

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



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**An informational letter to the commercial king crab fishermen of Norton Sound Section
2011 Norton Sound Section Summer Commercial King Crab Fishery Management Strategies**

The 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 66° N latitude (Figures 1 and 2). Figure 3 shows closed waters boundaries effective since 2002.

The Nome office will continue to be the center of management for the summer commercial fishery. The Norton Sound open access crab fishery may open as early as 12:00 noon on June 15, by emergency order, or anytime after. The open access fishery season is expected to be finished by September 3, but usually closes sometime in August when the harvest approaches the guideline harvest level. The CDQ crab fishery will also open by emergency order and may occur earlier than or during the open access fishery, or after the open access fishery is complete. The CDQ fishery opening date will be determined by when the buyer is ready to purchase CDQ crab.

The GHL for the 2011 Norton Sound Section summer commercial king crab fishery will be 358,000 pounds with 26,850 pounds allocated to the CDQ fishery and 331,150 pounds allocated to the open access fishery.

STATUS OF STOCK/RESEARCH

Estimates of legal red king crab biomass in Norton Sound, based on eleven trawl surveys conducted between 1976 and 2008, have been standardized, accounting for design and coverage (Table 1). The surveys taken as a whole indicate there have been periods of weak and strong recruitment. Norton Sound legal red king crab biomass in 1976 was estimated to be roughly 1.7 million crabs. By 1982, the legal biomass had fallen to 0.8 million crabs because of a lack of recruitment and high harvest rates in the summer commercial fishery. The population then gradually recovered to an estimated 1.3 million legal crabs in 1991. The trawl survey conducted during August of 1996 indicated a reduced stock size and estimated the legal biomass at 0.5 million crabs. In 1999, the legal red king crab population of 1.6 million crabs was estimated by trawl survey to be near the historical high

biomass. Results from later trawl surveys estimated legal red king crab biomass had fallen to 0.8 million crabs in 2002 and 0.7 million crabs in 2006. In 2008, the biomass level appeared to have bounced back to 0.8 million crabs based on the trawl survey conducted that year. Estimated abundances for pre-1 and pre-2 males were 0.7 million and 0.8 million crabs, respectively. The 2008 pre-1 male abundance estimate was lower than the all-time high observed in 1999, but higher than the other five prior surveys. These crabs molted and joined the recruit portion of the legal crab biomass in 2009. Prerecruit-2 male crab abundance was slightly higher than 2006 and was the highest abundance estimate on record, indicating possible strong recruitment for the 2010 and 2011 seasons.

Current size composition data from the 2011 winter pot study indicate that the legal proportion of the catch was similar to 2010 (Table 2). A decrease of 7% in the recruit proportion was offset by an increase of 6.3% in postrecruit proportion. Correspondingly, the sublegal proportion of the catch was similar to 2010. Pre-1 proportion was decreased by 5.7%, which was offset by a combined increase of 6.3% for proportions of pre-2 and pre-3 crabs. Pre-1 crabs require one molt to become part of legal population next year, while pre-2 crabs require two molts.

These findings suggest that legal crab population in 2011 will very likely be similar to 2010, but that it might decline slightly in 2012. However, it should be noted that the length frequency data from the winter project alone are of limited use in estimating absolute abundance of crabs in Norton Sound. Absolute abundance of legal crabs is what managers ultimately need to know to establish harvest quotas. The winter project provides abundance of size classes relative to other size classes, but relative abundances do not equal absolute abundances. The similarity in catch proportion of legal crabs seen this winter compared to 2010 does not mean that the legal crab absolute abundance has remained the same. Based on this study alone, the results would be similar if the absolute abundance of both legal and sublegal crabs all increased or all decreased.

Therefore, the population model is a better predictor of abundance estimates by incorporating the absolute abundances estimated from the triennial trawl surveys, with the yearly relative abundances from the winter project (and other historical data), to estimate absolute abundance, even in years when no trawl survey is conducted. However, a retrospective analysis of the model has shown a consistent overestimating of legal male crab biomass compared to what is believed to be the actual biomass. Although an exploitation rate of up to 10% of estimated biomass is allowed in regulation, retrospective analysis has shown that actual exploitation rates has probably been closer to 12% to 16% in recent years due to the determined overestimation bias of the population model. After the 2011 trawl survey scheduled to take place in July and August, the department will again estimate the legal male biomass and compare the performance of the model in estimating legal abundance. In future years, with the legal biomass believed to be continually overestimated by the present model, the department may go with a more conservative GHL.

