

# Addendum to the 2021 SAFE Report for the Pribilof Islands Blue King Crab Fisheries of the Bering Sea and Aleutian Islands Regions

William T. Stockhausen  
Alaska Fisheries Science Center  
September 2021

THIS INFORMATION IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PREDISSEMINATION PEER REVIEW UNDER APPLICABLE INFORMATION QUALITY GUIDELINES. IT HAS NOT BEEN FORMALLY DISSEMINATED BY NOAA FISHERIES/ALASKA FISHERIES SCIENCE CENTER AND SHOULD NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY

## Summary

The Pribilof Islands blue king crab (PIBKC) assessment is on a biennial cycle. 2021 is the “on” year in the cycle, and a full assessment was conducted in May 2021 to determine overfished status. Because the fishery year (July 1, 2020 to June 30, 2021) was incomplete at that time, only a preliminary determination of whether or not overfishing of PIBKC occurred in 2020/21 could be given. This addendum to the 2021 SAFE report provides the 2020/21 overfishing status for PIBKC based on final retained catch and bycatch mortality estimates in the directed fishery, other crab fisheries, and the groundfish fisheries.

The overfishing limit (OFL) for PIBKC in 2020/21 was 1.16 t, with an acceptable biological catch (ABC) of 0.87 t (NPFMC, 2020). Following completion of the 2020/21 crab fishery year, data on retained catch and bycatch of PIBKC was obtained from the Alaska Department of Fish and Game (ADFG) and the NMFS Alaska Regional Office (via the Alaska Fisheries Information Network [AKFIN]) for crab fisheries and groundfish fisheries, respectively. No retained catch or bycatch was taken in 2020/21 because the directed fishery was closed due to its overfished status (Table 3). Also, no bycatch of PIBKC was observed in other crab fisheries (e.g., Tanner crab; Table 4). Bycatch in the groundfish fisheries totaled 0.006 t across all gear types in 2020/21 (Table 4), with all bycatch occurring in the fixed gear (hook-and-line) fisheries (almost all in fisheries targeting Pacific cod). After applying gear-specific discard mortality rates (0.2 for fixed gear, 0.8 for trawl gear), this amounted to 0.001 t total catch mortality (Table 5). Because this was less than the OFL for 2020/21 (1.16 t), **overfishing did not occur on this stock in 2020/21.**

The following two tables update the management performance tables presented in the 2021 SAFE Report with the final fishing mortality estimates for 2020/21:

Table 1. Management performance; all units in metric tons.

Year	MSST	Biomass ( $MMB_{\text{mating}}$ )	TAC	Retained Catch	Total Catch Mortality	OFL	ABC
2017/18	2,053	230	closed	0	0.33	1.16	0.87
2018/19	2,053	230	closed	0	0.40	1.16	0.87
2019/20	2,049	180	closed	0	0.42	1.16	0.87
2020/21	2,049	181	closed	0	0.00	1.16	0.87
2021/22	--	180	--	--	--	1.16	0.87

Table 2. Management performance; all units in millions of pounds.

Year	MSST	Biomass ( $MMB_{\text{matng}}$ )	TAC	Retained Catch	Total Catch Mortality	OFL	ABC
2017/18	4.526	0.507	closed	0	0.0007	0.0026	0.002
2018/19	4.526	0.507	closed	0	0.0009	0.0026	0.002
2019/20	4.517	0.398	closed	0	0.0009	0.0026	0.002
2020/21	4.517	0.398	closed	0	0.0000	0.0026	0.002
2021/22	--	0.398	--	--	--	0.0026	0.002

## References

NPFMC. 2020. Stock Assessment and Fishery Evaluation Report for the King and Tanner Crab Fisheries of the Bering Sea and Aleutian Islands: 2020 Final Crab SAFE. North Pacific Fishery Management Council, 1007 West Third, Suite 400 Anchorage, AK 99501-2252.

## Tables

Table 3. Retained catch in the directed PIBKC fishery.

Year	Retained Catch		Avg. CPUE legal crabs/pot
	Abundance	Biomass (t)	
1973/1974	174,420	579	26
1974/1975	908,072	3,224	20
1975/1976	314,931	1,104	19
1976/1977	855,505	2,999	12
1977/1978	807,092	2,929	8
1978/1979	797,364	2,901	8
1979/1980	815,557	2,719	10
1980/1981	1,497,101	4,976	9
1981/1982	1,202,499	4,119	7
1982/1983	587,908	1,998	5
1983/1984	276,364	995	3
1984/1985	40,427	139	3
1985/1986	76,945	240	3
1986/1987	36,988	117	2
1987/1988	95,130	318	2
1988/1989	0	0	--
1989/1990	0	0	--
1990/1991	0	0	--
1991/1992	0	0	--
1992/1993	0	0	--
1993/1994	0	0	--
1994/1995	0	0	--
1995/1996	190,951	628	5
1996/1997	127,712	425	4
1997/1998	68,603	232	3
1998/1999	68,419	234	3
1999/2000 - 2020/2021	0	0	--

