

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



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2016 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° 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. The department estimated the legal male biomass (LMB) to be 4.3 million pounds for 2016 based on the model's results from spring of 2016 that included the latest data from the 2015 summer fishery and the 2014 trawl survey (Appendix 1). By Board of Fisheries (BOF) regulation, a harvest rate of up to 15% is allowed when the LMB exceeds 3.0 million pounds. Additionally, the North Pacific Fishery Management Council had set an allowable biological catch (ABC) of 577,000 pounds for 2016, which is to include the summer and winter commercial harvests, estimated winter and summer subsistence harvests, and estimated incidental mortality of non-target crab discards. Based on the recommended ABC, the department applied a harvest rate of 12% for the commercial red king crab fishery yielding a total GHF of 517,200 pounds. The CDQ allocation (7.5%) was 38,790 pounds and the open access fishery allocation was 478,410 pounds. Of the open access portion, the winter commercial fishery is allowed 8% (38,273 pounds) and the summer commercial fishery is allowed 92% (440,137 pounds).

WINTER FISHERY

The winter commercial harvest traditionally occurred 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 3 miles offshore (Figure 2). But in recent years, with the increase in exvessel crab price, harvest has occurred in eastern and southern Norton Sound. The harvest is generally divided between local residents who buy crab directly from the fishermen, the Norton Sound Seafood Plant (NSSP) in Nome, and other non-local markets such as Anchorage.

Some regulations adopted by the BOF in 2015 affecting the winter red king crab commercial fishery went into effect this season. The fishery is now opened by emergency order on or after January 15 and closes on April 30 or earlier if necessary. Another adopted regulation setting pot limits and

requiring pot tags will not be implemented until the 2017 season. In 2017, commercial permit holders will be limited to 20 pots each and each pot must have a current-year pot tag attached.

HARVEST SUMMARY

Open Access Fishery

The winter commercial season opened February 15, 2016, and 30 fishermen registered. One land-based processor (NSSP in Nome) and one catcher-processor registered to buy crab, and seven fishermen applied for a catcher-seller permit to sell crab dockside (but only one made sales). Based on fish tickets submitted, the first landing was made February 16 and last landing was made on March 24. From beginning to end of the season, the harvest rate was consistently high, with landings every day (Figure 3). A total of 284 landings was made, with an overall CPUE of 5 crab/pot, and average weight of 2.67 lbs/crab (Table 1). Price of crab averaged \$6.99/lb, the highest ever for the Norton Sound king crab fishery, and total exvessel value was \$304,117, the third highest for the winter fishery (Table 2). A total of 44,779 lbs (16,767 crab) were harvested, with roughly a third harvested in February and two-thirds in March. Total amount of crab harvested was 45% compared to last year, and number of landings was 43% in comparison. Since the season started later this year, when the ice was more stable, number of pots reported lost was much less compared to last year: 38 pots lost out of 494 pots fishing this year (8%), compared to 104 out of 606 pots last year (17%). Nome crabbers reported fishing from 24 miles west to 12 miles east of Nome, excluding the area closed to commercial fishing. Similar to last year, the majority of fishermen (18) and harvest (91%) came from the Nome area, with the remaining fishermen and harvest coming from Elim, Golovin, Stebbins, and White Mountain areas. Similar to the last two years, the ice was unstable in most of eastern & southern Norton Sound and, except for Elim (7% of harvest), harvest from these areas accounted for 1% or less of the total harvest in 2016.

CDQ Fishery

The Norton Sound Economic Development Corporation (NSEDC) and Yukon Delta Fisheries Development Association (YDFDA) divide the CDQ allocation. Only fishermen designated by these two CDQ groups are allowed to participate in this portion of the king crab fishery. Fishermen are required to have a CDQ king crab permit from the Commercial Fisheries Entry Commission 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 2016, as in the previous nine years, YDFDA transferred their quota to NSEDC.

Similar to the past eleven years except for 2013, NSEDC fishermen harvested all, or nearly all, of the entire allocation. In 2016, for the first time, the CDQ fishery was prosecuted during the winter season, opening on March 23, the day before the open-access fishery closed, to allow registered CDQ permit-holders to continue fishing. From then until the last (winter) landing was made on April 21, the 22 crabbers that fished (out of 26 that registered) harvested 35,207 pounds, or 91% of the CDQ quota. The remaining 9% (3,583 pounds) was harvested during the summer fishery (Table 3).

In 2016, combining results from winter and summer, there was a total of 189 CDQ landings and 2,253 pots lifts. Average price paid to fishermen was \$7.50/lb in winter and \$6.50/lb in summer, for a combined exvessel value of \$278,976 for the CDQ fishery. This was the fifteenth year a CDQ harvest occurred since the CDQ fishery was implemented in 1998.

SUMMER FISHERY

HARVEST SUMMARY

Open Access Fishery

The 2016 summer open access commercial crab fishery was opened by emergency order at 12:00 noon, June 27 in the Norton Sound Section, with a GHF of 440,137 pounds of crab. Two companies, NSSP and Aquatech, were registered to buy crab (though Aquatech ended up not purchasing crab), and three fishermen registered to sell crab dockside as catcher-seller (only two made sales). NSSP operated a seafood processing plant in Nome and two tenders in eastern Norton Sound. Crab were sold to NSSP and to local residents.

The first open access deliveries were made on June 29 and final deliveries were made July 21, the day the fishery was closed by emergency order at 6:00 AM, for a season length of 25 days, one day less than in 2015. This year as in past years, the season start was based on when the crab processors were ready to purchase crab. Once the open access season was under way, NSSP purchased crab continuously with no reports of poor crab meat fill.

For the 2016 season, as in 2015, the harvest rate was excellent from the start and, with only one major storm at the end, continued to be superb throughout the four week season (Figure 4), making it the shortest season since the Norton Sound registration area became super-exclusive in 1994, which effectively made it a small boat fishery. The daily CPUE never dropped below 10 crab per pot and went as high as 33 crab per pot (Table 4). By the third week of July, the projected trend line showed that the open access quota would be reached in a few days. Even though the weather forecast turned negative and no fishing occurred for two days, there was no expected drop in harvest rate once fishing resumed. With an upcoming weather window of fishing opportunity, a closure was announced for July 20 at 6:00 AM, which gave the fishermen 36 hours' notice. The original deliver-by time was extended from 12 hours to 18 hours due to rough surf conditions in parts of Norton Sound. On the morning of July 20, with half the fleet unable to get to their pots due to adverse marine conditions, the closure was extended for 24 hours, to July 21 at 6:00 AM. Crabbers were allowed 12 hours beyond the closure time to deliver, or at least be waiting to deliver at the Nome plant or at a tender. Because of safety concerns, the usual requirement to have all pot doors open and bait containers removed by the closure date and time was waived. Fishermen could get to their pots once they felt safe to do so, but all crab retrieved after the closure date and time had to be returned to the water.

