

ANNUAL MANAGEMENT REPORT FOR THE
SHELLFISH FISHERIES OF THE WESTWARD REGION, 1997

By

Westward Region Shellfish Management Staff

Regional Information Report¹ 4K98-39

Alaska Department of Fish and Game
Division of Commercial Fisheries
211 Mission Road
Kodiak, Alaska 99615

July 1998

¹ The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished division reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accommodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may contain preliminary data; this information may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or the Division of Commercial Fisheries.

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OVERVIEW

The Alaska Department of Fish and Game (ADF&G) Westward Region includes the Gulf of Alaska south of Cape Douglas (58°52' N. lat.) on the Alaska Peninsula, the Kodiak Island and Aleutian Islands group and the Bering Sea northeast from the U.S.-Russian convention line of 1867 to Norton Sound (Figure 1-1). Encompassed is 525,000 square miles of the most productive shellfish habitat in the world. The major commercial shellfish fisheries are king crab (three species), Tanner crab (two species), Dungeness crab and scallops. Minor fisheries occur for Korean hair crab, *C. tanneri* Tanner crab, snails, shrimp, clams, octopus, sea cucumbers and sea urchins.

The regional ADF&G office is in Kodiak with a field office in Dutch Harbor. This report documents shellfish activities in the Region which are in progress year around. ADF&G fishery biologists are charged with state management and research programs associated with all commercially utilized stocks of shellfish. The full-time management staff consists of nine biologists, one secretary and one field office assistant. Approximately 12 seasonal personnel are hired for shellfish assessment cruises, logbook programs, shipboard observations, interviews, dockside sampling, data entry, secretarial assistance and overseeing the floating processor observer program.

In 1997, approximately 500 catcher vessels, 20 catcher processors, 22 shorebased processors and 11 floating processors engaged in harvesting and processing shellfish resources (Table 1-1). The 1997 Westward Region crab landings of 138.6 million pounds were worth \$142 million, exvessel value (Table 1-2). The landings of crab were at the lowest point since 1984, however the value of the fisheries was reduced by only 18% from the previous year. The leading fishery was Tanner crab with landings of 120 million pounds worth \$93 million. King crab was the second most valuable fishery worth \$48 million

There was not any regional trawl shrimp harvest in 1997 (Table 1-3). Poor production in recent years discouraged fishermen and processors from participating in 1997. The results of a 1995 shrimp survey, which was conducted in historically important areas indicated that shrimp stocks were extremely depressed. A slight improvement over recent years was noted on deep grounds over 90 fathoms but overall levels are still far below those experienced several decades ago.

The 1997 king crab harvest was approximately 21.9 million pounds (Table 1-4). The red king crab seasons were closed once again in Kodiak, Alaska Peninsula and Dutch Harbor. These areas have been closed continuously since 1983. The Department has surveyed these areas to assess the populations which continue to show little or no recruitment. Adak golden king crab became the highest value king crab fishery with a catch of 4.6 million pounds and exvessel value of \$12 million.

Bristol Bay red king crab opened to fishing in 1997. The harvest of 8.7 million pounds had an exvessel value of \$28.5 million, the highest value king crab fishing in the state. The Adak golden

king crab harvest through the end of 1997 stood at approximately 3.5 million pounds with the season continuing into 1998.

The 1997 *Chionoecetes opilio* Tanner crab fisheries produced 119 million pounds, up from the 1996 harvest of 67.5 million. (Table 1-5) The value remained nearly steady at \$92.5 million. The outlook for *C. opilio* stocks indicates a high population, but overall recruitment to the fishery remains unknown. A strong cohort is present in the north and west extremes of the Bering Sea but little is known about growth rates and the size of maturity in that region. The *C. bairdi* fishery did not open in 1997. *C. bairdi* stocks are small in a historic sense and population is comprised of old shelled animals. Survey information does not indicate a quick rebuilding of that stock in the near future. Fisheries for deep water Tanner crabs, *C. tanneri* and *C. angulatus* have been developing in recent years. Landings remain minor but have occurred in all districts of the region.

The 1997 Dungeness crab harvest was one half million pounds (Table 1-6). This was the lowest harvest since 1977. The Kodiak District produced the majority of the catch.

In September 1988 the Alaska Board of Fisheries adopted the mandatory observer requirement for vessels processing king and *C. bairdi* crabs. The Board adopted the same requirements for *C. opilio* processing vessels in September 1990. The regulations required industry to fund the observers which are provided by a third party contractor and certified by the Department of Fish and Game. The observer program has been active for over five years with observers participating in nine fisheries annually. Data indicate that observer presence onboard has deterred the taking of undersized crab on catcher processors. Recently, the observer program has come to be relied on to provide biological data on both targeted species and bycatch.

Fisheries in the Westward Region are managed by areas that vary according to species. Those that occur in the Bering Sea, Aleutian Islands, Alaska Peninsula or Kodiak are summarized in this report under those section headings.

Table 1-1. Shellfish processors operating in the Westward Region during the 1997 fishing seasons.

Location	Company	*Products	
Kodiak	Alaska Fresh Seafoods	KDM	
	Alaska Pacific Seafoods	M	
	Cook Inlet Processing	KMD	
	Emerald Island Seafoods	KTMD	
	Great Northern Sea Produces Inc.	M	
	International Seafoods of Alaska	M	
	King Crab Inc.	KMD	
	Tyson Seafoods	M	
	Western Alaska Fisheries	M	
Sand Point	Trident Seafoods	TD	
King Cove	Peter Pan Seafoods	KT	
Akutan	Trident	KTM	
Dutch Harbor	Alyeska Seafoods	KT	
	Icicle Seafoods (Bering Star)	T	
	Osterman Fish	KTDM	
	Prime Alaska	KTDM	
	Royal Aleutain Processors	KTDM	
	Unisea Seafoods Incorporated	KTM	
	Westward Seafoods	KTDM	
	St. Paul	Icicle Seafoods (Arctic Star)	KT
		Trident Seafoods	KTM
Unisea Seafoods		KTM	
<u>FLOATER PROCESSORS</u>			
	Alaska Packer	KT	
	Aleutian Falcon	T	
	Blue Wave	KT	
	Coastal Star	KT	
	Independence	T	
	Northland	T	
	Omni Sea	T	
	Sea Alaska	KT	
	Snopac	T	
	Stellar Sea	KT	
	Yard Arm Knot	KT	

Continued

Table 1-1. (page 2 of 2)

Location	Company	*Products
<u>CATCHER PROCESSORS</u>		
	Alaskan Enterprises	T
	Baranof	KT
	Bountiful	T
	Carolina Boy	M
	Carolina Girl	M
	Courageous	KT
	Deep Sea Harvester	KT
	Fortune Hunter	M
	Jacquelyn R	KT
	Kiska Enterprise	KT
	Ocean Hunter	M
	Pacific Lady	KT
	Patricia Lee	K
	Pavlof	KT
	Pro Surveyor	T
	Provider	M
	Pursuit	M
	Royal Enterprise	KT
	Seawind	KT
	Westward Wind	KT

*K=King Crab

T=Tanner Crab

S=Shrimp

D=Dungeness

M=Scallops, Clams, Hair crab, Octopus, Urchins.

Table 1-2. Westward region king crab, shrimp, Tanner crab and Dungeness crab pounds, price per pound and value to the fishermen since, 1950-1997.

Year	SHRIMP			KING CRAB			TANNER CRAB ^a			DUNGENESS CRAB			TOTAL	
	# ^b	Price ^c	Value ^d	# ^b	Price ^c	Value ^d	# ^b	Price ^c	Value ^d	# ^b	Price ^c	Value ^d	# ^b	Value ^d
1950				2.1										
1951				.80										
1952				.70										
1953				3.3										
1954				6.6										
1955				5.5										
1956				10.9										
1957				12.3										
1958				12.4										
1959				16.4										
1960	3.4	.039	.13	30.4	.085	2.58							33.9	2.71
1961	11.0	.04	.44	38.6	.095	3.66							49.6	4.10
1962	12.6	.04	.50	49.5	.10	4.95				1.9	.09	.17	64.0	5.62
1963	10.1	.043	.43	66.8	.10	6.68				2.4	.09	.21	79.3	7.32
1964	3.9	.04	.15	91.8	.10	9.18				4.2	.09	.38	99.9	9.71
1965	13.8	.04	.55	138.2	.128	17.68				3.3	.12	.40	155.3	18.63
1966	24.1	.045	1.08	136.2	.11	14.90				1.2	.13	.16	161.5	16.14
1967	39.6	.045	1.78	103.4	.26	26.88	.10	.07	.007	6.6	.13	.86	149.7	29.53
1968	39.7	.04	1.58	69.0	.26	17.94	2.7	.10	.27	8.0	.14	1.12	119.4	20.91
1969	45.0	.06	2.48	54.7	.28	15.32	8.5	.11	.64	3.8	.16	1.08	115.0	19.82
1970	68.2	.04	2.73	49.9	.30	14.97	11.3	.11	1.24	5.7	.14	.80	135.1	19.74
1971	88.6	.04	3.54	52.8	.39	20.59	9.8	.11	1.07	1.4	.18	.25	152.6	25.45
1972	78.0	.04	3.12	70.4	.55	38.72	15.6	.13	2.03	2.1	.40	.84	166.1	44.71
1973	117.8	.08	9.42	69.3	.45	31.18	38.0	.17	6.46	2.2	.50	1.10	247.1	48.16
1974	104.0	.08	8.32	94.3	.45	42.43	43.4	.20	8.68	.80	.47	.38	242.5	59.81
1975	92.1	.08	7.37	96.7	.66	63.82	33.2	.17	5.64	.60	.61	.37	222.6	77.20
1976	119.3	.10	11.93	101.4	1.37	138.91	64.8	.20	12.96	.08	.15	.01	285.6	168.81
1977	110.6	.13	14.38	94.6	1.34	126.76	86.4	.33	28.51	.10	.30	.03	291.7	169.68
1978	64.2	.165	10.59	119.9	1.60	191.80	114.3	.43	49.15	1.3	.75	.98	301.4	253.16
							1.7	.38	.64					

Continued

Table 1-2. (page 2 of 3)

Year	SHRIMP			KING CRAB			TANNER CRAB ^a			DUNGENESS CRAB			TOTAL	
	# ^b	Price ^c	Value ^d	# ^b	Price ^c	Value ^d	# ^b	Price ^c	Value ^d	# ^b	Price ^c	Value ^d	# ^b	Value ^d
1979	44.6	.225	10.03	151.6	0.95	144.02	84.2	.55	46.3	1.4	0.75	1.05	314	211.06
							32.2	.30	9.66					
1980	43.1	.29	12.49	189.6	1.05	199.08	4.0	.55	35.2	2	0.45	0.9	338.2	255.97
							39.5	.21	8.3					
1981	21.5	.27	5.81	85.3	2.0	170.6	49.3	.65	32.05	5.6	0.7	3.92	214.4	226.08
							52.7	.26	13.7					
1982	11.2	.27	3.02	38.5	3.75	144.48	34.2	1.65	56.43	5.3	0.75	3.98	118.5	229.19
							29.3	.73	21.38					
1983	2.8	.35	.98	25.0	3.00	75.00	31.4	1.25	39.25	5.9	1.05	6.2	91.3	130.6
							26.2	.35	9.17					
1984	2.9	.33	.95	17.1	2.75	47.02	18.8	1.10	20.68	6	1.4	8.4	70.8	86.22
							26.0	.30	7.8					
1985	1.2	.20	.24	20.4	2.50	51.00	18.4	1.50	27.6	4.6	1.2	5.52	109.1	103.71
							64.5	.30	19.35					
1986	.5	.25	.13	17.3	3.50	60.50	13.2	1.90	25.08	1.2	1.15	1.38	128.7	144.99
							96.5	.60	57.9					
1987	0.0	0.00	0.00	27.3	3.50	95.46	7.6	2.11	16.02	1.7	1.25	2.07	138.5	189.98
							101.9	0.75	76.43					
1988	Confidential			20.0	3.98	79.37	9.9	2.36	23.4	2.3	1.06	2.44	167.6	209.86
							135.4	0.77	104.25					
1989	0.00	0.00	0.00	22.7	4.02	91.07	14.0	2.94	41.17	3.1	1.1	3.4	189.3	247.74
							149.5	0.75	112.1					
1990	0.00	0.00	0.00	34.7	4.21	145.93	28.2	1.91	53.86	3	1.51	4.55	227.6	307.74
							161.7	0.64	103.4					

Continued

Table 1-2. (page 3 of 3)

Year	SHRIMP			KING CRAB			TANNER CRAB ^a			DUNGENESS CRAB			TOTAL	
	# ^b	Price ^c	Value ^d	# ^b	Price ^c	Value ^d	# ^b	Price ^c	Value ^d	# ^b	Price ^c	Value ^d	# ^b	Value ^d
1991	0.00	0.00	0.00	28.3	2.94	83.25	42.0	1.14	48.02	1.5	1.5	2.04	400.4	297.64
							328.6	0.5	164.3					
1992	Confidential			19.1	3.79	72.56	34.3	1.55	53.21	1.7	0.86	1.43	370.4	284.85
									315.3	0.5	157.65			
1993	Confidential			26.6	3.47	92.3	25.3	1.69	42.76	1.7	0.92	1.56	284.4	309.71
							230.8	0.75	173.1					
1994	0	0	0	12.6	4.21	53	7.8	3.75	24.25	1.2	1.2	1.44	171.4	278.44
							149.8	1.3	194.74					
1995	0	0	0	11.9	2.67	31.82	4.2	2.8	11.85	0.7	1.72	1.2	92.1	227.73
							75.3	2.43	182.86					
1996	0	0	0	21.0	2.46	51.66	1.81	2.50	4.52	0.9	1.06	1.0	88.1	142.78
							64.4	1.33	85.6					
1997	0	0	0	18.1	2.64	47.7	0	0	0	1.0	2.10	2.1	138.6	142.30
							119.5	0.79	92.5					

^a*C. bairdi* and *C. opilio*.

^bMillions of pounds.

^cDollars.

^dMillions.

Table 1-3. Historic domestic trawl shrimp catch, Alaska Westward Region, 1960-1997.

Calendar Year	Kodiak	Chignik	Peninsula	Aleutians	Total
1960	3,379,000				3,379,000
1961	11,083,500				11,083,500
1962	12,654,300				12,654,300
1963	10,118,500				10,118,500
1964	3,946,900				3,946,900
1965	13,810,500				13,810,500
1966	24,097,100				24,097,100
1967	38,722,100	879,900			39,602,000
1968	34,468,700	1,153,700	4,137,400		39,759,800
1969	41,243,600	419,900	3,365,600		45,029,100
1970	62,369,300	1,226,800	4,634,700		68,230,800
1971	82,153,724	987,900	5,532,400		88,674,024
1972	58,352,319	4,829,800	14,740,800	94,627	78,017,546
1973	70,511,477	26,884,200	20,022,000	456,179	117,873,858
1974	48,771,375	23,392,400	26,145,900	5,749,407	104,059,082
1975	46,806,799	24,435,400	20,044,400	893,567	92,180,166
1976	51,400,472	27,059,700	37,170,300	3,670,609	119,301,081
1977	31,801,573	27,797,739	46,454,376	4,599,858	110,653,546
1978	22,820,135	22,976,720	11,812,795	6,618,263	64,227,913
1979	14,540,901	23,722,330	3,134,367	3,236,721	44,634,319
1980	27,783,437	12,843,270	C L O S E D	2,479,350	43,106,057
1981	19,030,341	70,948	C L O S E D	2,398,458	21,499,747
1982	10,884,059	0 ^a	0 ^a	341,551	11,225,610
1983	2,779,030	0 ^a	0 ^a	5,600	2,784,630
1984	3,023,438	0 ^a	0 ^a	0 ^a	3,023,438
1985	1,159,912	0 ^a	0 ^a	0 ^a	1,159,912
1986	453,468	0 ^a	0 ^a	0 ^a	453,468
1987	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
1988	Confidential ^b	0 ^a	0 ^a	0 ^a	Confidential ^b
1989	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
1990	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
1991	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
1992	0 ^a	0 ^a	0 ^a	Confidential ^b	Confidential ^b
1993	1,704	0 ^a	0 ^a	Confidential ^b	Confidential ^b
1994	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
1995	0 ^a	0 ^a	0 ^a	0 ^a	0 ^a
1996	Confidential ^b	0 ^a	0 ^a	0 ^a	0 ^a
1997	Confidential ^b	0 ^a	0 ^a	0 ^a	0 ^a
AVERAGE (Years Fished)	26,720,606	14,128,629	15,236,533	2,377,888	41,963,058

^a Season Open - No Catch Reported

^b Catches by less than three vessels remain confidential

Table 1-4. Historic king crab catch by registration area for Alaska's Westward Region (in thousands of pounds), 1950-1997.

