

BERING SEA BAIRDI TANNER CRAB FISHERY, 1998  
REPORT TO THE ALASKA BOARD OF FISHERIES

by

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## TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES .....	i
LIST OF FIGURES .....	i
BERING SEA TANNER CRAB .....	1
Description of Area.....	1
Historic Background.....	1
1998 Fishery.....	2
Status of Stocks.....	2
LITERATURE CITED .....	3
TABLES .....	4
FIGURES .....	11

## LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Commercial harvest statistics, by season, for the Bering Sea Tanner crab fishery, 1969-1998 .....	4
2. Economic performance of the commercial Bering Sea Tanner crab commercial fishery, 1979/80-1998 .....	6
3. Bering Sea commercial Tanner crab seasons, 1970-1998 .....	7
4. Bering Sea commercial Tanner crab catch by subdistrict, 1974/75-1998 .....	8

## LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
5. The Bering Sea Tanner crab management area with sub-districts and sections.....	11
6. Bering Sea Tanner crab harvest and Guideline Harvest Levels, 1979-1998 .....	12

## **BERING SEA TANNER CRAB**

### *Description of Area*

The Bering Sea District of Statistical Area J includes all waters of the Bering Sea north of the latitude of Cape Sarichef and east of the U.S.-Russian Convention Line of 1867. This district is divided into the Eastern and Western Subdistricts by a line at 173° W. long. (Figure 1). In the northeastern corner of the Eastern Subdistrict lies the Norton Sound section.

### *Historic Background*

The first reported catches of Tanner crabs (*Chionoecetes bairdi*) occurred in 1968, incidental to the king crab fishery in Bristol Bay. In 1974, a directed Tanner crab fishery began. Harvest in the directed fishery peaked at an all time high of 66.6 million pounds during the 1977/78 season. In the fall of 1978, the National Marine Fisheries Service (NMFS) predicted sharp declines in Tanner crab abundance, beginning with the 1978/79 fishing season. Tanner crab stocks declined as anticipated, and by 1984, the commercial harvest fell to 1.2 million pounds. Further stock decline led to a fishery closure during the 1986 and 1987 seasons (Table 1).

In an attempt to slow the harvest rate to allow sufficient time for in-season management of Bering Sea king and Tanner crab fisheries, the Alaska Board of Fisheries (BOF) passed regulations in the spring of 1992 which set a 250 pot limit on all vessels fishing the Bristol Bay king and Bering Sea Tanner crab fisheries. On November 30 of that year, the NMFS repealed these pot limit regulations. This action was due to perceived inconsistencies with provisions of the Bering Sea/Aleutian Island king and Tanner crab Federal Management Plan (FMP) which mandated application of pot limits in a nondiscriminatory manner. In the spring of 1993, the BOF passed new regulations, which set pot limits based on overall vessel length. Vessels in excess of 125 feet were limited to maximum of 250 pots. Vessels 125 feet and under were allowed a maximum of 200 pots. These pot limits were, and continue to be, implemented through a buoy tag program from the Dutch Harbor and Kodiak Alaska Department of Fish and Game (ADF&G) offices.

Also during the Spring 1993 BOF meeting, regulations were adopted which opened and closed that portion of the Bering Sea east of 168° W. long. to fishing for Tanner crabs concurrent to the regulatory opening and emergency order closure of the Area T red king crab fishery. The BOF mandated a reopening of the Bering Sea between 163° and 173° W. long. for the directed Tanner crab fishery 10 days following the closure of the Area T king crab fishery. In the event the Bristol Bay red king crab fishery failed to open, that portion of the Eastern Bering Sea west of 163° W. long. would be allowed to open on November 1 to a directed fishery for Tanner crabs. These actions by the BOF were based on observer bycatch data and historic harvest patterns which indicated the majority of female king crab bycatch in the Bristol Bay king and Bering Sea Tanner crab fisheries came from waters east of 163° W. long.

During the 1994 and 1995 seasons, the Bristol Bay red king crab fishery failed to open due to the depressed nature of that stock. As a result, the Tanner crab fishery opened on November 1 in that portion of the Eastern Bering Sea west of 163° W. long.