The open access harvest from fish ticket reports was 137,774 red king crab or 416,576 pounds (95% of the open-access quota; Table 4). Of this total, 1,357 pounds were reported as deadloss, and 1,388 pounds reported as personal use. Out of the 38 vessels and 42 permit holders that registered to fish, 36 vessels and 37 permit holders made 227 landings (Table 5). The average weight for commercially caught crab was 3.0 pounds, slightly heavier than last year. Number of pots registered was 1,520, and there were 7,891 pot pulls. CPUE was 18 crab per pot, compared to 17 crab in 2015. In 2016, the total harvest rate tracked similarly to 2015 (Figure 4). The average price paid (including CDQ catch) was \$6.50/lb, the highest amount ever paid for the summer fishery (Table 6). The exvessel value of the fishery (including \$0.023 million from summer CDQ) was \$2.713 million, the highest fishery value ever for Norton Sound without adjusting for inflation (Figure 5).

CDQ Fishery

As in the previous five years, the CDQ fishery opened concurrently with the open access fishery in 2016. No additional summer crabber registered to fish the CDQ quota. Out of the 26 winter crabbers that had registered for CDQ, only one made any landings in the summer, for a total harvest of 3,583 pounds.

Harvest Areas and Sampling

Fish ticket reports document eight statistical areas were fished in the summer open access and CDQ fisheries (Table 7). The top harvest (37%) and most effort (33%) came from statistical area 636401, south of Golovnin Bay in eastern Norton Sound, followed by statistical areas 646401 and 656401, south of Nome, which yielded 30% and 23%, respectively, of the total harvest. These three statistical areas are all directly south of the closed boundary line (Figure 6), and, similar to last year, effort was concentrated in this main area. The remaining five statistical areas all had 5% or less of the total harvest (Appendix 2). The catch from statistical areas east of 164°W longitude made up 44% of the harvest (Figure 7).

Carapace length (CL) measurements and shell age were collected from 1,567 commercially-caught crab during the summer open access and CDQ fisheries. Since the summer of 2002, NSEDC has operated a seafood processing plant in Nome. In 2016, 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 old) or old (over 13 months old). Male new-shell crab made up 92% of the total legal crab sampled, and old-shell crab made up 8%, similar to last year. Recruit crab are new-shell legal crab < 116-mm CL. Postrecruit crab are legal new-shell male crab \geq 116-mm CL and all legal old-shell males. Recruit crab made up 36% of the legal crab sampled and postrecruit crab made up 64%, similar to the three years prior to last year (Table 5). Overall mean carapace length of legal male crab was 118-mm.

Table 1.—Daily catch based on fish ticket data for the winter commercial king crab harvest, Norton Sound, February 15–March 24, 2016.

Date	Landings	Number of crab	Lbs of crab harvested	Number of pots pulled	Average weight (lbs)	Daily CPUE
02/16	3	59	179	8	2.66	2
02/17	1	69	185	6	2.67	2
02/18	4	328	870	40	2.63	5
02/19	4	190	499	20	2.50	5
02/20	7	467	1,334	42	2.64	5
02/21	6	504	1,399	9	2.46	4
02/22	4	395	1,034	64	2.56	2
02/23	6	521	1,372	62	2.42	7
02/24	6	341	912	67	2.50	3
02/25	9	600	1,611	121	2.26	10
02/26	6	313	789	64	2.52	5
02/27	8	368	1,006	79	2.57	8
02/28	7	419	1,149	108	2.21	8
02/29	5	206	551	61	2.67	3
03/01	9	558	1,505	107	2.70	5
03/02	6	589	1,472	99	2.50	6
03/03	11	1,031	2,726	131	2.35	7
03/04	9	391	1,032	87	2.64	4
03/05	4	271	751	40	2.77	7
03/06	13	872	2,337	252	2.68	3
03/07	7	264	708	75	2.36	5
03/08	8	540	1,442	84	2.67	6
03/09	7	273	703	114	2.58	2
03/10	8	401	1,074	82	2.68	5
03/11	8	299	794	90	2.66	3
03/12	4	251	677	54	2.70	5
03/13	5	218	587	58	2.69	4
03/14	8	231	647	70	2.80	3
03/15	8	631	1,649	100	2.61	6
03/16	13	515	1,386	144	2.69	4
03/17	11	475	1,233	113	2.60	4
03/18	8	320	874	72	2.73	4
03/19	5	167	478	43	2.86	4
03/20	10	685	1,748	124	2.55	6
03/21	14	1,094	2,966	165	2.71	7
03/22	14	668	1,842	80	2.76	8
03/23	10	701	1,804	125	2.57	6
03/24	8	542	1,454	142	2.68	4
Total	284	16,767	44,779	3,202	2.67	5

Note: The fishery closed by emergency order on 3/24/16 and the last delivery was made on 3/24/16.

Table 2.—Historical winter commercial red king crab fishery catch statistics and economic performance, Norton Sound Section, Eastern Bering Sea, 1978–2016.

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	44,779	25	284	3,202	5	2.7	6.99	304,117	2/15–3/24

^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 of 2014 to April 30.

^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 Does not include CDQ catch information and values.

Table 3.—Daily catch based on fish ticket data for the CDQ commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, March 23–April 21 and June 27–July 9, 2016.