Year	K Kodiak	M Alaska Peninsula	O Dutch Harbor	R Adak	Q Bering Sea	T Bristol Bay	Total Westward Region	Foreign	Total
1950	60.0	2,124.0	0	0	0	0	2,184.00	0	2,184.0
1951	200.0	599.0	0	0	0	0	799	0	799.0
1952	400.0	298.0	0	0	0	0	698	0	698.0
1953	900.0	380.0	0	0	0	2,000.0	3,280.00	11,356.0	14,636.0
1954	4,000.0	317.0	0	0	0	2,329.0	6,646.00	8,086.0	14,732.0
1955	2,000.0	1,641.0	0	0	0	1,878.0	5,519.00	8,693.0	14,212.0
1956	4,800.0	4,221.0	0	0	0	1,896.0	10,917.00	8,308.0	19,225.0
1957	5,000.0	6,687.0	0	0	0	588.0	12,275.00	8,548.0	20,823.0
1958	5,200.0	7,246.0	0	0	0	7.0	12,453.00	8,136.0	20,589.0
1959	10,200.0	6,167.0	0	0	0	0	16,367.00	11,602.0	27,969.0
1960/61	21,064.0	6,700.0	0	2,093.7	0	598.0	30,456.50	24,611.0	55,067.5
1961/62	28,962.9	3,900.0	533.0	4,776.0	0	459.0	38,630.90	40,404.0	79,034.0
1962/63	37,626.7	2,273.0	1,536.0	8,006.5	0	74.0	49,543.20	49,516.2	102,782.2
1963/64	37,716.2	6,539.0	3,893.0	17,903.7	0	747.0	66,798.90	56,671.0	123,469.9
1964/65	41,596.5	14,354.0	13,761.0	21,193.0	0	910.0	91,815.00	63,076.0	154,891.3
1965/66	94,431.0	14,713.0	19,196.0	8,040.0	0	1,762.0	138,142.40	41,405.0	179,547.4
1966/67	73,817.8	22,577.0	32,852.0	5,883.1	0	997.0	136,126.90	43,998.0	180,124.9
1967/68	43,448.5	17,252.0	22,709.0	16,948.9	0	3,102.0	103,460.40	32,528.0	135,988.4
1968/69	18,211.4	10,944.0	11,300.0	19,874.8	0	8,687.0	69,017.20	27,681.0	96,698.2
1969/70	12,200.5	4,137.0	8,950.0	19,055.4	0	10,403.0	54,745.90	14,113.0	68,858.9
1970/71	11,719.9	3,425.7	9,652.0	16,057.0	NF	8,559.2	49,913.60	12,930.0	62,843.6
1971/72	10,884.1	4,123.1	9,391.6	15,475.9	NF	12,995.8	52,869.70	6,188.0	59,057.7
1972/73	15,479.9	4,069.3	10,450.4	18,724.1	NF	21,744.9	70,490.70	4,721.0	75,211.7
1973/74	14,397.3	4,260.6	12,722.7	9,741.5	1,276.6	26,913.6	69,331.80	1,279.0	70,610.8
1974/75	23,582.7	4,572.1	13,991.1	2,775.0	7,107.3	42,266.3	94,274.00	2,618.0	96,892.0
1975/76	24,061.6	2,605.3	15,906.6	437.1	2,433.7	51,326.2	96,747.40	0	96,747.4
1976/77	17,966.8	958.8	10,198.4	2.3	8,356.1	63,919.7	101,399.80	0	101,399.8

Continued

Table 1-4 (page 2 of 2)

Year	K Kodiak	M Alaska Peninsula	O Dutch Harbor	R Adak	Q Bering Sea	T Bristol Bay	Total Westward Region	Foreign	Total
1977/78	13,503.6	726.3	3,684.4	953.0	8,201.8 ^a	69,967.8	94,567.90	0	94,567.9
1978/79	12,021.8	3,093.8	6,824.1	807.2	10,387.7 ^a	87,618.3	119,933.70	0	119,933.7
1979/80	14,608.9	4,453.5	15,010.9	490.7	9,230.3 ^a	107,828.0	151,647.4	0	151,647.4
1980/81	20,448.6	5,080.6	19,053.6	1,478.4	11,543.8	129,948.5	187,553.5	0	187,553.5
1981/82	24,237.6	3,147.5	5,231.1	2,843.0	13,772.5	33,591.4	85,291.4	0	85,291.4
1982/83	8,729.2	1,627.7	1,616.2	9,708.1	13,447.3	3,001.2	38,497.8	0	38,497.8
1983/84	111.4 ^b	CLOSED	1,810.0	10,109.6	11,701.9	CLOSED	25,463.1	0	25,463.1
1984/85	22.2 ^b	CLOSED	1,521.1	5,508.7	4,701.3	4,182.4	17,115.2	0	17,115.2
1985/86	63.6 ^b	CLOSED	1,968.2	11,931.0	2,959.8	4,174.9	20,405.4	0	20,405.4
1986/87	146.5 ^b	CLOSED	1,869.2	13,510.2	1,262.1	11,393.9	17,308.50	0	17,308.5
1987/88	67.2 ^b	CLOSED	1,383.2	3,190.0 ^c	2,200.9	12,289.1	19,130.4	0	19,130.4
1988/89	2.8 ^b	CLOSED	1,545.1	9,571.1 ^d	1,488.3	7,387.8	19,955.1	0	19,955.1
1989/90	*	CLOSED	1,852.2	9,251.9 ^d	1,428.2	10,264.8	22,657.8	0	22,657.8
1990/91	*	CLOSED	1,718.8	9,606.30	1,725.3	20,362.3	33,412.7	0	33,412.7
1991/92	0	CLOSED	1,447.7	6,128.7 ^d	3,372.1	17,177.9	28,126.4	0	28,126.4
1992/93	*	CLOSED	1,357.0	7,248.1 ^d	2,474.0	8,043.0	19,122.1	0	19,122.1
1993/94	*	CLOSED	915.5	5,368.4	5,675.0	14,628.6	26,587.5	0	26,587.5
1994/95		CLOSED	1,750.3	5,205.5	5,206.5	CLOSED	12,603.0	0	12,603.0
1995/96		CLOSED	1,994.0	4,644.7	5,304.7	CLOSED	11,943.4	0	11,943.4 ^e
1996/97	0	CLOSED	°	5,854.2 ^e	5,501.9	8,405.6	19,761.7	0	19,761.7
1997/98	0	CLOSED	*	5,657.4	6,098.1	8,756.5	20,512.0	0	20,512.0

* Confidential catch.

^aFishing year - July 1 through June 30.

^bBrown crab, red king closed since 1982/83.

^cThrough January 31.

^dCalendar year.

^eDutch Harbor combined with Adak to form the Aleutian Area in 1996.

Table 1-5. Westward Region historic Tanner crab *C. bairdi* and *C. opilio* catch (in pounds) for Alaska, 1965-1997.

Year ^a	Kodiak	Chignik ^b	South Peninsula	Eastern Aleutians	Western Aleutians	Bering Sea <i>C. opilio</i>	Bering Sea <i>C. bairdi</i>	Total U.S. Harvest	Total Foreign Harvest
1965	0	0	0	0	0	0	0	0	3,936,000
1966	0	0	0	0	0	0	0	0	7,290,000
1967	110,961	0	5,000	0	0	0	0	115,961	24,000,000
1968	2,560,687	0	131,700	0	0	0	17,900	2,710,287	30,940,000
1969	6,796,477	0	644,400	0	0	0	1,008,900	8,449,777	47,668,000
1970	7,749,859	0	2,022,427	0	0	0	1,014,700	11,259,447	47,828,000
1971	7,436,414	152,256	2,140,755	0	0	0	166,100	9,875,888	39,886,000
1972	11,898,054	23,343	3,618,883	0	0	0	107,761	15,662,354	31,186,000
1973	31,113,459	747,788	5,615,563	62,128	168,354	0	231,668	38,008,640	27,886,000
1974	25,479,717	4,202,671	9,503,366	498,836	71,887	0	5,044,197	43,409,968	27,912,000
1975	17,535,844	3,649,444	5,195,800	77,164	3,350	0	7,284,378	33,225,873	18,456,000
1976	23,446,245	6,926,161	11,201,941	534,295	62,180	0	22,341,475	64,818,920	19,286,000
1977	20,720,079	5,672,919	6,773,838	1,301,654	0	0	51,455,221	86,405,326	21,520,173
1978	33,271,472	4,693,830	7,446,270	2,624,016	237,512	1,716,124	66,648,954	116,014,238	33,057,796
1979	29,173,807	2,536,105	8,684,408	1,092,311	197,244	31,102,832	42,547,174	116,411,771	32,914,536
1980	18,623,875	3,517,920	3,961,251	879,807	337,297	39,344,323	36,614,315	103,507,133	15,636,125
1981	11,748,629	3,653,723	3,294,106	654,514	220,716	50,483,055	29,732,086	102,056,808	0
1982	13,756,159	3,240,526	4,589,042	739,694	838,627	29,351,474	11,008,779	63,542,301	0
1983	18,927,061	3,497,370	2,863,798	547,830	448,399	26,128,410	5,273,881	57,686,749	0
1984	14,789,903	659,043	1,789,883	239,395	191,954	26,813,074	1,208,223	45,691,225	0
1985	12,024,553	385,838	2,561,868	165,529	66,549	65,998,875	3,151,498	82,900,497	0
1986	8,974,520	184,907	3,763,761	166,939	72,441	97,984,539	0	109,674,455	0
1987	4,833,473	195,060	2,400,784	160,292	42,761	101,903,388	0	109,535,758	0
1988	3,888,906	183,111	3,328,809	309,918	169,289	134,060,185	2,210,394	144,150,612	0
1989	5,208,999	323,120	1,055,082	328,696	53,181	149,455,340	7,012,965	163,437,891	0
1990	3,456,314	0	0	171,785	48,746	161,742,748	24,549,299	189,968,822	0
1991	1,917,713	0	0	50,038	14,779	328,647,269	40,081,555	370,711,294	0
1992	2,400,213	0	0	98,703	7,825	315,302,034	31,796,381	349,605,156	0
1993	1,318,446	0	0	118,609	2,293	230,787,000	23,908,272	256,134,620	0
1994	0	0	0	0	0	149,775,765	7,766,886	157,542,651	0
1995	0	0	0	0	0	75,252,677	4,233,061	79,485,738	0
1996	0	0	0	0	0	65,712,797	18,060,077	67,518,874	0
1997	0	0	0	0	0	119,452,070	0	119,452,070	0

^a Calendar year

^b Chignik and South Peninsula catches combined 1967 through 1970.

Table 1-6. Alaska Westward Region historic Dungeness crab catch (in pounds) by district, 1962-1997.

Calendar Year	Kodiak	Alaska Peninsula	Aleutians	Total
1962	1,904,567	0	0	1,904,567
1963	2,487,512	0	0	2,487,512
1964	4,162,182	0	0	4,162,182
1965	3,311,571	0	0	3,311,571
1966	1,148,600	0	0	1,148,600
1967	6,663,668	0	0	6,663,668
1968	6,829,061	1,259,000	0	8,088,061
1969	5,834,628	1,056,000	0	6,890,628
1970	5,741,438	13,000	0	5,754,438
1971	1,445,864	11,000	0	1,456,864
1972	2,059,536	65,000	0	2,124,536
1973	2,000,526	194,500	0	2,195,026
1974	750,057	0	60,517	810,574
1975	639,813	0	4,408	644,221
1976	87,110	0	0	87,110
1977	113,026	0	0	113,026
1978	1,362,306	0	0	1,362,306
1979	1,313,650	102,320	1,101	1,417,071
1980	2,011,736	0	0	2,011,736
1981	5,566,463	42,296	0	5,608,759
1982	4,546,311	779,600	36,034	5,361,945
1983	4,752,148	1,200,978	8,975	5,962,101
1984	5,304,921	647,497	91,736	6,044,154
1985	4,153,877	462,258	16,750	4,632,885
1986	965,095	179,367	10,897	1,155,359
1987	1,450,983	182,706	26,627	1,660,316
1988	2,125,032	179,022	22,634	2,326,688
1989	3,077,937	*	11,124	3,089,061 ^b
1990	2,879,955	65,806	17,365	2,963,126
1991	1,414,499	80,248	7,412	1,502,159
1992	1,656,793	*	5,649	1,662,442
1993	1,369,889	273,811	7,531	1,651,231
1994	948,461	277,639	*	1,226,100 ^b
1995	527,434	*	*	527,434 ^b
1996	668,772	112,388	0	781,160
1997	529,601	240,120	0	769,721

^a Catch confidential, where less than 3 vessels participate.

^b Total does not include confidential catch.

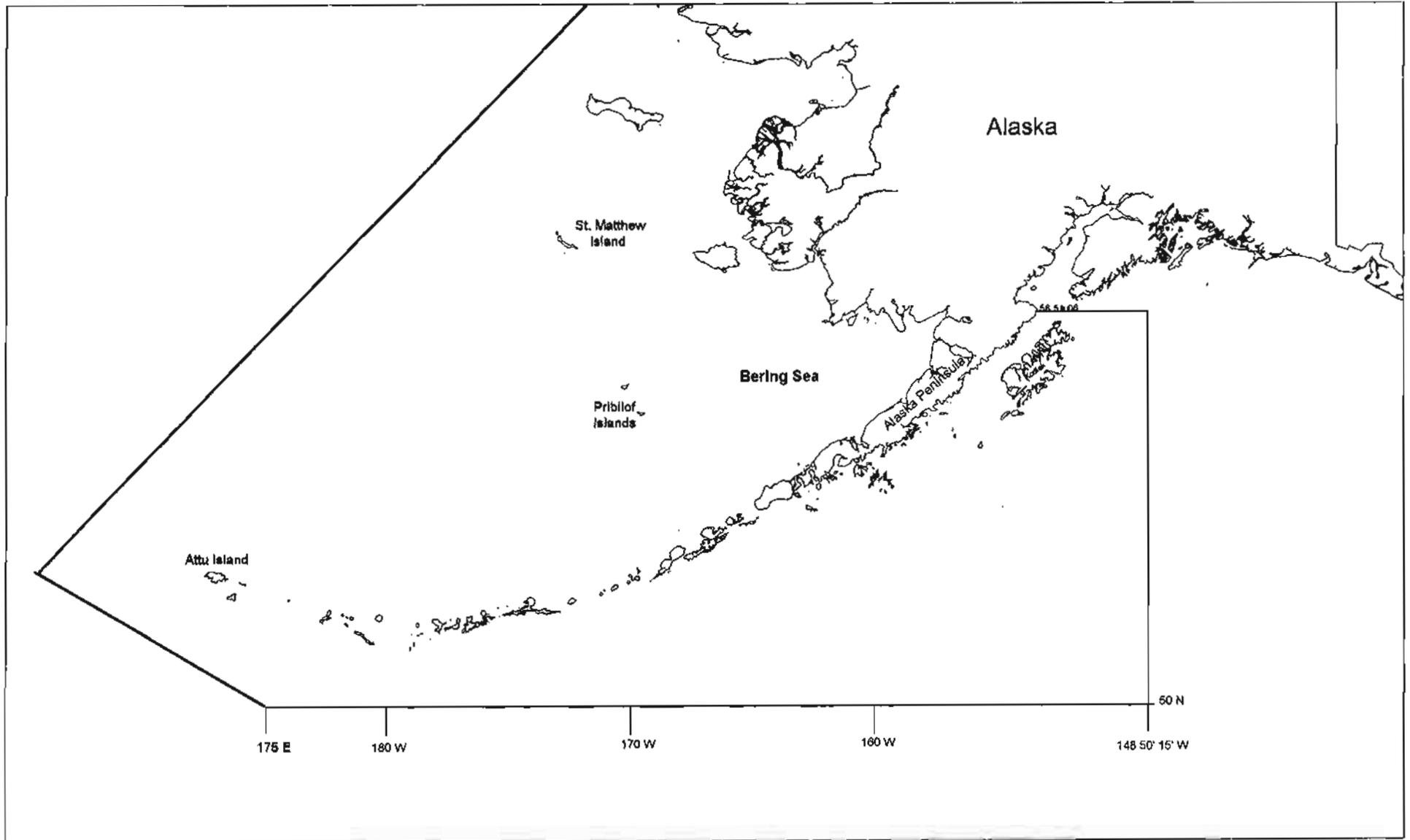


Figure 1-1. Alaska Department of Fish and Game Westward Region.

ANNUAL MANAGEMENT REPORT FOR THE
SHELLFISH FISHERIES OF KODIAK AREA, 1997

by

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July 1998

KODIAK AREA

Introduction

The Kodiak shellfish management area includes Pacific Ocean waters south of the latitude of Cape Douglas (58°52' N. lat.) on the Alaska Peninsula, east of the longitude of Cape Kumlik (157°27' W. long.), and west of 148°50' W. longitude. The management unit varies slightly for shrimp, where it extends from the latitude of Cape Douglas to the longitude of Kilokak Rocks on the Alaska Peninsula (156°19'25" W. long.). This report reviews the 1997 shellfish fisheries within the area and provides a synopsis of all landings within the Kodiak area.

Dungeness crab, sea cucumber and weathervane scallop were the principal commercial shellfish species fished. A small harvest of octopus, sea urchins, and trawl shrimp also occurred. Historically, the Kodiak area has supported substantial red king crab, Tanner crab and trawl pink shrimp fisheries. Current red king and Tanner crab population levels are depressed to a level that does not allow commercial harvests. Pink shrimp populations are similarly depressed. Historically productive sections are closed, but some offshore areas remain open to exploratory shrimp fishing though effort has been minimal.

Catches are reported by fishermen from individual statistical areas (Figure 2-1) and summarized by districts or sections. At the port of Kodiak, 1.9 million pounds of shellfish were landed during 1997, with an exvessel value equaling \$6.0 million (Table 2-1). This included shellfish harvested from other management areas, principally the Bering Sea, and landed in Kodiak. The single most valuable shellfish species in the Kodiak area was the Weathervane scallop worth \$2.6 million to the fleet.

A discussion of each fishery appears in individual sections of this report except for scallops that appear in the regional scallop section. During 1997 a total of nine emergency orders were issued for the king crab, Tanner crab, Dungeness crab scallop and sea cucumber fisheries in the Kodiak management area (Table 2-2, Table 2-3).

TANNER CRAB

The Westward registration area for Tanner *Chionoecetes bairdi* crab encompasses the waters of the Pacific Ocean south of the latitude of Cape Douglas and west of the longitude of Cape Fairfield and all Bering Sea and Pacific Ocean waters east of the U.S./Russian Convention Line of 1867.

Within this registration area, the Tanner crab stocks are managed by districts. The Kodiak, Chignik, South Peninsula districts are managed by the shellfish staff stationed at the Kodiak office. The Kodiak District includes the Pacific Ocean waters south of the latitude of Cape

Douglas and east of the longitude of Cape Kumlik. Commercial catches are summarized by sections within the Kodiak District (Figure 2-2). The Chignik District includes all Pacific Ocean waters west of the longitude of Cape Kumlik and east of a line from Kupreanof Point to Castle Rock and east of a line extending 135° from Castle Rock. The South Peninsula District includes the Pacific Ocean waters west of Kupreanof Point and east of the longitude of Scotch Cap Light. The Eastern Aleutian, Western Aleutian and Bering Sea districts are managed from the Dutch Harbor ADF&G office.

Historic Background

The domestic Tanner crab fishery for Kodiak and waters south of the Alaska Peninsula began in 1967 when less than the 200,000 pounds were landed. As king crab stocks declined in the late 60's interest increased in the Tanner crab fishery. During this period, fishermen were experimenting with their crab pots to increase catches of Tanner crab and decrease incidental catch of king crab. This was accomplished by placing wooden slats in the tunnel eye of the pot to reduce the height of the opening to 4 inches or less which did not allow the larger king crab to enter the pot. A newly developed top entry pot had a round fiberglass tunnel opening and was reported to be selective for Tanner crab. While resembling the pot fished by the Japanese in the Bering Sea, this pot was larger and heavier and was not fished with a groundline. A hinged base allows crab to be dropped directly into vessel live tanks.

Considering the abundance of Tanner crab and availability of fishing gear, the commercial fishery was slow to develop. Four factors attributed to this slow development:

1. Relatively low consumer acceptance of Tanner crab;
2. competition on the U.S. market from imported Tanner crab meat;
3. a black encrustment on crab shell now known as black mat syndrome;
4. uneconomical extraction of meat from the shell. Extraction of meat from Tanner crab legs using equipment and methods designed for the larger king crab required a high amount of labor per yield. Shell fragments in shoulder meat required considerable hand labor for removal.

By the 1972/73 season market conditions had improved and Tanner crab had established itself as a dominant winter and spring fishery. In 1973 the department initiated an experimental survey program which used king crab pots as the means of capture. Although the program was designed to assess red king crab populations, Tanner crab assessment was also possible since they readily enter king crab pots. The primary goals of these surveys were to estimate the annual relative abundance of crab and predict recruitment trends two to four years in advance of crab attaining commercial size. These estimates would allow the department to establish annual harvest levels.

During 1974 and 1975 the Alaska Board of Fisheries (BOF) set a guideline harvest range on Tanner crab of 35 to 55 million pounds for Kodiak, Chignik and South Peninsula. Also in

1975, the Board adopted an April 30th closure to protect crab at the onset of mating. In 1976 the Board established a 5½ inch minimum size limit which allows males at least one full breeding season before becoming available for commercial harvest. Beginning December 6, 1978, the Federal government assumed joint Tanner crab management responsibilities with the State of Alaska in the Exclusive Economic Zone off Alaska. This joint management was accomplished through a Fishery Management Plan (FMP).

The commercial fishery peaked during the 1977/78 season when over 33 million pounds were harvested from the Kodiak District (Table 2-4). The commercial catch began to decline in the late 70's and early 80's. In 1980 the BOF adopted into regulation a 250 pot limit for Kodiak to reduce effort in the fishery.

During this period it became evident to ADF&G that the pot surveys did not adequately assess the Tanner crab stocks. Survey results did not accurately predict fishery performance. In addition, small Tanner crabs ($\leq 114\text{mm CW}$) did not enter pots in predictable numbers from survey to survey; thus, little could be determined regarding future recruitment trends. Due to these problems, trawls were looked to as an alternative for surveying the Tanner crabs in the Gulf of Alaska. The National Marine Fisheries Service was already using this gear in the Bering Sea. An experimental program to test this possibility began in 1980. This trawl survey was done in conjunction with the traditional pot survey for red king crabs.