Table 4. Estimated bycatch of PIBKC in the crab and groundfish fisheries. These values do not include discard mortality rates.

fishery year	crab (pot) fisheries (t)			groundfish fisheries (t)	
	females	legal males	sublegal males	fixed gear	trawl gear
1991/92	--	--	--	0.067	6.199
1992/93	--	--	--	0.879	60.791
1993/94	--	--	--	0.000	34.232
1994/95	--	--	--	0.035	6.856
1995/96	--	--	--	0.108	1.284
1996/97	0.000	0.000	0.807	0.031	0.067
1997/98	0.000	0.000	0.000	1.462	0.130
1998/99	3.715	2.295	0.467	19.800	0.079
1999/00	1.969	3.493	4.291	0.795	0.020
2000/01	0.000	0.000	0.000	0.116	0.023
2001/02	0.000	0.000	0.000	0.833	0.029
2002/03	0.000	0.000	0.000	0.071	0.297
2003/04	0.000	0.000	0.000	0.345	0.227
2004/05	0.000	0.000	0.000	0.816	0.002
2005/06	0.050	0.000	0.000	0.353	1.339
2006/07	0.104	0.000	0.000	0.138	0.074
2007/08	0.136	0.000	0.000	3.993	0.132
2008/09	0.000	0.000	0.000	0.141	0.473
2009/10	0.000	0.000	0.000	0.216	0.207
2010/11	0.000	0.000	0.186	0.044	0.056
2011/12	0.000	0.000	0.000	0.112	0.007
2012/13	0.000	0.000	0.000	0.170	0.669
2013/14	0.000	0.000	0.000	0.065	0.000
2014/15	0.000	0.000	0.000	0.144	0.000
2015/16	0.103	0.000	0.230	0.744	0.808
2016/17	0.000	0.000	0.000	0.077	0.455
2017/18	0.064	0.000	0.000	0.000	0.378
2018/19	0.000	0.000	0.101	0.020	0.466
2019/20	0.000	0.000	0.000	0.009	0.518
2020/21	0.000	0.000	0.000	0.006	0.000

Table 5. Estimated bycatch mortality of PIBKC in the crab and groundfish fisheries. A discard mortality rate of 0.2 has been applied to PIBKC taken with crab pots or groundfish fixed gear; a rate of 0.8 has been applied to PIBKC taken with groundfish trawl gear.

fishery year	crab (pot) fisheries (t)			groundfish fisheries (t)		total bycatch mortality (t)
	females	legal males	sublegal males	fixed gear	trawl gear	
1991/92	--	--	--	0.013	4.959	4.973
1992/93	--	--	--	0.176	48.633	48.809
1993/94	--	--	--	0.000	27.386	27.386
1994/95	--	--	--	0.007	5.485	5.492
1995/96	--	--	--	0.022	1.027	1.049
1996/97	0.000	0.000	0.161	0.006	0.054	0.221
1997/98	0.000	0.000	0.000	0.292	0.104	0.396
1998/99	0.743	0.459	0.093	3.960	0.063	5.319
1999/00	0.394	0.699	0.858	0.159	0.016	2.125
2000/01	0.000	0.000	0.000	0.023	0.018	0.042
2001/02	0.000	0.000	0.000	0.167	0.023	0.190
2002/03	0.000	0.000	0.000	0.014	0.238	0.252
2003/04	0.000	0.000	0.000	0.069	0.182	0.251
2004/05	0.000	0.000	0.000	0.163	0.002	0.165
2005/06	0.010	0.000	0.000	0.071	1.071	1.152
2006/07	0.021	0.000	0.000	0.028	0.059	0.108
2007/08	0.027	0.000	0.000	0.799	0.106	0.931
2008/09	0.000	0.000	0.000	0.028	0.378	0.407
2009/10	0.000	0.000	0.000	0.043	0.165	0.209
2010/11	0.000	0.000	0.037	0.009	0.045	0.091
2011/12	0.000	0.000	0.000	0.022	0.006	0.028
2012/13	0.000	0.000	0.000	0.034	0.535	0.569
2013/14	0.000	0.000	0.000	0.013	0.000	0.013
2014/15	0.000	0.000	0.000	0.029	0.000	0.029
2015/16	0.021	0.000	0.046	0.149	0.646	0.862
2016/17	0.000	0.000	0.000	0.015	0.364	0.379
2017/18	0.013	0.000	0.000	0.000	0.303	0.315
2018/19	0.000	0.000	0.020	0.004	0.373	0.397
2019/20	0.000	0.000	0.000	0.002	0.415	0.416
2020/21	0.000	0.000	0.000	0.001	0.000	0.001