In 1994, the Guideline Harvest Level (GHL) for Tanner crabs, in that portion of the Eastern Subdistrict open to fishing, was 7.5 million pounds. The total Tanner crab harvest in 1994 was 7.6 million pounds. In 1995, the Tanner crab GHL in the Eastern Subdistrict, west of 163° W. long., was 5.5 million pounds. The total commercial Tanner crab harvest in that year was 4.2 million pounds (Tables 2 and 3).

In 1996, the Tanner crab fishery opened on November 1, concurrent to the red king crab fishery in Bristol Bay. The GHL for the 1996 Tanner crab fishery was 8.4 million pounds. The total incidental harvest of Tanner crabs during the directed red king crab fishery was 994,776 pounds. The vast majority of this incidental harvest of Tanner crabs came from the area east of 163° W. long. The directed Tanner crab fishery for the 1996 season opened on November 15, in that portion of the Eastern Subdistrict west of 163° W. long. The remaining GHL was 6.2 million pounds. Due to poor fishery performance, the fishery was closed on November 27. Total harvest in the 1996 directed Tanner crab fishery was 811,301 pounds. Combined with the 994,776 pounds taken in the red king crab fishery, the total harvest of Tanner crabs for the 1996 season was 1,806,077 pounds (Tables 1 and 4). Fishery performance for the 1996 season, in numbers of legal crabs per pot pull (CPUE) was 5. This compares to a CPUE of 8 and 13 for the 1995 and 1994 fisheries, respectively (Tables 1,2 and 4).

Results from the 1997 NMFS survey indicated the abundance of legal Tanner crabs declined 66% from the prior year and that large Tanner crab abundance was at the second lowest level in the history of the survey. Pre-recruit crabs showed a 61% decline and large female crab abundance decreased by 64% from levels observed in 1996 (Stevens et al. 1998). Based on poor fishery performance in 1996 and survey results indicating significant declines in most segments of this population, the Bering Sea Tanner crab fishery remained closed for the 1997 season.

### *1998 Fishery*

Due to record low stock abundance, the Bering Sea Tanner crab fishery remained closed for the 1998 season.

### *Status of Stocks*

Results from the 1998 NMFS survey indicated further declines in the Tanner crab stock abundance from levels observed in 1997. Large male and female Tanner crabs continued to decline to the lowest level in the history of the survey. However, pre-recruit crabs showed a 22% increase in 1998, indicating the potential for improved recruitment in the near future (Stevens et al. 1998).

The ADF&G is currently developing a revised harvest strategy as part of a comprehensive Tanner crab rebuilding plan for the Bering Sea. This revised harvest strategy will be presented to the BOF at their March 1999 meeting.

## LITERATURE CITED

Stevens, B.G., R.S. Otto, J.A. Haaga, and R.A. MacIntosh. 1998. Report to Industry on the 1997 Eastern Bering Sea Crab Survey. (Alaska Fisheries Science Center) Processed Report 98-02.

Stevens, B.G, J.A. Haaga, and R.A. MacIntosh. 1998. Report to Industry on the 1997 Eastern Bering Sea Crab Survey. (Alaska Fisheries Science Center) Processed Report 98-07.

Table 1. Commercial harvest statistics, by season, for the Bering Sea *C. bairdi* fishery, 1969-1998.