Vessel participation increased as the price per pound of live crab went from 65 cents per pound to \$1.65 per pound. Reacting to this development, the BOF adopted regulations in 1983, to designate the South Peninsula and Chignik Districts as a combined super-exclusive area. This meant that vessels fishing this area for Tanner crab could not fish Tanner crab elsewhere in the state for that registration year. Additionally, the Board reduced the pot limit in the Kodiak District from 250 to 200 pots per vessel.

On February 8th, 1984 a federal judge issued a restraining order restricting the State of Alaska from enforcing the super-exclusive area in Chignik and the South Peninsula and the 200 pot limit in Kodiak outside of three miles. In order to make state and federal regulations consistent, on February 9 the BOF issued an emergency regulation rescinding the pot limit and super-exclusive registration area.

The joint Fishery Management Plan (FMP) was still in effect although there was considerable confusion over the enforcement and effective dates of regulations. The FMP was amended nine times in six years. To achieve conservation and management objectives and to effectively coordinate management with the State, the FMP adopted many of the management measures employed by the State. However, the FMP did not provide for management based on the best available scientific information or provide for timely coordination of management with the State. In March 1986, the North Pacific Fishery Management Council (NPFMC) voted to suspend the implementation of regulations for the Tanner crab FMP. The FMP was repealed at the request of the council, effective April 1987. Once again, the State of Alaska had sole responsibility for the Tanner crab fishery in the Gulf of Alaska.

In 1990 the BOF adopted a new pot limit for Kodiak. This pot limit was a sliding scale limit that decreased with decreasing harvest projections. The limit ranged from 150 to 75 pots per vessel. As crab stocks decreased these pot limits reduced the amount of gear on the fishing grounds and made inseason management less complicated. By the 1993 season a pot limit of 75 pots per vessel was established regardless of the survey estimate. Fishing seasons generally ran from January through the spring (Table 2-5). The harvest primarily came from the Eastside Section during the most recent fisheries. (Table 2-6).

Stock Status

ADF&G have continued to conduct trawl surveys in the Gulf of Alaska to assess both king and Tanner crab populations. Legal crab populations are low or depressed in most areas, and recruitment to legal size animals for the next two years is not expected to increase. The Department has observed and recorded conditions of female egg clutches since the existence of the survey with no abnormalities observed. Successful reproduction is further substantiated by the high incidence of one and two year old crab captured in the trawl survey. The Department suspects that fish predation on small crab and competition for food from groundfish may be a major factors limiting Tanner crab from recruitment to legal size.

The 1997 trawl survey completed 218 tows in the Northeast, Eastside, Southeast, Southwest, Westside and North Mainland Tanner crab sections. Tanner crab populations declined from the previous survey: 37.4 million crabs in 1996 to 20.6 million crabs in 1997. Natural mortality on the smaller size classes accounted for much of this decline while larger crab size classes declined only slightly. Of 16,910 male Tanner crab captured, 1,265 were legal-sized animals. This resulted in a population estimate of 959,000 legal crabs, down 3% from the 1996 estimate of 989,000. The highest densities of male crabs were found in Kodiak's inshore bays (Figure 2-3).

Threshold levels of crab abundance below which fisheries will not be conducted have not been established for Kodiak Tanner crab. However, the Department of Fish and Game is extremely concerned with the decline in legal size crabs. A commercial fishery was not allowed for the 1997/98 season. Complete information on trawl survey results are available in the ADF&G Regional Information Report series.

DUNGENESS CRAB

Historic Background

The first commercial Dungeness crab *Cancer magister* landings in the Kodiak District were in 1962 with a catch of 1.9 million pounds (Table 2-7). Favorable market conditions and previously unexploited stocks, resulted in an increase in the commercial harvest through the four year period from 1967 through 1970 with an average annual catch of 6.3 million

pounds. In 1969 the south end of Kodiak Island was closed from April 1 to June 15 due to the high incidence of female king crab in shallow water. During the early 1970s the fishery declined as lower stock levels and weaker market conditions reduced production. In 1977 the season dates were changed from year around to May 1 through January 1 for the northern portion of the island and June 15 through January 1 for the southern portion (Figure 2-4). During the closure period, crab pots must be removed from the water in an effort to reduce the amount of "derelict" gear. Declines in other fisheries and favorable market conditions during the late 1970s encouraged Dungeness fishing.

The 1981/82 harvest of 5.6 million pounds was the largest harvest for the Kodiak area since 1970. Increased effort resulted in the removal of the major portion of postrecruit animals from the stock. As a result production declined to less than 1 million pounds in 1986. In 1987, Dungeness stocks experienced a modest increase in recruitment. The catch rose even though fewer vessels participated. Production again peaked in 1989 with a large portion of the catch composed of animals newly recruited to the fishery. The average catch per pot in 1989 was the highest since 1981. Production after 1990 declined to the point where 1995 was the smallest harvest since 1977. Effort also declined with 1995 having the fewest number of vessels participating since 1980.

Another factor affecting the Dungeness fishery was been the discovery in 1992 of the paralytic shellfish poisoning (PSP) toxin in the viscera of the crab. The Alaska Department of Environmental Conservation (DEC) restricted the sale of live or whole cooked crabs which resulted in the loss of a valuable market and a drop in exvessel price of Dungeness crab. Sampling in subsequent years revealed the continued presence of the toxin.

1997 Fishery

The regulatory opening of the commercial Dungeness crab fishing season was May 1 for the north end of the district and June 15 for the south end. Both areas remained open until January 1, 1997. A total of 21 vessels made landings harvesting 529,601 pounds of Dungeness crab. Participating boats ranged in size from 30 feet to over 90 feet in length (Table 2-8).

This was the lowest harvest since 1977, despite the fact the exvessel price to fishermen was an average of \$2.05, the highest price on record. The catch was worth over \$1 million to the fleet.

The Southeast Section continued to be the largest producer of the harvest (42%) with the 1997 catch at 0.2 million pounds (Table 2-9), although this was only roughly half the harvest in that section in 1996. The most productive months for the Kodiak Dungeness fishery were July and August with 62% of the harvest (Table 2-10).

The 1996 season was marked by the continued presence of the toxin causing PSP in the viscera of Dungeness crab. Whole-cook markets were restricted and consumers were warned of the danger of eating crab "butter". The Department of Environmental

Conservation continued to use the action levels established in 1993 to regulate Dungeness crab processing in Alaska. When levels of PSP were found to be greater than 70 micrograms per 100 grams, restrictions against whole cooked crabs and live sales were enacted. Most areas around Kodiak were restricted for the entire 1997 season except for the North and South Mainland Sections where PSP levels were found to be lower than 70 micrograms per 100 grams. Some live sales from crabs caught in these areas did occur.

Stock Status

No assessment of Kodiak Dungeness stocks is conducted independent of the commercial fishery. Animals newly recruited to the fishery at the minimum carapace width of 175mm continue to provide the bulk of the harvest. Crab sampled during the 1997 season were 68% recruits with a mean carapace width of 175 mm (Figure 2-5).

KING CRAB

Introduction

This report will address the commercial king crab fishery around Kodiak Island. The Kodiak Management Area has its northern boundary at the latitude of Cape Douglas and a western boundary at the longitude of Cape Kumlik. Although this discussion will focus on the development of the commercial fishery and regulatory process in the Kodiak Management Area, the management strategies for the Alaska Peninsula and other areas of the state were tailored after those developed for the Kodiak Area.

Historic Background

The Kodiak king crab fishery was pioneered by salmon fishermen. Beginning in 1936 small amounts of red king crab *Paralithodes camtschaticus* were landed, but catches were not officially recorded until 1950. This period in the history of the fishery was exploratory in nature. Fishermen were locating crab, determining abundance and testing gear types. Once the resource was determined abundant enough to support fishermen, markets had to be developed to sell the product.

During the exploratory period, the Bureau of Commercial Fisheries (now National Marine Fisheries Service) was the management agency. Regulations in effect during this period provided for retaining only males with a minimum carapace width (cw) of 5½ inches. In 1949 the size limit was increased to 6½ inches cw.

King crab landings totaled 60,000 pounds in 1950 and the fishery was on its way to becoming a major force in the economy of the Alaska fishermen. From 1950 to 1959 the catch increased from 60,000 to 21 million pounds. During this period, a pot limit of 15 pots

was established for Cook Inlet and area registrations were instituted. Also in 1959 pots and ring nets were classified as the only legal gear and a pot limit of 30 pots per vessel was established for Kodiak. As Alaska gained statehood, management authority was transferred to the Alaska Department of Fish and Game.

In 1960 the king crab season was opened year around. Eight processors bought 21 million pounds of king crab at 8 cents per pound from 143 vessels (Table 2-11). The months of January and February accounted for approximately 50 percent of the harvest. In 1961 the Department recommended that more research was needed to determine the stock structure, breeding habits, age, and size of maturity before effective conservation regulations could be instituted. In 1963 the size limit was increased to 7 inches based on Kodiak area growth rate studies and to allow male king crab to breed at least one year before being available to the fishery. During the early 60s, the fishery continued to grow until 1964 when the Good Friday earthquake slowed production. Even with the earthquake, the 1964 harvest equaled the 37 million pound harvest of 1963. In 1965 the 30 pot limit was no longer in the regulations. A newshell crab closure went into effect from May 1 to June 30 (Table 2-12). There were 19 shellfish processors in Kodiak paying 10 cents per pound. The Department had completed king crab tagging studies and had defined four major separate stocks of crab. Also in 1965, the staff report to the Fish and Game Board stated that the stocks could not continue to support the large harvests that were occurring. The staff recommended the implementation of a quota system to curtail the harvest; however, no guidance was provided by the staff and no action was taken by the Board.

The development period which began in 1950 peaked in 1966, when 177 vessels delivered 90 million pounds to 32 processors in a ten-month fishing season. Catches in January and February accounted for 40% of the harvest. From 1965 to 1966, vessel effort and average vessel length increased along with a 37% increase in processors. All these factors combined to produce the peak harvest. In 1966 the Department issued the first emergency order to protect newshell and breeding crab and added its first shellfish management position. After examining 12,000 female king crabs, of which only three to five percent were barren, the Department stated that Kodiak king crab stocks were biologically sound. It appeared that a sufficient number of males were present to mate most of the females.

From 1967 to 1970 the king crab fishery expanded to offshore areas in an attempt to maintain the catch levels of previous years. In 1967 the Department started a test fishing program to locate concentrations of prerecruit crab and to estimate future production. The first catch projections predicted a continuing decline in future catches. The 1967/1968 season catch dropped to 43 million pounds, 30 million pounds less than the prior year. Also in 1968, females examined from eight different areas showed that 16% were not carrying eggs.

During the 1968/1969 season the catch dropped to 18 million pounds, and the fishery was closed by emergency order on February 28. The Department determined that in areas with an intensive commercial harvest, there was a higher incidence of barren females. In some areas 25% of the females were barren, with a higher proportion of large females barren than small females. The fishery was still dependent on a weak recruit class.

In July 1970, the Alaska Board of Fish and Game instituted a pot limit of 60 pots per vessel and established a catch quota system. The Department was directed to institute surveys for abundance estimates. The goals of the policy were twofold:

- 1 To develop and establish a stable fishery, with the objective of eliminating fluctuating harvests characteristic of the fishery.
2. To develop and maintain a broad base of various age classes in order to insure breeding success.

ADF&G was directed to present abundance estimates to the Board, which in turn set the quotas. Quotas were not to be increased unless the Board was notified two weeks in advance. The quotas set by the Board were intended not only to arrest the decline of the king crab fishery but also to return a degree of economic stability and cost effectiveness. Sometimes these quotas resulted in lowering fishing mortalities by 20 to 30 percent. Large numbers of harvestable crabs carried over to the following years. This stock-pile effect caused extremely short, fast-paced seasons. Many areas that had been fished later in the year were left unharvested. In 1971 the Board increased the pot limit to 75 pots per vessel. By 1972 the decline had been reversed and harvests started increasing. The 1973 fishery lasted 10 days under a fixed quota system and the Southern District was reopened for an additional eight day fishery.

In 1974 the Board adopted an 8 inch minimum size limit for a second season, as proposed by the Kodiak Advisory Committee. The purpose of the 8 inch season was to provide a harvest opportunity later in the season for areas that had produced larger crab but had not been fished in recent years. Also, harvests during the 7 inch season were composed of a larger percentage of postrecruit crab because of the restrictive quotas. It was believed that many of the crab that were not caught during the 7 inch season would be lost through natural mortality. Since it was indicated that an increase in harvest could be made, the Board took a cautious approach and decided to increase exploitation on the older postrecruit crab. The Board also adopted a flexible system of harvest guidelines rather than fixed quotas. The Board directed the Department to continue to manage the fishery using a multi-age-class management strategy based on analysis of crab stocks.

The harvest guideline system provided a more liberal approach to the harvest strategy. During the 1975/76 fishery the Department tried to maximize the harvest within each district by dividing districts into schools and closing each school when a 33% fishing mortality was reached (based on in-season tag recoveries).

In 1976 the Board adopted a fixed opening date of December 1 for the 8 inch season. The December 1 opening date provided an opportunity for all size vessels to participate in the second season. The additional season allowed a second opportunity to fish, provided an extra stimulus to the local economy, and became an important economic opportunity for a large portion of the fleet.

In 1978 the Board lowered the minimum size limit of the second season from 8 inches to 7½ inches. The Department proposed the change because of the large amount of postrecruit crab available between 7½ and 8 inches that year. The 1978/79 second season recorded a harvest of 1.7 million pounds; similar to the 1.8 million pounds landed in previous years. The lowered size limit increased recruit harvest during the second season from less than one percent under an 8 inch size limit to 15 percent the first year it was in effect. In 1979 the BOF increased the pot limit to 100 pots per vessel. The Board adopted a management plan for Kodiak in 1981. The plan's direction was threefold:

1. individual stocks of crabs are to be managed as a single unit, and small closures that leave a portion of a stock open should be avoided;
2. utilization of stocks should be based on overall stock size while considering recruit and postrecruit population levels;
3. a second season for 7½-inch crab will be provided for with an opening between November 15 and December 15.

Also in 1981 the Board increased the pot limit to 150 pots per vessel. The 1981/82 season harvest was the highest of the previous 14 years at 24.2 million pounds. The 1982/83 season harvest declined to 8.7 million pounds, the lowest in 24 years. However, the value of the fishery was the second highest, worth \$32.7 million. The effort level for this fishery is also the highest on record with 309 vessels participating.

In 1983 the traditional red king crab fishery was not opened by the Department of Fish and Game due to poor stock condition. This was a result of poor recruitment to legal-sized animals for the previous two years combined with continued low recruitment forecast for the next three years. The population of adult male crab was the lowest recorded in 13 years of annual population assessments. The department established threshold levels of legal males needed prior to considering any further fishery. The threshold of 10.3 million pounds of legal crabs was nearly twofold the 5.5 million pound estimate of the 1983 survey. Additionally in 1983 the Alaska Board of Fisheries lowered the pot limit to 100 pots per vessel.

In 1984 and 1985 the estimate of legal males on the pot survey remained below the 10.3 million pound threshold level established for Kodiak Island. However, in 1985 the estimate of legal males in the Southwest District was 4.9 million pounds. This was above the threshold value of 3.4 million pounds of legal crab established for the district. The department proposed a 450,000 harvest and presented this proposal to the Kodiak Advisory Committee (KAC). After review of both department and industry views, the KAC voted unanimously to oppose a fishery in the Southwest District. Their concerns were that a small area open with a large effort level would be destructive to the reproductive potential of the stock. The Commissioner of Fish and Game acknowledged the KAC concerns, and the Kodiak king crab fishery was closed during 1985.

In 1986 the fishery again remained closed as the estimate of legal males was below threshold values. The department revised the management plan from a threshold of legal males needed for a fishery to a number of fertilized females needed to maintain maximum

reproductive potential of the stocks when populations are depressed. This threshold value for the Kodiak Management Area is 5.1 million fertilized female red king crab.

In 1987 a trawl survey was conducted throughout the management area for the first time to assess both red king and Tanner crab stocks. Previous ADF&G trawl surveys had been limited to Tanner crab assessment in the Shelikof and portions of the Northeast and Eastside Sections of Kodiak Island. Offshore areas of Chignik and Pavlof Bay in the South Peninsula had also been surveyed. This trawl survey estimated a population of 310,000 adult female red king crab around Kodiak of which 47% were not carrying egg clutches. Additionally the estimate of legal males was 177,000 crabs, the lowest estimate in the history of the survey. The 1987 survey results indicated a continuation of the decline in red king crab abundance that had been noted the past five years and the commercial fishery again remained closed.

From 1988 to 1996, the department conducted trawl surveys to assess king and Tanner crab populations with the study areas expanded to encompass the Alaska Peninsula and Western Aleutian Management Areas. Population estimates were derived for the main commercial fishing districts by sex and size categories. The Kodiak Management Area continued to remain closed because the abundance estimates of females were well below threshold levels. Complete information on the Westward Region trawl survey catches can be obtained from the Department in a series of Regional Information Reports.

The pot limit for commercial king crab fishing in the Kodiak area was reduced in 1993. A sliding scale of 25-75 pots per vessel was selected based on the projected harvest guideline. Although a fishery had not occurred in the prior 10 years, this public proposal was aimed at reducing effort when the fishery did reopen.

Stock Status

The Kodiak red king crab population remains at historically low levels, and fishing seasons for this species have remained closed since 1983. During the 1997 Kodiak trawl survey the Department completed 218 hauls in known crab habitat. The red king crab population was estimated to be 183,000 animals, of which only 24,000 were legal-sized animals. The mature red king crab female population was estimated to be 71,000 animals. Eighty-eight percent of the mature female crab sampled had an estimated ovigerity of 80% or greater. While the 1997 survey showed an increase in most size categories, (overall numbers doubled from 94,000 to 183,000) nearshore habitat was not well sampled due to survey design and conflicts with commercial Dungeness crab pots so population estimates should be viewed cautiously, especially in regard to smaller animals.

Brown king crab, Lithodes aquespina

Interest in harvesting brown king crab grew with the collapse of the red king crab stocks. Although brown kings were occasionally landed with red king crab in prior years, the first recorded landings occurred in 1983. In that year, 12 vessels explored around the island finding limited resources. The catch totaled 111,398 pounds from 36 landings (Table 2-13). The largest harvest from this fishery was 146,478 pounds taken in 1986. The minimum size for brown king crab in Kodiak was reduced by the Alaska Board of Fisheries from 7 inch carapace width to 6 1/2 inches in 1985.

Since 1988, only 1 or 2 boats participated in this fishery, resulting in confidential catch information, or there has been no activity at all. No harvest occurred in 1997.

SHRIMP

Trawl Fishery Historic Background

The Westward Region shrimp fishery began with a harvest of 31,886 pounds in 1958. The fishery grew rapidly to an annual catch of 10 to 12 million pounds in the early 1960s. The fishery slowed when shore plants and the fishing fleet were badly damaged by the 1964 earthquake and tidal wave, but then grew rapidly to a peak Kodiak District harvest of 82.2 million pounds in 1971 (Table 2-14). As Kodiak shrimp catches declined in the 1970s, much of the vessel effort shifted into the Chignik and South Peninsula Districts (Figure 2-6). The Westward Region harvest peaked in 1976 at 120 million pounds. The northern pink shrimp, *Pandalus borealis*, has predominated the harvest contributing over 95% by weight. Other species landed included sidestripe, coonstripe, spot and humpy shrimps. Stock abundance and fisheries declined sharply thereafter.

