

SAFE Guidelines

BSAI CRAB PLAN TEAM

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BSAI Crab SAFE Guidelines - 2023

Good resource, not a quick reference, some guidance is not in the document. For example:

- new general guidance
- updates & reminders for table templates
- risk tables
- appendices
- buffer history
- overfishing and overfished status
- Per prior CPT and SSC comments, need for quicker reference doc to facilitate document creation & review process



For CPT Review: General Reminders doc

- General Reminders doc
 - Brief list: Executive Summary tables, docs, review, and presentations
 - High-level reminders reflected in checklist and SAFE Guidelines doc
 - Audience: CPT

CPT meeting review: document



For CPT Review: SAFE Guidelines checklist

- Crab SAFE Guidelines checklist
 - Detailed checklist, shorter than Guidelines doc
 - Content from BSAI SAFE guidelines & CPT/SSC discussions, format modelled after AFSC internal review checklist
 - Highlighted items, colored text, and comments are for new additions - those need CPT input
 - Audience: CPT stock assessment authors, CPT reviewers, other internal reviewers



SAFE Guidelines checklist

General

- Values in text match tables throughout document
- Tables for all model options appear in the document
- Checked for conversion and rounding errors
- Conclusions consistent with provided results (or discussion included)
- Checked for major typos or grammatical errors
- Model numbers are consistent in text, tables, table captions, figures, and with those previously endorsed by SSC and present in the proposed model runs PPT and document
- Tables and figures correctly labeled and ordered in text
- Page numbers on every page
- Every section is present (A-K; even if not applicable to the stock)
- Clarify model type/purpose (i.e., diagnostic, research, for consideration of harvest specs)
- Did you check the last two CPT and SSC reports for comments? Did the stock author include and respond to all of them?
- Length and readability - streamline where possible, evaluate whether information and figures can be moved to appendices
- Proposed model documents should focus on model development while providing a link to last full SAFE. Updated CPT/SSC comments and responses should be included.

Appendices

Appendices can include: XXXXX... where Appendix A is..., Appendix B is, etc.

- Technical appendix - equations, GMACS version, data files
- Ecosystem and Socioeconomic Profile (EBS snow crab, BBRKC, EBS Tanner crab)
- Buffer history - 5 years
- Risk table (EBS snow crab, BBRKC, EBS Tanner crab, AIGKC, NSRKC)

Additional questions

- Standardized format of risk table table and caption
- Where to report # of vessels and # of processors (from SSC comments, Oct 2025) - Section J. Ecosystem Considerations?
- Where and how to standardize reporting of overfished status in the document - Executive summary?

Stock projections

- Table of 5-year projections of stock abundance and fishery yields for author's recommended model run, based on average fishing mortality from last 5 years

Table 1. Stock status in relation to status determination criteria for 2024/2025 as estimated by the most recent assessment. Dark grey areas indicate parameters not applicable for that tier. Values are in thousands of metric tons (kt). Status determination recommendations made by the SSC are based on the best scientific information available and final status determination will be made by NMFS Headquarters following SAFE review.

Chapter	Stock	Tier	MSST	B _{MSY} or B _{MSY} proxy	2024/25 ¹ MMB	2024/25 MMB/ MMB _{MSY}	2024/25 OFL	2024/25 Total Catch	Rebuilding Status
1	EBS snow crab	3 ²	71.40	142.79	60.08 ³	0.42	19.6	2.81	overfished
2	BB red king crab	3	9.26	18.69	19.74	1.06	5.02	1.20	
3	EBS Tanner crab	3	21.61	40.01	99.53	2.49	41.29	3.09	
4	Pribilof Islands red king crab	4	0.64	1.283	3.15	2.45	0.685	< 0.001	
5	Pribilof Islands blue king crab	4	2.07	4.15	0.075	0.018	0.00116	< 0.001	overfished
6	St. Matthew Island blue king crab	4	1.48	2.93	1.41	0.48	0.129	0.001	overfished
7	Norton Sound red king crab	4	1.00	2.02 ⁴	2.50	1.24	0.33	0.23	
8	AI golden king crab	3	5.632	11.264	11.09	0.98	3.725	2.34	
9	Pribilof Islands golden king crab ⁵	5					0.114	Conf.	
10	Western AI red king crab	5					0.056	0.01	

¹ MMB on 2/1/2024 for Norton Sound red king crab as estimated in the 2024 assessment and on 2/15/2025 for all other Tier 1-4 stocks using the 2025 assessments (corrected from the June 2025 SSC report).

² Snow crab was assessed as a Tier 3 stock in 2024; however, the status for that year reflects the Tier 4 assessment conducted in 2025.

³ Snow crab MMB represents an estimate at the time of the survey, not at the time of mating.

⁴ B_{MSY} proxy basis years for NSRKC are 1980 - 2024.

⁵ PIGKC specifications are set on a calendar year basis.



