0a2)
 - Reflect size comp data similarities between commercial fisheries instead of fishery timing (base model mirrors winter commercial selectivity to winter pot with assumption that seasonality drives size comps, data does not support this)



NSRKC model choice – Model 25.0a2

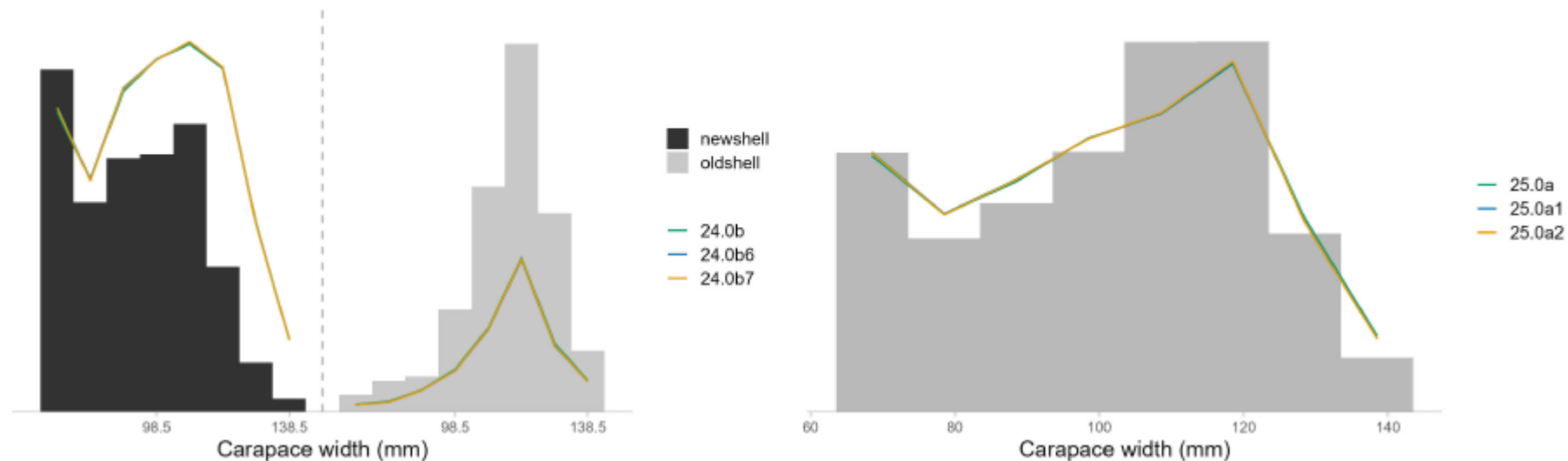
- Selectivity results
- Model 25.0a2
 - No issues with high F values in winter commercial with changes to selectivity



NSRKC model choice – Model 25.0a2

- Size comp fit improved with shell conditions combined

Fits to size comps - NOAA NS survey



CPT recommendations

- Author and CPT recommended model 25.0a2
- Selectivity changes make sense and fix high F values
- Shell conditions combined generally fit size comps better
- $M = 0.23$ aligns NSRKC with other king crab stocks (BBRKC, SMBKC, PIRKC)
- Improved retrospective patterns