No regulatory measures were promulgated in the Kodiak shrimp fishery until 1970 when an egg hatch closure was enacted during March and April for some bays and nearshore areas. In 1971 a quarterly quota system was adopted to provide harvest throughout the year while not allowing unrestricted harvest. In the late 1970s, the quarterly quota system was reduced to a single opening for certain areas and staggered opening dates for many of the fishing sections, while others retained two fishing periods in fall and winter. Most of the adjustments to season dates was due to industry's desire to spread harvest out over a longer time period while trying to prevent conflicts with vessels and processing in other fisheries. Also, during the late 1970s, stocks in some areas were not large enough to support fisheries, and these areas were opened and closed by emergency order.

The Department of Fish and Game conducted a voluntary logbook program beginning in 1967. This database, plus trawl surveys conducted by the department since the early 1970s, provided a means for establishing harvest levels. The system was flexible during its developing stage, but in 1981 the industry demanded this management scheme be defined. This led to the *Westward Region Shrimp Management Plan*, which was approved by the

Board of Fisheries in 1982. The objectives of this management plan were to maintain shrimp stocks at a level termed "representative biomass index" (RBI) determined by survey trawls, while allowing a fishery during rebuilding periods. A minimum level at which any harvest would occur was established and termed the "minimum acceptable biomass index" (MABI).

Concurrent with approval of the *Westward Region Shrimp Management Plan*, the BOF also enacted an additional management strategy as an "economic alternative" known as the *Mainland Shrimp Management Plan*. This alternative strategy allowed shrimp fishing in some bays on the Alaska Peninsula and around Afognak Island irregardless of survey results. In September of 1997, the BOF repealed the *Mainland Shrimp Management Plan* due to concerns about the lack of information needed for the sustainability of the fishery. This leaves only the General Section open from June 15 through February 28. No vessels registered to fish this section in 1997.

Stock Status

The department has continued to survey shrimp stocks from some key historic producing areas on a triennial basis. The most recent survey was in 1995 with another survey scheduled for fall of 1998. The 1997 survey caught shrimp over a widely scattered area but at low densities. The best sign was found in the deepest stations, generally over 90 fathoms where fish populations were lower than average. Modest increases were noted in the middle Marmot Bay area where the shrimp catch average 438 pounds per nautical mile, the highest level since surveys in the late 1970's. Survey estimates remained considerable below levels required to trigger a fishery opening in the surveyed bays (Table 2-15).

Pot Shrimp Fishery

Pot shrimping has never been a large fishery in Kodiak and is virtually nonexistent in the rest of the region. The largest harvest was less than 19,000 pounds of spot shrimp tails in 1983 (Table 2-16). Five vessels registered to pot shrimp in 1997, but only one landing was reported which remains confidential.

SEA CUCUMBER FISHERY

Sea cucumbers were not harvested commercially in the Westward Region until 1991. In 1991 and 1992 processors recruited divers to gather small numbers of *P. californicus* in the Kodiak and Chignik areas to test marketability. In spring 1993, several processors recruited divers to commercially pick sea cucumbers in the same areas. The fishery was allowed to develop under the terms of a permit authorized by 5 AAC 38.062. The Department specified dive gear as the only legal gear and required dive logs to be submitted with fish tickets. Each diver was required to have a CFEC permit card.

Harvests were monitored to determine abundance and distribution. As the harvest reached levels where the Department felt there was a potential for overfishing, the various fishing areas were closed. The 1993 harvest of 564,516 pounds was taken by 50 divers (Table 2-17).

The Department announced in February of 1994 several management measures intended to prevent the overharvest of the resource. A seasonal closure from May 1 through September 30 was established to protect the spawning aggregates of cucumbers. In addition, guideline harvest levels (GHLs) were established for the Kodiak and Chignik Districts. A total of 200,000 pounds was announced for Kodiak with the Chignik GHL set at 50,000 pounds. Management areas based on the Tanner crab fishing sections were utilized in Kodiak in an effort to spread the harvest around the island and prevent localized depletions (Figure 2-7). A GHL was set for each of the individual areas based on historic production and fisheries performance. Other Districts in the Westward Region would remain open without established guideline harvest levels. Registration permit provisions included a weekly fishing period of 5 days and daily dive logs submitted by the divers with their fish tickets.

Following the May 1 to September 30 closure, the Department reopened the Westward Region to sea cucumber fishing. Guideline harvests for the Kodiak and Chignik Districts totaled 225,000 pounds with 3 day weekly fishing periods. The shortened fishing periods were set to allow the Department a better opportunity to assess inseason fishery performance. During both the spring and fall seasons, GHL's were quickly reached in the Sections surrounding Kodiak Island, but the Mainland and Chignik Sections received little effort and remained open for the duration of the biological season.

The 1995/1996 sea cucumber fishing season opened on October 1, 1995. Evaluation of another year of fishery performance resulted in a decreased guideline harvest level. The GHL for the Kodiak and Chignik Districts totaled 160,000 pounds. Effort once again concentrated on the Eastside, Southeast, Southwest and Westside Sections of Kodiak. Those areas remained open for 4, 6, 9, and 10 days of fishing respectively. Once again, although outlying areas remained open to fish along the Alaska Peninsula, divers were reluctant to cross the Shelikof Strait in the face of stormy weather and the expectation of marginal returns. The 1996/1997 season followed a similar pattern although five fishing periods were allowed before the Northeast and Westside Sections closed.

1997/1998 Fishery

The season opened on October 1, 1997 with a GHL for the Kodiak and Chignik areas of 150,000 pounds. Management strategy was similar to previous years with a three day open period per week, and dive logs required with each fish ticket. During the first fishing period, October 1-3, 16 divers participated with nearly all of the effort concentrated in the Eastside Section. Fourteen divers in the Eastside Section harvested 39,762 pounds, close to the 40,000 pound GHL, so it was announced that this section would not reopen during the next fishing period (Table 2-18). The second fishing period,

October 8-10, 24 divers made landings with the effort concentrated in the Southeast and Southwest Sections. The Southeast harvest reached 19,000 pounds, nearly up to the GHL, and the Southwest harvest totaled nearly 25,000 pounds, well over its 20,000 pound GHL. It was announced that these two sections would not reopen. During the October 22-24 period, the Northeast Section closed with a harvest just over the 5,000 GHL and the following period the Westside Section closed with a harvest of 29,695, near the 30,000 GHL. Late October and early November saw harvests in the North Mainland Section and Chignik District totaling 13,644 pounds. No further harvest occurred before those areas closed by regulation on April 30, 1998.

Stock Status

No stock assessment is done on sea cucumbers in the Westward Region. Catch rates in the commercial fishery have remained nearly stable in recent years indicating a stable population but actual population levels, especially at depths below those available to the divers, are unknown.

SEA URCHINS

The green sea urchin *Strongylocentrotus droebachiensis* was not harvested commercially in the Westward Region until 1980 when a small amount was taken in the Kodiak area to test marketability. There was little further interest in sea urchins in Kodiak until 1985 when a small harvest occurred. In 1986 the harvest increased with more divers participating. Peak harvest occurred in 1988 at 190,500 pounds (Table 2-19). In recent years the Kodiak harvest has been in the 30-40 thousand pound range. There have been very limited green sea urchin harvests in the Dutch Harbor area during the years 1985, 1986, and 1996 but the poundage remains confidential. Green sea urchins are shipped live to Japan for processing.

Fishermen participate under the terms of a miscellaneous shellfish permit as authorized in 5 AAC 38.062. Currently the fishing period in the Westward Region is set at October 1 to January 31. While marketable roe may be available in February and later, the potential is high for increased sorting and handling mortality of unmarketable sea urchins. ADF&G in Dutch Harbor has issued special exploratory permits during the summer and early fall to check the quality of the roe but divers have found little marketable product during these periods.

Action by the BOF in March of 1997 authorized the use of 4 foot rakes for taking urchins, but the Board re-affirmed its opposition to the use of pots in the urchin fishery. It was felt that pot gear would result in unacceptable handling mortality of unmarketable sea urchins. Enforcement concerns had previously been raised for pot gear. The prime sea urchin season coincided with the historical Tanner crab fishery and it was feared that under the guise of sea urchin pot fishing, fishermen could prospect for Tanner crab. Size

limits for sea urchins are currently set by the market. Buyers will only purchase sea urchins 2 or 2 ¼ inches or greater in diameter.

1997/1998 Sea Urchin Fishery

Interest in harvesting sea urchins declined in 1997. Four divers participated but the harvest remains confidential because there were only two processors. As has been typical in recent years, although the sea urchin and sea cucumber seasons both open on October 1, interest in urchin harvesting occurs only after the Kodiak Island waters are closed to sea cucumber harvesting.

Stock Status

No assessment work is currently being done in the Westward Region. Fishery information indicates the resource biomass is not large when compared to other areas on the Pacific coast and when compared to a worldwide sea urchin harvest estimated at 100 million pounds. Although the Westward Region is a very small player in this fishery, in recent years Kodiak green sea urchins have had a reputation for high quality

OCTOPUS

The giant Pacific octopus *Octopus dofleini* exists throughout Alaskan waters and is quite abundant in the Kodiak District. Most recorded catches have been incidental to other commercial fishing activities such as crabbing and bottom fishing. The harvest increased through the years to a peak of over 19,000 pounds in 1980 (Table 2-20). Reduced catches after 1980 were the result of shortened Tanner crab seasons.

Interest in the fishery has been increasing due to the demand by longline fishermen for bait octopus. The octopus fishery experienced a dramatic increase in 1990. Caught incidentally in the rapidly expanding pot fishing for Pacific cod, the harvest increased to 103,627 pounds in 1993. The harvest during 1994 was reduced to 10,449 pounds primarily due to low market interest by processors. The harvest increased again in 1995 to 92,964 pounds landed as incidental catch to groundfish fisheries. The instigation of the state water Pacific cod fishery helped to expand the pot cod fishery as a portion of the cod quota was reallocated from trawls to pots. The 1997 octopus catch of 238,954 pounds was the highest on record. Pot gear bycatch contributed 94% of the harvest of octopus in 1997.

Stock Status

The Department currently has no population assessment of octopus and population status is unknown.

RAZOR CLAMS

Historic Background

Razor clams *Siliqua* sp. has been harvested in the Kodiak Management Area since the early 1920s. Though many Kodiak Island beaches were explored with some success, the principal commercial harvest occurred about 70 miles northwest of Kodiak in the Kukak Bay, Hallo Bay, Big River, and Swikshak Beach regions of the Alaska Peninsula. Digging continued on a somewhat regular basis until the early 1960s when a combination of increasing federal and state clam processing regulations, combined with poor market conditions, and the 1964 earthquake precipitated a decline in harvests. Commercial harvesting of clams for human consumption has never become re-established and the fishery has been strictly hand digging for use as bait in the Dungeness crab fishery. The certification program conducted by the Alaska Department of Environmental Conservation ended in July 1980. Currently, there are no clam beaches in the Kodiak Area certified as safe for human consumption.

Many of the principal harvest areas along the Alaska Peninsula are adjacent to the Katmai National Monument which includes all the land above mean high water from Cape Douglas to Cape Kubugakli. Commercial activity within the monument is restricted by the current policy of the U.S. Park Service which dictates a ban on camping in the monument in support of a business enterprise.

In 1986 the Alaska Board of Fisheries adopted a regulation prohibiting hydraulic mechanical dredges from harvesting clams in the Kodiak Area east of Kilokak Rocks.

Stock Status

The potential for a razor clam harvest in the Kodiak Management Area has been established by historic catch records and studies conducted by the Department. These studies, however, were conducted in the mid 70s and are of little benefit in judging stock status at this time due to environmental changes that have occurred. There were no landings of clams from the Kodiak Area during 1997 (Table 2-21).

Table 2-1. Landings and values of fisheries to the port of Kodiak, 1997.

Species	Pounds ^a	Exvessel Value (Dollars)
Bering Sea Crab ^b	509,389	1,781,948
Dungeness	650,284	1,316,106
Scallops	398,152	2,600,000
Sea Cucumbers	130,915	151,861
Miscellaneous ^c	18,641	19,691
Octopus ^d	218,327	124,614
Halibut	11,039,896	20,975,802
Pacific Cod	73,139,944	15,546,138
Sablefish ^e	3,887,386	8,014,256
Pollock	83,331,663	8,139,083
Flatfish ^f	16,636,317	2,947,214
Flathead Sole	2,519,706	352,591
Pacific Ocean Perch	4,833,278	242,446
Rockfish ^g	2,997,638	390,720
Rex Sole	666,202	153,253
Black Rockfish	174,389	59,114
Salmon ^h	57,828,811	18,798,037
Herring ^h	7,982,000	1,273,000
TOTAL	266,962,938	82,885,874

^a Represents pounds of product landed at the Port of Kodiak including harvest outside the Kodiak Management Area.

^b Includes *C. bairdi*, *C. opilio*, *C. tanneri* and king crab.

^c Includes sea urchins and shrimp.

^d Includes directed harvest in the shellfish fishery and groundfish bycatch.

^e Includes IFQ and non-IFQ harvest.

^f Includes the following species: rock sole, dover sole, butter sole, yellowfin sole, starry flounder, Alaska plaice and Greenland turbot.

^g Includes the following rockfish species: northern, thornyhead, yelloweye, rougheyeye, shortraker and dusky.

^h Represents pounds of product harvested in the Kodiak Management Area.

Table 2-2. Shellfish emergency orders issued for the Kodiak Management Area, 1997.

Emergency Order	Effective Date	Explanation
<u>Tanner Crab</u>		
4-S-01-97	January 1, 1997	Closed the Kodiak, Chignik, South Peninsula, and Eastern Aleutian Districts to Tanner crab fishing.
<u>Weathervane Scallop</u>		
4-S-03-97	July 1, 1997	Delayed Kodiak, Alaska Peninsula, Bristol Bay-Bering Sea, Dutch Harbor and Adak to Weathervane scallop fishing.
4-S-04-97	August 10, 1997	Closed Shelikof District of the Kodiak Area to Weathervane scallop fishing.
4-S-05-97	August 11, 1997	Closed Bering Sea to scallop fishing.
4-S-06-97	August 25, 1997	Closed Dutch Harbor area to Weathervane scallop fishing.
<u>Sea Cucumber</u>		
4-S-09-97	October 7, 1997	Closed Eastside section and the Southeast section of Kodiak Island to sea cucumber fishing.
4-S-10-97	October 14, 1997	Closed the sea cucumber fishery in the Southwest section of Kodiak Island.
4-S-11-97	October 21, 1997	Closed the Northeast section of Kodiak Island to sea cucumber dive fishery.
4-S-12-97	October 28, 1997	Closed the Westside section of Kodiak Island to sea cucumber fishing.

Table 2-3. Vessel and gear effort, by fishery and registration year, for the Kodiak Management Area, 1990/91-1997.

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
<i>Tanner Crab</i>							
Average pots per vessel	70	69	69	68	Closed	Closed	Closed
Total vessels	137	143	140	129	--	--	--
Total pots registered	9,560	9,883	9,660	8,770	--	--	--
	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>
<i>Dungeness Crab</i>							
Average pots per vessel	449	439	513	549	461	495	686
Total vessels	62	46	42	31	24	21	21
Total pots registered	27,825	20,228	21,533	17,007	11,065	10,400	14,410

Table 2-4. Commercial catch and effort for the Tanner crab *Chionoecetes bairdi*, Kodiak Management District, 1967-1997^a.

Year	Vessels	Landings	Number of crabs	Number of lbs.	Pots Lifted	CPUE	Avg Wt.	Price Per lb.
1967	-	83	-	110,961	-	-	-	\$0.07
1968	-	817	-	2,560,687	-	-	-	0.1
1969	85	955	-	6,827,312	72,748	43	-	0.11
1969/70	67	833	3,237,244	8,416,782	78,266	42	2.6	0.11
1970/71	82	453	2,686,067	6,744,163	60,967	44	2.5	0.11
1971/72	46	505	3,878,618	9,475,902	65,907	59	2.4	0.13
1972/73	105	1,466	13,609,688	30,699,777	188,158	67	2.3	0.17
1973/74	123	1,741	11,857,573	29,820,899	217,523	59	2.5	0.2
1974/75	74	471	5,459,940	13,649,966	73,826	83	2.5	0.17
1975/76	104	1,168	10,748,958	27,336,909	199,304	64	2.5	0.2
1976/77	102	998	7,830,727	20,720,079	164,213	48	2.6	0.33
1977/78	148	1,483	12,401,243	33,281,472	251,621	49	2.6	0.43
1978/79	218	1,225	10,702,829	29,173,807	275,455	38	2.7	0.55
1979/80	211	1,385	6,813,128	18,623,875	282,946	24	2.7	0.55
1980/81	188	771	4,398,631	11,748,629	174,351	25	2.7	0.65
1981/82	221	950	5,413,467	13,756,159	230,403	24	2.5	1.65
1982/83	348	1,439	7,744,812	18,927,061	377,562	21	2.4	1.25
1983/84	303	1,229	5,891,968	14,478,066	303,764	10	2.5	1.2
1984/85	214	710	4,567,037	12,024,553	176,830	26	2.6	1.5
1985/86	233	601	3,457,930	8,996,151	160,808	21	2.6	1.9
1986/87	189	503	1,830,365	4,833,473	110,963	16	2.6	2.62
1987/88	176	557	1,614,874	3,888,906	101,488	16	2.4	2.4
1988/89	171	567	2,106,320	5,208,999	86,556	24	2.5	3.05
1989/90	233	548	1,435,477	3,456,314	97,333	15	2.4	2.4
1990/91	137	448	764,107	1,917,713	54,110	14	2.5	1.59
1991/92	143	434	982,391	2,400,213	47,384	20	2.4	2.22
1992/93	140	353	518,982	1,318,446	43,528	12	2.5	2.1
1993/94	129	378	510,681	1,252,342	41,527	12	2.5	2.25
1994/95				NO FISHERY				
1995/96				NO FISHERY				
1996/97				NO FISHERY				
TOTAL	-	-	130,463,057	341,469,616	3,937,541	-	-	-
AVERAGE	162	827	5,218,522	12,195,343	140,626	31	2.6	-

^aData Source: Alaska Department of Fish and Game annual Board of Fish and Game Reports and annual Kodiak Area Management Reports.

Table 2-5. History of Kodiak District Tanner crab opening and closing dates, 1977-1997.

Year	Opened	Closed
1977	1-Jan	30-Apr
1978	1-Jan	15-May
1979	5-Jan	15-May
1980	5-Jan	15-May
1981	22-Jan	15-May
1982	10-Feb	13-Apr
1983	10-Feb	14-Mar
1984	10-Feb	1-Apr
1985	15-Jan	18-Feb
1986	15-Jan	15-May
1987	15-Jan	28-Feb
1988	15-Jan	10-Mar
1989	15-Jan	31-Mar
1990	15-Jan	21-Feb
1991	15-Jan	31-Mar
1992	15-Jan	30-Jan
1993	15-Jan	8-Feb
1994	15-Jan	2-Feb
1995	NO FISHERY	
1996	NO FISHERY	
1997	NO FISHERY	

Table 2-6. Tanner crab *Chionoecetes bairdi* catch in pounds by fishing section for the Kodiak Management District, 1991/92-1996/97.

Section	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
Northeast	381,512	264,913	238,076	Closed	Closed	Closed
Eastside	2,018,701	728,191	395,062	Closed	Closed	Closed
Southeast	Closed	Closed	Closed	Closed	Closed	Closed
Southwest	Closed	325,342	279,077	Closed	Closed	Closed
Semidi Islands	Closed	Closed	Closed	Closed	Closed	Closed
North Mainland ^a	Closed	Closed	340,127	Closed	Closed	Closed
South Mainland	Closed	Closed	0	Closed	Closed	Closed
Westside	Closed	Closed	Closed	Closed	Closed	Closed
Total	2,400,213	1,318,446	1,252,342	-0-	-0-	-0-

^aNorth Mainland catch includes South Mainland and Semidi Island to protect vessel confidentiality.