Year	Number of			Harvest <sup>a</sup> (pounds)	Pots Pulled	Average		Shell	Deadloss (pounds)	
	Vessels	Landings	Crab <sup>B</sup>			CPUE <sup>b</sup>	Weight (pounds)			Width (mm)
1969	NA	131	353,300	1,008,900	29,800	12	2.9	-	-	NA
1970	NA	66	482,300	1,014,700	16,400	29	2.1	-	-	NA
1971	NA	22	61,300	166,100	7,300	8	2.7	-	-	NA
1972	NA	14	42,061	107,761	4,260	10	2.6	-	-	NA
1973	NA	44	93,595	231,668	15,730	6	2.5	-	-	NA
1974	NA	69	2,531,825	5,044,197	22,014	115	2	-	-	NA
1974/75	28	80	2,773,770	7,028,378	38,462	72	2.5	-	-	NA
1975/76	66	304	8,956,036	22,358,107	141,206	63	2.5	-	-	NA
1976/77	83	541	20,251,508	51,455,221	297,471	68	2.5	-	-	NA
1977/78	120	861	26,350,688	66,648,954	516,350	51	2.5	152.8	88	218,099
1978/79	144	817	16,726,518	42,547,174	402,697	42	2.5	152.7	95	76,000
1979/80	152	804	14,685,611	36,614,315	488,434	30	2.5	151.4	90	56,446
1981	165	761	11,845,958	29,630,492	559,626	21	2.5	149.4	86.6	101,594
1982	125	791	4,830,980	11,008,779	490,099	10	2.3	148.8	85.4	138,159
1983	108	448	2,286,756	5,273,881	282,006	8	2.3	148.8	70.5	60,029
1984	41	134	516,877	1,208,223	61,357	8	2.3	146.5	40	5,025
1985	44	166	1,283,474	3,151,498	104,707	12	2.4	150.0	65	14,096
1986				NO COMMERCIAL FISHERY						
1987				NO COMMERCIAL FISHERY						
1988	98	248	897,059	2,210,394	112,334	8	2.5	143.5	70.2	10,724
1989	109	359	2,907,021	7,012,965	184,892	16	2.4	149.4	80.8	34,664
1990	179	1,032	10,717,924	24,549,299	711,137	15	2.3	148.1	96.5	87,475
1990/91	255	1,756	16,608,625	40,081,555	883,391	19	2.4	149.7	95.3	210,769
1991/92	285	2,339	12,924,034	31,796,381	1,244,633	10	2.5	150.4	93.2	279,741

-Continued-

Table 1. (Page 2 of 2)

Year	Number of			Harvest <sup>a</sup> (pounds)	Pots Pulled	Average		Shell	Deadloss (pounds)	
	Vessels	Landings	Crab <sup>a</sup>			CPUE <sup>b</sup>	Weight (pounds)			Width
1992/93	294	2,084	15,265,880	35,130,866	1,200,885	13	2.3	148.0	90.5	343,955
1993/94	296	862	7,235,498	16,891,320	576,464	13	2.3	150.7	93.9	258,389
1994	183	349	3,351,639	7,766,886	249,536	13	2.3	150.0	92.5	132,780
1995	196	256	1,877,303	4,233,061	247,853	8	2.3	149.3	58.6	44,508
1996 <sup>c</sup>	196	347	734,296	1,806,077	149,289	5	2.5	152.1	46.6	14,608
1997	NO COMMERCIAL FISHERY									
1998	NO COMMERCIAL FISHERY									

<sup>a</sup>Deadloss included.

<sup>b</sup>Defined as catch of legal crab per pot.

<sup>c</sup>Includes incidental catch with Bristol Bay red king crab and Bairdi directed fishery totals.

Table 2. Economic performance of the Bering Sea *C. Bairdi* commercial fishery, 1979/80-1998.