OUTLOOK FOR 2011

The king crab population model estimated legal male crab abundance for the 2011 summer commercial crab fishery at 3.98 million pounds (1.47 million crabs), compared to the revised 2010 model abundance estimate of 3.88 million pounds (1.48 million crabs) for legal male crabs. The model revised the 2010 estimate from 4.45 million pounds (1.69 million crabs) to 3.88 million pounds. Every time new data is incorporated into the population model, it estimates current abundance as well as revises prior years' abundances. In 2010, additional changes were

made to the model parameters so that the model better correlates with available data. Current and revised abundance estimates are based on the 2008 trawl survey, the latest summer and winter fisheries data, and historical data going back to 1976 that include pot and trawl surveys and summer and winter fisheries results.

The Alaska Board of Fisheries (BOF) regulation enacted in 1999 for the Norton Sound summer red king crab fishery (5AAC 34.915) states that if the legal biomass is 2.5 million pounds or more, the harvest rate will be no more than ten percent. In 2011, the department will allow a nine percent exploitation rate on the legal population (over 4.75 inch carapace width), which equates to a GHL of 358,000 pounds of crab. The CDQ allocation (at 7.5%) will be 26,850 pounds and the open access fishery allocation will be 331,150 pounds.

MANAGEMENT STRATEGY

Since the opening of a crab processing plant in Nome in 2002, most of the crabs caught have been landed in Nome. No floating crab processor is expected to operate in Norton Sound this season. At the Norton Sound Seafoods processing plant, there will be samplers on hand to take biological as well as legal measurements from crabs delivered during the CDQ and open access fisheries. If non-residents participate in the open access fishery, their catch will be sampled at the delivery dock before shipment to Anchorage.

All processors, including catcher-sellers, must register with the ADF&G office in Nome. All buyers must submit daily catch reports either by fax or email to the Nome ADF&G office with total catch by number of crabs, number of pounds, and pots pulled for the previous day. Fish tickets must be submitted weekly by buyers and catcher-sellers. **All deadloss and crabs kept for home use out of the commercial harvest must also be reported on fish tickets.** Catcher-sellers are also advised that their final fish tickets must be turned in within 24 hours of the final delivery of their catch within Norton Sound.

Fishermen must register with the ADF&G office in Nome or Unalakleet and obtain pot tags prior to setting gear in either the CDQ or open access fishery. Vessels that have a salt water circulation system in its holds or live tanks must also receive a tank inspection from either the Nome or Unalakleet ADF&G office. The pot limit is 40 pots per registered vessel, and at least one buoy on each pot must be legibly marked with the permanent ADF&G vessel license number of the king crab vessel operating the gear. All crab pots must have an escape mechanism. To replace lost tags a sworn statement signed by the vessel operator describing how they were lost must be submitted to the Nome office. Fishermen wishing to use storage pots, of which five are allowed in addition to the 40-pot limit, to hold crabs offshore prior to delivery, must contact ADF&G in Nome prior to deploying them and obtain storage pot tags. These storage pots must be unbaited with doors sewn closed, and have an escape mechanism. Permit holders are allowed to harvest up to one ton of herring or groundfish for use as bait in the commercial fishery for which the permit is held. **These fish may not be sold and must be reported on a fish ticket.** If a vessel travels outside the section to deliver their catch they must advise the Nome ADF&G office and agree to a reporting time and method prior to departure from the section.

For more information on regulations pertaining to this fishery, please contact Joyce Soong in the Nome ADF&G office.

