

**ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE**



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2019 Norton Sound Winter & Summer Commercial Crab Season Summaries

Norton Sound Section (Q3) consists of all waters in Statistical Area Q north of the latitude of Cape Romanzof ($61^{\circ} 49'$ N latitude), east of the International Dateline, and south of latitude 66° N (Figure 1).

Starting in 2016, under the new king crab management plan both winter and summer commercial fisheries are now combined under one red king crab harvest strategy. Legal male biomass (LMB) was estimated to be 2.51 million pounds for 2019 based on the model's results from spring 2019, which included data from the 2018 summer fishery and the 2018 trawl survey (Appendix 1). By regulation, a harvest rate of up to 13% is allowed when the LMB is 2.0–3.0 million pounds. Additionally, the North Pacific Fishery Management Council had set an allowable biological catch (ABC) of 190,000 pounds for 2019, which includes: the summer and winter commercial harvests, estimated winter and summer subsistence harvests, and estimated incidental mortality of non-target crab discards. In order to not exceed the recommended ABC, the department applied a harvest rate of 6.0% to the LMB for the commercial red king crab fishery, yielding a total GHL of 150,600 pounds. By regulation 8% of the GHL is allocated to the winter commercial fishery resulting in a 12,048-pound allocation. The Community Development Quota (CDQ) fishery is allocated 7.5% by regulation resulting in a 11,295-pound allocation. Any commercial harvest allocation not taken during the winter commercial fishery is added to the summer commercial fishery allocation.

WINTER FISHERY

Traditionally, winter commercial harvest occurs within 15 miles of Nome with an area closed to commercial fishing that is roughly 1 mile west to 3 miles east of town and extending out to the ice edge (Figure 2). Starting in 2010, due to increased exvessel price, harvests have occurred in eastern and southern Norton Sound. The catch is generally divided between residents who buy crab directly from the fishermen, the Norton Sound Seafood Plant (NSSP) in Nome, and other non-local markets such as Anchorage and Korea.

Regulations passed in 2015 affecting the winter red king crab commercial fishery went into effect starting with the 2016 season. The fishery can be opened by emergency order on or after January 15

and closes on April 30, unless the winter crab allocation is attained prior to that date. Additionally, pot limits and pot tag requirements were implemented starting with the 2017 season. Commercial permit holders are limited to 20 pots and each pot must have a current-year pot tag attached.

HARVEST SUMMARY

The 2019 winter open access fishery opened at noon on February 25, a week earlier than 2018 to allow for more fishing opportunity. Besides NSSP registering to buy crab, 3 fishermen applied for a catcher-seller permit to sell crab dockside (2 made sales). Unlike 2016-2018, NSSP chose not to buy CDQ crab during the winter season in 2019. Of the 18 crabbers that registered, 9 set pots but only 6 delivered crab, with 21 total landings. In eastern & southern Norton Sound, poor ice all winter resulted in no effort in those areas. Additionally, out of 96 pots reported fishing, a third were lost to moving ice. All harvests were made by Nome crabbers, who reported fishing from 5 miles west to 50 miles east of Nome, excluding the closed-to-commercial-fishing area, with 30% of harvest occurring in March and 70% in April. The fishery closed April 30 by regulation, but crabbers pulled (or lost) their pots by mid-April when the near-shore ice went out for good. Based on fish tickets, 3,295 pounds (1,050 crabs), just over a quarter of the winter open access quota, was harvested with an overall CPUE of 5 crab/pot and average weight of 3.1 lbs/crab (Table 1). This was the poorest harvest in over 10 years (Table 2; Figure 3) and an eighth of 2018 due to low participation and ice and weather conditions. Average price of crab was \$6.97/lb, the second highest paid in the Norton Sound winter king crab fishery, but the total exvessel value was \$20,700, less than 4% of the peak value of \$617,400 in 2015 (Table 2).

SUMMER FISHERY

HARVEST SUMMARY

The 2019 summer crab season opened June 25 for both the open access and CDQ fisheries in the Norton Sound Section with a combined GHQ of 147,300 pounds of crab, including the unharvested portion of the winter open access quota. A total of 28 vessels and 31 permit-holders registered to fish during the summer crab season, including 2 crabbers that fished both open access and CDQ fisheries. The total summer harvest from fish ticket reports was 75,023 pounds (24,913 crab) (Table 3), just over half of the combined summer quota, with 2019 having the slowest harvest rate out of the last 20 years (Figure 4, which includes other slow years for comparison), due to poor catch rates and low effort. Even though both fisheries did not close until the regulatory closure date of September 3, NSSP stopped purchasing crab August 25. Average price paid was \$6.98/lb, the highest amount ever paid for the summer fishery, but total exvessel value, including CDQ, was \$0.514 million, less than a third of 2018 (Table 4; Figure 5).

Open Access Fishery

The 2019 open access summer commercial crab fishery opened by emergency order at noon on June 25, with NSSP registered to buy crab and 1 fisherman registered as a catcher-seller. NSSP operated a seafood processing plant in Nome with 3 tenders operating in eastern Norton Sound. This year, as in past years, the season start was based on when the sole crab processor was ready to purchase crab, and once the season was under way, NSSP bought crab continuously until August 25, when they ceased buying due to low catch rates and soft-shelled crab.

Between the first delivery (June 26) and final delivery (August 25), 24 vessels and 26 permit holders made 146 landings totaling 73,784 pounds (24,504 crab), which was the lowest since 1999 (Tables 3

and 5). Of the total open access harvest, 807 pounds were reported as deadloss and 620 pounds were reported as retained and not sold. Season length was 71 days, more than twice the length of 2018 (Table 4). Including CDQ, average weight was 3.0 lbs/crab, number of pots registered was 1,096, and there were 5,436 pot pulls (Table 5).

Even though average daily CPUE was as high as 14 crab/pot in July, for most of the season the CPUE was 9 crab/pot or less and went as low as 1 crab/pot, for a season average of 5 crab/pot (Table 3), well below the average of 14 crab/pot for the previous 5 seasons (Table 5). Due to poor catch rates, many crabbers opted for longer soaks and by mid-July began leaving the fishery. As the season progressed, several of the remaining crabbers began fishing halibut or salmon concurrently with crab. By early August, 13 vessels were still fishing crab; however, by late August, when NSSP stopped buying crab, only half a dozen vessels were still fishing crab.

CDQ Fishery

The Norton Sound Economic Development Corporation (NSEDC) and Yukon Delta Fisheries Development Association (YDFDA) divide the CDQ allocation of 7.5% of the total GHL. Only fishermen designated by these 2 CDQ groups can participate in this portion of the king crab fishery. Fishermen are required to have a Commercial Fisheries Entry Commission CDQ king crab permit and register with ADF&G before they make their first delivery. Fishermen operate under authority of the CDQ group and each CDQ group decides how their crab quota is harvested. In 2019, as in the previous 12 years, YDFDA transferred their quota to NSEDC.

From 2016 to 2018, the CDQ fishery was prosecuted during the winter season, but in 2019, NSSP reverted to purchasing CDQ crab only in the summer season. The CDQ fishery was opened concurrently with the open access fishery (June 25), but the first landing was not made until mid-July (Table 3). From then until the last landing on August 20, the 2 CDQ-registered crabbers harvested 1,239 pounds (409 crab), just over 10% of the CDQ allocation, for an exvessel value that totaled under \$8,600. Of the CDQ harvest, 13 pounds were reported as deadloss. This was the 19th year a CDQ harvest occurred since the CDQ fishery was implemented in 1998 and was the smallest CDQ harvest to date.

Harvest Areas and Sampling

There were 14 statistical areas fished during the summer season (Table 6). Like 2017 and 2018, the top harvest (54%) and effort (43%) came from statistical area 636401, which is southwest of Golovnin Bay in eastern Norton Sound. The next highest harvests came from statistical area 626401 (22%), southeast of Golovnin Bay, and statistical area 646401 (13%), southeast of Nome. All these 3 statistical areas are directly south of the closed waters boundary line (Figure 6) and, like 2017 and 2018, effort was concentrated in this main area. The remaining 11 statistical areas had less than 5% of the total harvest (Appendix 2). The catch from statistical areas east of 164°W longitude made up 77% of the harvest, which is the highest in the last 11 years (Figure 7).

Carapace length (CL) measurements and shell ages were collected from 1,160 commercially caught crab during the summer season. Since the summer of 2002, NSEDC has operated a seafood processing plant in Nome. In 2019, 100% of sampling data was collected from this plant, either as crabbers offloaded their catch or from holding tanks. Carapace age was classified as new (2–12 months) or old (over 13 months). Male new-shell crab made up 72% of the total legal crab sampled. Recruit crab are new-shell legal crab less than 116 mm CL. Postrecruit crab are legal new-shell male crab greater than or equal to 116 mm CL and all legal old-shell males. Recruit crab made up

38% of the legal crab sampled and postrecruit crab made up 62%, the latter a quarter less than 2018 (Table 5). Overall mean carapace length of legal male crab was 119 mm, similar to 2016 and 2017.

