

2018/19 Stock Assessment and Fishery Evaluation Report for the Pribilof Islands Blue King Crab Fisheries of the Bering Sea and Aleutian Islands Regions

William T. Stockhausen
NOAA/NMFS/AFSC
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Introduction

Pribilof Islands blue king crab (PIBKC) has been moved to a triennial assessment cycle, with full assessments conducted every three years. The last full assessment was conducted for 2017/18, so 2018/19 is an “off” year for the assessment and only a brief update is presented here.

Overfished status

It is not possible to evaluate current overfished status for PIBKC without re-running the assessment model. However, given that the stock was severely overfished in 2017 and is not expected to rebuild within 50 years, it is highly likely that the stock remains overfished.

Overfishing status

The PIBKC fishery was closed in 2017/18, so no retained catch was taken. Total bycatch of PIBKC in the crab (pot) fisheries was estimated by ADFG from crab observer sampling at 64 kg, while total bycatch in the groundfish fisheries was estimated by NMFS AKRO from groundfish observer sampling at less than 0.5 kg in the fixed gear fisheries (pot and hook-and-line) and 397 kg in the trawl gear fisheries (pelagic and non-pelagic trawl gear). Applying handling mortality rates for 0.2 for fixed gear and 0.8 for trawl gear to these bycatch estimates yields an estimate of 0.330 t (330 kg) total catch mortality, which is below the OFL (and ABC) for 2017/18. Thus, **overfishing did not occur in 2017/18**.

OFL and ABC

PIBKC is in Tier 5 for OFL determination, thus OFL and ABC for 2018/19 are the same as that for 2017/18 (OFL = 1.16 t; ABC = 0.87 t).

Recent trends

Recent trends in fishery catch mortality and survey biomass from the NMFS EBS bottom trawl survey are presented in Tables 1-4 and Figures 1 and 2.

Tables

Table 1. Retained catch history in the 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 - 2017/2018	0	0	--

Table 2. Recent trends in total bycatch of PIBKC in the other crab and groundfish fisheries.

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	0.039	0.056
2011/12	0.000	0.000	0.000	0.112	0.007
2012/13	0.000	0.000	0.000	0.167	0.669
2013/14	0.000	0.000	0.000	0.064	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	0.090	0.455
2017/18	0.064	0.000	0.000	0.000	0.397

Table 3. Recent trends in total bycatch mortality of PIBKC in the other crab and groundfish fisheries.

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	0.008	0.045	0.090
2011/12	0.000	0.000	0.000	0.022	0.006	0.028
2012/13	0.000	0.000	0.000	0.033	0.535	0.568
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	0.861
2016/17	0.000	0.000	0.000	0.018	0.364	0.382
2017/18	0.013	0.000	0.000	0.000	0.317	0.330

Table 4. NMFS EBS survey biomass (1000's t) for PIBKC by sex.

year	females	males
1975	12.4	46.4
1976	5.8	19.7
1977	13.6	46.3
1978	6.9	28.1
1979	2.5	19.7
1980	213.7	36.5
1981	6.7	20.1
1982	9.9	25.7
1983	11.9	16.4
1984	3.4	6.7
1985	0.7	4.3
1986	2.5	3.1
1987	1.2	5.6
1988	1.5	4.7
1989	3.5	10.1
1990	3.3	12.2
1991	3.6	13.9
1992	3.2	13.8
1993	4.4	16.2
1994	5.2	10.9
1995	4.5	15.5
1996	6.4	15.3
1997	3.7	15.0
1998	2.7	11.9
1999	3.0	3.7
2000	1.6	4.5
2001	2.0	4.8
2002	1.5	2.5
2003	1.8	2.5
2004	0.4	2.0
2005	1.0	2.7
2006	0.7	4.6
2007	0.6	7.7
2008	1.0	5.9
2009	1.0	7.7
2010	1.0	12.7
2011	0.2	11.8
2012	0.4	7.6
2013	0.3	2.9
2014	0.3	6.6
2015	0.2	6.7
2016	0.6	3.9
2017	0.3	2.1
2018	0.7	2.3