Table 2-7. Dungeness crab commercial catch and effort by fishing year for the Kodiak Management District, 1962-1997.

Year	Landings	Vessels	Number of Crab	Number of Pounds	Pots Lifted	Average Lbs Per Landing	CPUE	Average Price/Pound	Exvessel Value
1962 ^a	149	-	-	1,904,567	-	12,782	-	\$0.09	171,000
1963	354	-	-	2,487,512	-	7,026	-	0.09	224,000
1964	395	29	-	4,254,565	-	10,537	-	0.09	375,000
1965	351	25	-	3,311,571	-	9,434	-	0.12	397,000
1966	144	12	-	1,416,174	-	7,976	-	0.13	149,000
1967	439	18	-	6,663,668	-	15,179	-	0.13	866,000
1968	536	43	-	6,829,061	-	12,741	-	0.14	956,000
1969	455	29	-	5,834,628	190,967	12,823	12	0.16	934,000
1970	318	33	-	5,741,438	249,800	18,005	9	0.14	804,000
1971	173	24	515,653	1,445,864	90,913	8,358	6	0.18	260,000
1972	316	34	766,960	2,059,536	140,921	6,517	6	0.40	824,000
1973	487	42	879,484	2,000,526	251,467	4,108	3	0.50	1,000,000
1974	172	23	337,839	750,057	104,062	4,361	3	0.47	353,000
1975	154	15	307,272	639,813	76,411	4,154	4	0.61	390,000
1976	6	4	38,072	87,110	4,410	14,518	9	0.15	13,000
1977 ^b					Confidential				
1978	173	20	618,357	1,362,306	93,633	7,875	6	0.75	1,022,000
1979	237	28	595,850	1,311,275	137,951	5,543	4	0.75	943,000
1980	197	21	968,829	2,011,736	107,261	10,212	9	0.45	905,000
1981/82 ^c	466	50	2,614,545	5,566,463	295,138	11,945	9	0.70	3,897,000
1982/83 ^d	991	111	2,004,075	4,546,311	481,542	4,588	4	0.75	3,410,000
1983/84	1,079	103	2,044,505	4,752,148	503,464	4,408	4	1.05	4,989,000
1984/85 ^e	1,163	106	2,393,974	5,303,052	627,441	4,564	4	1.45	7,689,000
1985 ^a	1,243	125	1,791,446	4,160,435	599,291	3,347	3	1.20	4,992,522
1986	577	81	439,738	967,423	199,881	1,667	2	1.15	1,112,500

-Continued-

Table 2-7. (Page 2 of 2)

Year	Landings	Vessels	Number of Crab	Number of Pounds	Pots Lifted	Average Lbs Per Landing	CPUE	Average Price/Pound	Exvessel Value
1987	379	45	747,117	1,450,983	150,067	3,828	5	1.26	1,828,000
1988	363	50	1,064,387	2,125,114	203,217	5,854	5	1.06	2,253,000
1989	359	47	1,428,973	3,077,937	185,242	8,574	8	1.10	3,385,730
1990	519	62	1,294,241	2,937,306	296,168	5,660	5	1.54	4,435,000
1991	732	62	695,470	1,414,499	279,872	1,932	1	1.37	1,938,000
1992	501	46	805,215	1,656,793	218,602	3,306	3	0.86	1,425,000
1993	263	42	647,736	1,369,889	180,534	5,209	5	0.92	1,260,000
1994	162	31	426,848	948,461	151,888	5,855	5	1.20	1,138,000
1995	106	24	257,677	527,434	107,506	4,976	4	1.72	907,000
1996	113	21	334,237	668,772	88,682	4,223	4	1.01	675,460
1997	123	21	257,692	529,601	95,067	4,296	3	2.05	1,085,682

^aSeason open year round 1962 - 1976

^bOpen May 1 through December 31, 1977 - 1980

^cOpen February 27, 1981 through February 1, 1982

^dOpen May 1, 1982 through February 1, 1983

^eOpen May 1, 1985 through December 31, 1985

Table 2-8. Keel length frequencies of Kodiak District shellfish vessels that made landings during the 1997 Dungeness crab fishing season.

Vessel Keel Length (feet)	Vessel Keel Length (feet)
<20-29	1
30-39	4
40-49	8
50-59	5
60-69	1
70-79	1
80-89	1
90->150	0
VESSELS:	21

Table 2-9. Dungeness crab commercial harvest (in pounds) by fishing section, Kodiak Management District, 1989-1997.

Section	1989	1990	1991	1992	1993	1994	1995	1996	1997
Northeast	113,211	65,703	266,187	201,984	34,080	7,725	4,222	6,865	2,523
Eastside	193,200	170,081	141,053	270,370	115,421	75,740	101,333	132,617	97,221
Southeast	2,323,771	2,479,534	805,459	859,492	776,258	637,338	331,609	422,682	343,310
Southwest	165,401	101,376	50,183	89,342	95,128	34,038	52,804	62,938	52,035
N Mainland	^b	18,723	36,831	36,202	68,325	19,987	^b	22,028	26,087
S Mainland	0	0	^b	0	^a	^d	0	0	3702
Westside	282,354 ^c	101,889	114,786	199,403	280,677	173,633	37,466 ^c	21,592	4,723
Total	3,077,937	2,937,306	1,414,499	1,656,793	1,369,889	948,461	527,434	668,722	529,601

^aNorth Mainland and South Mainland catches combined to protect vessel confidentiality.

^bConfidential.

^cNorth Mainland and Westside Section catches combined to protect vessel confidentiality.

^dSouthwest and South Mainland catches combined to protect vessel confidentiality.

Table 2-10. Dungeness crab commercial catch by statistical area and month from the Kodiak District, 1997.

Stat Area	Number Vessels	Number Landings	Pounds Harvested	Average Weight	CPUE	May	June	July	August	September	October	November	December
525701	6	31	67,895	2.1	3	1,060	7,944	31,909	16,596	10,386	0	0	0
525703	6	20	24,454	2.0	1	837	1,905	11,301	5,211	4,110	904	186	0
525733	4	7	1,721	2.1	1	0	0	924	543	0	0	254	0
535703	3	23	19,379	2.0	2	2,157	4,831	3,118	1,367	6,229	1,677	0	0
535705	5	24	24,068	2.1	1	951	10,202	9,812	1,541	471	904	187	0
535706	3	10	3,295	2.0	1	237	0	707	808	555	904	0	84
545601	7	42	244,320	2.1	0	0	22,508	129,539	29,449	47,586	15,238	0	0
545632	5	22	49,953	2.0	4	0	4,967	14,772	8,482	18,920	2,058	754	0
545633	3	14	46,985	2.0	4	0	8,363	8,113	25,939	4,570	0	0	0
545802	4	14	13,960	2.0	6	0	792	1,911	7,542	2,065	1,650	0	0
other ^a	9	56	33,571	2.1	1	1,507	1,694	9,704	10,435	4,804	5,240	187	0
TOTAL	21	123	529,601	2.1	3	6,749	63,206	221,810	107,913	99,696	28,575	1,568	84

^aInformation from statistical areas with less than three vessels has been combined to protect confidentiality.

Table 2-11. Historic commercial red king crab catch and effort for the Kodiak Registration Area "K", 1960/61-1996/97.

Fishing Year ^a	Vessels	Landings	Number of Crab	Number of Pounds	Pots Lifted	Average		
						CPUE	Weight Per Crab	Price Per Pound
1960/61	143	na ^b	2,116,375	21,064,871	na	na	na	\$0.085
1961/62	148	na	3,181,554	28,962,900	na	na	na	0.95
1962/63	195	na	4,146,143	37,626,703	na	na	na	0.10
1963/64	181	na	4,158,988	37,716,223	na	na	na	0.10
1964/65	189	na	4,923,309	41,596,518	95,951	51	na	0.10
1965/66	175	na	11,061,709	94,431,026	173,083	64	na	0.128
1966/67 ^c	213	na	8,476,299	73,817,779	223,174	38	na	0.11
1967/68	227	3,847	5,147,321	43,448,492	207,392	25	na	0.26
1968/69	178	1,839	2,348,950	18,211,485	119,146	20	na	0.26
1969/70 ^d	136	978	1,606,181	12,200,571	96,841	17	na	0.28
1970/71	100	830	1,561,318	11,719,970	119,192	13	na	0.30
1971/72	89	507	1,539,157	10,884,152	66,166	23	na	0.39
1972/73	88	683	2,029,670	15,479,916	70,806	29	na	0.55
1973/74	129	837	1,847,679	14,397,287	77,826	24	na	0.45
1974/75	158	1,195	2,910,201	23,582,720	110,297	26	na	0.45
1975/76	169	1,569	2,976,909	24,061,651	113,795	26	8.1	0.66
1976/77	195	1,165	2,177,956	17,966,846	130,777	17	8.2	1.37
1977/78	179	1,186	1,590,477	13,503,666	145,867	11	8.5	1.34 ⁱ
1978/79	194	1,077	1,464,021	12,021,850	177,261	8	8.2	1.60
1979/80	247	1,346	1,979,394	14,608,900	207,991	9	7.3	0.95
1980/81	164	1,175	2,787,199	20,448,654	201,531	14	7.3	1.05
1981/82	246	2,214	3,035,674	24,237,601	388,751	8	8	2.00
1982/83	309	1,373	1,011,109	8,729,761	283,795	4	8.6	3.75
1983/84				NO FISHERY				
1984/85				NO FISHERY				
1985/86				NO FISHERY				
1986/87				NO FISHERY				
1987/88				NO FISHERY				
1988/89				NO FISHERY				
1989/90				NO FISHERY				

Continued

Table 2-11. (Page 2 of 2)

Fishing Year ^a	Vessels	Landings	Number of Crab	Number of Pounds	Pots Lifted	Average	
						CPUE	Weight Per Crab Price Per Pound
1990/91				NO FISHERY			
1991/92				NO FISHERY			
1992/93				NO FISHERY			
1993/94				NO FISHERY			
1994/95				NO FISHERY			
1995/96				NO FISHERY			
1996/97				NO FISHERY			
AVERAGE ^e	174	1,359	2,963,898	24,834,120	143,813	21	

^aFishing year defined as May 1 - April 30.

^bNot available.

^cJuly 1 - April 30 season established.

^dAugust 15 - January 15 season established.

^eAverage includes only years with open fishing season.

Table 2-12. Kodiak red king crab harvest composition and seasons, 1960-1996/97.

Season	Open	Closed	Catch Million Pounds	Percent Recruits ^a	Percent Post-Recruits	Size Limit
1960/61	1-Jul	30-Jun	18.9	8	92	6.5
1961/62	1-Jul	30-Jun	29	36	64	6.5
1962/63	1-Jul	30-Jun	37.6	26	74	6.5
1963/64	1-Jul	30-Jun	35	33	67	7"
1964/65	1-Jul	30-Jun	41.6	48	52	7"
1965/66	1-Jul	30-Apr	94.4	35	65	7"
1966/67	1-Jul	30-Apr	73.8	28	72	7"
1967/68	1-Jul	30-Apr	43.4	27	73	7"
1968/69	15-Jun	31-Mar	18.2	61	39	7"
1969/70	15-Aug	15-Jan	12.2	59	41	7"
1970/71	15-Aug	15-Jan	11.7	38	62	7"
1971/72	15-Aug	29-Oct	10.9	75	25	7"
1972/73	15-Aug	13-Oct	15.5	47	53	7"
1973/74	15-Aug	25-Oct	14.4	49	51	7"
1974/75	15-Aug	21-Sep	20.9	52	48	7"
	15-Oct	15-Jan	2.2	3	97	8"
1975/76	15-Aug	20-Oct	21.6	48	52	7"
	20-Oct	1-Dec	2.5	3	97	8" ^b
1976/77	1-Sep	16-Oct	14.6	33	67	7"
	1-Dec	15-Jan	3.1	0.5	99.5	8"
1977/78	15-Sep	30-Nov	11.7	37	63	7"
	1-Dec	15-Jan	1.8	0.7	99.3	8"
1978/79	10-Sep	30-Nov	10.3	44	56	7"
	1-Dec	15-Jan	1.7	15	85	7.5
1979/80	10-Sep	30-Nov	13.4	70	30	7"
	1-Dec	15-Jan	1.2	30	70	7.5
1980/81	15-Sep	30-Nov	18.4	69	31	7"
	1-Dec	15-Jan	2.1	22	78	7.5
1981/82	15-Sep	15-Dec	20.3	61	39	7"
	15-Dec	15-Jan	3.9	7	93	7.5
1982/83	1-Sep	10-Dec	7.5	46	54	7"
	10-Dec	19-Dec	1.2	19	81	7.5

Continued

Table 2-12. (Page 2 of 2)

Season	Open	Closed	Catch Million Pounds	Percent Recruits	Percent Post -Recruits	Size Limit
1983/84			NO FISHERY			
1984/85 ^d			NO FISHERY			
1985/86			NO FISHERY			
1986/87 ^e			NO FISHERY			
1987/88			NO FISHERY			
1988/89			NO FISHERY			
1989/90			NO FISHERY			
1990/91			NO FISHERY			
1991/92			NO FISHERY			
1992/93			NO FISHERY			
1993/94			NO FISHERY			
1994/95			NO FISHERY			
1995/96			NO FISHERY			
1996/97			NO FISHERY			
1997/98			NO FISHERY			

^aRecruitment after 1963 based on 7" size limit.

^bMarmot Bay, Chiniak Bay and Kupreanof Strait did not open for 8" crab.

^cUganik Bay, Kupreanof Strait, Marmot Bay, Chiniak Bay, Ugak Bay, South Sitkalidak Strait, Kiliuda Bay and Alitak Bay did not open for 7½" crab.

^dHarvest of crab by test fishery - 33,743 pounds.

^eHarvest of crab by test fishery - 13,393 pounds.

Table 2-13. Historic commercial brown king crab *Lithodes aequispina* catch and effort for the Kodiak Registration Area "K", 1983-1997.

Fishing Year	Landings	Vessels	No. of Crabs	No. of Pounds	Pots Lifted	Average			Exvessel Value (Millions)
						CPUE	Wt. Per Crab	Price Per Pound	
1983	36	12	16,349	111,398	8,490	2	6.8	3	0.3
1984	8	6	3,513	22,066	1,950	2	6.3	2.5	0.1
1985	19	4	10,005	63,641	2,693	4	6.4	1.95	0.1
1986	31	4	21,862	146,478	5,463	4	6.7	3	0.4
1987	38	5	9,484	67,191	3,187	3	7.1	3.44	0.2
1988					Confidential				
1989					Confidential				
1990	6	3	1,214	7,314	1,090	1	6.02	3	0.2
1991	0	0	0	0	0				
1992					Confidential				
1993					Confidential				
1994	0	0	0	0	0				
1995					Confidential				
1996	0	0	0	0	0				
1997	0	0	0	0	0				

Table 2-14. Historic commercial trawl shrimp catch and effort for the Kodiak District of Westward Statistical Area "J", 1958-1997.

Calendar Year	Fishing Year	Vessels	Landings	Harvest in Pounds	Price
1958		NA	NA	31,886	\$0.04
1959		NA	NA	2,861,900	\$0.04
1960		11	94	3,197,985	\$0.04
1961		12	203	11,083,500	\$0.04
1962		11	204	12,654,027	\$0.04
1963		NA	NA	10,118,472	\$0.04
1964		6	NA	4,339,114	\$0.04
1965		11	320	13,823,061	\$0.04
1966		17	551	24,097,141	\$0.05
1967		23	na	38,267,856	\$0.05
1968		16	na	34,468,713	\$0.04
1969		26	935	41,353,461	\$0.06
1970		18	1,024	62,181,204	\$0.04
1971		49	1,746	82,153,724	\$0.04
1972		63	1,398	58,352,319	\$0.04
1973		50	1,283	70,511,477	\$0.06
	1973/74	63	1,029	56,203,992	\$0.08
	1974/75	75	1,100	58,235,982	\$0.08
	1975/76	58	884	49,086,591	\$0.08
	1976/77	62	762	46,712,083	\$0.10
	1977/78	58	653	26,409,366	\$0.13
	1978/79	50	328	20,506,021	\$0.17
	1979/80	37	242	12,863,536	\$0.23
	1980/81	67	462	27,101,218	\$0.29
	1981/82	55	298	19,112,367	\$0.27
	1982/83	40	224	10,391,207	\$0.27
	1983/84	14	63	2,779,030	\$0.35
	1984/85	13	59	2,942,922	\$0.33
	1985/86	5	26	1,145,980	\$0.20
	1986/87			Confidential	
	1987/88			Confidential	

Continued

Table 2-14. (Page 2 of 2)

Calendar Year	Fishing Year	Vessels	Landings	Harvest in Pounds	Price
	1988/89	0	0	0	0
	1989/90	0	0	0	0
	1990/91	0	0	0	0
	1991/92	0	0	0	0
	1992/93	0	0	0	0
	1993/94	3	3	1,704	NA
	1994/95	0	0	0	0
	1995/96	0	0	0	0
	1996/97		Confidential		
	1997/98	0	0	0	0
Averages ^b		33	556	25,917,820	\$0.12

^aNot available.

^bAverage calculated from years 1960-1985.

Table 2-15. ADF&G shrimp population survey estimates, 1995.

Area	MABI ^a (million pounds)	1995 Survey
Chiniak	1.45	0.17
Marmot	29.24	2.84
Kiliuda Bay	5.3	0.13
Twoheaded Gully	7.3	0.13
Alitak Bay	4.28	0.02
Uyak Bay	3.19	0.23
Uganik Bay	2.59	0.93
Wide Bay	1.05	0.08
Chignik Bay	4.55	1.00
Kuiukta Bay	1.9	0.36

^aMinimum Acceptable Biomass Index (MABI). This is the threshold value needed to conduct a fishery.

Table 2-16. Commercial pot shrimp catch statistics, Kodiak District of Statistical Area 'J', 1969-1997.

Year	Vessels	Landings	Pounds
1969		Confidential	
1970	NA ^a	20	12,302
1971	0	0	0
1972		Confidential	
1973		Confidential	
1974	6	73	10,336
1975	7	77	12,782
1976		Confidential	
1977	3	26	2,565
1978		Confidential	
1979		Confidential	
1980	4	25	4,700
1981	4	6	2,511
1982	6	18	9,754
1983	12	31	18,686
1984	6	21	4,361
1985		Confidential	
1986		Confidential	
1987	0	0	0
1988		Confidential	
1989		Confidential	
1990		Confidential	
1991	0	0	0
1992	0	0	0
1993	0	0	0
1994		Confidential	
1995	0	0	0
1996	0	0	0
1997		Confidential	

^aNot available.

Table 2-17. Historic harvest of sea cucumbers in the Kodiak and Chignik Districts 1991-1997.

Year	Number of Permits	Number of Landings	Pounds Harvested	Average Price Per Pound
1991		Confidential		
1992		Confidential		
1993	50	487	564,516	0.93
1994	86	269	413,576	1.2
1995	21	60	145,092	1.25
1996	31	93	162,451	1.25
1997	26	65	132,337	1.16

Table 2-18. Sea cucumber commercial harvest by area, Kodiak and Chignik Districts, 1997.