SSC example Table 1, Oct 2025 Report



Table 2. SSC recommendations for Eastern Bering Sea crab stocks. Stocks for which specifications are rolled over between assessments (St. Matthew blue king crab, Pribilof Islands golden king crab and Western Aleutian Islands red king crab) are also included. Biomass values are in thousand metric tons (kt). Dark grey areas indicate parameters not applicable for that tier. Tier designations in this table are based on the projected stock status in 2025/2026. Stocks for which the SSC recommended different harvest specifications from the CPT are bolded. Harvest specifications for SAFE Chapters 1 – 6 are set in October and Chapters 8 – 10 are set in June, in the year according to the assessment frequency cycle (see current SAFE Introduction). Chapter 7 was set in December 2024.

Ch.	Stock	Tier	F _{OFL}	B _{MSY} or proxy	B _{MSY} basis years ¹	2025/2026 MMB ²	2025/26 MMB / B _{MSY}	Natural Mortality (M)	2025/26 OFL	2025/26 ABC	ABC Buffer
1	E. Bering Sea snow crab	4b	0.19	142.79	1982-2024	105.21 ³	0.74	0.27	20.11	12.07	40%
2	Bristol Bay red king crab	3b	0.37	18.52	1984-2024	16.84	0.91	0.23	5.85	4.68	20%
3	E. Bering Sea Tanner crab	3a	1.47	43.22	1982-2024	75.96	1.76	0.23	51.02	40.81	20%
4	Pribilof Is. red king crab	4a	0.21	1.283	2000-2024	2.586	2.02	0.21	0.4899	0.3674	25%
5	Pribilof Is. blue king crab ⁴	4c	0	4.15	1980/81-1984/85; 1990/91-1997/98	0.162	0.04	0.18	0.00116	0.00087	25%
6	St. Matthew blue king crab	4b	0.11	2.93	1978-2023	1.53	0.52	0.23	0.129	0.097	25%
7	Norton Sound red king crab	4a	0.18	1.96	1980-2025	2.15	1.10	0.18	0.284	0.199	30%
8	Aleutian Is. golden king crab ⁵	3	0.52 (EAG), 0.39 (WAG)	11.264	1987-2021	10.48	0.93	0.22	3.166	2.374	25%
9	Pribilof Is. golden king crab ⁶	5			1993 -1998				0.114	0.085	25%
10	W. Aleutian Is. red king crab	5			1995/96 - 2007/08				0.056	0.014	75%

¹ For Tiers 3, 4 where BMSY proxy is estimable, the years refer to the time period over which the estimate is made. For Tier 5 stocks it is the years from which the catch average for OFL is estimated.

² MMB is estimated on 2/1/2025 for Norton Sound red king crab and on 2/15/2026 for all other Tier 1-4 stocks, using the current assessments (corrected from June 2025 SSC report).

³ Snow crab MMB represents an estimate at the time of the survey, not at the time of mating.

⁴ The F_{OFL} of 0 for PIBKC is indicative of a closed directed fishery due to stock status per the crab FMP guidelines.

⁵ AIGKC OFL and ABC are calculated by combining two separate assessment models for the EAG and WAG, as presented in the current assessment. Sub-tiers are set separately for each model and are detailed in the assessment document.

⁶ PIGKC specifications are set on a calendar year basis.

SSC example Table 2, Oct 2025 Report



SAFE Template tables

- “Basis for the OFL”
 - Executive summary, section 7
 - Include last 5 years as rows (see example below)
 - This should be the information used in the current year to set OFL
 - Add a row for each year, don’t update previous years

7. Basis for the OFL:

Table 3: Basis for the OFL (1000 t) from the CPT recommended model (24.0c.2).

Year	Tier	B_{MSY}	Biomass (MMB_{mating})	B/B_{MSY}	F_{OFL}	Basis for B_{MSY}	Natural mortality
2021/22	3b	24.2	14.9	0.62	0.17	1984-2020	0.18
2022/23	3b	24.03	17.0	0.71	0.20	1984-2021	0.18
2023/24	3b	19.36	14.98	0.77	0.30	1984-2022	0.23
2024/25	3b	18.69	15.43	0.83	0.33	1984-2023	0.23
2025/26	3b	18.52	16.84	0.91	0.37	1984-2024	0.23



SAFE table template, cont'd

- Status of stock (for last completed fishing year) using current model
- NEW table in executive summary
- State overfishing status at bottom of this table.
- MSST - estimated as $\frac{1}{2}$ Bmsy estimated from the 2025 model for the 2024 crab year
- Bmsy - this is Bmsy from the 2024 model (see row in previous slide)
- 2024/25 MMB estimated from 2025 model

This table evaluates the **status** of the stock using the 2025 model (sept 2025) but for the last COMPLETED crab year.

BBRKC example								
Crab Year	Tier	MSST	Bmsy	2024/25 MMB	2024/25 MMB/Bmsy	OFL	2024/25 Total Catch	Rebuilding status
2024/2025	3	9.26	18.69	19.74	1.06	5.02	1.2	
Total catch is below OFL therefore overfishing did not occur in the 2024/25 season.								