Table 1.—Daily catch based on fish ticket data for the winter commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, February 25–April 30, 2019.

Date	Landings	Number of crab	Pounds of crab	Number of pots pulled	Average weight (lbs)	Daily CPUE
02/26	1	1	3	6	3.0	0
02/28	1	1	4	7	4.0	0
03/01	1	14	45	7	3.2	2
03/02	1	11	35	7	3.2	2
03/03	1	19	63	11	3.3	2
03/05	1	5	20	10	4.0	1
03/06	2	51	163	14	3.2	4
03/08	1	9	32	11	3.6	1
03/10	1	3	13	3	4.3	1
03/22	1	19	62	6	3.3	3
03/26	1	53	172	12	3.2	4
03/31	2	135	430	16	3.2	8
04/06	2	201	604	19	3.0	11
04/08	1	113	339	13	3.0	9
04/10	1	22	70	1	3.2	22
04/11	2	254	797	34	3.1	7
04/13	1	139	443	18	3.2	8
Total	21	1,050	3,295	195	3.1	5

Note: The fishery closed by regulation on 4/30, but the last delivery was made on 4/13.

Table 2.—Historical winter commercial red king crab fishery catch statistics and economic performance, Norton Sound Section, Eastern Bering Sea, 1978–2019.

Year	Commercial harvest (lbs) ^a	Permits fished	Landings	Pot pulls	CPUE	Average weight (lb)	Exvessel price/lb	Fishery value (\$)	Season dates ^b
1978	25,025	37	c	c	c	c	0.90	28,800	1/01–4/30
1979	575	1	c	c	c	c	c	c	1/01–4/30
1980	57	1	c	c	c	c	c	c	1/01–4/30
1981	0	0	c	c	c	c	c	c	1/01–4/30
1982	44	1	c	c	c	c	c	c	1/01–4/30
1983	1,427	5	c	c	c	c	c	c	1/01–4/30
1984	2,226	8	c	c	c	c	c	c	1/01–4/30
1985 ^c	3,042	10	106	103	11	2.6	5.56 ^d	6,494 ^d	1/01–4/30
1986 ^c	5,015	6	64	c	c	2.3	5.40 ^d	11,707 ^d	11/15–5/15
1987	2,590	7	51	55	19	2.5	2.60	6,734	11/15–5/15
1988	980	10	56	148	3	2.3	2.33	2,283	11/15–5/15
1989 ^c	1,045	5	59	c	c	c	5.40 ^d	2,210 ^d	11/15–5/15
1990 ^c	9,792	12	199	257	14	2.8	5.33 ^d	19,327 ^d	11/15–5/15
1991 ^c	10,064	11	187	609	6	2.7	5.00 ^d	19,000 ^d	11/15–5/15
1992	21,177	13	287	1,823	4	2.8	3.60	76,283	11/15–5/15
1993 ^c	4,926	8	66	c	c	2.8	2.84 ^c	14,000 ^d	11/15–5/15
1994	17,214	25	183	1,018	6	3.0	3.01	51,709	11/15–5/15
1995	21,813	42	345	3,302	2	2.9	3.09	66,190	11/15–5/15
1996	5,064	9	68	292	7	2.5	3.16	14,838	11/15–5/15
1997	^e	2	^e	^e	^e	^e	2.81	^e	11/15–5/15
1998	2,349	5	31	749	1	2.4	3.57	8,168	11/15–5/15
1999	7,041	5	61	425	6	2.6	3.69	24,777	11/15–5/15
2000	7,894	10	90	1,230	2	2.6	3.72	29,300	11/15–5/15
2001	2,943	3	21	534	2	2.7	3.60	10,582	11/15–5/15
2002	6,860	11	68	1,247	2	2.7	3.53	22,682	11/15–5/15
2003	16,827	13	128	1,960	3	2.5	3.52	57,577	11/15–5/15
2004 ^f	1,293	2	16	397	1	2.5	3.95	5,110	11/15–5/15
2005	5,619	4	51	1,076	2	2.7	4.52	25,054	11/15–5/15
2006	^e	1	^e	^e	^e	^e	3.98	^e	11/15–5/15
2007	8,023	8	106	926	4	2.4	3.06	24,464	11/15–5/15

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Year	Commercial harvest (lbs) ^a	Permits fished	Landings	Pot pulls	CPUE	Average weight (lb)	Exvessel price/lb	Fishery value (\$)	Season dates ^b
2008	14,676	9	129	1,008	6	2.5	3.03	43,664	11/15–5/15
2009	12,348	7	130	1,282	4	2.5	3.01	32,649	11/15–5/15
2010	12,028	10	184	1,848	3	2.5	3.54	41,265	11/15–5/15
2011	8,669	5	129	1,747	2	2.6	3.59	30,776	11/15–5/15
2012	24,142	35	319	1,668	5	2.6	6.47	150,569	11/15–5/15
2013	62,179	26	495	6,093	4	2.8	6.73	402,256	11/15–5/15
2014	34,587	21	323	4,037	4	2.3	6.94	234,291	11/15–5/15
2015	98,750	44	664	7,314	6	2.4	6.57	617,434	11/15–4/30
2016 ^g	79,986	48	471	5,459	5	2.7	7.22	559,803	2/15–4/21
2017 ^g	77,843	88	435	3,225	8	3.0	6.73	483,797	2/07–3/22
2018 ^g	29,118	43	322	2,566	4	3.2	6.95	186,044	3/03–4/30
2019	3,295	6	21	195	5	3.1	6.97	20,699	2/25–4/30

^a Deadloss included in total.

^b From 1986 to 2014, season dates were from November 15 of the previous year to May 15 of the current year. In 2015, season dates were from November 15, 2014 to April 30, 2015. Starting in 2016, the season is opened by emergency order anytime on or after January 15 and closes by regulation on April 30 or earlier by EO.

^c Prior to the 1985 season, no crab fish ticket data were entered into the fish ticket database. Some data for years 1985-86, 1989-91, and 1993 were missing from the fish ticket database, and some information were found in the text of the annual management report for the respective year.

^d Value given is price per crab. Fishery value was derived by multiplying price per crab by number of crab harvested.

^e Information is confidential because less than 3 permit holders delivered.

^f Confidentiality was waived by the fishermen.

^g Includes catch information and values from the winter CDQ fishery.

Table 3.—Daily catch based on fish ticket data for the open-access & CDQ summer commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, June 25–September 3, 2019.

Date	Landings	Number of crab	Pounds of crab	Cumulative pounds	Number of pots pulled	Average weight (lbs)	Daily CPUE
06/26	2	137	451	451	40	3.3	3
06/27	1		Information is confidential				
06/28	14	2,574	7,615	7,615	511	3.0	5
06/29	2	517	1,603	9,218	75	3.1	7
07/01	1		Information is confidential				
07/02	2	646	1,896	1,896	76	2.9	9
07/03	1		Information is confidential				
07/04	15	2,413	7,358	7,358	511	3.0	5
07/05	5	1,770	5,242	12,600	195	3.0	9
07/06	8	1,845	5,514	18,114	264	3.0	7
07/07	8	929	2,794	20,908	270	3.0	3
07/08	1		Information is confidential				
07/09	1		Information is confidential				
07/10	10	1,969	5,765	5,765	342	2.9	6
07/11	5	500	1,509	7,274	229	3.0	2
07/12	4	801	2,357	9,631	119	2.9	7
07/13	1		Information is confidential				
07/14	14	2,305	6,916	6,916	481	3.0	5
07/15 ^a	4	229	704	7,620	116	3.1	2
07/16	2	482	1,439	9,059	80	3.0	6
07/19 ^a	8	1,175	3,503	12,562	277	3.0	4
07/22	2	269	855	13,417	60	3.2	4
07/23	4	677	2,103	15,520	154	3.1	4
07/24	3	307	958	16,478	117	3.1	3
07/27	8	1,634	5,117	21,595	113	3.1	14
07/28 ^a	4	397	1,200	22,795	40	3.0	10
07/29	1		Information is confidential				
08/01	3	209	678	678	101	3.2	2
08/02 ^a	4	360	1,117	1,795	100	3.1	4
08/05 ^a	3	143	461	2,256	119	3.2	1
08/07	1		Information is confidential				
08/08 ^a	2	59	189	189	80	3.2	1
08/11	1		Information is confidential				
08/18	1		Information is confidential				
08/19	1		Information is confidential				
08/20 ^a	1		Information is confidential				
08/21	3	518	1,636	1,636	86	3.2	6
08/22	1		Information is confidential				
08/25	1		Information is confidential				
Totals	153	24,913	75,023		5,027	3.0	5

Note: Both fisheries closed by regulation on 9/3, but the last open access delivery was made on 8/25 and the last CDQ delivery was made on 8/20.