Area	Guideline Harvest Level	Pounds
Chignik District Total	25,000	13,644
Kodiak District		
Northeast Section	5,000	5,290
Eastside Section	40,000	39,762
Southeast Section	20,000	19,003
Southwest Section	20,000	24,943
Westside Section	30,000	29,695
North Mainland Section	10,000 a	

^aChignik District and Kodiak North Mainland Section harvests have been combined to retain vessel confidentiality.

Table 2-19. Historic harvest of sea urchins in the Kodiak area, 1980-1997.

Year	Number of Permits	Number of Landings	Pounds Harvested (Live Weight)	Average Price Per Pound
1980		Confidential		
1985		Confidential		
1986		Confidential		
1987	12	78	104,139	0.69
1988	28	260	190,509	0.8
1989	29	81	44,862	0.82
1990	25	83	84,004	0.84
1991	6	24	29,947	0.92
1992		Confidential		
1993		Confidential		
1994		Confidential		
1995	8	50	38,437	1.34
1996	7	31	36,147	1.1
1997		Confidential		

Table 2-20. Commercial catch, effort, and value for octopus in the Kodiak Management Area, 1977-1997.

Year	Number Vessels	Number Landings	Catch (Pounds)	Average Price per Pound	Exvessel Value (Dollars)
1977	5	9	1,000	0.71	1,136
1978	11	21	3,336	0.75	2,502
1979	20	43	6,978	0.74	5,164
1980	27	61	19,342	0.75	14,506
1981	21	46	5,872	0.7	4,110
1982	12	29	3,854	0.7	2,697
1983	12	20	3,764	0.7	2,634
1984	17	43	6,487	0.7	4,341
1985	10	12	4,812	0.78	3,753
1986	5	8	643	0.7	450
1987	8	15	14,151	1.08	15,300
1988	4	4	1,949	1.08	2,105
1989			Confidential		
1990	31	140	74,816	1.08	80,801
1991	74	354	134,966	1.07	144,414
1992	97	491	144,893	1.07	155,036
1993	49	149	103,627	1	103,627
1994	19	60	10,449	0.59	6,165
1995	64	438	92,964	0.58	53,919
1996	58	308	92,257	0.55	50,741
1997	91	691	238,954	0.55	131,425

Table 2-21. Historic commercial razor clam catch effort and value for Kodiak Management Area, 1960-1997.

Year	Number of Registered Diggers ^a	Number of Landings	Catch (Pounds)	Average Catch Per Landing (Pounds)	Average Price Per Pound	Est. Price Exvessel (Dollars)
1960	76		420,636		\$0.11	44,000
1961	95		381,971		\$0.11	40,000
1962	66		297,516		\$0.11	31,000
1963	39		323,757		\$0.11	35,600
1964	2		0		\$0.00	0
1965	4		20,000		\$0.25	5,000
1966	29		15,429		\$0.38	6,000
1967	9		2,155		\$0.40	900
1968	19		6,384		\$0.40	2,600
1969	5	6	12,029	2,005	\$0.40	4,812
1970	6	32	132,261	4,133	\$0.40	53,000
1971	73	82	190,394	2,322	\$0.30	57,000
1972	95	128	152,116	1,188	\$0.35	53,000
1973	64	140	165,282	1,181	\$0.40	66,000
1974	58	74	198,381	2,681	\$0.50	99,000
1975	18	5	6,188	1,238	\$0.50	3,000
1976	9	0	0	0	\$0.00	0
1977	8	1	400	400	\$1.00	400
1978			Confidential			
1979	0	0	0	0	\$0.00	0
1980	na ^a	8	8,006	1,001	\$0.79	6,325
1981	na	5	8,186 ^b	1,637	\$1.00	8,186
1982	na	11	11,608 ^c	1,055	\$1.00	11,608
1983	na	7	7,920	1,131	\$1.00	7,920
1984	na	21	33,972	1,613	\$1.00	33,972
1985	na	11	16,945 ^d	1,540	\$1.00	16,945
1986	na	4	3,993	998	\$1.00	3,993
1987	0	0	0	0	\$0.00	0
1988	0	0	0	0	\$0.00	0

Continued

Table 2-21. (Page 2 of 2)

Year	Number of Registered Diggers ^a	Number of Landings	Catch (Pounds)	Average Catch Per Landing (Pounds)	Average Price Per Pound	Est. Price Exvessel (Dollars)
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0
1991	0	0	0	0	0	0
1992	0	0	0	0	0	0
1993	0	0	0	0	0	0
1994	0	0	0	0	0	0
1995	0	0	0	0	0	0
1996	0	0	0	0	0	0
1997	0	0	0	0	0	0

^aRepresents registered diggers not actual diggers. No data available after 1977 due to statewide issuance of Interim Use Permits.

^bAdditional 985 pounds of hardshell clams harvested.

^cAdditional 1,506 pounds of hardshell clams harvested.

^dAdditional 1,496 pounds of hardshell clams harvested.

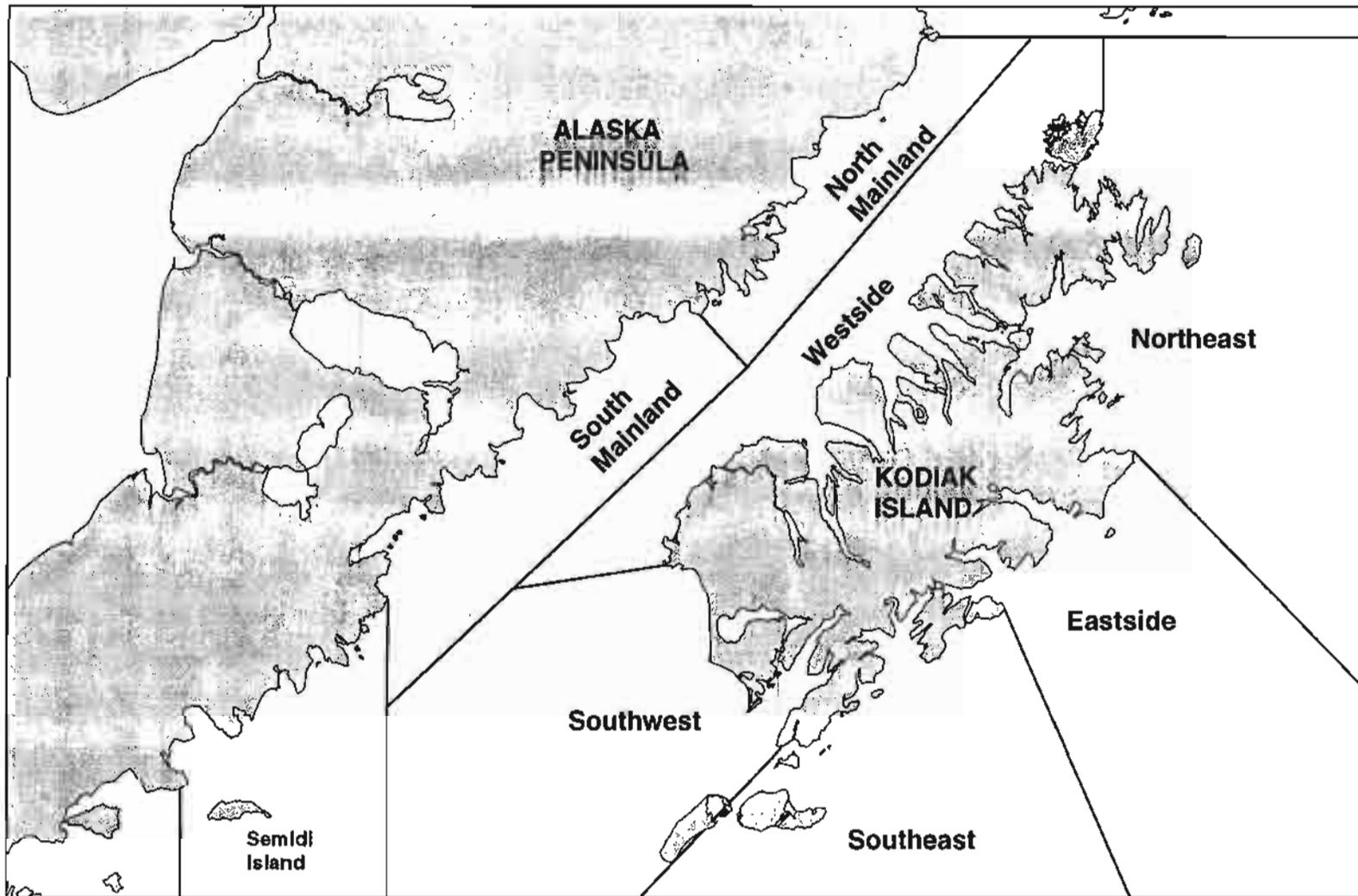


Figure 2-2. Kodiak District Tanner Crab fishing sections.

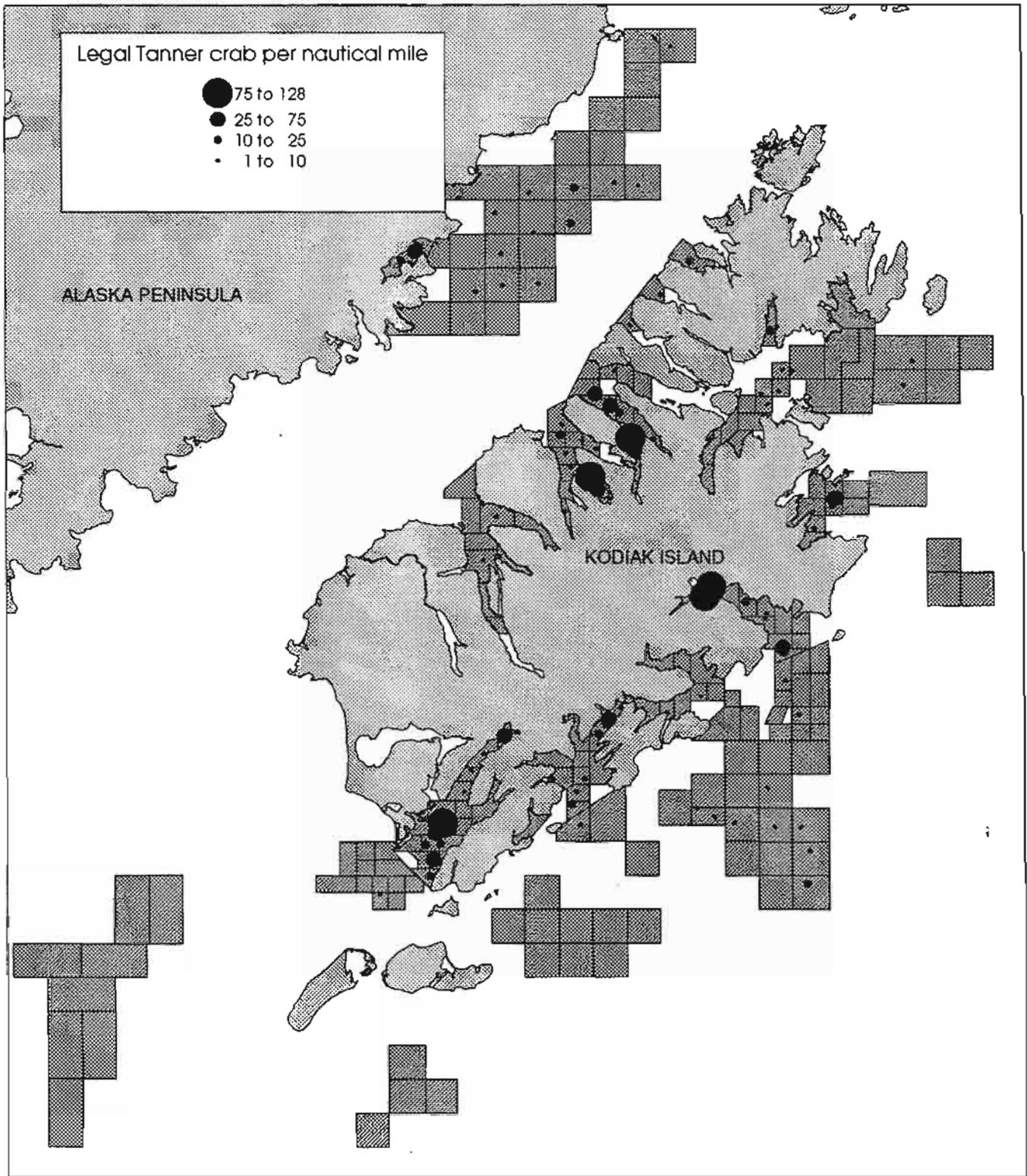


Figure 2-3. Legal Tanner crab density from a trawl survey of Kodiak Island waters, 1997.

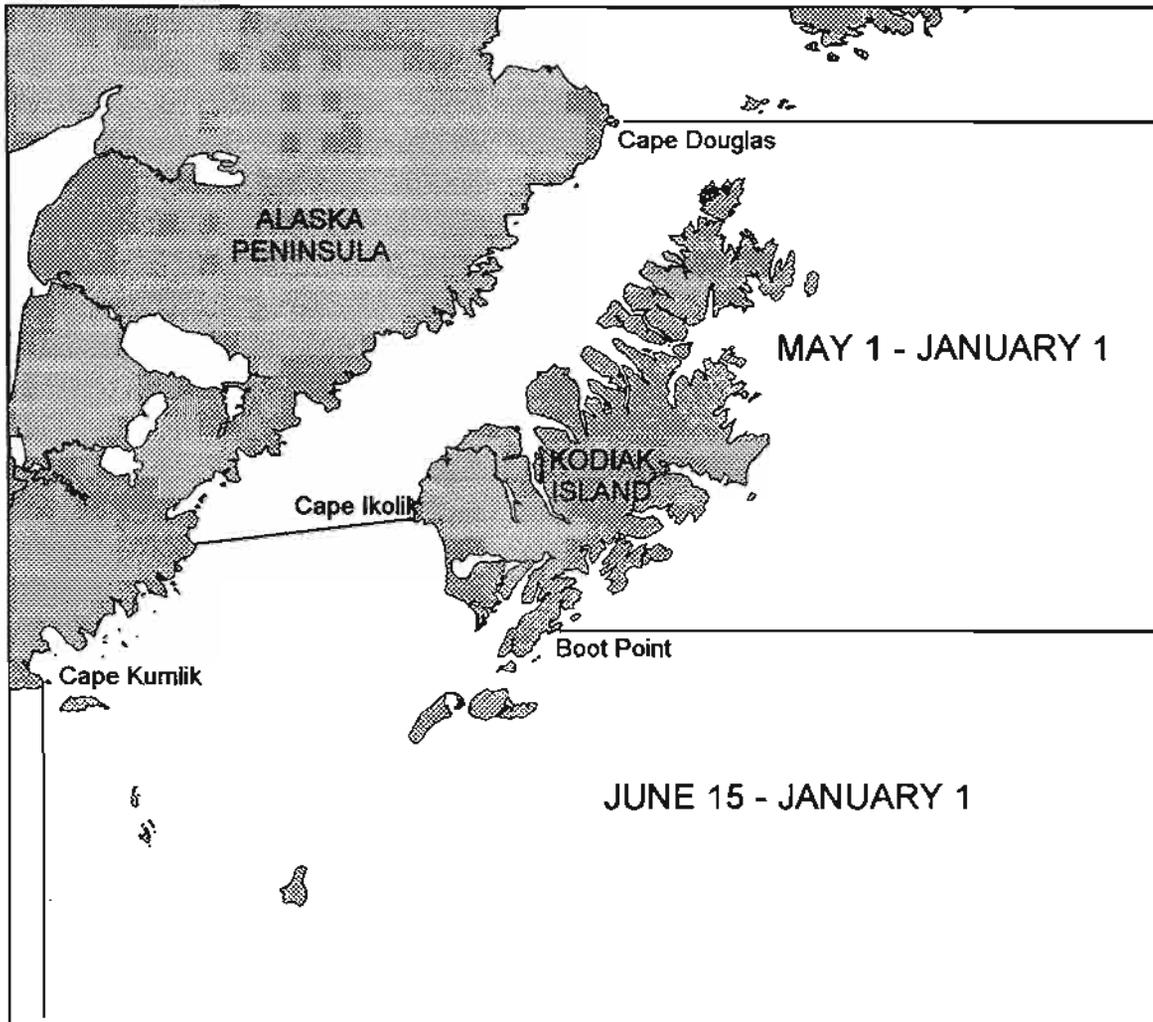


Figure 2-4. Kodiak District commercial Dungeness crab fishing season.

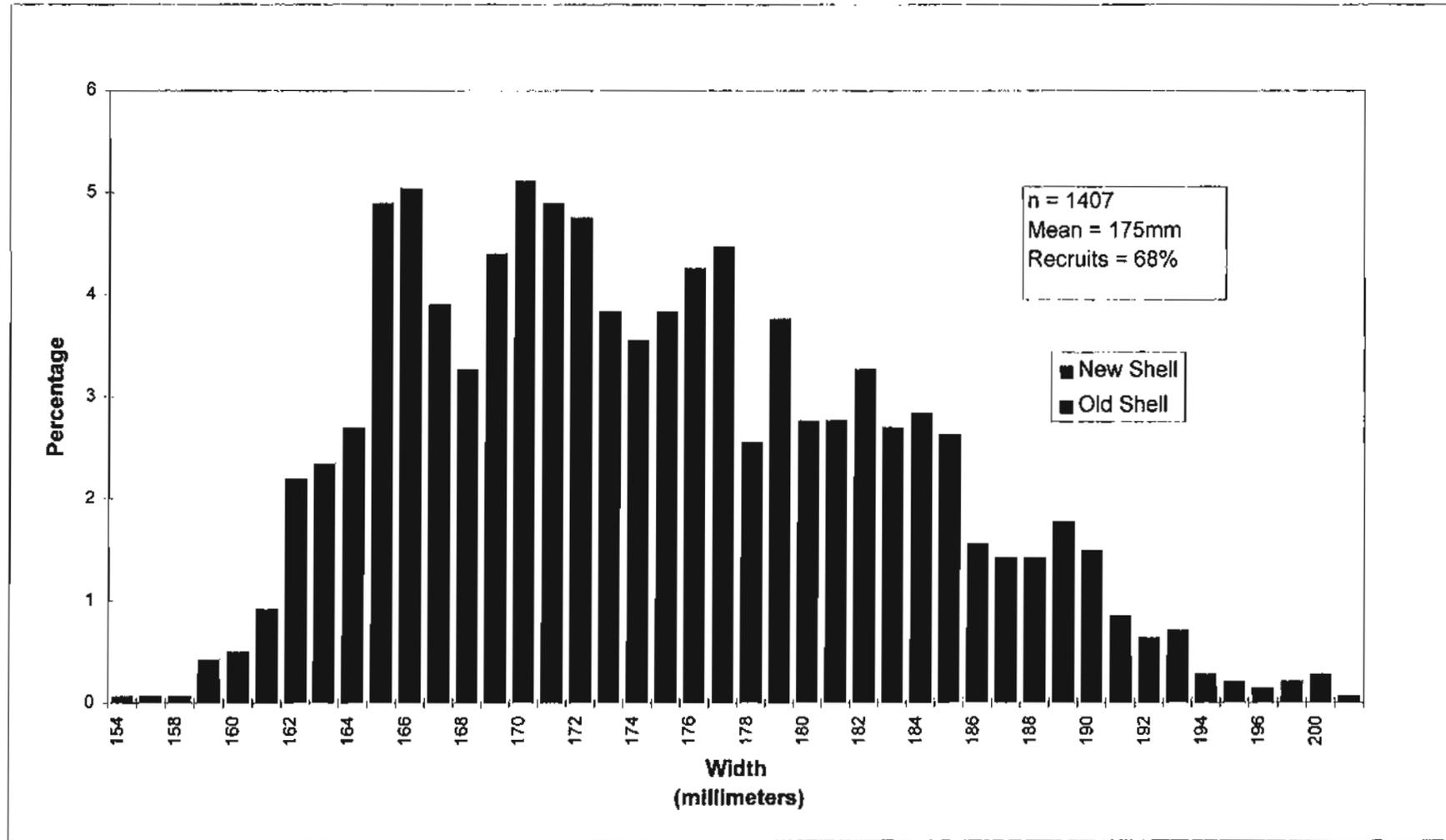


Figure 2-5. Kodiak District commercial Dungeness width frequencies, 1997.