Date	Landings	Number crab	Crab harvested (lbs)	Cumulative total (lbs)	Number pots pulled	Average weight (lbs)	CPUE
03/25	6	360	959	959	63	2.7	6
03/26	10	626	1,724	2,683	83	2.8	8
03/27	1	20	58	2,741	7	2.9	3
03/28	10	805	2,192	4,933	96	2.7	8
03/30	8	722	1,981	6,914	100	2.7	7
03/31	4	186	517	7,431	34	2.8	5
04/01	3	48	137	7,568	13	2.9	4
04/02	10	629	1,709	9,277	93	2.7	7
04/03	10	668	1,813	11,090	99	2.7	7
04/04	7	763	2,081	13,171	107	2.7	7
04/05	6	542	1,456	14,627	63	2.7	9
04/06	7	374	1,010	15,637	69	2.7	5
04/07	9	504	1,376	17,013	84	2.7	6
04/08	9	732	1,979	18,992	111	2.7	7
04/09	10	780	2,050	21,042	141	2.6	6
04/10	6	385	1,048	22,090	64	2.7	6
04/11	6	380	1,016	23,106	74	2.7	5
04/12	6	390	1,013	24,119	73	2.6	5
04/13	9	459	1,250	25,369	104	2.7	4
04/14	7	707	1,870	27,239	92	2.6	8
04/15	6	326	883	28,122	92	2.7	4
04/16	7	411	1,076	29,198	81	2.6	5
04/17	8	505	1,342	30,540	138	2.7	4
04/18	5	309	881	31,421	61	2.9	5
04/19	8	791	2,161	33,582	126	2.7	6
04/20	3	294	789	34,371	52	2.7	6
04/21	6	311	836	35,207	81	2.7	4
07/07	1	888	2,589	37,796	39	2.9	23
07/09	1	335	994	38,790	13	3.0	26
Total	189	14,250	38,790	38,790	2,253	2.7	6

Note: For the winter, the CDQ fishery closed on 4/21/16, and the last delivery was made 4/21/16. For the summer, the CDQ fishery closed on 7/9/16, and the last delivery was made on 7/9/16.

Table 4.—Daily catch based on fish ticket data for the open-access summer commercial king crab harvest, Norton Sound Section, Eastern Bering Sea, June 27–July 21, 2016.

Date	Landings	Number of Crabs	Lbs of Crabs Harvested	Cumulative Lbs	No. of Pots Pulled	Average Weight (lbs)	Daily CPUE
6/29	12	5,534	16,834	16,834	429	3.04	13
6/30	5	4,485	13,465	30,299	170	3.00	26
7/1	7	5,338	15,394	45,693	261	2.88	20
7/2	4	3,445	10,528	56,221	105	3.06	33
7/3	11	9,163	27,506	83,727	398	3.00	23
7/4	9	7,223	21,908	105,635	344	3.03	21
7/5	15	9,139	26,924	132,559	506	2.95	18
7/6	6	2,400	7,361	139,920	205	3.07	12
7/7	12	9,441	28,558	168,478	385	3.02	25
7/8	7	5,173	15,350	183,828	267	2.97	19
7/9	16	11,638	35,843	219,671	606	3.08	19
7/10	7	5,716	16,773	236,444	253	2.93	23
7/11	1	566	1,679	238,123	40	2.97	14
7/12	22	14,607	44,800	282,923	799	3.07	18
7/13	6	2,579	7,800	290,723	213	3.02	12
7/14	10	5,655	17,513	308,236	338	3.10	17
7/15	3	2,749	8,327	316,563	140	3.03	20
7/16	23	12,285	37,222	353,785	833	3.03	15
7/19	16	10,013	30,128	383,913	530	3.01	19
7/20	7	2,997	9,101	393,014	232	3.04	13
7/21	21	7,628	23,562	416,576	785	3.09	10
Totals	220	137,774	416,576	416,576	6,292	3.02	22

Note: The fishery closed by emergency order on 7/21 at 6:00 AM, and last delivery was made on 7/21.

Table 5.—Historical summer commercial red king crab annual harvest, Norton Sound Section, Eastern Bering Sea, 1977–2016.

Year	Number vessels	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 only)				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	7,891	18	8	64	3.0	118

^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.

Table 6.—Historical summer commercial red king crab fishery economic performance, Norton Sound Section, Eastern Bering Sea, 1977–2016.

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		
			open access	CDQ			days	dates	
1977	^c	16.4	0.52	^d	0.75	0.229	60	^c	^d
1978	3.00	15.5	2.09	^d	0.95	1.897	60	6/07–8/15	^d
1979	3.00	11.5	2.93	^d	0.75	1.878	16	7/15–7/31	^d
1980	1.00	6.6	1.19	^d	0.75	0.890	16	7/15–7/31	^d
1981	2.50	4.4	1.38	^d	0.85	1.172	38	7/15–8/22	^d
1982	0.50	3.3	0.23	^d	2.00	0.405	23	8/09–9/01	^d
1983	0.30	4.0	0.37	^d	1.50	0.537	4	8/01–8/05	^d
1984	0.40	4.4	0.39	^d	1.02	0.395	14	8/01–8/15	^d
1985	0.45	5.0	0.43	^d	1.00	0.427	22	8/01–8/23	^d
1986	0.42	5.5	0.48	^d	1.25	0.600	13	8/01–8/25 ^c	^d
1987	0.40	5.6	0.33	^d	1.50	0.491	11	8/01–8/12	^d
1988	0.20	5.6	0.24	^d	^c	^c	10	8/01–8/11	^d
1989	0.20	5.6	0.25	^d	3.00	0.739	3	8/01–8/04	^d
1990	0.20	5.2	0.19	^d	^c	^c	4	8/01–8/05	^d
1991	0.34	5.0				No Summer Commercial Fishery			
1992	0.34	4.6	0.07	^d	1.75	0.130	2	8/01–8/03	^d
1993	0.34	4.1	0.33	^d	1.28	0.430	52	7/01–8/28 ^f	^d
1994	0.34	3.4	0.32	^d	2.02	0.646	31	7/01–7/31	^d
1995	0.34	2.7	0.32	^d	2.87	0.926	67	7/01–9/05	^d
1996	0.34	2.3	0.22	^d	2.29	0.519	57	7/01–9/03 ^g	^d
1997	0.08	2.3	0.09	^d	1.98	0.184	44	7/01–8/13 ^h	^d
1998	0.08	2.7	0.03	^d	1.47	0.041	65	7/01–9/03 ⁱ	^d
1999	0.08	3.4	0.02	^d	3.08	0.073	66	7/01–9/04 ^j	^d
2000	0.33	4.0	0.29	0.01	2.29	0.715	91	7/01–8/29	9/01–9/29
2001	0.30	3.7	0.28	0.00	2.34	0.674	97	7/01–9/01	9/01–9/09
2002	0.24	3.5	0.24	0.01	2.81	0.729	77	7/01–8/06	6/15–28; 8/9–9/3
2003	0.25	3.6	0.25	0.01	3.09	0.823	68	7/01–8/13	6/15–28; 8/15–24
2004	0.35	4.0	0.34	0.03	3.13	1.038	53	7/01–8/08	6/15–6/28
2005	0.37	4.2	0.37	0.03	3.18	1.264	72	7/01–8/15	6/15–28; 8/17–27
2006	0.45	4.0	0.42	0.03	2.26	1.021	67	7/01–8/22	6/15–6/28

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Table 6.–Page 2 of 2.