^a Information includes CDQ data.

Table 4.—Historical summer commercial red king crab fishery economic performance, Norton Sound Section, Eastern Bering Sea, 1977–2019.

Year	Guideline harvest level (lbs) ^b	Legal male pop est (lbs) ^b	Commercial harvest (lbs) ^{a,b}		Exvessel price/lb	Fishery value (millions \$)	Season length dates		
			open access	CDQ			days	open access	CDQ
1977	c	15.2	0.52	d	0.75	0.229	60	c	d
1978	3.00	14.8	2.09	d	0.95	1.897	60	6/07–8/15	d
1979	3.00	10.9	2.93	d	0.75	1.878	16	7/15–7/31	d
1980	1.00	6.0	1.19	d	0.75	0.890	16	7/15–7/31	d
1981	2.50	3.9	1.38	d	0.85	1.172	38	7/15–8/22	d
1982	0.50	2.7	0.23	d	2.00	0.405	23	8/09–9/01	d
1983	0.30	3.4	0.37	d	1.50	0.537	4	8/01–8/05	d
1984	0.40	3.9	0.39	d	1.02	0.395	14	8/01–8/15	d
1985	0.45	4.3	0.43	d	1.00	0.427	22	8/01–8/23	d
1986	0.42	4.7	0.48	d	1.25	0.600	13	8/01–8/25 ^e	d
1987	0.40	4.7	0.33	d	1.50	0.491	11	8/01–8/12	d
1988	0.20	4.9	0.24	d	c	c	10	8/01–8/11	d
1989	0.20	4.9	0.25	d	3.00	0.739	3	8/01–8/04	d
1990	0.20	4.7	0.19	d	c	c	4	8/01–8/05	d
1991	0.34	4.4				No Summer Commercial Fishery			
1992	0.34	4.2	0.07	d	1.75	0.130	2	8/01–8/03	d
1993	0.34	3.8	0.33	d	1.28	0.430	52	7/01–8/28 ^f	d
1994	0.34	3.2	0.32	d	2.02	0.646	31	7/01–7/31	d
1995	0.34	2.6	0.32	d	2.87	0.926	67	7/01–9/05	d
1996	0.34	2.2	0.22	d	2.29	0.519	57	7/01–9/03 ^g	d
1997	0.08	2.1	0.09	d	1.98	0.184	44	7/01–8/13 ^h	d
1998	0.08	2.4	0.03	d	1.47	0.041	65	7/01–9/03 ⁱ	d
1999	0.08	3.3	0.02	d	3.08	0.073	66	7/01–9/04 ^j	d
2000	0.33	3.9	0.29	0.01	2.29	0.715	91	7/01–8/29	9/01–9/29
2001	0.30	3.6	0.28	0.00	2.34	0.674	97	7/01–9/01	9/01–9/09
2002	0.24	3.4	0.24	0.01	2.81	0.729	77	7/01–8/06	6/15–28; 8/9–9/3
2003	0.25	3.5	0.25	0.01	3.09	0.823	68	7/01–8/13	6/15–28; 8/15–24
2004	0.35	3.9	0.34	0.03	3.13	1.038	53	7/01–8/08	6/15–6/28
2005	0.37	3.9	0.37	0.03	3.18	1.264	72	7/01–8/15	6/15–28; 8/17–27
2006	0.45	3.6	0.42	0.03	2.26	1.021	67	7/01–8/22	6/15–6/28

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Year	Guideline harvest level (lbs) ^b	Legal male pop est (lbs) ^b	Commercial harvest (lbs) ^{a,b}		Exvessel price/lb	Fishery value (millions \$)	days	Season length dates	
			open access	CDQ				open access	CDQ
2007	0.32	3.5	0.29	0.02	2.84	0.750	52	7/01–8/17	6/15–6/28
2008	0.41	3.8	0.36	0.03	3.20	1.231	73	6/23–8/18	8/17–9/03
2009	0.38	4.1	0.37	0.03	3.17	1.225	98	6/15–9/20 ^k	6/15–7/28 ^k
2010	0.40	4.5	0.39	0.03	3.73	1.528	58	7/01–8/24	6/28–7/16
2011	0.36	4.5	0.37	0.03	5.23	2.016	33	6/28–7/30	6/28–7/08
2012	0.47	4.0	0.44	0.03	5.41	2.556	72	6/29–8/11	6/29–9/08
2013	0.50	3.5	0.37	0.02	5.63	2.165	74	7/03–9/14	7/03–9/14 ⁱ
2014	0.38	3.5	0.36	0.03	5.12	1.960	52	6/25–8/02	6/25–8/15
2015	0.39	4.3	0.37	0.03	5.40	2.130	26	6/29–7/24	6/29–7/24 ^l
2016 ^m	0.52	4.4	0.42	0.04	6.50	2.713	25	6/27–7/21	3/23–4/21; 6/27–7/9
2017 ^m	0.50	3.8	0.41	0.04	6.25	2.560	30	6/26–7/25	2/28–3/22
2018 ^m	0.32	3.0	0.30	0.02	6.25	1.846	35	6/24–7/28	3/03–4/14
2019 ^m	0.15	2.5	0.07	0.00	6.98	0.514	71	6/25–9/03 ⁿ	6/25–9/03 ⁿ

^a Deadloss and personal use included in total.

^b Millions of pounds.

^c Information not available.

^d No CDQ was allocated until 1998, and no harvest occurred until 2000.

^e Fishing began 8/12.

^f Fishing began 7/8.

^g Fishing began 7/9 due to fishermen’s strike.

^h First delivery was made 7/10.

ⁱ First delivery was made 7/16.

^j The season was extended 24 hours due to bad weather.

^k NSSP stopped buying crab from 6/29 to 7/6 due to poor meat fill.

^l Final delivery was made 7/17.

^m GHF includes 8% that was allocated to the winter commercial fishery; the fishery value does not include amount from the winter CDQ fishery, if any; and number of season days does not include the winter CDQ fishery, if any.

ⁿ Season ended by regulation on September 3, but NSSP stopped buying crab on 8/25 due to slow catch rate and soft-shell crab.

Table 5.—Historical summer commercial red king crab annual harvest, Norton Sound Section, Eastern Bering Sea, 1977–2019.

Year	Number vessels (open access only)	Number permits	Number landings	Number crab	Harvest (lbs) ^a		Number pots		CPUE	Percent old shell	Percent postrecruits	Average weight (lbs)	Avg legal mean length (mm)	
					open access	CDQ ^b	registered	pulls						
1977	7	7	13	195,877	517,787		c	5,457	36	c	c	2.7	113	
1978	8	8	54	660,829	2,091,961		c	10,817	64	c	c	3.0	119	
1979	34	34	76	970,962	2,931,672		c	34,773	28	c	c	3.0	120	
1980	9	9	50	329,778	1,186,596		c	11,199	29	c	c	3.6	126	
1981	36	36	108	376,313	1,379,014		c	33,745	11	c	c	3.7	129	
1982	11	11	33	63,949	228,921		c	11,230	6	c	c	3.6	125	
1983	23	23	26	132,205	368,032			3,583	11,195	12	c	45	2.8	115
1984	8	8	21	139,759	387,427			1,245	9,706	14	c	41	2.8	113
1985	6	6	72	146,669	427,011			1,116	13,209	11	c	55	2.9	116
1986	3	3	c	162,438	479,463			578	4,284	38	c	52	2.9	116
1987	9	9	c	103,338	327,121			1,430	10,258	10	13	78	3.2	122
1988	2	2	c	76,148	236,688			360	2,350	32	26	75	3.1	119
1989	10	10	c	79,116	246,487			2,555	5,149	15	29	77	3.1	120
1990	4	4	c	59,132	192,831			1,388	3,172	19	17	79	3.1	121
1991 ^d							No Summer	Commercial	Fishery					
1992	27	27	c	24,902	74,029			2,635	5,746	4	29	72	3.0	120
1993	14	20	208	115,913	335,790			560	7,063	16	10	69	2.9	119
1994	34	52	407	108,824	327,858			1,360	11,729	9	71	86	3.0	119
1995	48	81	665	105,967	322,676			1,900	18,782	6	21	64	3.0	118
1996	41	50	264	74,752	224,231			1,640	10,453	7	36	70	3.0	117
1997	13	15	100	32,606	92,988			520	2,982	11	14	51	2.8	116
1998	8	11	50	10,661	29,684			360	1,639	7	39	68	2.8	117
1999	10	9	53	8,734	23,553			360	1,630	5	12	58	2.7	118
2000	14	17	202	108,249	297,654	14,870		560	6,345	18	16	60	2.7	116
2001	30	37	320	98,321	288,199	0		1,200	11,928	8	11	67	2.9	119
2002	28	32	164	86,666	244,376	15,225		1,120	6,491	14	11	67	3.0	120
2003	24	30	219	88,518	253,284	13,923		960	8,494	11	14	52	2.8	117
2004	26	29	208	120,289	314,472	26,274		1,120	8,066	15	8	51	2.8	117
2005	30	32	227	128,405	370,744	30,060		1,320	8,867	16	9	64	2.9	118

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Table 5.–Page 2 of 2.