Figures

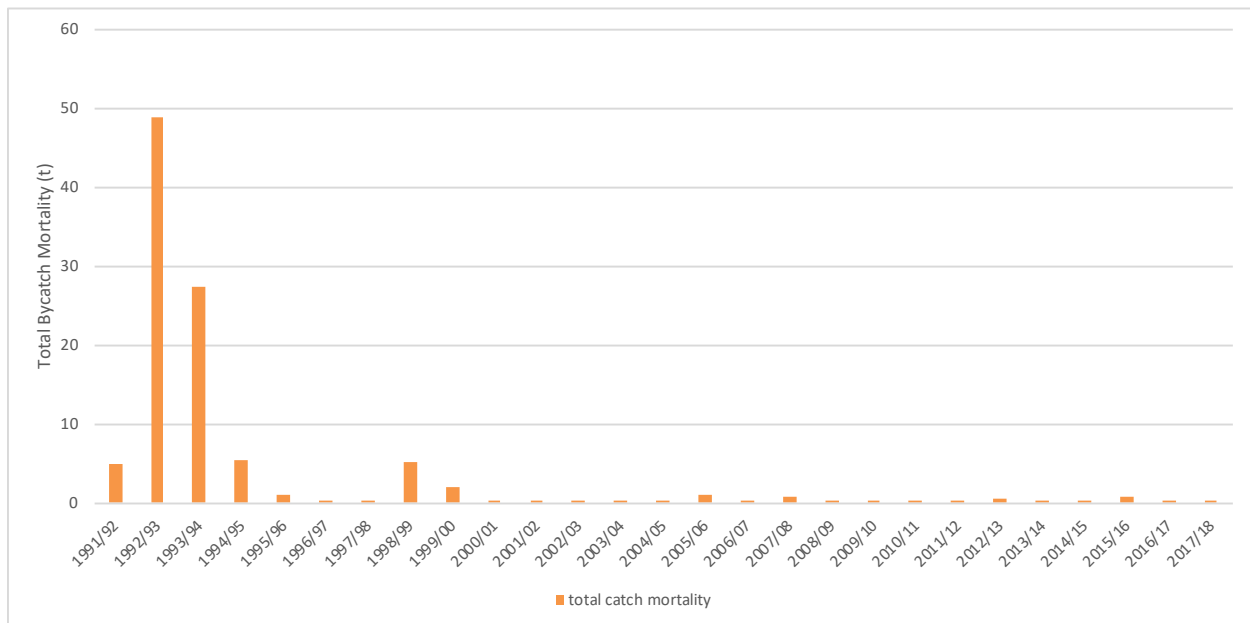


Figure 1. Trends in total bycatch mortality (t) for PIBKC.

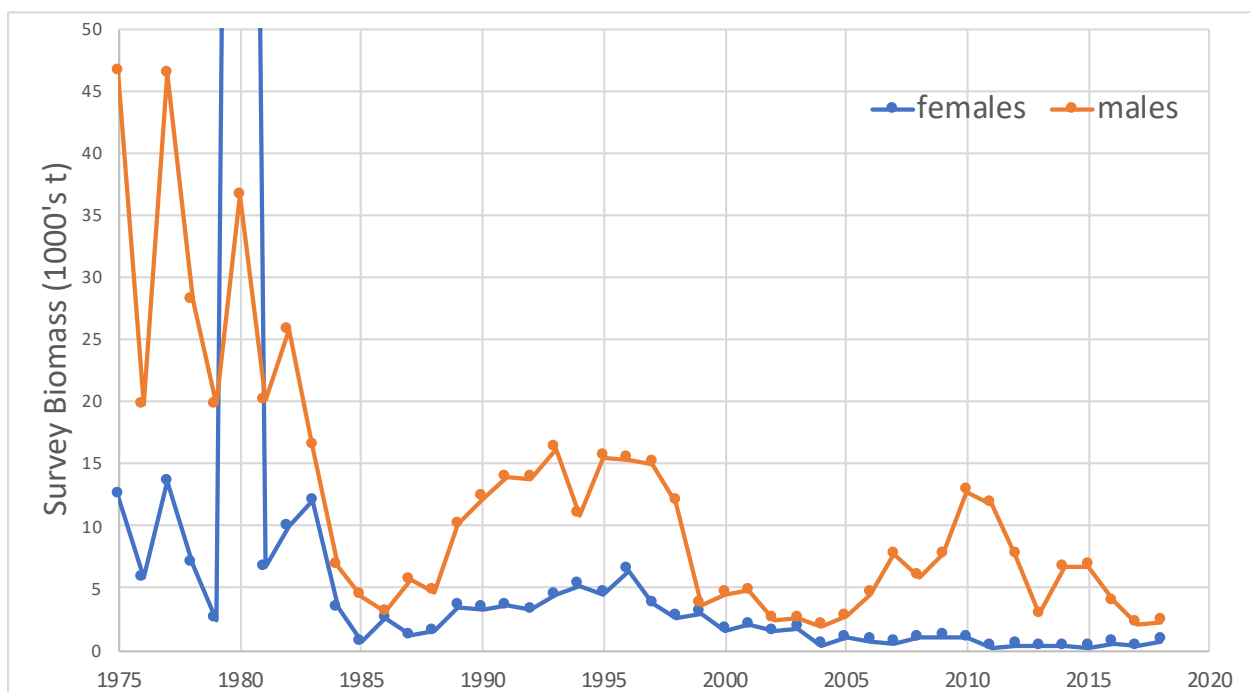


Figure 2. Trends in NMFS EBS bottom trawl survey biomass for PIBKC. Survey biomass for females in 1980 was 213,000 t.