Year	Guideline	Legal male pop est (lbs) ^b	Commercial		Exvessel price/lb	Fishery value (millions \$)	Season length		
	harvest		harvest (lbs) ^{a,b}				days	dates	
	level (lbs) ^b		open access	CDQ				open access	CDQ
2007	0.32	4.0	0.29	0.02	2.84	0.750	52	7/01–8/17	6/15–6/28
2008	0.41	4.4	0.36	0.03	3.20	1.231	73	6/23–8/18	8/17–9/03
2009	0.38	4.6	0.37	0.03	3.17	1.225	98	6/15–9/20 ^k	6/15–7/28 ^k
2010	0.40	5.1	0.39	0.03	3.73	1.528	58	7/01–8/24	6/28–7/16
2011	0.36	5.2	0.37	0.03	5.23	2.016	33	6/28–7/30	6/28–7/08
2012	0.47	4.8	0.44	0.03	5.41	2.556	72	6/29–8/11	6/29–9/08
2013	0.50	4.3	0.37	0.02	5.63	2.165	74	7/03–9/14	7/03–9/14 ⁱ
2014	0.38	4.1	0.36	0.03	5.12	1.960	52	6/25–8/02	6/25–8/15
2015	0.39	4.4	0.37	0.03	5.40	2.130	26	6/29–7/24	6/29–7/24 ^l
2016 ^m	0.52	4.3	0.42	0.04	6.50	2.713	25	6/27–7/21	3/23–4/21; 6/27–7/9

^a Deadloss 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 actually began 8/12.

^f Fishing actually 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 meatfill.

^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 \$0.26 million from winter CDQ fishery; season days do not include 3/23–4/21 for winter CDQ fishery.

Table 7.–Red king crab CDQ and open-access summer commercial harvest based on fish ticket reports by statistical area for Norton Sound Section, Eastern Bering Sea, June 27–July 21, 2016.

Statistical area	Number crab	Crab harvested (lbs.)	Number pots pulled	CPUE	Average weight (lbs.)	Percent of pots pulled in stat area ^a	Percent of harvest in stat area ^a
626401	6,469	19,488	969	7	3.01	12.3	4.6
636330	3,404	10,122	211	16	2.97	2.7	2.4
636401	51,171	154,502	2,581	20	3.02	32.7	36.8
646401	42,082	126,906	2,083	20	3.02	26.4	30.2
656330	104	307	30	3	2.95	0.4	0.1
656401	31,899	97,414	1,708	19	3.05	21.6	23.2
666401	2,068	6,030	100	21	2.92	1.3	1.4
666402	1,800	5,391	209	9	3.00	2.6	1.3
Total	138,997	420,159	7,891	18	3.02	100	100

^a Percentage rounded to nearest tenth except total.

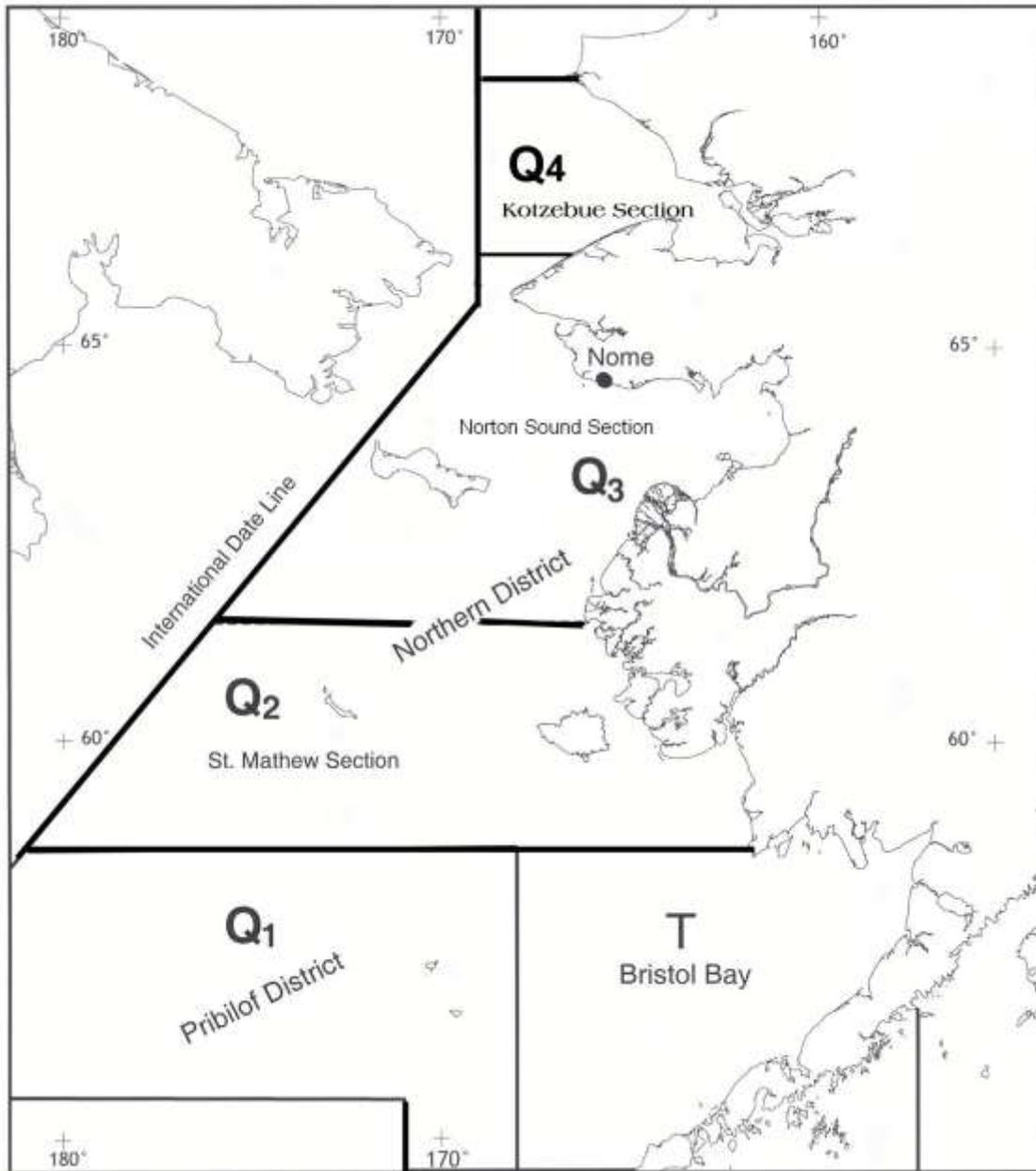


Figure 1.—King crab fishing districts and sections of Statistical Area Q.