Year	GHL <sup>a,b</sup>	Season Total <sup>b</sup>	Number of		Number of Pots		Value		Season Length	
			Vessels	Landings	Registered	Pulled	Exvessel (per lb.)	Total <sup>c</sup>	Days	Dates
1979/80	28-36	36.5	152	804	40,273	488,434	\$0.52	\$19.0	189	11/01-05/11
1981	28-36	29.6	165	761	42,910	559,626	\$0.58	\$17.2	88	01/15-04/15
1982	16-Dec	10.9	125	791	36,396	490,099	\$1.06	\$11.5	118	02/15-06/15
1983	5.6	5.2	108	448	15,255	282,006	\$1.20	\$6.2	118	02/15-06/15
1984	7.1	1.2	41	134	9,851	61,357	\$0.95	\$1.1	118	02/15-06/15
1985	3	3.1	44	166	15,325	104,707	\$1.40	\$4.3	149	01/15-06/15
1986					NO COMMERCIAL FISHERY					
1987					NO COMMERCIAL FISHERY					
1988	5.6	2.2	98	248	38,765	112,334	\$2.17	\$4.8	93	01/15-04/20
1989	13.5	7	109	359	43,607	184,892	\$2.90	\$20.3	110	01/15-05/07
1990 <sup>d</sup>	29.5	24.5	179	1,032	46,440	711,137	\$1.85	\$45.3	89	01/15-04/24
1990/91	42.8	39.7	255	1,756	75,356	883,391	\$1.12	\$44.5	126	11/20-03/25
1991/92	32.8	31.5	285	2,339	85,401	1,244,633	\$1.50	\$47.3	137	11/15-03/31
1992/93	39.2	35.1	294	2,084	71,481	1,200,885	\$1.69	\$58.8	137	11/15-03/31
1993 <sup>e</sup>	10.7	4.1	283	347	62,302	250,501	\$1.90	\$7.6	10	11/01-11/10
1993/94 <sup>f</sup>	9.1	12.8	261	515	53,737	325,963	\$1.90	\$24.0	42	11/20-01/01
1994 <sup>f</sup>	7.5	7.6	183	349	38,670	249,536	\$3.75	\$28.5	20	11/01-11/21
1995 <sup>f</sup>	5.5	4.2	196	256	40,827	247,853	\$2.80	\$11.7	15	11/01-11/16
1996 <sup>e</sup>	2.2 <sup>g</sup>	1	192	195	38,300	75,753	\$2.51	\$2.5	4	11/01-11/05
1996 <sup>f</sup>	6.2	0.8	135	152	29,955	73,522	\$2.48	\$2.0	12	11/15-11/27
1996 <sup>h</sup>	8.4	1.8	327	347	68,602	149,275	NA	\$4.5	16	NA
1997					NO COMMERCIAL FISHERY					
1998					NO COMMERCIAL FISHERY					

<sup>a</sup>Guideline Harvest Level

<sup>b</sup>Millions of pounds, deadloss not included.

<sup>c</sup>Millions of dollars.

<sup>d</sup>Winter fishery.

<sup>e</sup>East of 168° West longitude (incidental to Bristol Bay red king crab).

<sup>f</sup>163° -173° West longitude (directed fishery).

<sup>g</sup>East of 163° West longitude.

<sup>h</sup>Total vessel count for both fisheries, some vessels fished both fisheries.

Table 3. Bering Sea commercial *C. bairdi* Tanner crab seasons, 1970-1998.

Season	Date		Number of Vessels	Harvest <sup>a</sup>	Average		Price/Pound
	Opened	Closed			Wt.Lbs.	CPUE <sup>b</sup>	
1971 <sup>c</sup>			NA	166.1	2.7	8	NA
1972 <sup>c</sup>			NA	108.8	2.6	10	NA
1973 <sup>c</sup>			NA	231.7	2.5	6	NA
1974 <sup>c</sup>			NA	5,044.2	2	115	NA
1974/75	07/29	06/15	28	7,027.4	2.5	72	\$0.20
1975/76	08/01	07/15	66	22,358.1	2.5	63	\$0.19
1976/77	08/01	07/07	83	51,455.2	2.5	68	\$0.30
1977/78	09/15	06/15	120	66,649.0	2.5	51	\$0.38
1978/79	11/10	05/24	144	42,547.2	2.5	42	\$0.52
1979/80	11/01	05/11	152	36,614.3	2.5	30	\$0.52
1981	01/15	04/15	165	29,630.5	2.5	21	\$0.58
1982	02/15	06/15	125	11,008.8	2.3	10	\$1.06
1983 <sup>d</sup>	02/15	05/22 06/15	108	5,273.9	2.3	8	\$1.20
1984	02/15	06/15	41	1,208.2	2.3	8	\$0.95
1985	01/15	06/15	44	3,151.5	2.4	12	\$1.40
1986			NO COMMERCIAL FISHERY				
1987			NO COMMERCIAL FISHERY				
1988	01/15	04/20	98	2,210.4	2.5	8	\$2.17
1989	01/15	05/07	109	7,013.0	2.4	16	\$2.90
1990	01/15	04/09 <sup>e</sup> 04/24 <sup>f</sup>	179	24,549.3	2.3	15	\$1.85
1990/91	11/20	03/25	255	40,081.6	2.4	19	\$1.12
1991/92	11/15	03/31	285	31,796.4	2.5	10	\$1.50
1992/93	11/15	03/31	294	35,130.9	2.3	13	\$1.69
1993/94	11/01	11/10 <sup>g</sup>	283	4,114.9	2.4	7	\$1.90
	11/20	01/01 <sup>h</sup>	261	12,776.4	2.3	17	\$1.90
1994	11/01	11/21 <sup>h</sup>	183	7,766.9	2.3	13	\$3.75
1995	11/01	11/16 <sup>h</sup>	196	4,233.1	2.3	8	\$2.80
1996 <sup>g</sup>	11/01	11/05	192	994.8	2.5	5	\$2.51
1996 <sup>h</sup>	11/15	11/27	135	811.3	2.4	5	\$2.48
1997			NO COMMERCIAL FISHERY				
1998			NO COMMERCIAL FISHERY				

