

Submitted at the request of Board Member Carlson-Van Dort by Alaska Bering Sea Crabbers, 3/10/2020

Bairdi buffers between OFL, ABC, and TAC in recent years

C4 BSAI Crab SAFE Introduction  
OCTOBER 2019

## Introduction

The annual stock assessment and fishery evaluation (SAFE) report is a requirement of the North Pacific Fishery Management Council's *Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs* (FMP), and a federal requirement [50 CFR Section 602.12(e)]. The SAFE report summarizes the current biological and economic status of fisheries, total allowable catch (TAC) or Guideline Harvest Level (GHL), and analytical information used for management decisions. Additional information on Bering Sea/Aleutian Islands (BSAI) king and Tanner crab is available on the National Marine Fisheries Service (NMFS) web page at <https://www.fisheries.noaa.gov/region/alaska> and the Alaska Department of Fish and Game (ADF&G) Shellfish web page at: <http://www.adfg.alaska.gov/index.cfm?adfg=CommercialByFisheryShellfish.main>.

*Paralithodes camtschaticus*, stocks (Bristol Bay, Pribilof Islands, Norton Sound and Adak), 2 blue king crab, *Paralithodes platypus*, stocks (Pribilof Islands and St Matthew Island), 2 golden (or brown) king crab, *Lithodes aequispinus*, stocks (Aleutian Islands and Pribilof Islands), southern Tanner crab *Chionoecetes bairdi* hereafter referred to as Tanner crab, and snow crab *Chionoecetes opilio*. All other crab stocks in the BSAI are exclusively managed by the State of Alaska (SOA).

The Crab Plan Team (CPT) annually assembles the SAFE report with contributions from ADF&G and the NMFS. This SAFE report is presented to the North Pacific Fishery Management Council (NPFMC) and is available to the public on the NPFMC web page at: <https://www.npfmc.org/fishery-management-plan-team/bsai-crab-plan-team/>. Due to a process to accommodate specific fishery and data availability needs to determine overfishing level (OFL) determinations, and annual catch limit (ACL) requirements, the CPT reviews assessments in a staggered time frame. Additionally, based upon consideration of stock prioritization including assessment methods and data availability, some stocks are assessed on an annual basis while others are assessed less frequently. The CPT reviews one assessment in January (Norton Sound red king crab), two assessments in May on a three-year cycle (WAI red king crab and Pribilof Islands golden king crab) and the remaining assessments (Bristol Bay red king crab, EBS snow crab, EBS Tanner crab, Saint Matthew blue king crab, Pribilof Island red king crab and Pribilof Island blue king crab, Aleutian Islands golden king crab,) in September (Table 1). Pribilof red king crab is assessed biennially while Pribilof blue king crab is assessed on a three-year cycle. Stocks can be assessed more frequently on a case-by-case basis should data indicate that it is necessary.

*Historical status and catch specifications for Eastern Bering Sea Tanner crab (million lb). Shaded values are new estimates or projections based on the current assessment. Other table entries are based on historical assessments and are not updated except for total and retained catch.*

<b>Year</b>	<b>MSST</b>	<b>Biomass (MMB)</b>	<b>TAC (East + West)</b>	<b>Retained Catch</b>	<b>Total Catch Mortality</b>	<b>OFL</b>	<b>ABC</b>
2015/16	28.27	162.99	19.67	19.64	25.09	59.94	47.95
2016/17	32.15	171.87	0.00	0.00	2.52	56.46	45.17
2017/18	33.40	95.49	2.50	2.50	5.22	56.03	44.83
2018/19	45.27	182.09	2.44	2.44	4.18	46.01	36.82
2019/20		87.18				63.62	50.89

*Status and catch specifications (million lb) for eastern Bering Sea Tanner crab.*

<b>Year</b>	<b>MSST</b>	<b>Biomass (MMB)</b>	<b>TAC (East + West)</b>	<b>Retained Catch</b>	<b>Total Catch Mortality</b>	<b>OFL</b>	<b>ABC</b>
2011/12	25.13	129.17 <sup>A</sup>	0.00	0.00	2.73	6.06	5.47
2012/13	36.97	130.84 <sup>A</sup>	0.00	0.00	1.57	41.93	18.01
2013/14	37.43	160.28 <sup>A</sup>	3.12	2.78	6.13	55.89	39.29
2014/15	29.53	157.78 <sup>A</sup>	15.10	13.58	20.19	69.40	55.51
2015/16		118.38 <sup>B</sup>				59.94	47.95

A - Estimated biomass at the time of mating for the year concerned. Note this represents a revised estimate from the projection the previous year.

B - Projected biomass from the current stock assessment. This value will be updated next year.

Table 4. Crab Plan Team recommendations from the September 2019 meeting. Note that recommendations are final values from the SSC for stock 7 (February) and 5 and 8 (June); stocks 9 and 10 were not assessed in 2019. Hatched areas indicate parameters not applicable for that tier. Values are in thousand metric tons (kt).

Chapter	Stock	Tier	Status (a,b,c)	F <sub>(2019)</sub>	B <sub>2019</sub> or B <sub>2019,proj</sub>	B <sub>2019</sub> basis years <sup>(1)</sup>	2019/20 <sup>(2)</sup> MMB	2019/20 MMB · MMB <sub>B<sub>2019</sub></sub>	γ	Mortality(M)	2019/20 <sup>(1)</sup> OFL	2019/20 ABC	ABC Buffer
1	EBS snow crab	3	a	1.93	126.1	1982-2018 [recruitment]	167.3	1.33		0.41 (mat. females) 0.31 (imm.) 0.30 (mat. males)	54.90	43.90	20%
2	BB red king crab	3	b	0.22	21.25	1984-2018 [recruitment]	15.96	0.75		0.18	3.40	2.72	20%
3	EBS Tanner crab	3	b	1.08	41.07	1982-current [recruitment]	39.55	0.96		0.30 (mat. females) 0.23 (imm.) 0.30 (mat. males)	28.86	23.09	20%
4	Pribilof Islands red king crab	4	a	0.21	1.73	2001-present [MMB]	5.37	3.10	1	0.21	0.86	0.65	25%
5	Pribilof Islands blue king crab	4	c	0.18	4.11	1980-81-1984/85 & 1990-91-1997/98 [MMB]	0.175	0.04	1	0.18	0.00116	0.00087	25%
6	St. Matthew Island blue king crab	4	c	0.04	3.48	1978-2018 [MMB]	1.08	0.31	1	0.18	0.044	0.035	20%
7	Norton Sound red king crab	4	b	0.12	2.06	1980-2018 [MMB]	1.41	0.68	1	0.18	0.11	0.09	20%
8	AI golden king crab	3	a	EAG (0.66) WAG (0.60)	11.76	1987/88-2012/13	15.94	1.36		0.21	5.25	3.94	25%
9	Pribilof Islands golden king crab	5				See intro chapter					0.09	0.07	25%
10	Western AI red king crab	5				1995/96-2007/08					0.06	0.01	75%

<sup>(1)</sup> For Tiers 3 and 4 where B<sub>2019</sub> or B<sub>2019,proj</sub> is estimable, the years refer to the time period over which the estimate is made. For Tier 5 stocks it is the years upon which the catch average for OFL is obtained.

<sup>(2)</sup> MMB as projected in Feb 2019 for Norton Sound red king crab, and June 2019 for AIGKC.

<sup>(3)</sup> AIGKC OFL and ABC calculated by author outside the chapter for using the Approach 2 combination of EAG and WAG and 25% buffer between OFL and ABC.