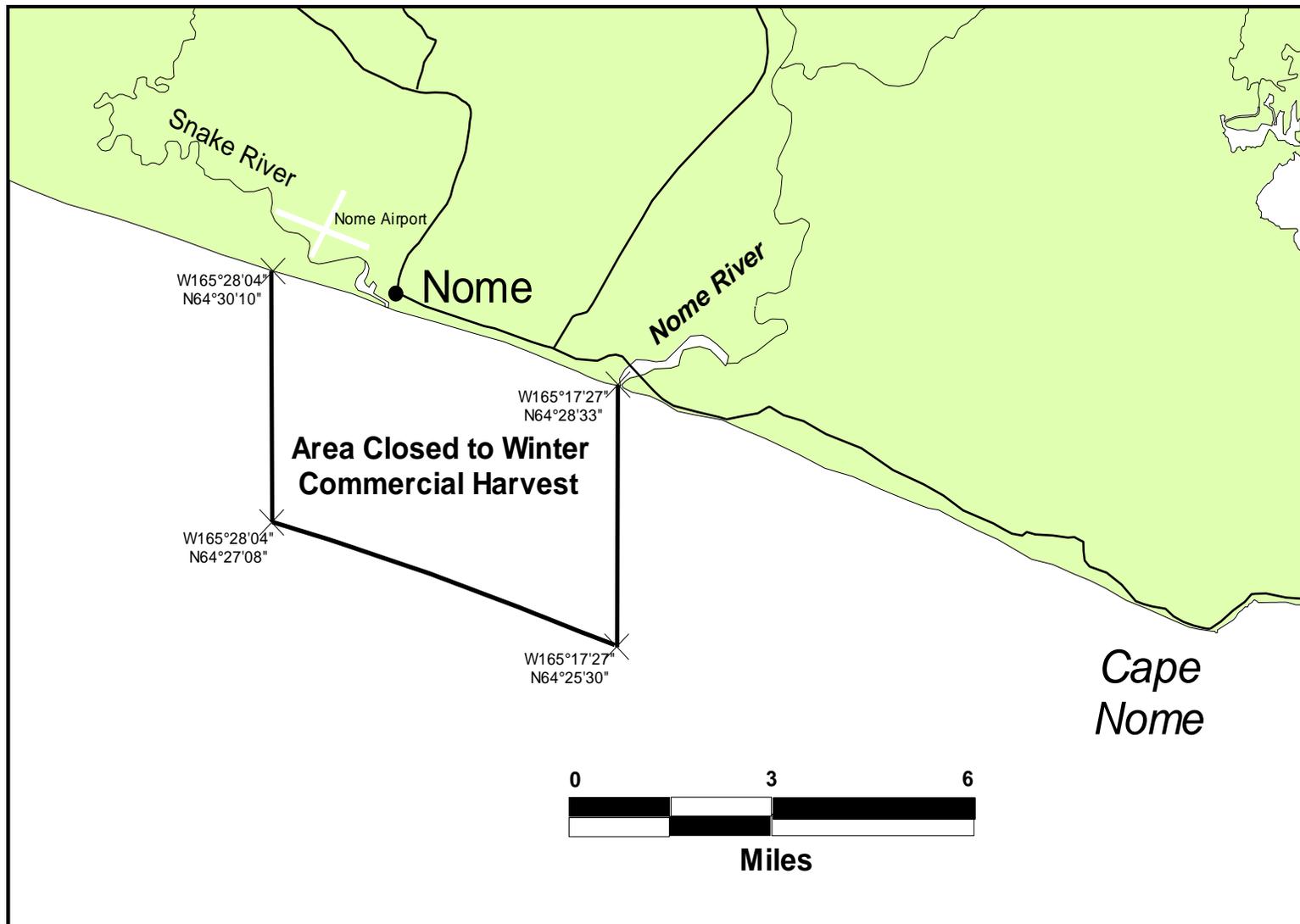


Figure 2.—Closed waters area in effect for the Norton Sound winter commercial crab fishery.