<sup>a</sup>Thousands of pounds - deadloss included.

<sup>b</sup>Defined as catch per pot pull.

<sup>c</sup>Incidental to the king crab fishery.

<sup>d</sup>Partial Bering Sea closure.

<sup>e</sup>East of 165° West longitude.

<sup>f</sup>East of 165° West longitude.

<sup>g</sup>East of 168° West longitude.

<sup>h</sup>163° -173° West longitude.

Table 4. Bering Sea *C. bairdi* commercial catch by subdistrict, 1974/75-1998.

Season	Subdistrict	Number of			Harvest <sup>a</sup> (pounds)	Pots Pulled	Average		Deadloss (pounds)
		Vessels	Landings	Crab <sup>a</sup>			Weight (pounds)	CPUE <sup>b</sup>	
1974/75	Southeastern		72	2,526,687	6,504,984	32,275	2.6	78	0
	Pribilofs	28	8	247,083	523,394	3,923	2.1	63	0
	TOTAL		80	2,773,770	7,028,378	38,462	2.5	72	0
1975/76	Southeastern		230	6,682,232	16,643,194	106,445	2.5	63	0
	Pribilofs		74	2,273,804	5,714,913	34,761	2.5	65	0
	TOTAL	66	304	8,956,036	22,358,107	141,206	2.5	63	0
1976/77	Southeastern		437	16,089,057	41,007,736	233,667	2.6	69	0
	Pribilofs		104	4,162,451	10,447,485	63,804	2.5	65	0
	TOTAL	83	541	20,251,508	51,455,221	297,471	2.5	68	0
1977/78	Southeastern		706	21,055,527	53,278,012	408,437	2.5	52	0
	Pribilofs		155	5,210,170	13,152,843	107,913	2.5	48	0
	TOTAL	120	861	26,350,688	66,648,954	516,350	2.5	51	218,099
1978/79	Southeastern		758	15,601,891	39,694,205	356,594	2.5	44	75,400
	Pribilofs		59	1,124,627	2,852,969	46,103	2.5	24	600
	TOTAL	144	817	16,726,518	42,547,174	402,697	2.5	42	76,000
1979/80	Southeastern		789	14,329,889	35,724,003	476,410	2.5	30	56,446
	Pribilofs		15	355,722	890,312	12,024	2.5	30	0
	TOTAL	152	804	14,685,611	36,614,315	488,434	2.5	30	56,446
1982	Southeastern		539	3,825,433	8,812,302	322,634	2.3	12	69,829
	Pribilofs		252	1,005,547	2,196,477	167,465	2.2	6	68,330
	TOTAL	125	791	4,830,980	11,008,779	490,099	2.3	10	138,159