Year	Number vessels (open access only)	Number permits	Number landings	Number crab	Harvest (lbs) ^a		Number pots		CPUE	Percent old shell	Percent postrecruits	Average weight (lbs)	Avg legal mean length (mm)
					open access	CDQ ^b	registered	pulls					
2006	28	29	224	139,131	419,191	32,557	1,120	8,695	17	27	75	3.0	119
2007	30	30	234	101,672	289,264	23,611	1,200	9,118	12	12	55	2.8	117
2008	23	23	230	132,295	364,235	30,900	920	8,721	16	23	55	2.8	115
2009	22	23	333	133,498	369,462	28,125	920	11,934	12	18	57	2.8	116
2010	23	25	256	139,014	387,304	30,000	1,040	9,698	16	14	51	2.8	116
2011	24	25	173	132,030	373,990	26,850	1,040	6,808	21	14	57	2.8	116
2012	29	29	289	149,604	441,080	34,910	1,200	10,041	16	9	67	2.9	118
2013	33	33	435	124,485	373,278	18,585	1,420	15,058	9	8	68	3.0	120
2014	33	35	281	120,385	360,860	28,148	1,560	10,127	13	22	65	3.0	120
2015	36	36	231	133,531	371,520	29,595	1,480	8,356	17	22	42	2.8	115
2016	36	37	227	137,774	416,576	38,790 ^e	1,520	8,009	17	8	64	3.0	118
2017	36	36	270	135,323	411,739	37,232 ^f	1,640	9,440	14	20	75	3.0	120
2018	33	33	256	89,613	298,396	23,957 ^f	1,400	8,797	10	16	84	3.3	123
2019	24	26	146	24,504	73,784	1,239	1,096	5,436	5	28	62	3.0	119

^a Deadloss included in total.

^b No CDQ fishery harvest prior to the 2000 season.

^c Data not available.

^d No summer commercial fishery.

^e 35,207 pounds were harvested during the winter CDQ fishery.

^f All CDQ harvest occurred during the winter.

Table 6.–Red king crab open-access & CDQ summer commercial harvest based on fish ticket reports by statistical area for Norton Sound Section, Eastern Bering Sea, June 25–September 3, 2019.

Statistical area	Number of crab	Pounds of crab	Number of pots pulled	CPUE	Average weight (lbs.)	Percent of harvest in stat area	Percent of pots pulled in stat area
616331	180	570	79	2	3.2	1	1
626401	5,366	16,300	856	6	3.0	22	16
636330	154	479	39	4	3.1	1	1
636401	13,606	40,576	2,339	6	3.0	54	43
646330	191	592	40	5	3.1	1	1
646401	3,169	9,565	940	3	3.0	13	17
656401	586	1,869	294	2	3.2	2	5
666330	1,055	3,247	276	4	3.1	4	5
666401	102	341	118	1	3.3	0	2
666402	478	1,422	375	1	3.0	2	7
666431	19	49	40	0	2.6	0	1
676501	2	5	10	0	2.5	0	0
686431	2	5	20	0	2.6	0	0
686500	3	5	10	0	1.7	0	0
Total	24,913	75,023	5,436	5	3.0	100	100

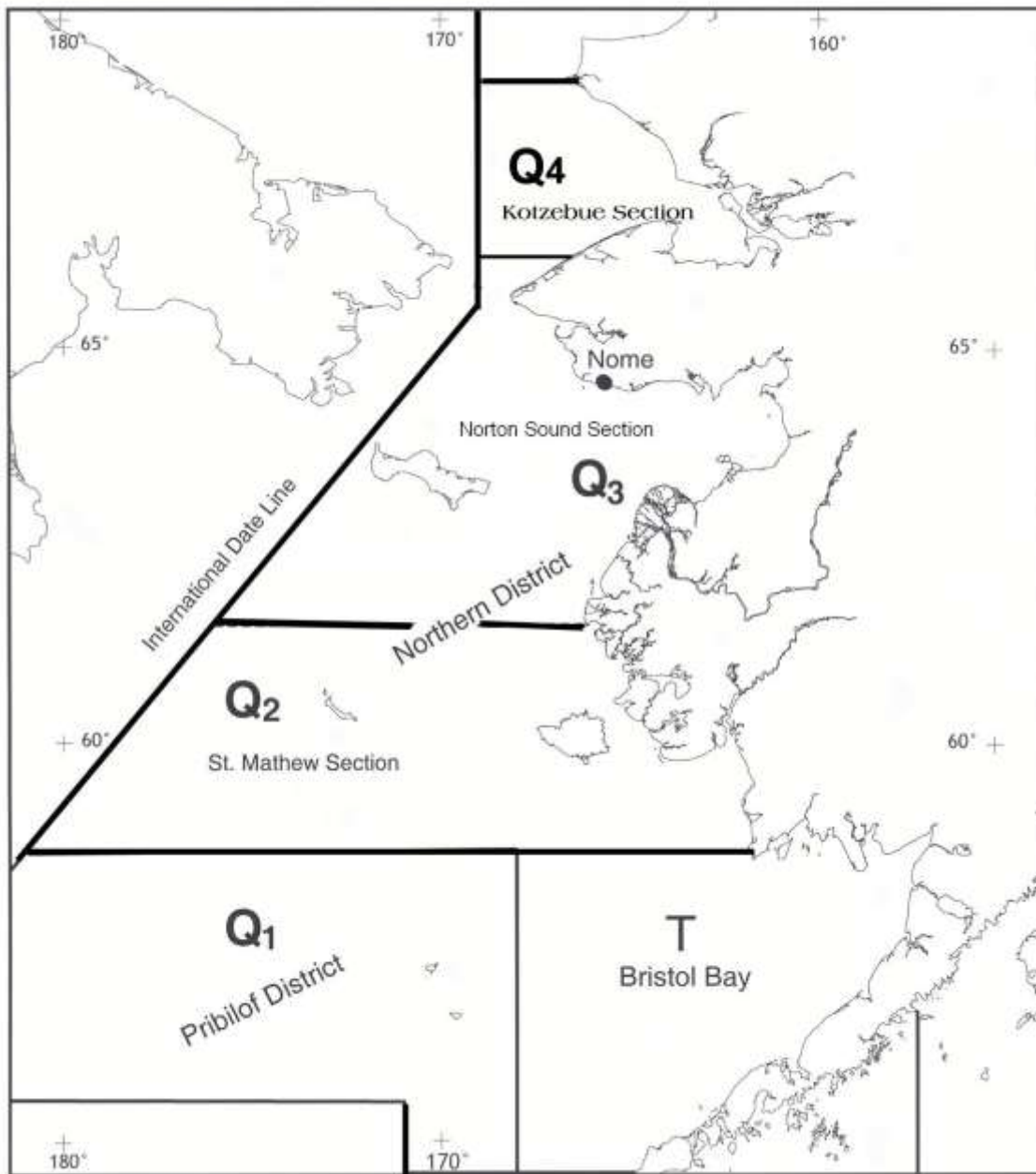


Figure 1.—King crab fishing districts and sections of Statistical Area Q.

