

Update to the 2019 SAFE Report for the Pribilof Islands Blue King Crab Fisheries of the Bering Sea and Aleutian Islands Regions

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Summary

The Pribilof Islands blue king crab (PIBKC) assessment is on a biennial cycle. 2020 is the “off “year in the cycle, so only an update to determine whether or not overfishing occurred in 2019/20 is presented here. The next full assessment will occur in 2021.

The most recent full assessment was conducted in May 2019 (Stockhausen, 2019). This report updates that assessment with final retained catch and bycatch mortality estimates in the directed fishery, other crab fisheries, and the groundfish fisheries to determine the final status of whether or not overfishing occurred during the 2019/20 crab fishery year (July 1, 2019-June 30, 2020). The 2019 SAFE Report determined the overfishing limit (OFL) for PIBKC to be 1.16 t, with an acceptable biological catch (ABC) of 0.87.

Following completion of the 2019/20 crab fishery year, data on retained catch and bycatch 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 by the directed fishery in 2019/20 because it was closed due to its overfished status (Table 3). Also, no bycatch of PIKBC was observed in other crab fisheries (i.e., snow crab; Table 4). Bycatch in the groundfish fisheries totaled 0.527 t across all gear types in 2019/20 (Table 5). After applying gear-specific discard mortality rates, this amounted to 0.416 t total catch mortality (Table 5). Because this was less than the OFL for 2019/20 (1.16 t), **overfishing did not occur on this stock in 2019/20.**

The following two tables update the management performance tables presented in the 2019 SAFE Report with the final fishing mortality estimates for 2019/20:

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

Year	MSST	Biomass (MMB _{matng})	TAC	Retained Catch	Total Catch Mortality	OFL	ABC
2016/17	2,053	232	closed	0	0.38	1.16	0.87
2017/18	2,053	230	closed	0	0.33	1.16	0.87
2018/19	2,053	230	closed	0	0.41	1.16	0.87
2019/20	--	175	closed	0	0.42	1.16	0.87
2020/21	--	175	--	--	--	1.16	0.87

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

Year	MSST	Biomass (MMB_{ma(ting)})	TAC	Retained Catch	Total Catch Mortality	OFL	ABC
2016/17	4.526	0.511	closed	0	0.0008	0.0026	0.002
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	--	0.386	closed	0	0.0009	0.0026	0.002
2020/21	--	0.386	--	--	--	0.0026	0.002

Shaded values – Based on data available to the Crab Plan Team at the time of the assessment

References

Stockhausen, W.T. 2019. 2019 Stock Assessment and Fishery Evaluation Report for the Pribilof Islands Blue King Crab Fisheries of the Bering Sea and Aleutian Islands. North Pacific Fishery Management Council, 605 W. 4th Avenue, Suite 306, Anchorage, AK 99501-2252.

Tables

Table 3. Retained catch in the directed PIBKC fishery.

Year	Retained Catch	
	Abundance	Biomass (t)
1973/1974	174,420	579
1974/1975	908,072	3,224
1975/1976	314,931	1,104
1976/1977	855,505	2,999
1977/1978	807,092	2,929
1978/1979	797,364	2,901
1979/1980	815,557	2,719
1980/1981	1,497,101	4,976
1981/1982	1,202,499	4,119
1982/1983	587,908	1,998
1983/1984	276,364	995
1984/1985	40,427	139
1985/1986	76,945	240
1986/1987	36,988	117
1987/1988	95,130	318
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
1996/1997	127,712	425
1997/1998	68,603	232
1998/1999	68,419	234
1999/2000 - 2019/2020	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

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