2011-2016
Norton Sound Winter
Red King Crab Fishery

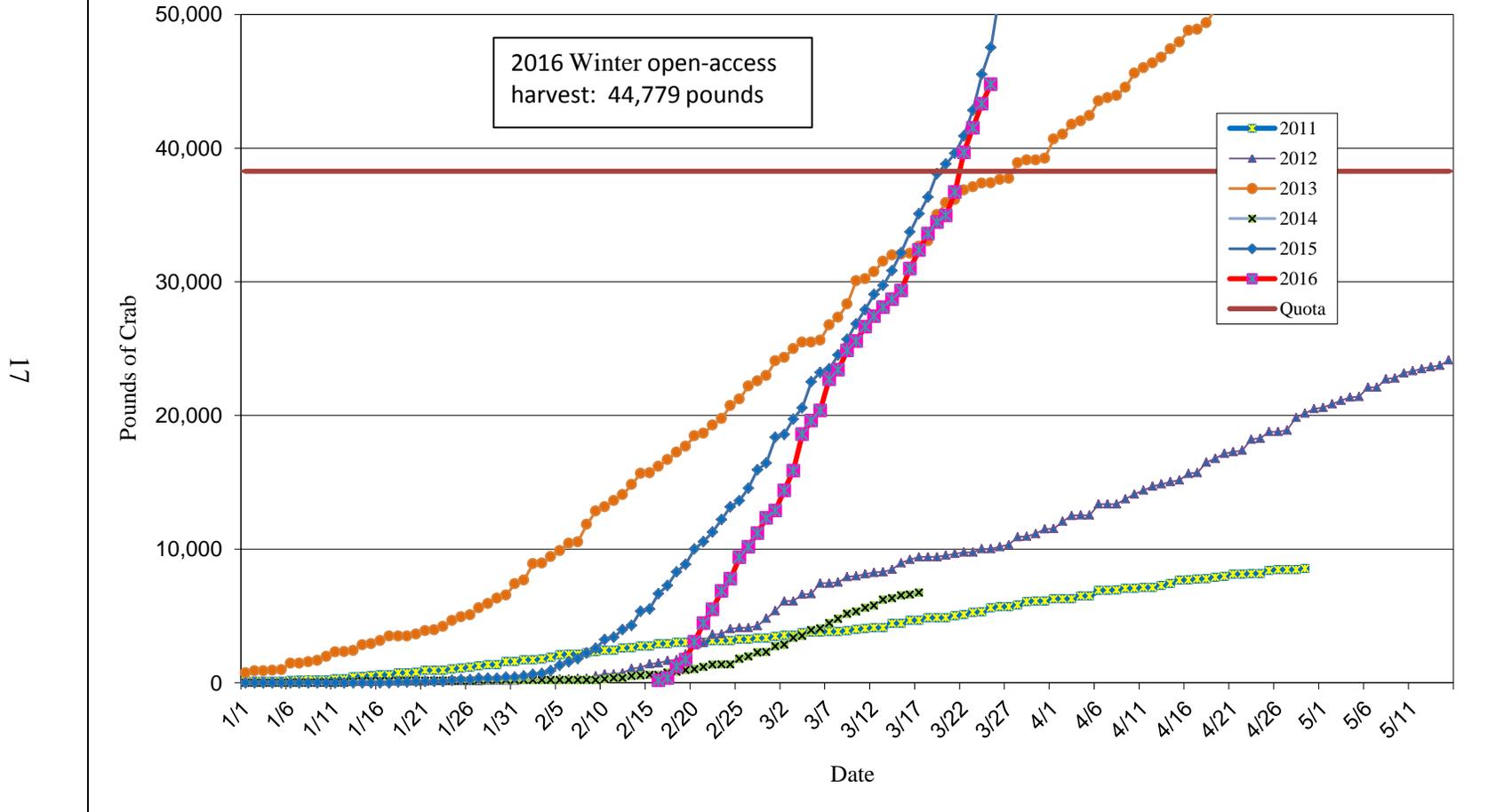


Figure 3.—Current and historical catch performance for the Norton Sound winter commercial crab fishery, 2011–2016.