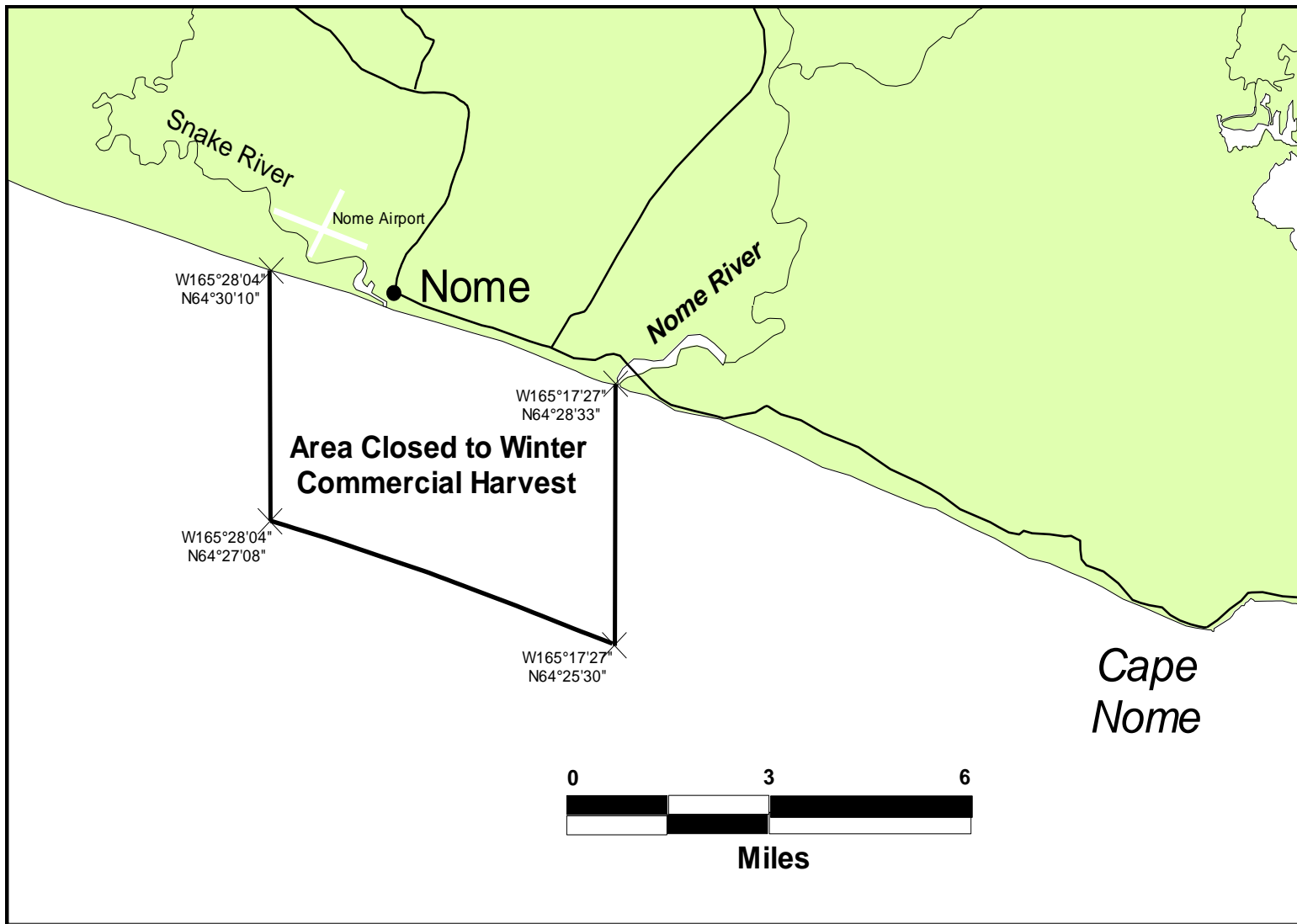


Figure 2.—Closed waters area in effect for the Norton Sound winter commercial crab fishery.

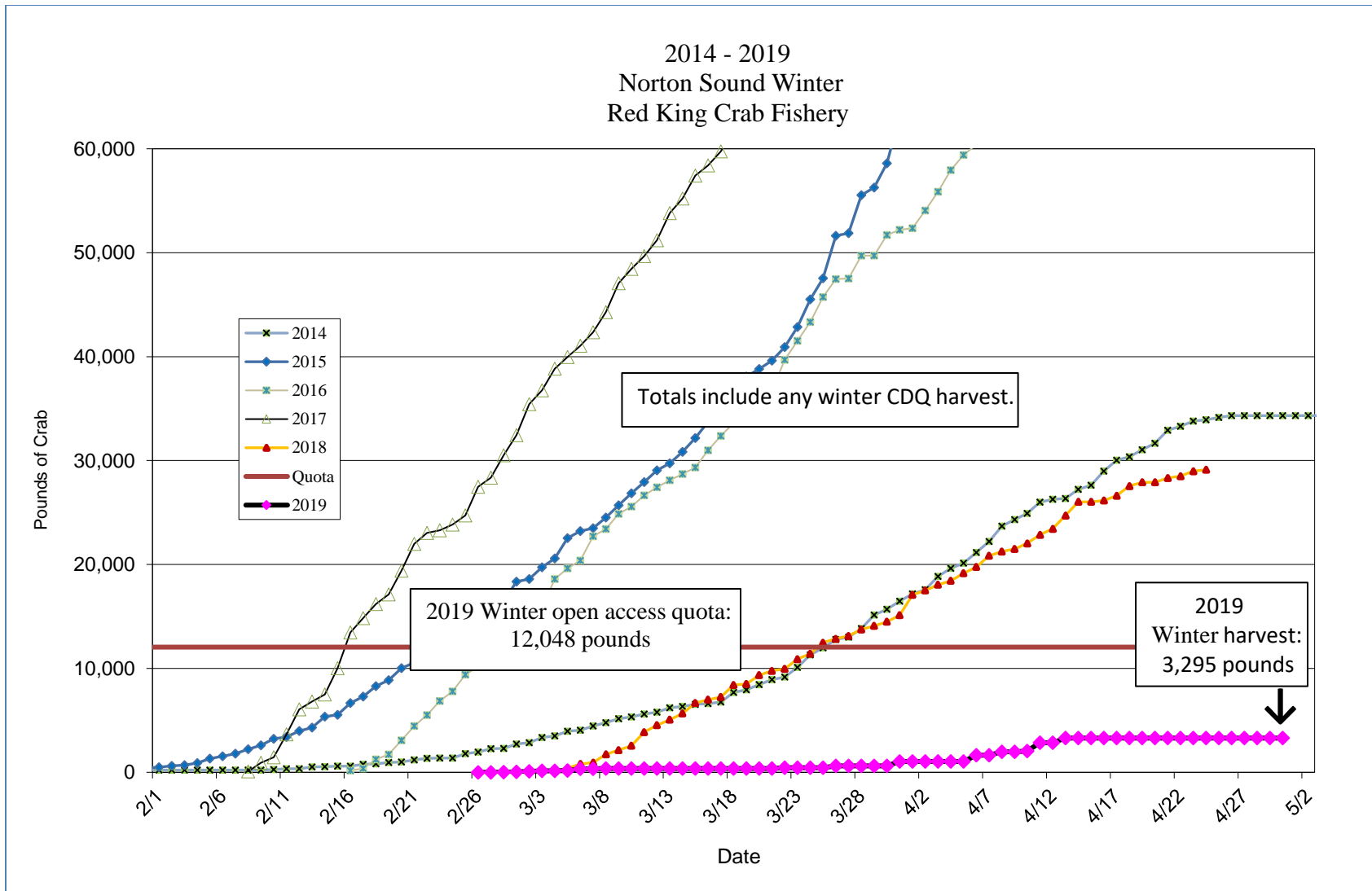


Figure 3.—Current and historical catch performance for the Norton Sound winter commercial crab fishery, 2014–2019.