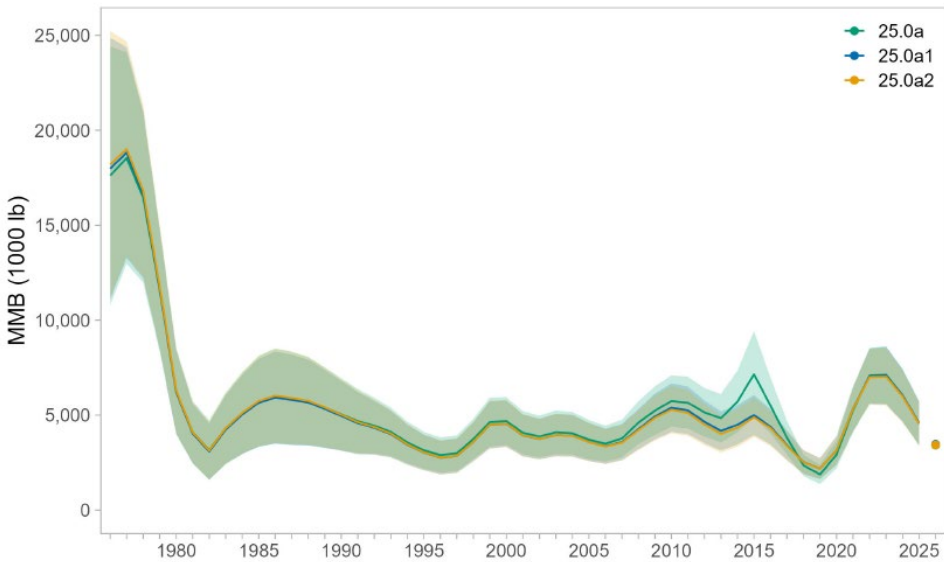


Table 1: Status and catch specifications (1,000 t) for the author-recommended model, 25.0a2.

Year	MSST	Biomass (MMB_{maturing})	GHL	Retained catch	Total catch	OFL	ABC	Model
2021/21	1.02	2.29	0.14	0.003	0.003	0.20	0.16	
2022/22	0.95	2.42	0.15	0.15	0.16	0.30	0.18	
2023/23	1.20	2.40	0.178	0.192	0.201	0.292	0.204	
2024/24	1.00	2.50	0.219	0.209	0.215	0.332	0.233	
2025/25	0.98	2.15	0.186	0.164	0.168	0.284	0.199	
2026/26	1.00	1.56				0.193	0.135	25.0a2



Buffer and future recommendations

- 30% buffer, consistent with previous years (see minutes for full details)
 - Life history information is borrowed from other stocks
 - Lack of information about discards
- Future work:
 - Incorporate model-based indices of abundance (help with spatial variability in surveys)
 - Add winter subsistence total catch and summer subsistence catch data (not currently in the model)
 - Review and potentially revise CPUE standardization methods
 - General data reproducibility and improvements (new author)