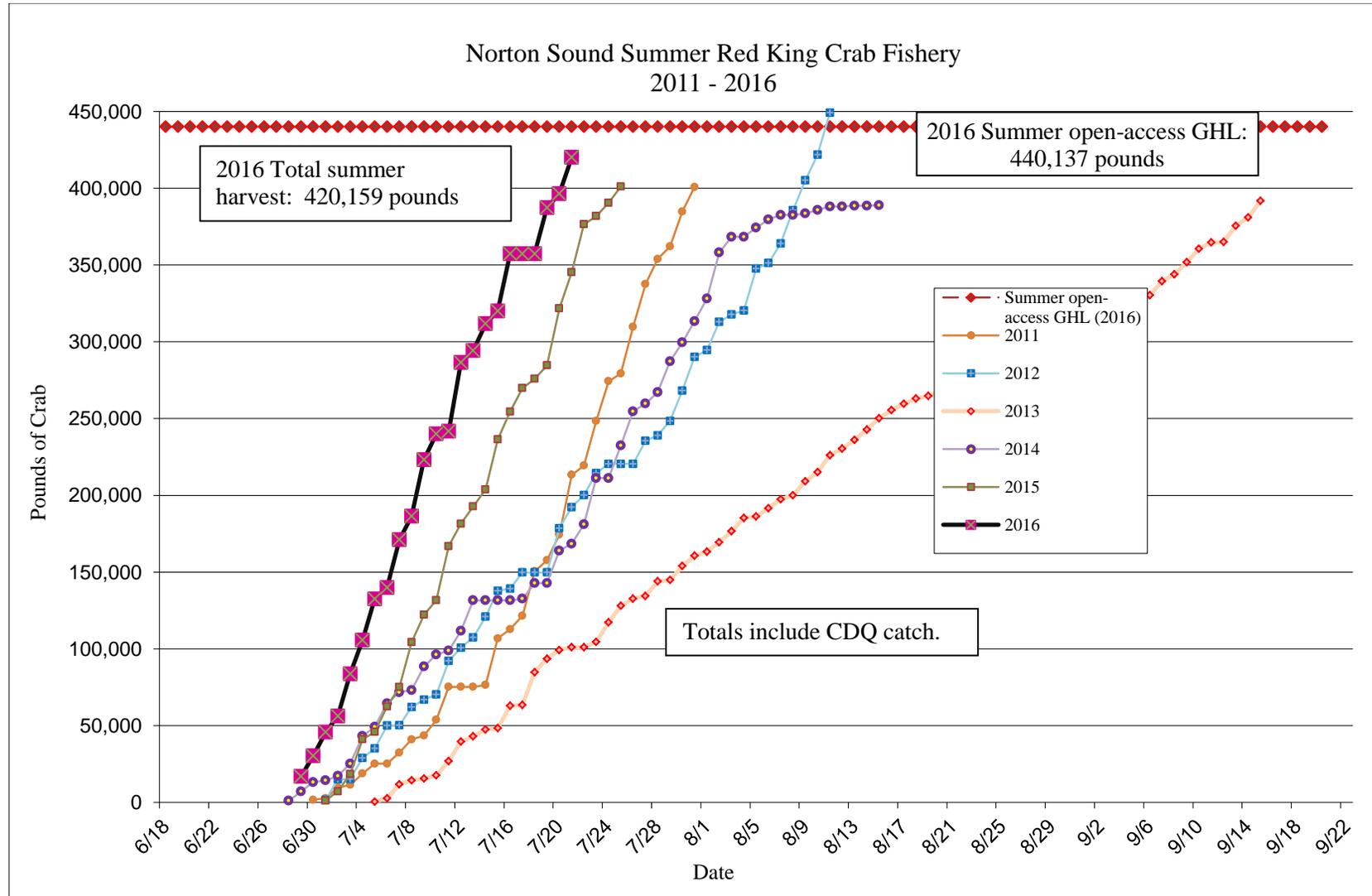
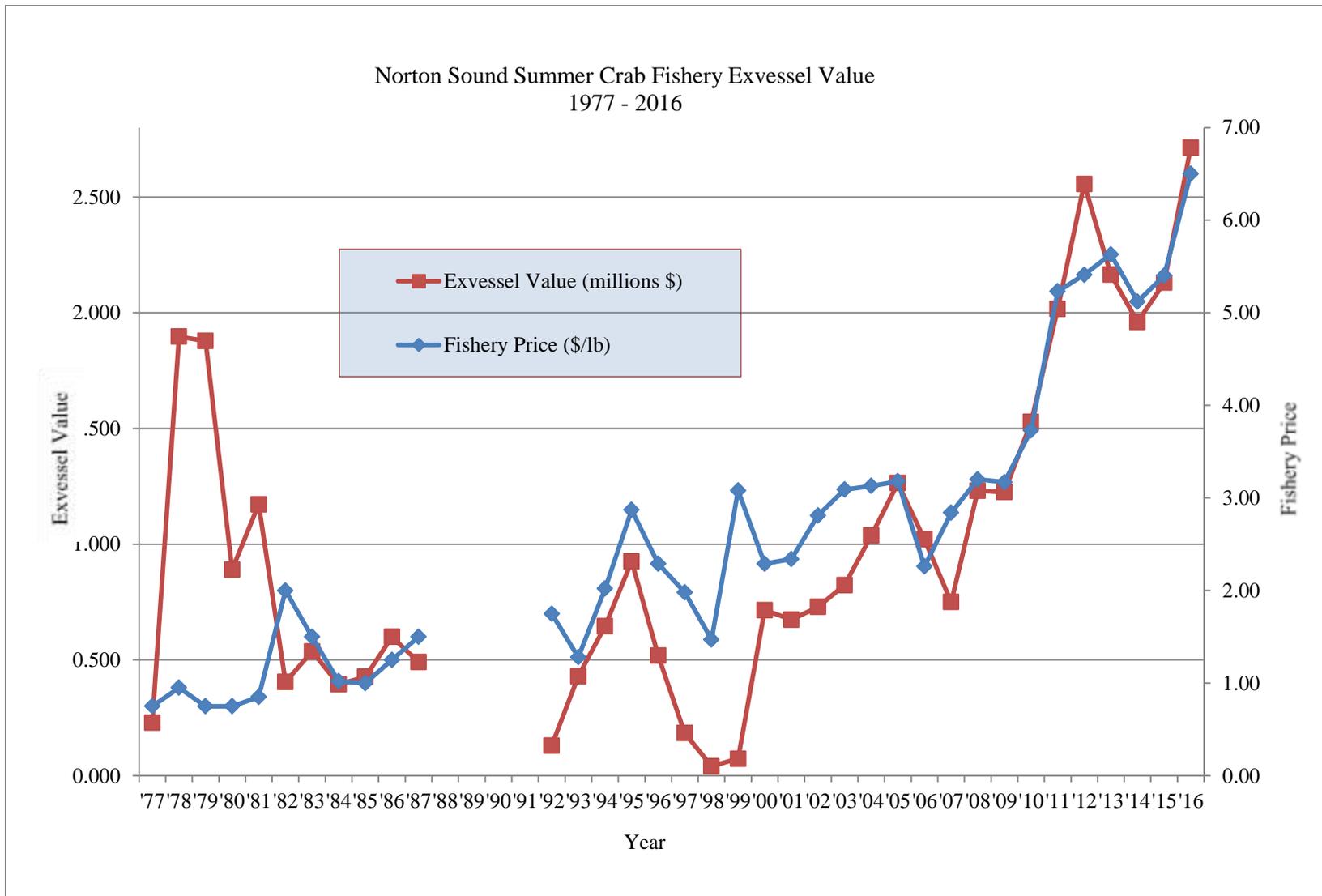
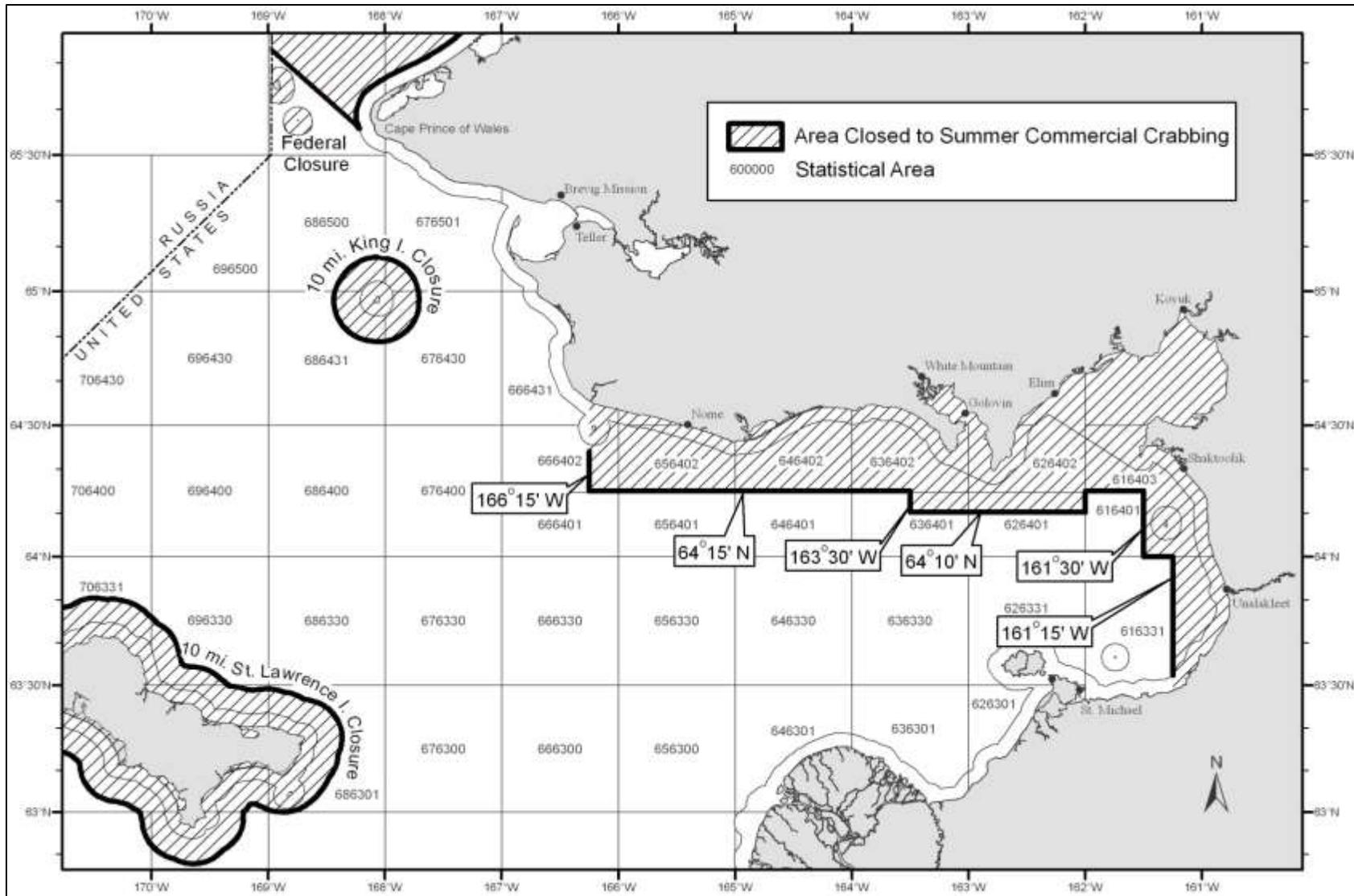