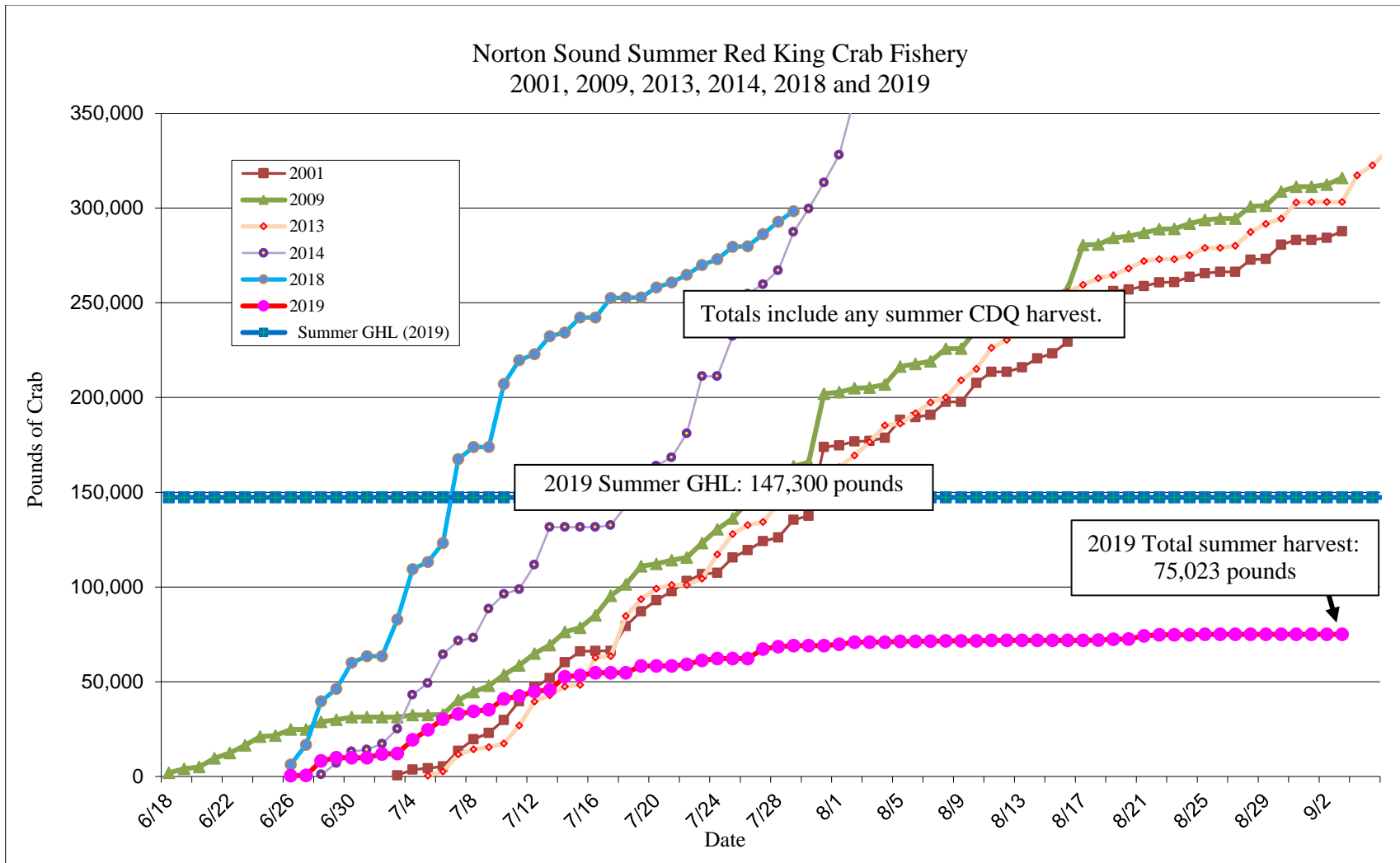
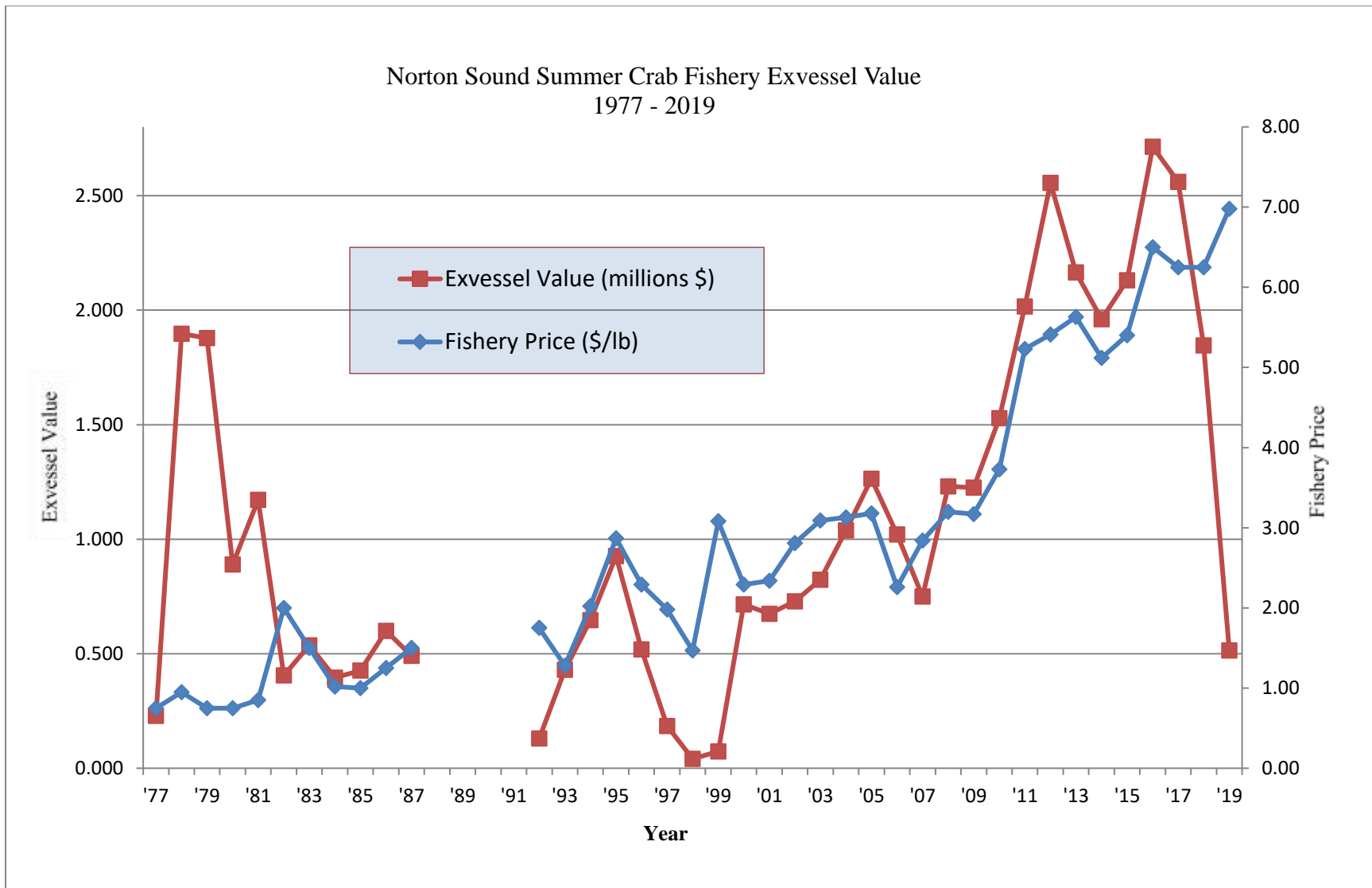
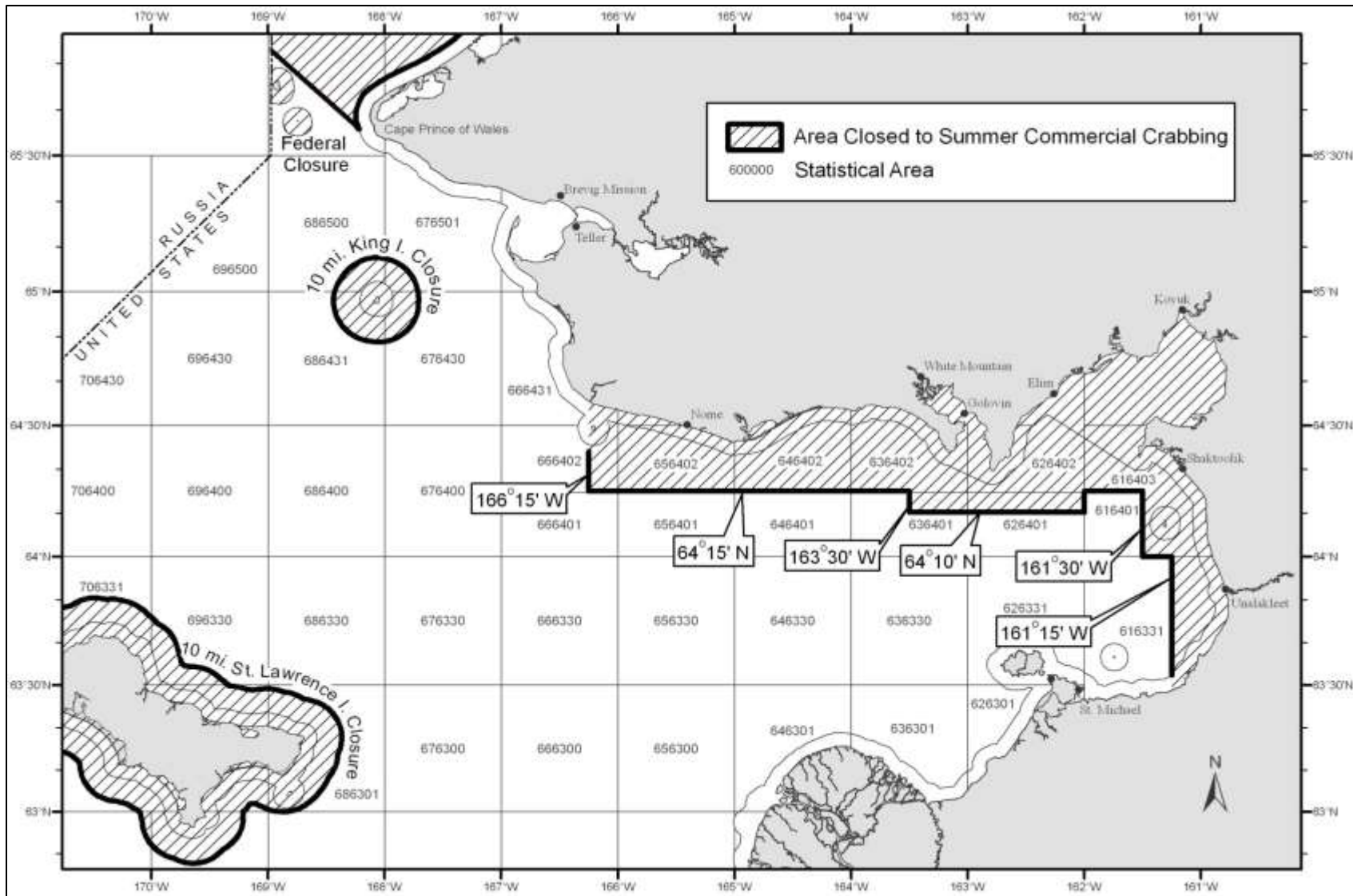


Figure 4.—Current and historical catch performance for the Norton Sound summer commercial crab fishery, 2001, 2009, 2013, 2014, 2018 and 2019.