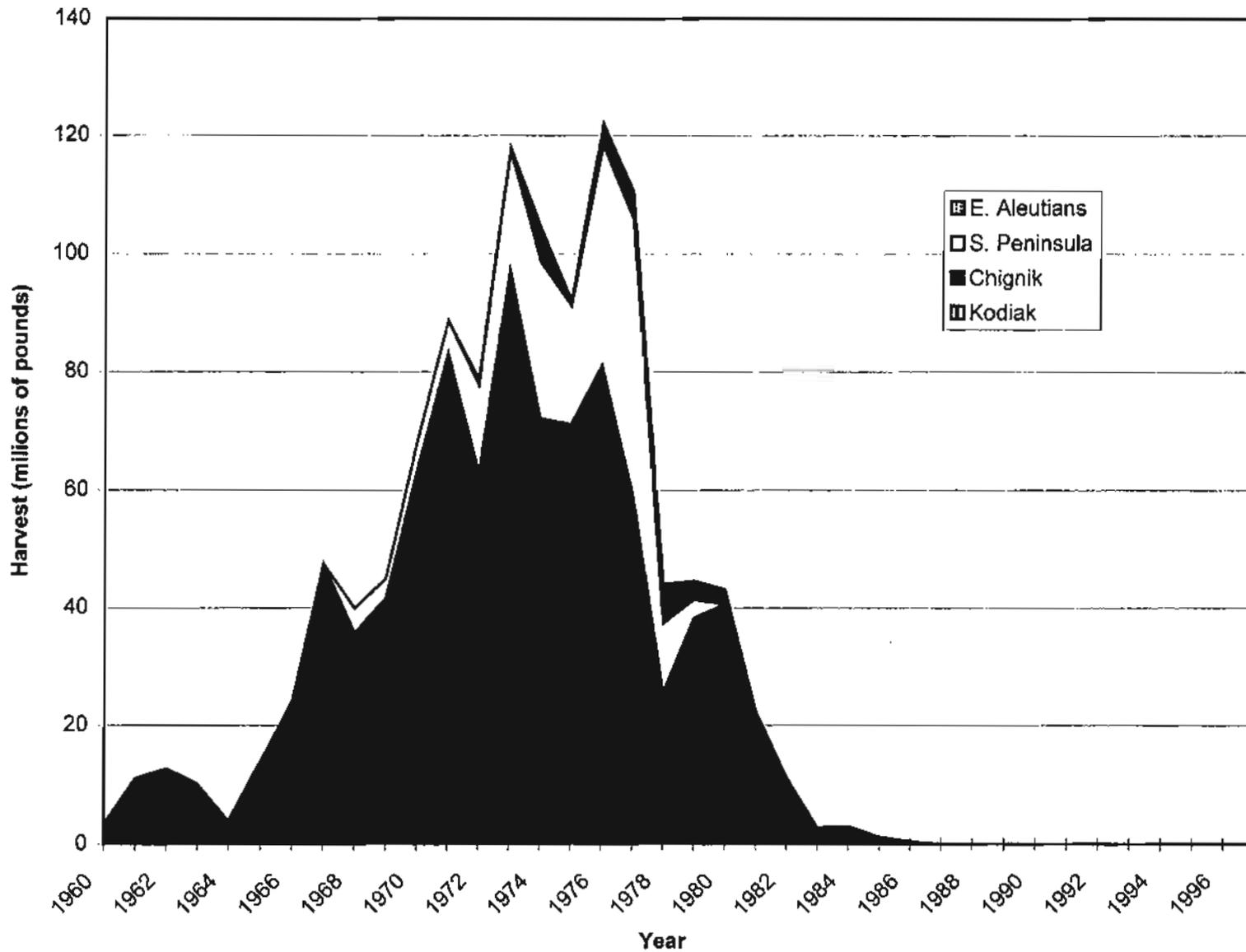


Figure 2-6. Westward Region Trawl Shrimp Harvest, 1960-1997.

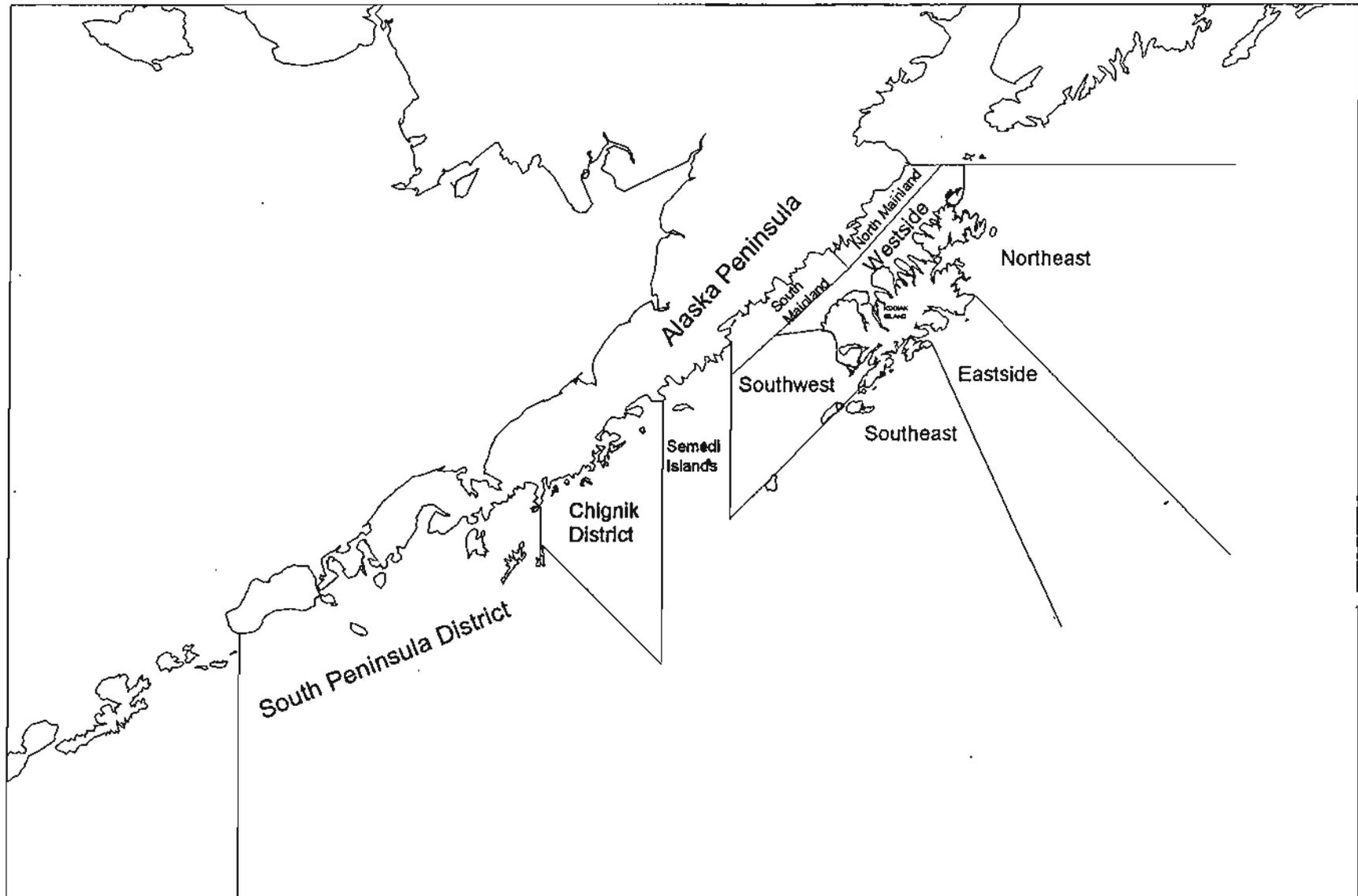


Figure 2-7. Commercial Tanner crab management districts and sections used to manage sea cucumbers in the Westward Region.

ANNUAL MANAGEMENT REPORT FOR THE
SHELLFISH FISHERIES OF ALASKA PENINSULA AREA, 1997

by

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July 1998

ALASKA PENINSULA

Introduction

The Alaska Peninsula Management Area includes those waters of the Pacific Ocean west of the longitude of Cape Kumlik and east of the longitude of Scotch Cap Light (Figure 3-1).

Commercial shellfish fisheries have traditionally occurred in the Alaska Peninsula on king crab, Tanner crab, Dungeness crab, shrimp, scallops and octopus. Shellfish stocks are considered depressed and no commercial fishery has occurred since 1982 for king crab and shrimp and since 1989 for Tanner crab. Limited effort has occurred on Dungeness crab, scallops, sea cucumbers and octopus. This management area includes within it the communities of Chignik Lake, Chignik Lagoon, Anchorage Bay, Perryville, Ivanoff, Sand Point, King Cove, Cold Bay and False Pass.

KING CRAB

Introduction

The red king crab fishery in the Alaska Peninsula Registration Area M began in 1947, when 141,000 pounds were landed. The historic high catch of 22.6 million pounds occurred in 1966 (Table 3-1).

Of the three Area M king crab districts, the major portion of the harvest in the last ten years of fishing (1972-1982) came from the Central District with Pavlof Bay being the major producer. The annual catch in the Unimak Bight District during the same period averaged less than half the Central District annual harvest. Catches in the Chignik District during this period varied depending on effort but did not exceed 386,000 pounds.

During the 1980/81 season the Area M harvest reached just over five million pounds, the highest catch since the 1968/69 season. The catch was the result of strong recruitment from 1978 through 1980. Recruitment has declined severely since that time. The fishery was closed for the first time during the 83/84 season and has remained closed since.

Stock Status

The Alaska Department of Fish and Game conducted a trawl survey of the Alaska Peninsula crab stocks in 1997, with the R/V Resolution covering king crab habitat throughout the registration area. One hundred and forty-nine hauls were completed. Data from the 1997 survey indicated that the red king crab population remains at very low levels. While the stock is difficult to assess, there are some signs the population may be increasing. The number of crab captured in 1997 increased to 210 from 22 in 1996, resulting in a population

estimate which rose from 16,000 to 178,000. Most of the increase came in the smaller size classes (Table 3-2).

Brown King Crab

Occasionally fishermen express an interest in exploring Area M for brown king crab *Lithodes aequispina*. In 1983 five vessels registered but no catch was recorded. Presently, male brown king crab 6-inches or greater in shell width may be taken from January 1 through December 31 under a permit issued by the Commissioner. No vessels registered to fish for brown king crab in Area M during 1997. Stock status is unknown, and no commercial quantities have been located to date.

CHIGNIK TANNER CRAB

Historic Background

The Chignik District of area J consists of the waters south of the Alaska Peninsula from Cape Kumlik west to Kupreanof Point.

The Chignik Tanner crab fishery began in 1968 when 21,000 pounds of crab were caught (Table 3-3). During the next four years, the market was uncertain and harvests were erratic. Other than a 14 day closure before each king crab season and limiting gear to pots or ring nets, few regulations governed the early fishery.

In 1973, market conditions improved, and 15 vessels harvested nearly 750,000 pounds. There were 25 vessels the next year, and the catch grew to 4 million pounds. In 1975/76, 35 vessels landed the peak harvest of 7 million pounds. By 1976, the rapid growth of the fishery caused the BOF to adopt several protective regulations. A system to register and inspect vessels was adopted and the harvest was restricted to male crabs with carapace widths 5.5 inches or greater. The seasons were open November 1 to May 15 to protect crabs during the mating and molting period. In addition, guideline harvest levels were established. Concern over lost pots led to the adoption of a regulation requiring that: "After July 1, 1978, each Tanner crab pot shall contain a mechanism that will destroy its fish catching and holding ability if lost or abandoned." For the next five seasons, the harvest was less variable, and catches ranged from 2.5 to 5.6 million pounds.

Three other points characterized the first 14 years of the Chignik District fishery. First, the productive grounds included nearly all waters of the District, with most of the production coming from the offshore waters between Mitrofanina Island, Lighthouse Rocks, and the Semidi Islands. Second, most of the fishing began in late March after the Kodiak and South Peninsula District fisheries closed. Third, no abundance surveys were conducted during this period. The 5-10 million pound guideline was based on the historical harvests from 1974 to 1976/77. Even with the relatively liberal seasons, the guideline was rarely attained.

Since 1981, there have been several changes in the fishery. The Department conducted trawl surveys each summer from 1981 to 1984. The surveys predicted poor recruitment after the 1983 fishing season. Harvest projections were drastically reduced for the 1984 and 1985 fisheries.

As predicted, commercial harvests dropped sharply each season from 1984 to 1986. Following a minor increase in 1987, the 1988 catch declined to 183,000 pounds; the lowest harvest in 16 years. The catch did not decline uniformly over the grounds, but fell off first and most rapidly in the popular offshore waters. Production from offshore waters decreased steadily until production was limited for Chignik Bay and a few other near shore areas in 1988. Concurrent with dwindling catches, fleet size decreased from 48 vessels in 1983 to 6 vessels in 1988 when four locally-owned seine vessels, one boat from Sand Point, and one 65 foot vessel from Kodiak participated in the fishery.

Beginning with the 1981 season, the fleet commenced fishing on November 2, the opening date of the season and continued fishing until the District was closed. However, as the fishery changed several changes to the opening date of the fishery were made: in 1981/82 the date was moved to December 15; subsequently, the date was set to February 10 for the 1983 and 1984 seasons. In part, the new dates were established to harvest the crab at peak quality. Further, some fishermen hoped the new dates would find the large vessels busy fishing in the Bering Sea thus reducing competition in the Chignik and South Peninsula Districts. However, in the adjoining South Peninsula District, seasons opening in February were found to extend into the crab molting period. Therefore, beginning in 1985, the opening date has been January 15. In 1988, the BOF adopted a March 31 closure date because molting was occurring before the former May 15 closure. Since 1990 the Chignik Tanner crab fishery has remained closed due to the low abundance of Tanner crab in the area.

In 1993 the BOF adopted pot limits for the Chignik District. This pot limit, effective for the combined Chignik and South Peninsula Districts, is 40 pots when the guideline harvest level is less than 600,000 pounds and 75 pots when the guideline harvest is 600,000 pounds or more.

Stock Status

The Department has conducted a trawl survey annually in the Chignik District since 1989. Population estimates of legal crabs declined (from 497,000 legal males) in 1989 down to a record low of 59,800 in 1992. The 1997 survey estimated that the total numbers of male and female Tanner crabs nearly doubled since the 1996 survey from 3.4 million to 6.1 million, with increases across a broad range of size classes although total numbers are still well below the level at which the fishery closed in the late 1980's. The commercial fishery remained closed during 1997. The department will be proposing a management plan to the Board of Fisheries at their March 1999 meeting which will address the minimum thresholds needed to re-open the fishery.

SOUTH PENINSULA TANNER CRAB

Introduction

The South Peninsula District of Area J includes all waters south of the Alaska Peninsula from Kupreanof Point to Scotch Cap Light on Unimak Island. The first harvest of Tanner crab *Chionoecetes bairdi* from the area occurred in 1967 when 3,100 pounds were landed. The fishery grew quickly, and by 1973 harvests exceeded five million pounds (Table 3-4). In 1974 guideline harvest levels were established, and in 1975 seasons were imposed to protect adult crab during the mating and molting period. In 1976, the minimum size limit of 5.5 inches across the carapace was established. During the six seasons from 1974 through 1978/79, harvests ranged from 5 to 9 million pounds. The fishery peaked in 1978/79 when 9 million pounds of crab were caught. From 1979/80 to 1984 the harvest and CPUE declined in response to low legal size recruitment to the population. The population declined in 1984 and the fleet only landed 2 million pounds. Recruitment improved in the years 1985 through 1988 and the harvest ranged from 2 million pounds to 4 million pounds. In 1989 the harvest decreased to 1 million pounds and recruitment also declined. The fishery has been closed since 1990 due to the low abundance of legal crab and the lack of recruitment. In 1993 the BOF established a pot limit of 75 pots when the guideline harvest is 600,000 pounds or greater. When the guideline harvest is less than 600,000 pounds the pot limit is 40 pots per vessel.

Stock Status

In 1997 the Department conducted a trawl survey in the South Peninsula District to assess king and *C. bairdi* populations. Total estimated legal crab in the South Peninsula for 1997 was 97,000 crabs, up slightly from the 1996 estimate of 91,000. These are the two lowest estimates of legal crabs found since the area was first trawl surveyed in 1988. Due to the continuing low abundance of legal males and anticipated low recruitment, the 1997 *C. bairdi* fishery did not open (Table 3-5).

Deep Water Tanner Crab

The Alaska Peninsula was initially explored for deep water Tanner crabs, *Chionoecetes tanneri*, and *C. angulatus* in 1994. The fishery was permitted under the terms of 5 AAC 35.082. Vessels were required to use single line pot gear and carry ADF&G approved observers. A minimum carapace width of 5.0 inches for *C. tanneri* and 4.5 inches for *C. angulatus* was stipulated. Two vessels fished in the Alaska Peninsula District and their harvest remains confidential.

Interest in deep water Tanner crabs increased in 1995. Six vessels made landings totaling 947,014 pounds (Table 3-6). Most of the fishing occurred in a narrow band of the continental shelf from 375 to 475 fathoms. The average catch per pot was 81 crabs with

an average weight of 1.6 pounds per crab. Average size of retained crab was 133 mm in carapace width.

Performance of the fishery declined in 1996. Seven vessels made 35 deliveries but the catch fell to 553,028 pounds and CPUE declined from 81 crab in 1995 to only 17 crab in 1996. The price also fell from an average of \$1.60 to \$1.00. Much of the production came from previously unexplored areas.

On August 14, 1996 new regulations passed by the Board of Fisheries became effective. These allowed for the longlining of pots and also established pot limits. On the Alaska Peninsula fishermen will be allowed up to 300 small pots (no more than 20 feet in diameter and no more than 42 inches high) or 150 large pots. There was no reported harvest of deep water Tanner crab during 1997.

Information on the biology of deep water Tanner crab is limited. Data still needs to be collected on size at maturity, handling morality, molt timing and other key parameters. The Department does not conduct population assessments but deep water Tanner vessels are required to carry observers who are working to collect this information.

ALASKA PENINSULA DUNGENESS CRAB

Introduction

The Alaska Peninsula District is described as all waters of Statistical Area J west of the longitude of Cape Kumlik (157° 27' W. long.) and east of the longitude of Scotch Cap Light (164° 44' W. long.).

Historically, Dungeness *Cancer magister* catches from the District have been sporadic with the highest catch recorded in 1968 when 1.26 million pounds were landed (Table 3-7). Subsequent effort and catches remained low for many years due to low prices and better prospects in other fisheries. During the early 1980's, the decline in king crab stocks and a stronger market for Dungeness generated a renewed interest in the fishery. Local fishermen became concerned with over exploitation of the Dungeness stock along with an increase in effort. In 1983 the Alaska Board of Fisheries made the Alaska Peninsula District a superexclusive registration area. The superexclusive regulation has reduced effort in the district and poor catches have also discouraged participation in the fishery.

Management of the Alaska Peninsula District Dungeness fishery has been by sex, size and season. Only males greater than 6.5 inches in carapace width may be harvested from May 1 until January 1 or February 1 (the exact closing date has varied over the years).