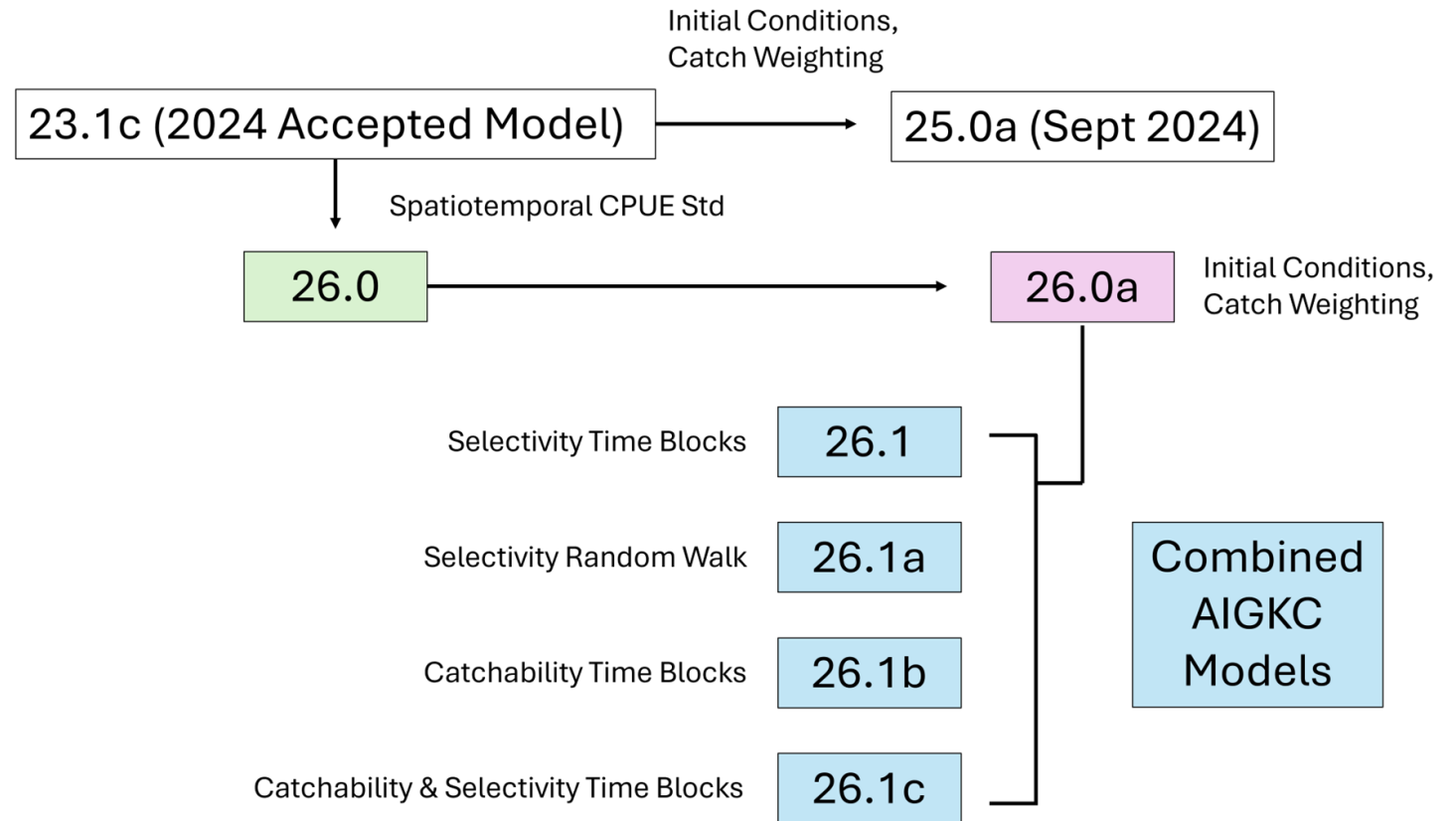
ALEUTIAN ISLAND GOLDEN KING CRAB (AIGKC)