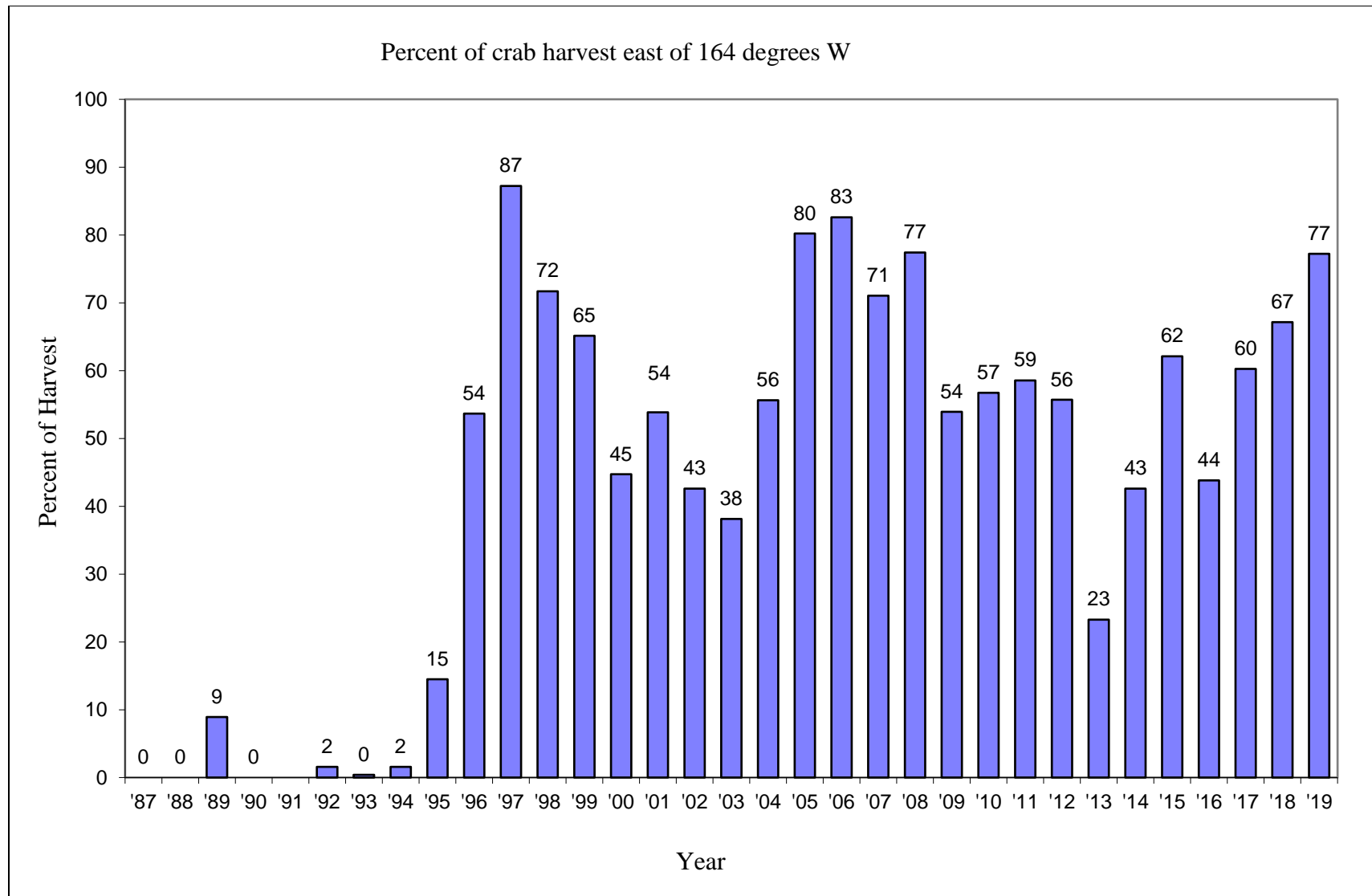
Notes: Pricing information was not available for 1988–1990. No summer commercial fishery occurred in 1991.
 Figure 5.—Norton Sound crab exvessel value and fishery price per pound, 1977–2019.



Note: Line drawn around the coastline delineates the 3-mile state waters zone.

Figure 6.—Statistical areas and closed-waters area in effect for the Norton Sound summer commercial crab fishery.

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Note: No summer commercial fishery occurred in 1991.

Figure 7.—The percent of crab harvested during the Norton Sound summer commercial red king crab fishery east of 164 degrees west longitude, 1987–2019.

Appendix 1.–Standardized results from population assessment surveys for red king crab in Norton Sound since 1976.

Year	Date	Research agency	Gear	Population abundance estimates (number of crab) ^a			Legal male biomass (millions of pounds) ^d	Standard error		
				pre-2 males ^b	pre-1 males ^b	legal males ^c		prerecruit-2 males	prerecruit-1 males	legal males
1976	9/02–09/05 9/16–10/07	NMFS	Trawl	653,106	1,414,353	2,491,086	7,473,258	285,637	642,876	801,298
1979	7/26–08/05	NMFS	Trawl	19,038	47,313	813,274	2,439,822	16,488	22,711	204,197
1980 ^e	7/04–07/14	ADF&G	Pots			1,900,000	5,700,000			
1981	6/28–07/14	ADF&G	Pots			1,285,195	3,855,585			
1982	7/06–07/20	ADF&G	Pots			353,273	1,059,819			
1982	9/05–09/11	NMFS	Trawl	379,347	1,012,272	918,686	2,756,058	120,610	295,984	243,467
1985	7/01–07/14	ADF&G	Pots			907,579	2,722,737			
1985	9/16–10/01	NMFS	Trawl	402,922	664,594	1,132,662	3,397,986	157,046	281,598	249,394
1988	8/16–08/30	NMFS	Trawl	583,924	486,570	972,757	2,918,271	146,733	249,394	354,901
1991	8/22–08/30	NMFS	Trawl	386,338	408,241	1,545,558	4,636,674	297,059	157,018	450,814
1996	9/07–09/18	ADF&G	Trawl	395,888	277,595	528,431	1,585,293	243,594	78,712	157,909
1999	7/28–08/07	ADF&G	Trawl	96,295	582,799	1,542,589	4,627,767	56,017	165,689	318,731
2002	7/27–08/06	ADF&G	Trawl	393,689	482,815	740,450	2,221,350	85,797	81,271	81,271
2006	7/25–08/08	ADF&G	Trawl	937,083	571,890	718,379	2,155,137	551,144	153,272	105,487
2008	7/24–08/11	ADF&G	Trawl	795,777	689,843	811,727	2,435,181	187,516	120,153	152,145
2011	7/18–08/15	ADF&G	Trawl	431,153	311,550	1,310,634	3,931,902	151,713	87,866	123,310
2014	7/18–07/30	ADF&G	Trawl	1,547,538	2,110,274	1,747,720	5,243,160	643,563	1,474,574	912,399
2017	7/28–08/08	ADF&G	Trawl	258,235	288,615	941,797	2,825,391	78,381	100,434	270,551
2018	7/22–08/09	ADF&G	Trawl	212,664	151,903	303,806	911,418	58,798	61,909	93,597

Note: Blank cells are because the numbers were not calculated.

^a Population estimates are valid for the date of the survey (i.e., either before or after the summer commercial fishery). All historical abundances were updated based on newly recovered data.

^b Pre-2 males were defined as 76–89 mm in carapace length (CL) and pre-1 males were defined as sublegal crab \geq 90 mm CL.

^c Legal male red king crab were defined as \geq 121 mm (4.75 inches) in carapace width (CW) for the pot surveys and all ADF&G trawl surveys, and \geq 104 mm CL for all the NMFS trawl surveys except the 1979 survey which defined legal males as \geq 100 mm CL.