Figure 4.—Current and historical catch performance for the Norton Sound summer commercial crab fishery, 2011–2016.

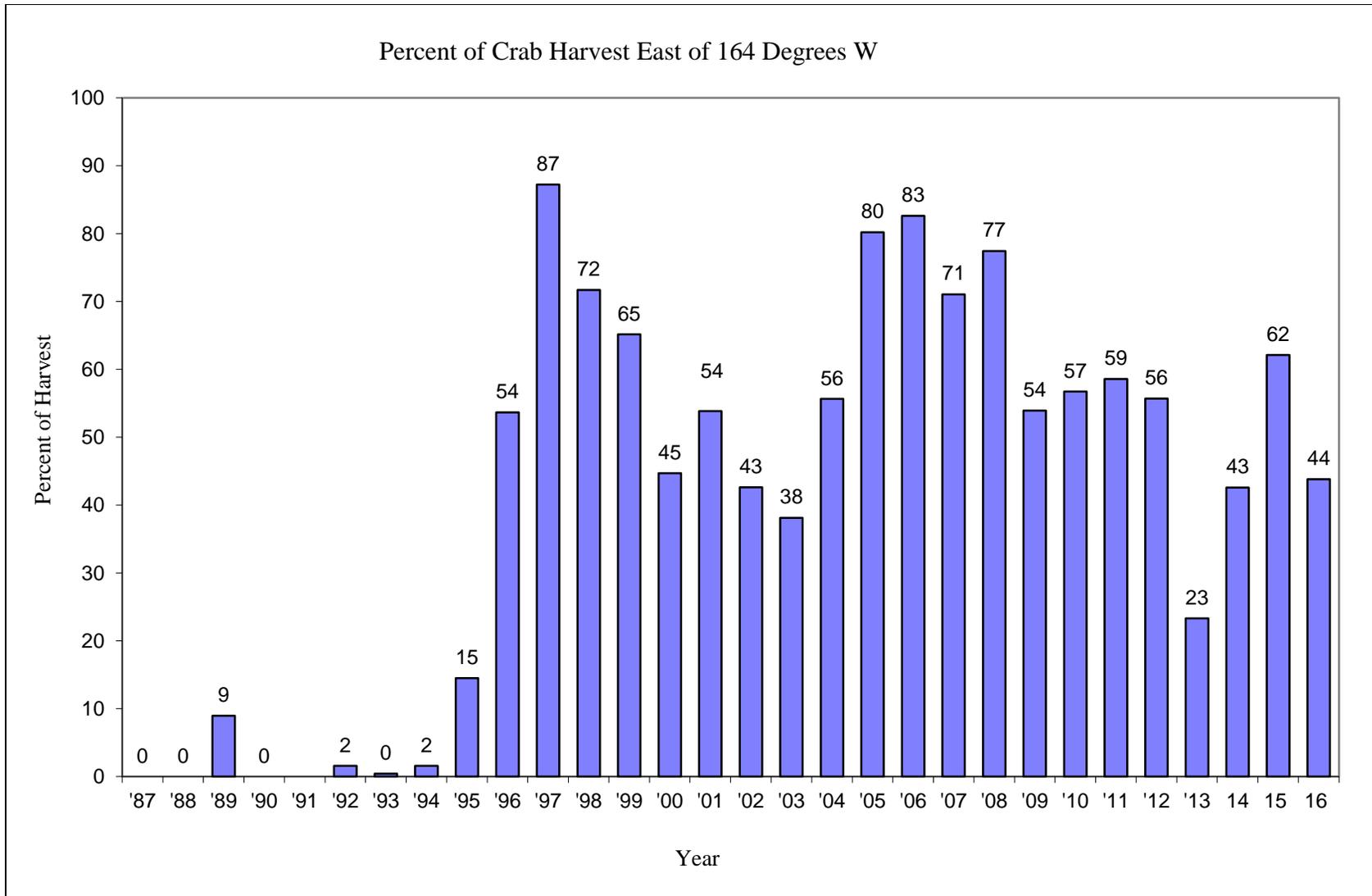


Notes: Pricing information was not available for 1988–1990. No summer commercial fishery occurred in 1991.
 Figure 5.—Norton Sound crab exvessel value and fishery price per pound, 1977–2016.



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.



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, 1987–2016.

Appendix 1.–Standardized results from population assessment surveys for red king crab in Norton Sound, 1976–2014.

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

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 ≥ 90 mm CL.

^c Legal male red king crab were defined as ≥ 121 mm (4.75 inches) in carapace width (CW) for the pot surveys and all ADF&G trawl surveys, and ≥ 104 mm CL for all of the NMFS trawl surveys except the 1979 survey which defined legal males as ≥ 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, 1977–2016 (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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Appendix 2.–Page 3 of 4.

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	Totals
616331		34,518
616401		21,202
626331		80,448
626401	19,488	1,242,861
626402		40,347
636330	10,122	93,975
636401	154,502	2,594,150
636402		5,220
646301		18,516
646330		51,959
646401	126,906	964,974
646402		294,200
656300		180,012
656330	307	1,302,867
656401	97,414	2,961,798
656402		1,214,562
666230		57,288
666300		366,045
666330		1,567,553
666401	6,030	2,947,493
666402	5,391	1,428,539
666431		155,966
676300		140,015
676330		158,598
676400		808,047
676430		21,177
676501		1,044
686330		1,860
686431		340
Totals	420,159	18,755,574

Note: No summer commercial fishery occurred in 1991.

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