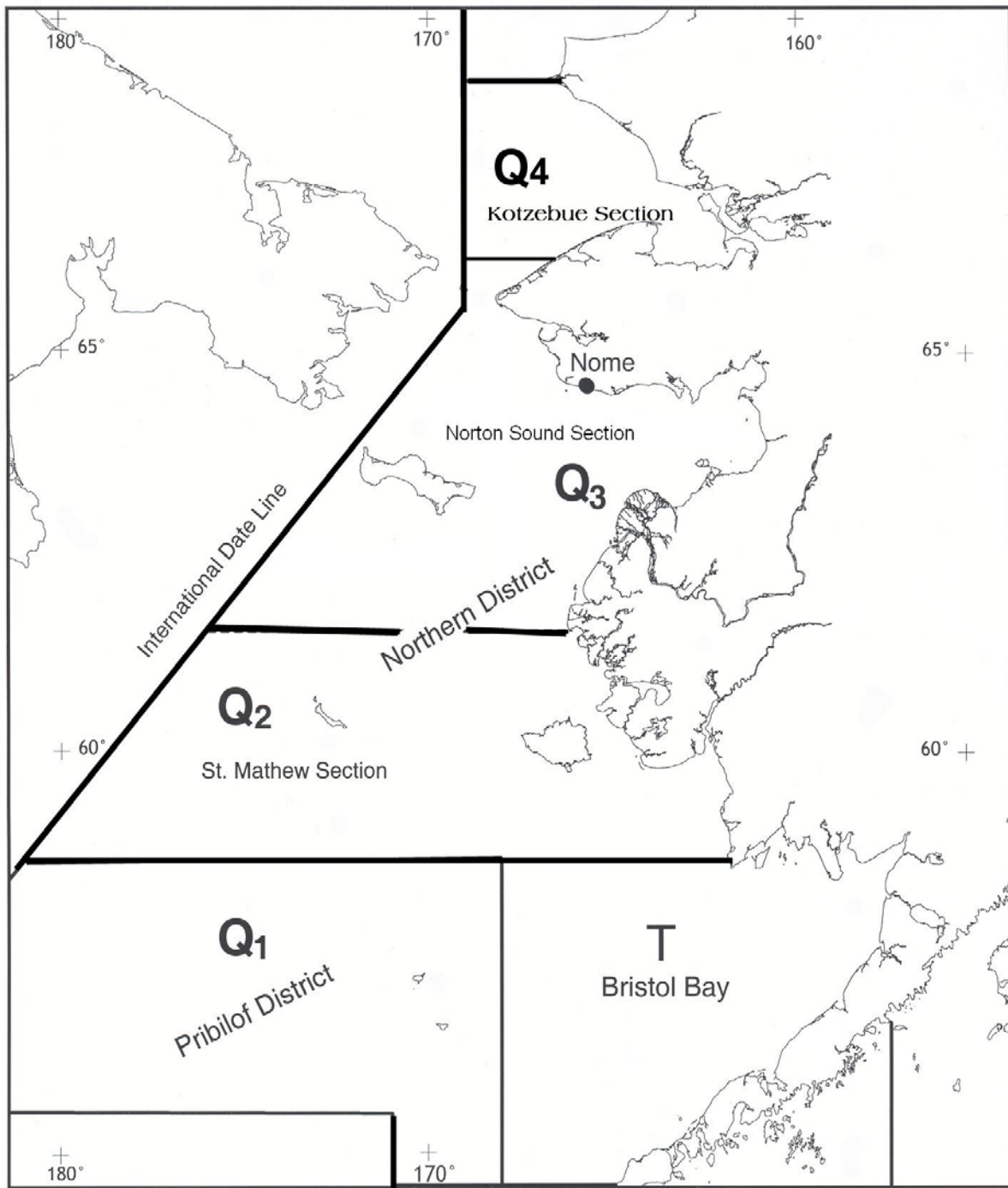


Figure 1. King crab fishing districts and sections of Statistical Areas Q.