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Table 4. (page 2 of 3)

Season	Subdistrict	Number of			Harvest <sup>a</sup> (pounds)	Pots Pulled	Average		Deadloss (pounds)
		Vessels	Landings	Crab <sup>a</sup>			Weight (pounds)	CPUE <sup>b</sup>	
1983	Northern		10	29,478	48,454	5,950	1.7	5	167
	Southeastern		287	1,984,673	4,633,354	192,538	2.3	10	52,879
	Pribilofs		151	272,505	592,073	83,528	2.2	3	6,983
	TOTAL	108	448	2,286,756	5,273,881	282,006	2.3	8	60,029
1984	Southeastern		91	470,181	1,099,142	44,546	2.3	11	4,688
	Pribilofs		43	46,759	109,081	16,811	2.3	3	337
	TOTAL	41	134	516,877	1,208,223	61,357	2.3	8	5,025
1985	Southeastern	38	143	1,278,109	3,139,041	96,976	2.4	13	14,096
	Pribilofs	15	23	5,365	12,457	7,731	2.3	1	0
	TOTAL	44	166	1,283,474	31,513,498	104,707	2.4	12	14,096
1986				NO COMMERCIAL FISHERY					
1987				NO COMMERCIAL FISHERY					
1988	Eastern	98	248	897,059	2,210,394	112,334	2.5	8	10,724
	Western	0	0	0	0	0	0	0	0
	TOTAL	98	248	897,059	2,210,394	112,334	2.5	8	10,724
1990	Eastern		1,105	10,708,996	24,529,165	701,924	2.3	15	87,475
	Western		17	8,928	20,134	9,213	2.3	1	0
	TOTAL	179	1,032	10,717,924	24,549,299	711,137	2.3	15	87,475
1990/91	Eastern	255	1,756	16,608,625	40,081,555	883,391	2.4	19	210,769
	Western	0	0	0	0	0	0	0	0
	TOTAL	255	1,756	16,608,625	40,081,555	883,391	2.4	19	210,769

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Table 4. (page 3 of 3)

Season	Subdistrict	Number of			Harvest <sup>a</sup> (pounds)	Pots Pulled	Average		Deadloss (pounds)
		Vessels	Landings	Crab <sup>a</sup>			Weight (pounds)	CPUE <sup>b</sup>	
1991/92	Eastern	285	2,339	12,924,034	31,796,381	1,244,633	2.5	10	279,741
1992/93	Eastern	293	2,011	15,074,084	34,821,043	1,150,834	2.3	13	340,955
	Western	70	96	191,796	309,823	50,051	1.6	4	3,000
	TOTAL	294	2,084	15,265,880	35,130,866	1,200,885	2.3	13	343,955
1993/94	East of 168 <sup>oc</sup>	283	347	1,696,430	4,114,949	250,501	2.4	7	103,715
	163 <sup>o</sup> to 173 <sup>od</sup>	261	515	5,539,068	12,776,371	325,963	2.3	17	154,674
	TOTAL	296	862	7,235,498	16,891,320	576,464	2.3	13	258,389
1994	163 <sup>o</sup> to 173 <sup>o</sup>	183	349	3,351,639	7,766,886	249,536	2.3	13	132,780
1995	163 <sup>o</sup> to 173 <sup>o</sup>	196	256	1,877,303	4,233,061	247,853	2.3	8	44,508
1996	East of 168 <sup>oc</sup>	192	195	393,257	994,776	75,753	2.5	5	8,464
	163 <sup>o</sup> to 173 <sup>od</sup>	135	152	341,039	811,301	73,522	2.4	5	6,144
	TOTAL	196	347	734,296	1,806,077	149,275	2.5	5	14,608
1997	NO COMMERCIAL FISHERY								
1998	NO COMMERCIAL FISHERY								

<sup>a</sup>Deadloss .

<sup>b</sup>Defined as catch of legal crabs per pot pull.

<sup>c</sup>November 1 - November 10, 1993.

<sup>d</sup>November 20, 1993 - January 1, 1994.