Proposed models for spring 2026



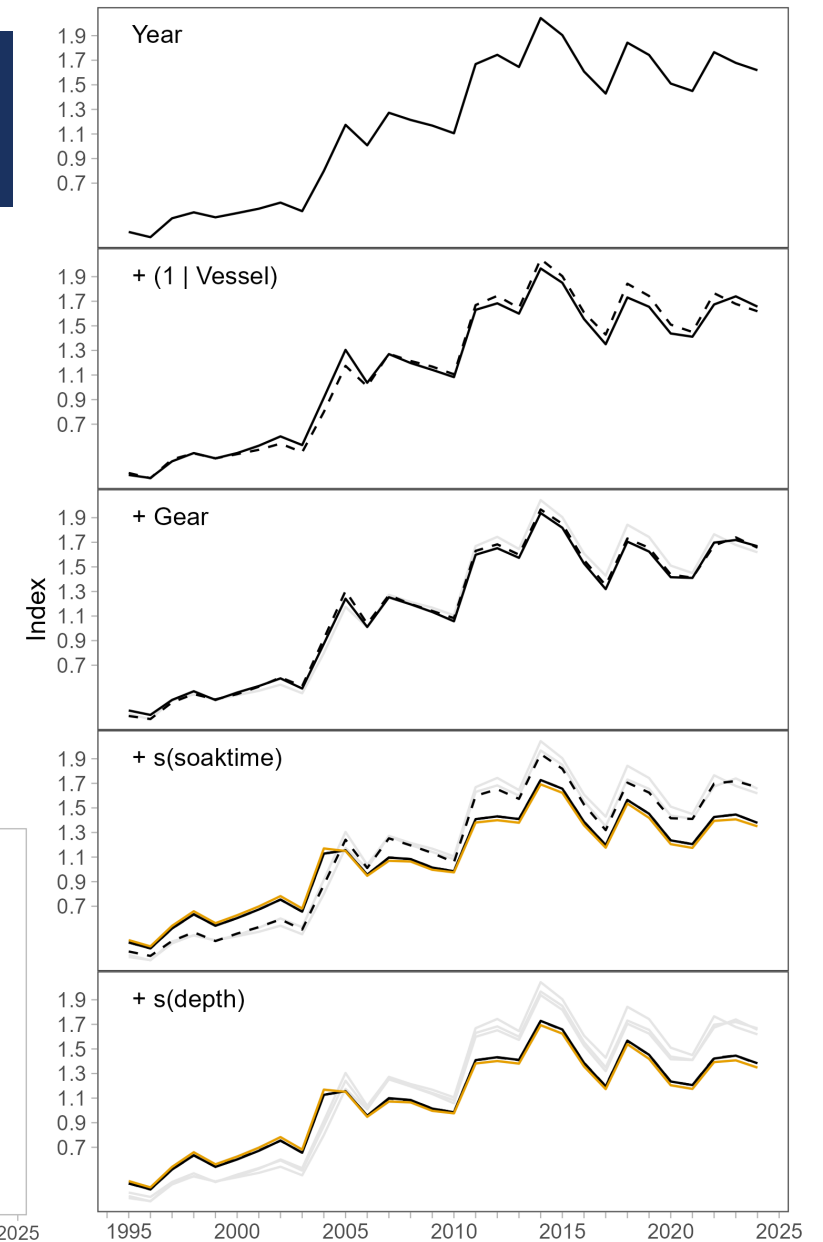
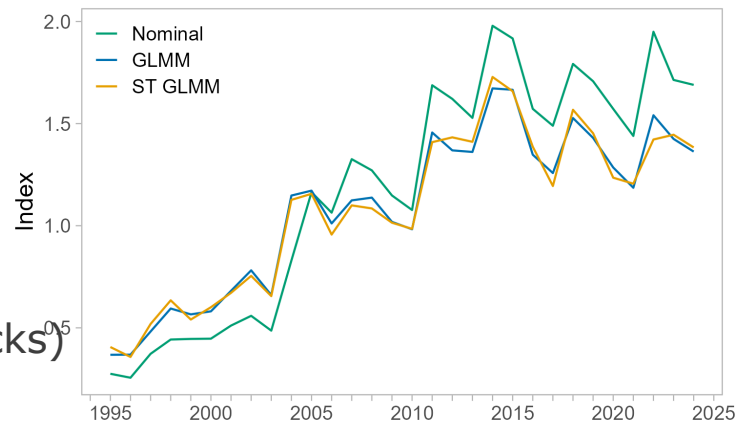
AIGKC proposed models

- Initial conditions and data weighting
- Spatiotemporal CPUE std
- Selectivity and catchability time varying



AIGKC proposed models

- Initial conditions and data weighting
 - Improve model simplicity
- Spatiotemporal CPUE std
 - Soak time largest influence
- Selectivity and catchability time varying
 - CPT concern over time varying catchability not being appropriate
 - CPT concern time varying selectivity is over fitting
- CPT recommended models:
 - 23.1c (base)
 - 26.0 (base sdmTMB CPUE std)
 - 26.0a (26.0 + initial conditions)
 - 26.1(26.0a + selectivity time blocks)