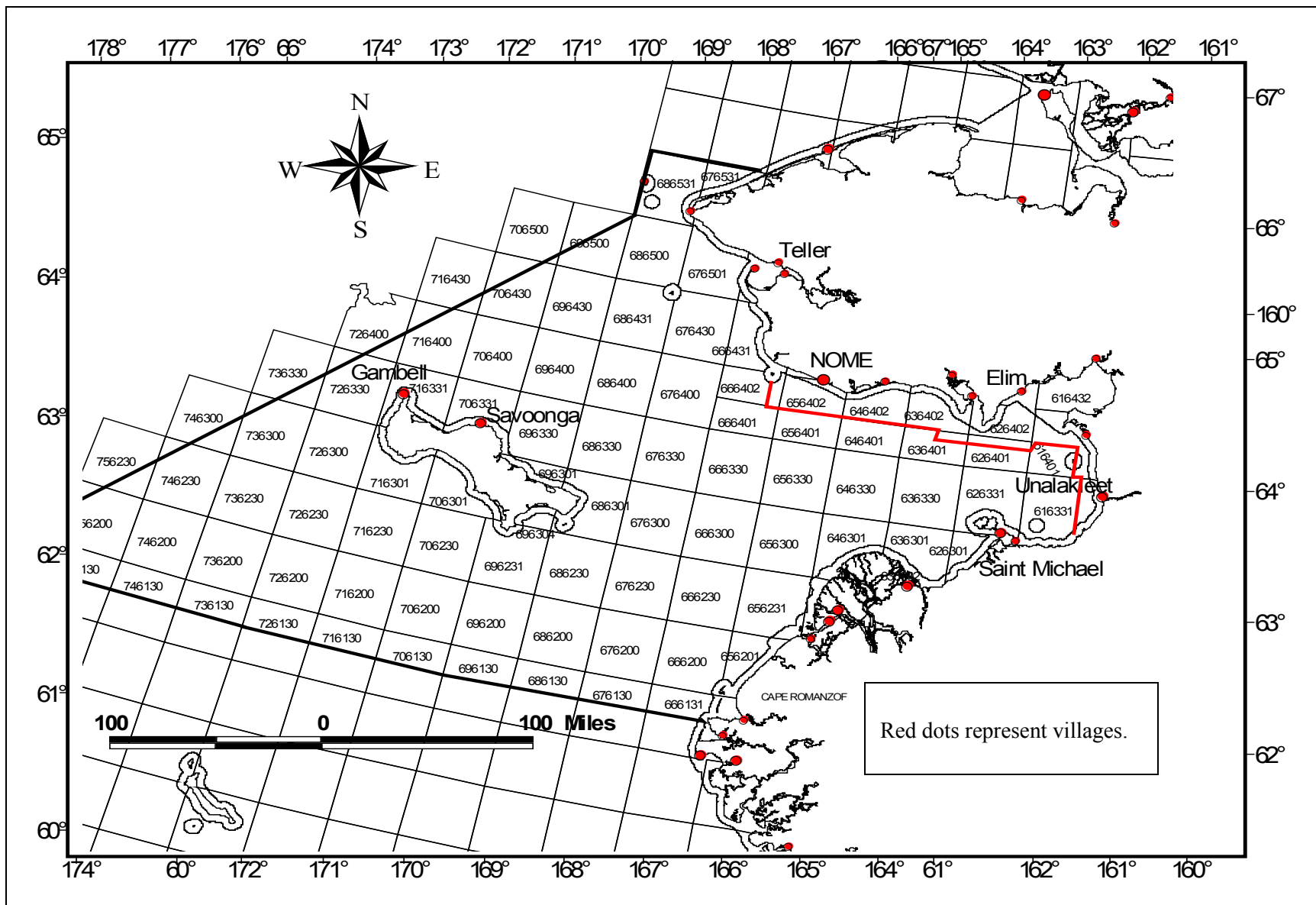


Figure 2. Norton Sound Section of Area Q and associated Statistical Areas.