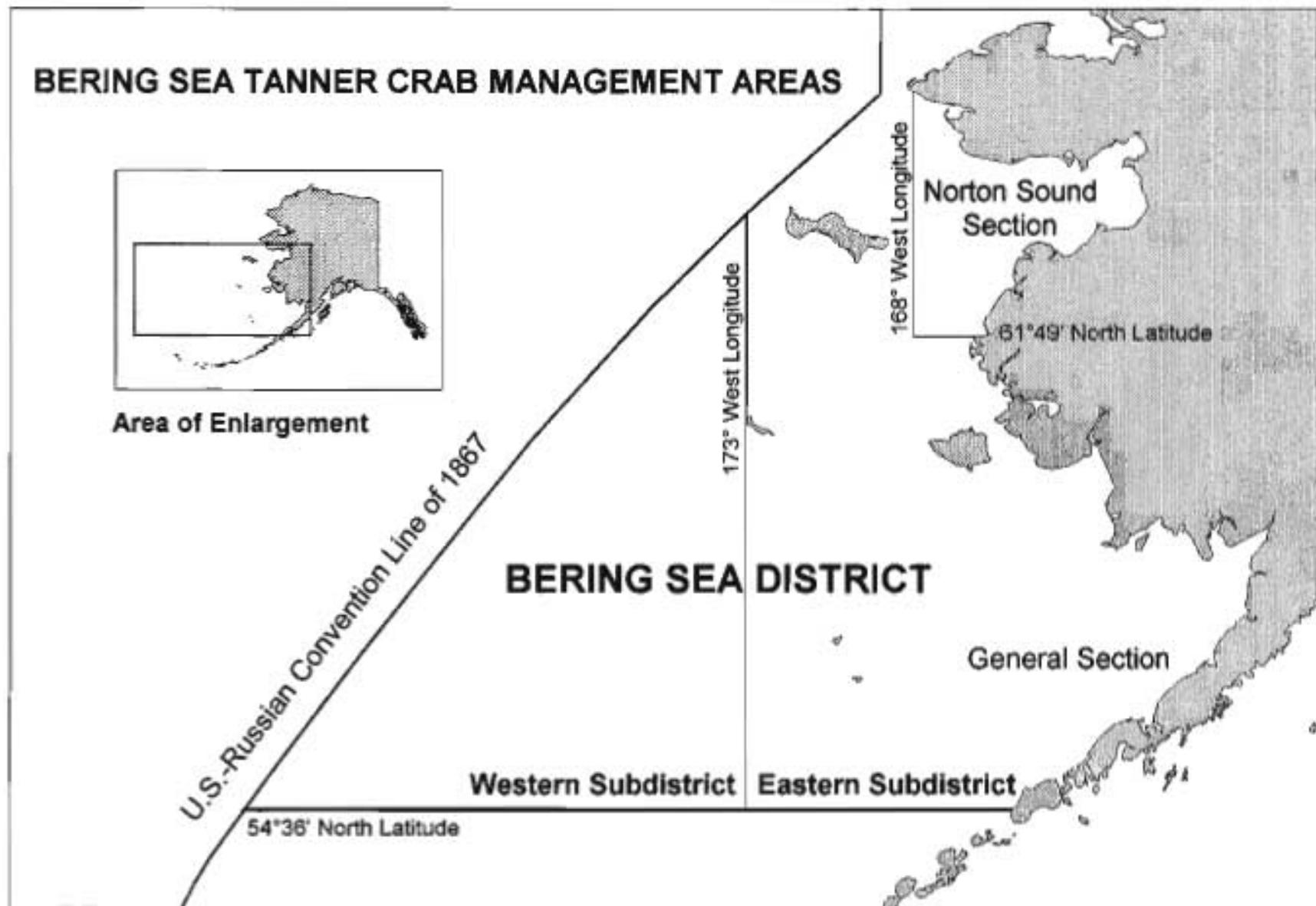


Figure 1. The Bering Sea Tanner crab management area with subdistricts and sections.