OFL calculation

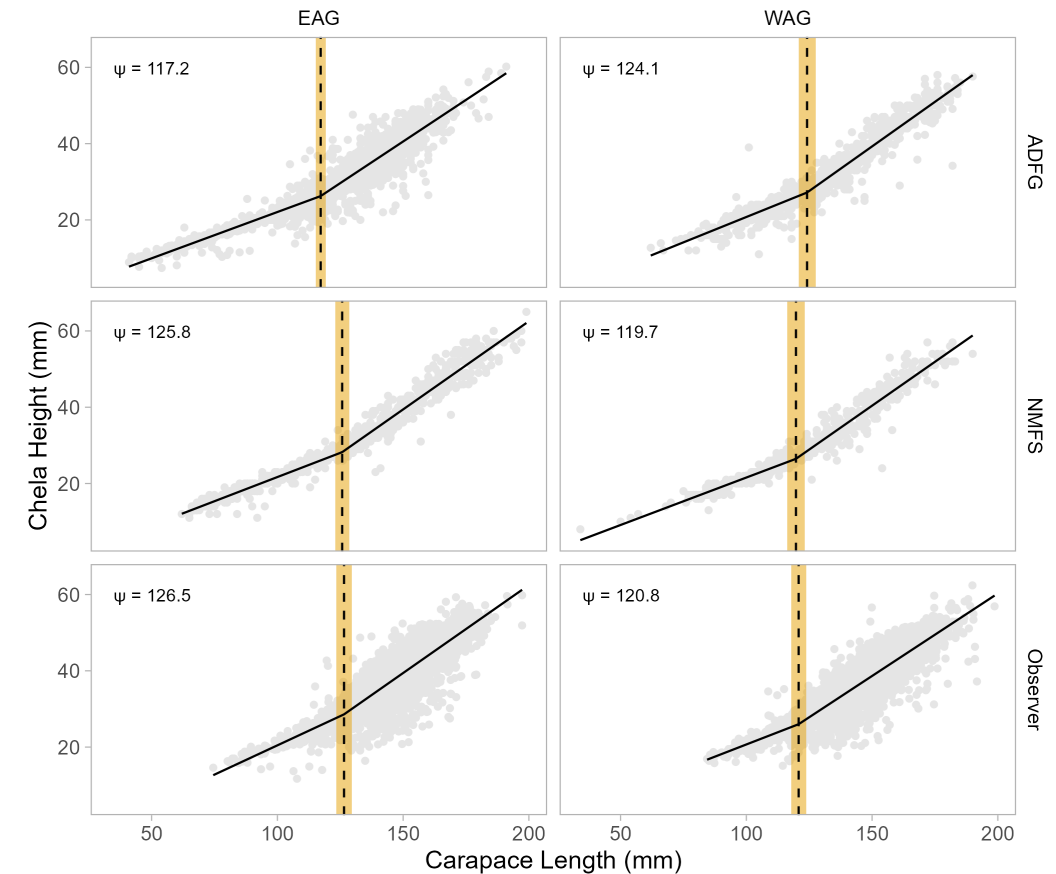
- OFL calculation
 - SSC approach of combining MMB and B_{35} , apply cumulative stock status to F_{OFL} control rule
- ADF&G manages subdistricts independently
 - Separate TAC
 - Separate harvest strategies and harvest rates
- CPT/ author concern that combined approach applies surplus in one area to harvest opportunities in the other
 - Subdistrict specific reference points may become more important with diverging area trends
 - CPT recommends combined stock status but area specific FOFL calculations

Subdistrict	MMB (t)	$B_{35\%}$ (t)	Status	$F_{35\%}$	F_{OFL}	Combined Status	F_{OFL} (Combined)
EAG	6,879	6,730	1.022	0.515	0.515	0.928	0.474
WAG	3,570	4,530	0.788	0.514	0.393	0.928	0.473



Other topics

- Combined models
 - Work done in GMACS but need more development
- Size at Maturity review (appendix B)
 - Variability by data source (year and collection methods)
 - Variability by sub area
 - Size at maturity likely between 110-130 mm
 - Analysis needs to be refined more before setting reference points with alternative MMB
- Gear conflict analysis (confidential, ADF&G only review)
 - No contrasting CPUE trends in areas of vessel-gear overlap vs no gear overlap
 - No evidence of displacement from data available



QUESTIONS?

- Thanks to all CPT members and crab assessment authors.