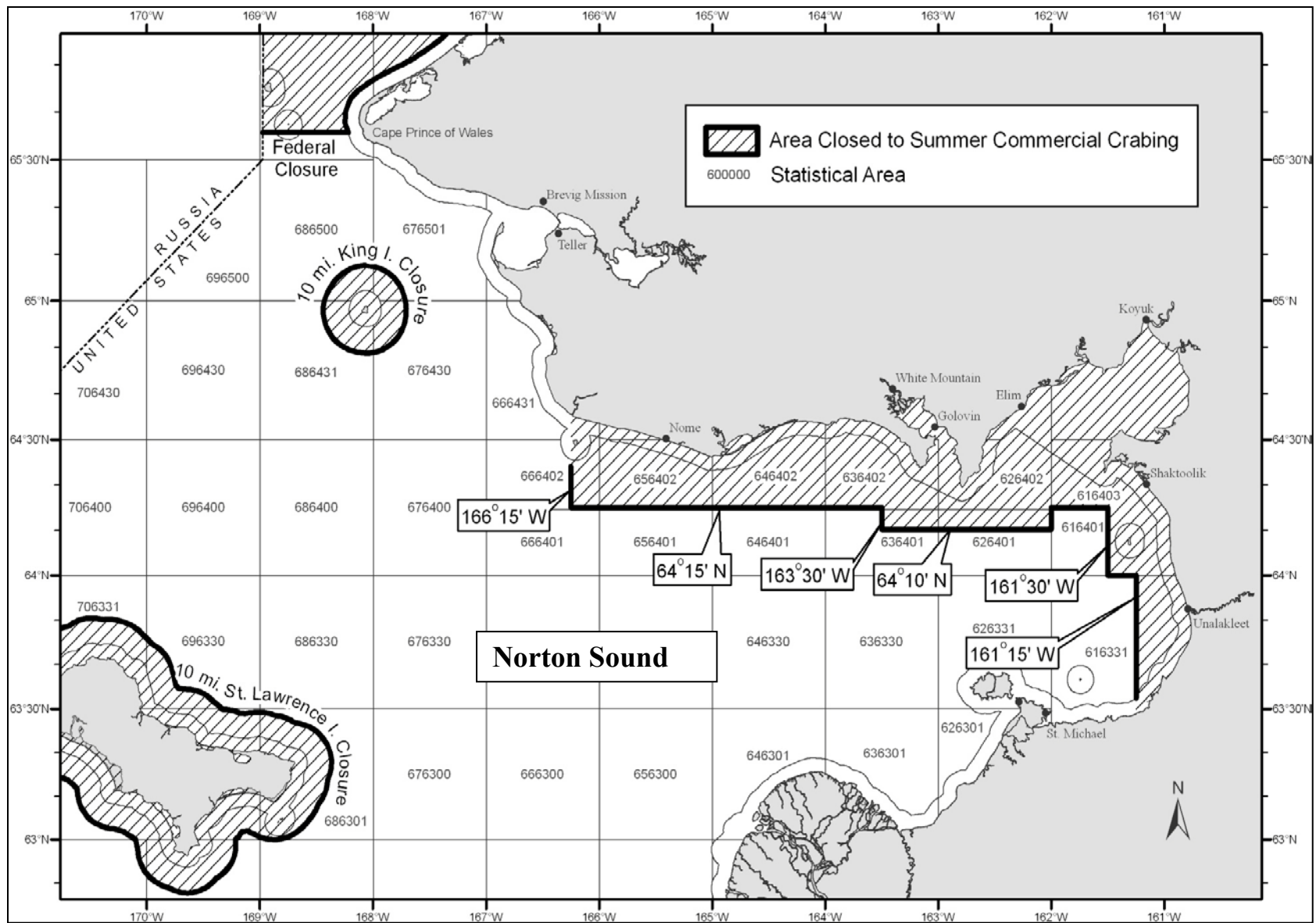


Figure 3. Closed water regulations in effect for the Norton Sound commercial crab fishery.

Table 1. Standardized results from population assessment surveys for red king crab in Norton Sound, 1976-2008.

Year	Dates	Research Agency Gear		Number of Red King Crabs Captured ^{a, b}				Population Abundance Estimates ^c			Standard Error		
				Pre-2 Males	Pre-1 Males	Legal Males ^d	Females	Pre-2 Males	Pre-1 Males	Legal Males	Pre-2 Males	Pre-1 Males	Legal Males
1976	9/02–09/05 9/16–10/07	NMFS	Trawl	58(38)	110(213)	180(614)	101(35)	331,555	808,091	1,742,755	44,653	70,094	104,941
1979 ^e	7/26–08/05	NMFS	Trawl			90(86)	N/A			809,799			61,176
1980 ^f	7/04–07/14	ADF&G	Pots			3,290	158			1,900,000			
1981	6/28–07/14	ADF&G	Pots			3,415	1,933			1,285,195			
1982	7/06–07/20	ADF&G	Pots			2,001	424			353,273			
1982	9/05–09/11	NMFS	Trawl	42	107	97	256	356,724	832,581	877,722	50,116	76,454	79,907
1985	7/01–07/14	ADF&G	Pots			4,645	181			907,579			
1985	9/16–10/01	NMFS	Trawl	63	94	139	139	466,858	707,140	1,051,857	58,598	71,999	87,931
1988	8/16–08/30	NMFS	Trawl	82(0)	69(1)	135(3)	212(2)	565,255	493,030	978,748	62,339	58,224	82,083
1991	8/22–08/30	NMFS	Trawl	39	42	166	105	294,801	303,682	1,287,486	46,648	46,960	98,101
1996	8/07–08/18	ADF&G	Trawl	39(36)	32(17)	53(14)	98(70)	452,580	325,699	536,235	52,324	47,338	69,647
1999	7/28–08/07	ADF&G	Trawl	9(3)	64(38)	103(63)	64(18)	103,832	940,198	1,594,341	40,841	120,449	129,864
2002	7/27–08/06	ADF&G	Trawl	34(18)	42(23)	61(29)	116(35)	427,703	518,638	771,569	73,494	80,741	85,303
2006	7/25–08/08	ADF&G	Trawl	77(3)	37(16)	51(18)	66(1)	775,076	569,833	726,251	91,812	82,883	92,590
2008	7/11–08/11	ADF&G	Trawl	51(18)	46(19)	53(15)	90(2)	795,777	697,442	811,727	100,778	91,542	103,155

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

^a Number of crabs captured on ADF&G pot surveys represent data standardized for a 24-hour soak.