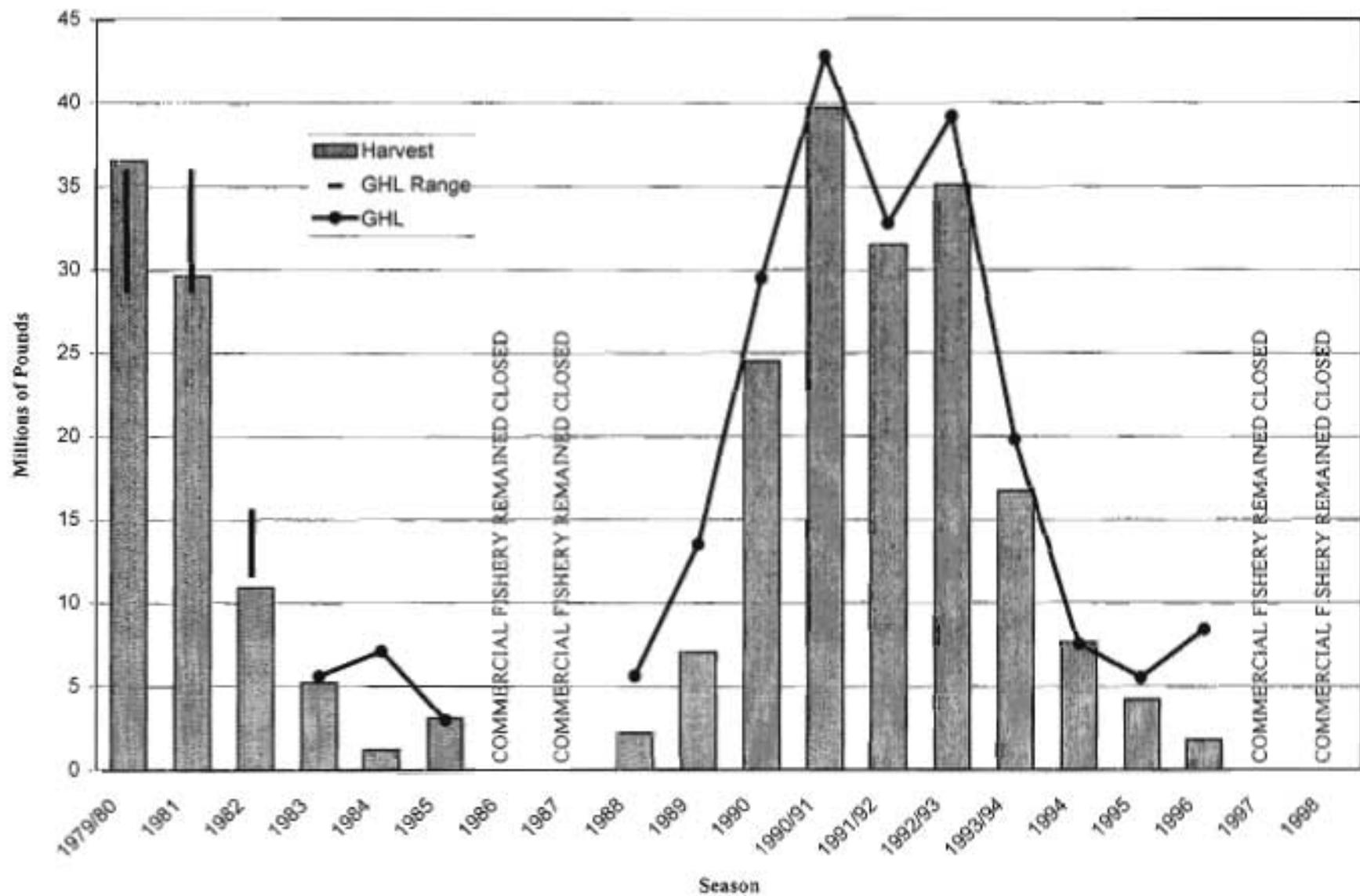


Figure 2. Bering Sea Tanner crab harvest and Guideline Harvest Levels, 1979-1998.

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