^d Legal male biomass is estimated by multiplying the population abundance estimate of legal males by an average weight of 3.0 pounds.

^e The 1980 pot survey estimate has been revised from the original estimate of 13.4 million pounds which was thought inaccurate due to an under-reporting of recovered tagged crab.

Appendix 2.—Historical commercial harvest by statistical areas of red king crab from Norton Sound Section, Eastern Bering Sea, 1977–2019 (catch in pounds).

Statistical area	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
616331	7,893	0	0	0	0	0	0	0	0	0	0	0	0
616401	0	0	0	0	0	0	0	0	0	0	0	0	0
626331	40,020	0	0	0	0	22	0	0	0	0	0	0	0
626401	31,572	0	0	4,830	399	0	0	0	0	0	0	0	0
626402	38,995	0	0	0	0	0	0	0	0	0	0	0	0
636330	0	0	0	0	0	0	0	0	0	0	0	0	0
636401	0	0	0	12,398	61,823	32,246	5,880	41	891	0	0	0	22,030
636402	0	0	0	0	0	0	0	0	0	0	0	0	0
646301	0	0	0	0	0	0	0	0	0	0	0	0	0
646330	0	0	0	0	4,716	0	0	0	0	0	0	0	5,212
646401	0	0	155,972	0	1,319	17,532	0	0	0	0	0	0	0
646402	80,969	0	0	0	0	748	0	0	0	0	0	0	0
656300	0	0	161,699	0	15,174	0	0	0	0	0	0	0	0
656330	0	0	323,518	72,735	395,662	3,983	24,246	83,479	7,632	0	79,006	36,129	1,757
656401	0	0	138,011	121,147	253,387	60,480	11,422	183,119	246,200	0	194,408	165,644	100,956
656402	306,302	90,187	288,869	918	3,098	2,832	0	0	132,363	0	0	0	0
666230	0	55,490	0	0	77	0	0	0	0	0	0	0	0
666300	0	162,795	60,816	84,874	9,167	95	0	4,534	0	0	0	0	0
666330	0	353,016	505,050	367,446	141,513	8,990	1,192	0	389	70,615	2,963	13,020	1,275
666401	0	179,212	486,947	205,400	381,510	79,580	325,045	116,254	5,341	408,848	50,744	21,895	115,257
666402	12,036	515,778	534,938	183,581	0	17,585	0	0	32,992	0	0	0	0
666431	0	0	146,029	0	0	0	0	0	0	0	0	0	0
676300	0	13,238	0	126,231	0	0	0	0	0	0	0	0	0
676330	0	51,304	81,798	6,762	18,734	0	0	0	0	0	0	0	0
676400	0	667,130	33,856	274	92,026	1,315	247	0	32	0	0	0	0
676430	0	3,811	12,309	0	373	3,513	0	0	1,171	0	0	0	0
676501	0	0	0	0	36	0	0	0	0	0	0	0	0
686330	0	0	1,860	0	0	0	0	0	0	0	0	0	0
686431	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	517,787	2,091,961	2,931,672	1,186,596	1,379,014	228,921	368,032	387,427	427,011	479,463	327,121	236,688	246,487

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Statistical area	1990	1992	1993	1994	1995	1996 ^a	1997	1998	1999	2000	2001	2002	2003
616331	0	0	0	48	0	0	0	0	633	4,557	0	3,506	646
616401	0	0	0	0	35	0	0	0	0	0	0	0	0
626331	0	0	0	0	0	61	0	0	0	0	0	2,455	0
626401	0	0	0	0	18,971	45,045	18,066	8,065	508	4,689	61,620	53,722	15,899
626402	0	0	0	0	0	0	0	0	0	0	0	0	1,352
636330	0	0	0	0	0	4,560	3,838	2,449	0	0	2,253	0	0
636401	0	1,159	1,373	8,087	24,329	70,677	59,206	10,771	14,201	126,994	91,343	50,906	83,949
636402	0	0	0	1,754	3,466	0	0	0	0	0	0	0	0
646301	0	0	0	0	4,628	13,888	0	0	0	0	0	0	0
646330	0	0	0	0	1,493	2,894	314	0	3,021	0	1,868	1,955	0
646401	0	0	1,963	37,222	105,045	22,834	1,052	3,194	221	0	4,287	0	3,952
646402	0	0	730	143,511	66,821	0	0	0	0	0	0	0	0
656300	0	0	0	0	0	0	0	0	0	0	0	0	14
656330	0	4,814	265	0	19,745	15,446	4,661	4,078	1,300	0	20,869	12,374	21,176
656401	171	53,119	105,341	29,566	32,289	9,985	4,035	1,127	2,739	94,813	55,158	63,038	40,566
656402	0	0	193,079	106,053	44,000	0	0	0	0	0	0	0	1,441
666230	0	0	0	0	0	0	0	0	0	0	0	0	0
666300	0	0	0	0	0	25,519	0	0	0	0	0	0	0
666330	27,185	4,305	31,758	0	730	0	0	0	0	5,839	7,030	1,332	1,296
666401	162,263	10,632	746	396	0	3,001	1,816	0	930	60,762	43,771	35,970	83,998
666402	0	0	535	1,221	0	0	0	0	0	0	0	30,070	12,873
666431	0	0	0	0	1,124	0	0	0	0	0	0	4,274	45
676300	0	0	0	0	0	546	0	0	0	0	0	0	0
676330	0	0	0	0	0	0	0	0	0	0	0	0	0
676400	3,212	0	0	0	0	9,775	0	0	0	0	0	0	0
676430	0	0	0	0	0	0	0	0	0	0	0	0	0
676501	0	0	0	0	0	0	0	0	0	0	0	0	0
686330	0	0	0	0	0	0	0	0	0	0	0	0	0
686431	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	192,831	74,029	335,790	327,858	322,676	224,231	92,988	29,684	23,553	297,654	288,199	259,602	267,207

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Statistical area	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
616331			2,357		5,658	888					4,923	3,410
616401				231	416	6,170				7,729	4,692	1,929
626331			1,415	27,018	3,235	3,047		2,489		686		
626401	23,113	94,130	118,202	61,704	96,327	103,043	52,054	85,271	115,524	36,802	69,936	103,881
626402												
636330		126	26,680	10,253	2,350	5,026	2,584		1,454	12,035	7,565	2,680
636401	166,489	227,204	224,531	123,092	197,948	96,279	182,040	146,973	148,183	34,027	78,572	137,285
636402												
646301												
646330	2,226	4,097	2,629	5,290	1,505	933	1,205		1,204	4,195	5,390	1,812
646401	1,964	149	1,660		18,728	46,264	77,437	83,099	98,811	59,737	36,409	58,929
646402										5,271		
656300	932		284	1,909								
656330	46,288	47,411	17,752	4,911		10,617	17,660	1,546	8,168	8,515		4,828
656401	21,579	9,405	28,434	70,065	68,968	107,557	82,747	77,149	85,920	147,569	122,631	69,355
656402		380	807	2,254						37,743		
666230			1,721									
666300			18,245									
666330	12,359	142	5,041	511		1,514		2,042	1,000			
666401	42,452	727	600	2,498		10,021			15,726	33,469	38,099	9,308
666402	23,344	16,025	1,050	2,959		6,228	1,577	2,271		1,419	18,968	7,699
666431										2,669	1,825	
676300												
676330												
676400				180								
676430												
676501		1,008										
686330												
686431			340									
Totals	340,746	400,804	451,748	312,875	395,135	397,587	417,304	400,840	475,990	391,863	389,008	401,115

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Statistical area	2016	2017	2018	2019	1977-2019 Totals
616331			1,110	570	36,198
616401		2,368			23,570
626331		3,366	956		84,770
626401	19,488	53,398	22,520	16,300	1,335,078
626402					40,347
636330	10,122	3,429	949	479	98,832
636401	154,502	185,444	174,811	40,576	2,994,982
636402					5,220
646301					18,516
646330		388		592	52,938
646401	126,906	101,796	60,162	9,565	1,136,496
646402					294,200
656300					180,012
656330	307	2,317			1,305,184
656401	97,414	44,007	4,885	1,869	3,012,558
656402					1,214,562
666230					57,288
666300					366,045
666330		1,469	595	3,247	1,572,864
666401	6,030	12,412	9,963	341	2,970,209
666402	5,391	1,347	22,445	1,422	1,453,753
666431				49	156,015
676300					140,015
676330					158,598
676400					808,047
676430					21,177
676501				5	1,049
686330					1,860
686431				5	345
686500				5	5
Totals	420,159	411,739	298,396	75,023	19,540,732

Note: No summer commercial fishery occurred in 1991.

^a Does not include approximately 2,490 lbs not reported on fish tickets (1996).