^b The 1976, 1979, 1988, and all ADF&G trawl catches include resampled stations (in parentheses). The 1979, 1996, and 2006 population estimates incorporated resampled stations by combining catches and tow distances for each station resampled.

^c Population estimates are valid for the date of the survey (i.e., either before or after the summer commercial fishery).

^d Legal male red king crabs were defined as ≥ 121 -mm (4.75-in) 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.

^e Pre-1 and pre-2 male, and female data is not available for the 1979 NMFS trawl survey and the legal male abundance estimate is fully standardized.

^f 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 crabs.

Table 2. Summary of red king crab data from the winter pot surveys, Norton Sound, 1991–2011.

Year (dates) ^b	Pot Lifts	Females			Males					
		Number Caught	Number Caught	CPUE	Prerecruits ^a / Sublegal			Legal		CL (mm)
					Threes ^c	Twos ^d	Ones ^e	Recruits ^f	Postrecruits ^g	
1991	56	8	1,283	22.9	0.2%	4.8%	30.6%	33.5%	30.9%	114
1993	33	1	181	5.5	0.0%	3.3%	8.8%	17.1%	70.7%	118
1995 ^h	126	10	776	6.2	2.1%	9.8%	11.4%	32.3%	44.4%	117
1996	159	26	1,582	9.9	9.2%	22.1%	33.1%	10.1%	25.5%	117
1997 (2/18-4/14)	140	60	399	2.9	11.0%	32.3%	20.8%	14.3%	21.6%	118
1998 (2/18-4/22)	84	38	882	10.9	0.8%	36.6%	44.3%	8.7%	9.5%	113
1999 (2/08-4/20)	122	15	1,308	10.7	0.7%	6.5%	42.4%	39.0%	11.3%	110
2000 (2/14-4/10)	93	22	575	6.2	3.1%	13.2%	20.3%	38.6%	24.9%	113
2001 (2/16-4/02)	14	1	44	3.1	4.5%	18.2%	15.9%	13.6%	47.7%	106
2002 (2/13-4/18)	64	46	832	13.0	10.7%	43.1%	25.5%	9.0%	11.8%	117
2003 (2/12-4/14)	86	22	826	9.6	4.2%	19.7%	41.6%	20.2%	14.2%	113
2004 (2/23-4/09)	77	9	286	3.7	0.0%	9.4%	40.2%	37.1%	13.3%	112
2005 (2/18-4/21)	93	20	406	4.4	1.5%	15.8%	23.9%	25.4%	33.5%	116
2006 (1/26-4/19)	85	25	512	6.0	1.0%	28.5%	33.0%	15.6%	21.9%	115
2007 (2/27-4/10)	22	15	160	7.3	8.8%	16.4%	52.8%	11.3%	10.6%	112
2008 (2/11-4/14)	142	102	3,557	25.0	3.4%	36.2%	31.0%	17.8%	11.6%	112
2009 (3/03-4/08)	24	29	526	21.9	1.1%	11.0%	41.8%	23.6%	22.4%	113
2010 (3/29-4/20)	23	4	581	25.3	1.4%	10.2%	31.7%	30.3%	26.5%	112
2011 (3/24-4/15)	27	5	597	22.1	2.7%	15.2%	26.0%	23.3%	32.8%	113
Avg. 1991-2010	80	25	818	11.0	3.5%	18.7%	30.5%	22.1%	25.1%	114

^a Prerecruits are sublegal crabs \leq 115-mm CL.

^b The project was not funded in 1992 and 1994.

^c Prerecruit three crabs are $<$ 76-mm CL.

^d Prerecruit two crabs are 76-mm to 89-mm CL.

^e Prerecruit ones are sublegal crabs $>$ 89-mm CL.

^f Recruits are new-shell, legal crabs \leq 115-mm CL.

^g Postrecruits are new-shell, legal crabs $>$ 115-mm CL and all old-shell legal crabs.

^h Includes catch from 12 sampling sites and from one commercial fisherman's catch on April 5.