1997 Fishery

The Alaska Peninsula crab season opened May 1st. Record high price led an increase in interest in the fishery with the highest number of pot lifts in the last ten year. Catch doubled from the previous year, but the CPUE was one of the worst on record. Seven vessels registered and 17 deliveries for 240,128 pounds. Catch averaged only 2.8 crab per pot.

Stock Status

No research, including abundance surveys, has been conducted on the Dungeness of the area. Management activity has been limited to monitoring the deliveries and recording the harvest. Information collected has been limited to a few skipper interviews and sporadic catch samples. This sampling indicated that the catch has been predominantly recruit crab. Recruits are new-shelled legal males less than 194mm in carapace width.

ALASKA PENINSULA SHRIMP

Introduction

The Alaska Peninsula is divided into the Chignik and South Peninsula Districts, with districts subdivided into sections that are managed according to the *Westward Region Shrimp Survey Management Plan*. Shrimp fishing in the Alaska Peninsula began in 1968 but catch levels remained relatively low until the 1972/73 season when 19.6 million pounds were harvested (Table 3-8). The historic high catch was reached in the 1977/78 season with a harvest of 71.5 million pounds. Catches declined rapidly until all South Peninsula Sections were closed in 1980. Although the Sutwik Island Section and all offshore waters of the Chignik District remained open in 1981/82, only 70,948 pounds of shrimp were landed from the area. Since that time all the inshore waters have remained closed and no fishing has occurred in the open area offshore. No vessels registered and no deliveries were made from the offshore sections that were open to fishing during the 1995/96 season.

Stock Status

In 1995 ADF&G conducted a trawl survey in the Chignik Bay and Kuiukta Bay Sections of the Chignik District. A total of 13 shrimp tows were made and the catch of shrimp in the Chignik District averaged 146 pounds per nautical mile towed, down from the 246 pounds per nautical mile captured during the 1992 survey. The 1995 Chignik District population estimate was 1.4 million pounds, well below the 4.55 million pounds minimum acceptable biomass index needed to warrant a commercial fishery. The next shrimp survey is scheduled for 1998.

The National Marine Fisheries Service has conducted a shrimp survey in Pavlof Bay for the past 24 years. The catch of shrimp in the Pavlof section during the 1995 survey was the lowest in the history of the survey. Shrimp populations in the Pavlof Bay section are severely depressed; no significant recovery is anticipated in the near-term.

ALASKA PENINSULA SEA CUCUMBERS

The Alaska Peninsula was initially explored for sea cucumbers *Parastichopus californicus* in 1993. Diving effort was in the Chignik area, with the farthest west delivery coming from Kuiukta Bay. The western edge of the sea cucumber range has not been established but the ADF&G R/V Resolution captured a specimen near King Cove in August 1997.

During the 1993 season, primarily in November and December, thirteen divers landed 93,701 pounds of eviscerated product. The following February, concerns about overharvest led the Department to establish guideline harvest levels for the Westward Region using areas based on the Tanner crab sections and districts. A 50,000 pound eviscerated weight guideline was established in Chignik while the South Peninsula District remained open to fishing without a harvest guideline. A closed season was also established for the period of April 30 to October 1 to protect spawning aggregates of cucumbers. A weekly five day fishing period with daily dive log books requirements were established to assist in the monitoring of the fishery.

Activity was sporadic throughout the winter but interest increased in March. The Chignik fishery remained open until April 8, 1994 when closed by emergency order after achieving the guideline harvest. The Alaska Peninsula reopened for the 1994/1995 season on October 1, 1994 along with the entire Westward Region. The weekly fishing period was reduced to a Saturday to Monday period. Poor fishery performance led to a reduction of the Chignik harvest guideline to 25,000 pounds. Effort was minimal for the remainder of the season with only 3 divers registered. The catch remains confidential.

There was no effort during the 1995/1996 season in the Alaska peninsula area. In 1996/1997, one vessel fished, but the catch remains confidential. During the 1997/1998 season four divers landed 13,427 pounds.

OCTOPUS

Octopus *Octopus defleini* have been frequently harvested in the Alaska Peninsula area both as bait and as a food product since the early 1980s (Table 3-9). Some fishing has targeted on octopus but most harvest has occurred incidental to other fisheries. Until 1988 octopus were usually taken incidentally during the Tanner crab fishery. Since then, octopus have been landed by trawl and pot fishermen targeting cod. In recent years over

90% of the octopus catch has been taken with pot gear. The 1997 harvest of 49,446 pounds was the highest on record. This may be due to improved reporting of bycatch, and also to the fact that more of the Pacific cod harvest in the Central and Western Gulf has been allocated to pot gear resulting in more octopus bycatch. No stock assessment is conducted on this species.

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Table 3-1. Catch and effort statistics for red king crab in the Alaska Peninsula Area M, 1947-1996/97.

Year	Vessels	Number Landings	Number Crab	Number Pounds	Pots Lifted	CPUE	Average Weight	Price Per Pound
1947	na	na	18,800	141,000	na	na	7.5	na
1948	na	na	518,500	3,363,000	na	na	6.5	na
1949	na	na	205,500	3,476,000	na	na	12.0	na
1950	na	na	270,000	2,124,000	na	na	7.9	na
1951	na	na	86,500	599,000	na	na	6.9	na
1952	na	na	32,400	298,000	na	na	7.6	na
1953	na	na	38,400	380,000	na	na	10.0	na
1954	na	na	31,666	316,660	na	na	10.0	na
1955	na	na	164,069	1,640,688	na	na	10.0	na
1956	na	na	421,651	4,221,496	na	na	10.0	na
1957	na	na	668,709	6,687,092	na	na	10.0	na
1958	na	na	724,595	7,245,947	na	na	10.0	na
1959	na	na	568,303	6,166,974	na	na	10.0	na
1960	na	1,496	677,100	6,700,000	na	na	9.9	na
1961	na	959	419,354	3,900,000	na	na	9.3	na
1962	na	657	287,624	2,273,013	na	na	7.9	na
1963	27	1,037	970,739	6,539,129	na	na	6.7	0.09
1964	40	1,297	1,906,018	14,354,060	na	na	7.5	0.10
1965	36	1,081	1,813,728	14,713,501	na	na	8.1	0.10
1966	37	1,255	2,494,949	22,577,587	na	na	9.0	0.10
1967	39	1,062	1,943,463	17,252,307	na	na	8.9	0.19
1968/69	34	885	1,273,567	10,944,472	na	na	8.6	0.34
1969/70	33	415	558,800	4,137,000	51,300	11	7.7	0.25
1970/71	25	339	446,042	3,425,760	38,995	11	7.7	0.25
1971/72	26	364	597,394	4,123,130	41,759	14	6.9	0.28
1972/73	29	301	610,300	4,069,362	34,408	18	6.7	na
1973/74	36	389	658,632	4,260,674	53,642	12	6.9	0.72
1974/75	36	318	644,054	4,572,101	44,951	14	7.1	0.43
1975/76	37	248	367,221	2,605,310	35,104	11	7.2	0.41
1976/77	26	122	125,778	958,069a	17,748	7	7.7	0.61
1977/78	15	73	119,641	726,382	10,551	11	6.1	1.00
1978/79	33	226	520,168	3,093,859	31,142	17	5.9	1.27
1979/80	68	288	738,859	4,453,557	41,753	18	6.0	0.92
1980/81 ^a	51	358	821,071	5,080,632	54,114	15	6.2	0.96
1981/82	56	341	515,882	3,168,889	51,776	10	6.1	1.40
1982/83	63	157	271,237	1,683,654	30,894	9	6.2	3.20
1983/84				NO FISHERY				
1984/85				NO FISHERY				
1985/86				NO FISHERY				
1986/87				NO FISHERY				
1987/88				NO FISHERY				
1988/89				NO FISHERY				
1989/90				NO FISHERY				
1990/91				NO FISHERY				
1991/92				NO FISHERY				
1992/93				NO FISHERY				
1993/94				NO FISHERY				
1994/95				NO FISHERY				
1995/96				NO FISHERY				
1996/97				NO FISHERY				

na=Not Available.

^aCombined 6 1/2 inch and 7 1/2 inch seasons.

Table 3-2. Male red king crab abundance data from annual Alaska Peninsula (Area M) surveys, 1975-1997.

Year	Stations	Pots	Legals		Sublegals	
	Fished	Lifted	Number	CPUE ^b	Number	CPUE
1975	110	610	815	1.4	4,776	7.8
1976	129	801	874	1.1	8,006	10.0
1977	75	354	3,610	10.2	16,986	48.0
1978	62	355	7,259	20.4	10,960	30.9
1979	69	330	4,411	13.4	7,141	21.6
1980	120	700	8,110	11.6	7,263	10.4
1981	127	750	4,545	6.1	2,538	3.4
1982	113	630	1,197	1.9	805	1.3
1983	77	307	317	1.0	216	0.7
1984	218	498	324	0.6	25	0.0
1985	138	410	36	0.1	18	0.0
1986	129	400	65	0.2	52	0.1
1987	145	434	11	0.1	17	0.0
1988a	106		45		27	
1989	167		19		215	
1990	157		4		16	
1991	146		5		53	
1992	143		9		7	
1993	146		9		11	
1994	155		3		42	
1996	148		5		17	
1997	149		7		203	

^aTrawl survey introduced in 1988. Catches and population estimates not directly comparable to pot survey results.

^bCatch per pot lift.

Table 3-3. Chignik District Tanner crab catch and effort statistics, 1968-1997.

Year	Vessels	Number Landings	Number Craba	Number Poundsa	Pots Lifted	Average Weight	CPUE	Price Poundb	Percent Recruitsc
1968	na	na	na	21,100	na	na	na	na	na
1969	na	na	na	38,100	na	na	na	na	na
1970	na	na	na	2,800	na	na	na	na	na
1971	na	na	na	152,300	na	na	na	na	na
1972				Harvest Confidential					
1973	15	56	297,363	747,788	8,080	2.5	51	0.16	na
1974	25	115	1,586,560	4,054,873	28,083	2.6	57	0.2	na
1974/75	25	91	1,438,508	3,649,444	22,675	2.5	63	0.14	na
1975/76	35	288	2,724,509	6,926,161	52,381	2.5	52	0.185	na
1976/77	21	141	2,098,226	5,672,919	40,604	2.7	52	0.33	na
1977/78	32	140	1,725,042	4,693,830	38,414	2.8	45	0.42	na
1978/79	39	126	926,253	2,536,105	28,378	2.7	33	0.55	na
1979/80	42	155	2,340,004	3,517,920	54,627	2.6	25	0.54	na
1980/81	24	112	1,534,847	3,653,723	44,022	2.4	35	0.64	65.6
1981/82	45	174	1,343,500	3,240,576	47,830	2.4	28	1.21	64.7
1983	48	136	1,432,029	3,497,370	60,210	2.4	24	1.12	65.1
1984	17	41	269,724	659,043	14,665	2.4	18	1.09	33.5
1985	15	27	162,448	375,476	15,708	2.3	10	1.42	51.2
1986	6	12	85,697	188,162	7,435	2.2	12	1.97	85.3
1987	10	20	89,329	195,060	7,052	2.2	13	2.28	90.1
1988	6	11	87,148	183,111	6,544	2.1	13	2.33	91.3
1989	6	34	142,470	323,120	9,845	2.3	15	3.05	95.0
1990					No Fishery				
1991					No Fishery				
1992					No Fishery				
1993					No Fishery				
1994					No Fishery				
1995					No Fishery				
1996					No Fishery				
1997					No Fishery				

^aIncludes deadloss.

^bComputed only for live poundage where price information was available.

^cRecruits = newshell male crab from 137 to 163 mm carapace width.

Table 3-4. Tanner crab catch and effort statistics for South Peninsula District, 1967-1997.

Year	Number Vessels	Number Landings	Number Crab ^a	Number Pounds ^a	Pots Lifted	Average Weight	CPUE	Price Pounds ^b	Percent Recruits
1967				3,100					
1968		155	36,835	110,610		3			
1969		173	221,946	606,178		2.7			
1970				2,093,600					
1971	17	242	813,610	2,140,585		2.6		0.10	
1972				3,618,900					
1973	36	390	2,213,006	5,615,563	53,573	2.5	41		
1974	44	386	3,504,668	8,300,578	58,444	2.4	60		
1974/75	44	131	2,053,530	5,195,800	38,153	2.5	54	0.14	
1975/76	36	288	2,724,509	6,926,161	52,381	2.5	52	0.20	
1976/77	28	389	2,524,565	6,773,838	63,143	2.7	40	0.32	
1977/78	36	374	2,847,948	7,446,270	70,587	2.6	40	0.40	
1978/79	48	332	3,267,122	8,684,408	82,374	2.7	40	0.51	65.8
1979/80	61	363	2,581,544	6,961,251	96,989	2.7	27	0.54	39.5
1980/81	43	268	1,274,539	3,294,106	59,560	2.6	21	0.58	34.7
1981/82	72	365	1,815,060	4,589,042	81,008	2.5	22	1.05	50.2
1983	82	230	1,144,096	2,863,798	70,524	2.5	16	1.20	55.4
1984	61	207	775,472	1,789,883	50,726	2.3	15	1.04	29.6
1985	52	184	1,097,182	2,549,686	47,465	2.3	23	1.42	73.0
1986	74	187	1,589,759	3,781,950	65,078	2.4	24	1.72	72.9
1987	54	106	950,300	2,400,784	37,511	2.5	25	2.03	56.1
1988	73	148	1,359,371	3,328,809	52,516	2.4	26	2.20	78.6
1989	65c	87	433,112	1,055,082	27,958	2.4	15	2.70	52.9
1990				NO FISHERY					
1991				NO FISHERY					
1992				NO FISHERY					
1993				NO FISHERY					
1994				NO FISHERY					
1995				NO FISHERY					
1996				NO FISHERY					
1997				NO FISHERY					

^aIncludes deadloss.

^bComputed for live crab only.

^cOne additional vessel was registered but did not fish in the District.

Table 3-5. Tanner crab commercial fishing periods in the South Peninsula District, 1974-1997.

Year	Open	Closed
1974/75	15-Aug	15-Jun
1975/76	1-Nov	30-Jun
1976/77	1-Nov	15-May
1977/78	1-Nov	15-May
1978/79	1-Nov	15-May
1979/80	1-Nov	15-May
1980/81	1-Nov	15-May
1981/82	1-Dec	13-Mar
1982/83	15-Dec	17-Mar
1984	10-Feb	10-Mar
1985	10-Feb	20-Mar
1986	15-Jan	10-Mar
1987	15-Jan	5-Feb
1988	15-Jan	26-Jan
1989	15-Jan	22-Jan
1990		Closed
1991		Closed
1992		Closed
1993		Closed
1994		Closed
1995		Closed
1996		Closed
1997		Closed

Table 3-6. Commercial catch and effort for the deepwater Tanner crab *Chionoecetes tanneri*, Alaska Peninsula District, 1994-1997.

Year	Vessels	Landings	Number Crab ^a	Number Pounds ^a	Number of Pot Lifts	CPUE	Average Weight	Price Per Pound	Deadloss
1994					Confidential				
1995	6	34	600,984	947,014	7,143	81	1.6	1.40	24,473
1996	7	35	335,234	553,028	19,285	17	1.6	1.00	43,643
1997					No fishing occurred				

^aDeadloss included.

Table 3-7. Dungeness crab harvest statistics, Alaska Peninsula District, 1968-1997.

Year	Vessels	Landings	Number of Crab ^a	Number of Pounds ^a	Pots Lifted	CPUE	Average Weight	Price Per Pound
1968	na	na	434,142	1,259,013	na	na	2.9	na
1969	na	na	411,000	1,056,000	na	na	na	na
1970	na	na	4,200	13,000	na	na	na	na
1971	na	na	3,900	11,000	na	na	na	na
1972	na	na	29,400	65,000	na	na	na	na
1973				Confidential				
1974				No Effort				
1975				No Effort				
1976				No Effort				
1977				No Effort				
1978				No Effort				
1979				Confidential				
1980				No Effort				
1981/82				Confidential				
1982/83	16	79	357,955	779,600	59,265	6	2.2	0.75
1983/84	18	132	565,430	1,207,128	113,061	5	2.1	0.97
1984/85	13	99	294,191	647,497	106,056	3	2.1	1.38
1985/86	7	31	239,202	488,107	52,117	5	2.0	1.26
1986/87	6	28	87,925	180,261	30,280	3	2.0	1.05
1988				Confidential				
1989				Confidential				
1990	4	10	31,074	65,806	5,225	6	2.1	1.53
1991	7	18	39,069	80,248	12,813	3	2.1	1.24
1992				Confidential				
1993	3	15	127,979	273,811	15,675	8	2.1	0.79
1994	4	24	134,429	277,639	27,950	5	2.1	1.01
1995				Confidential				
1996	4	9	47,824	112,388	15,306	4	2.3	1.01
1997	7	17	120,935	240,128	42,324	2.8	2.0	2.06

na = Not Available.

^aIncludes deadloss.

Table 3-8. Historic South Peninsula and Chignik District shrimp harvest statistics.

Year	SOUTH PENINSULA				CHIGNIK			
	Vessels	Landings	Number Pounds	Price Pound	Vessels	Landings	Number Pounds	Price Pounds
1968			Confidential				Confidential	
1969			Confidential				Confidential	
1970	4	173	4,398,800	0.04			890,705	
1971			Confidential				Confidential	
1972/73			14,740,801	0.07			4,829,117	
1973/74	12	347	19,987,246	0.07	33	277	51,673,788	0.08
1974/75	22	387	26,145,720	0.08	37	323	23,392,352	0.08
1975/76	24	326	20,044,112	0.09	50	334	24,435,480	0.08
1976/77	19	424	37,148,932	0.09	48	303	27,232,630	0.10
1977/78	48	409	45,003,794	0.13	50	271	26,512,791	0.13
1978/79	23	108	9,418,276	0.16	40	201	23,257,869	0.17
1979/80	10	41	3,134,367	0.21	35	195	23,722,330	0.23
1980/81			Closed		54	148	12,843,270	0.29
1981/82			Closed		3	4	70,948	0.27
1982/83			No Activity				No Activity	
1983/84			No Activity				No Activity	
1984/85			No Activity				No Activity	
1985/86			No Activity				No Activity	
1986/87			No Activity				No Activity	
1987/88			No Activity				No Activity	
1988/89			No Activity				No Activity	
1989/90			No Activity				No Activity	
1990/91			No Activity				No Activity	
1991/92			No Activity				No Activity	
1993/93			No Activity				No Activity	
1993/94			No Activity				No Activity	
1994/95			No Activity				No Activity	
1995/96			No Activity				No Activity	
1996/97			No Activity				No Activity	
1997/98			No Activity				No Activity	

Table 3-9. Historic deliveries of octopus in the Alaska Peninsula District, 1980-1997.

YEAR	VESSELS	LANDINGS	POUNDS	PRICE PER LB.
1980			CONFIDENTIAL	
1981			CONFIDENTIAL	
1982			CONFIDENTIAL	
1983			CONFIDENTIAL	
1984			CONFIDENTIAL	
1985			CONFIDENTIAL	
1986			NO FISHING	
1987			NO FISHING	
1988	31	190	44,568	.92
1989	23	123	14,890	1.00
1990	19	78	9,139	1.00
1991	29	106	19,495	1.00
1992	72	266	45,230	1.00
1993	35	80	12,024	1.00
1994	23	48	17,031	0.59
1995	24	54	7,536	0.45
1996	26	67	12,587	0.49
1997	33	146	49,446	0.49

i

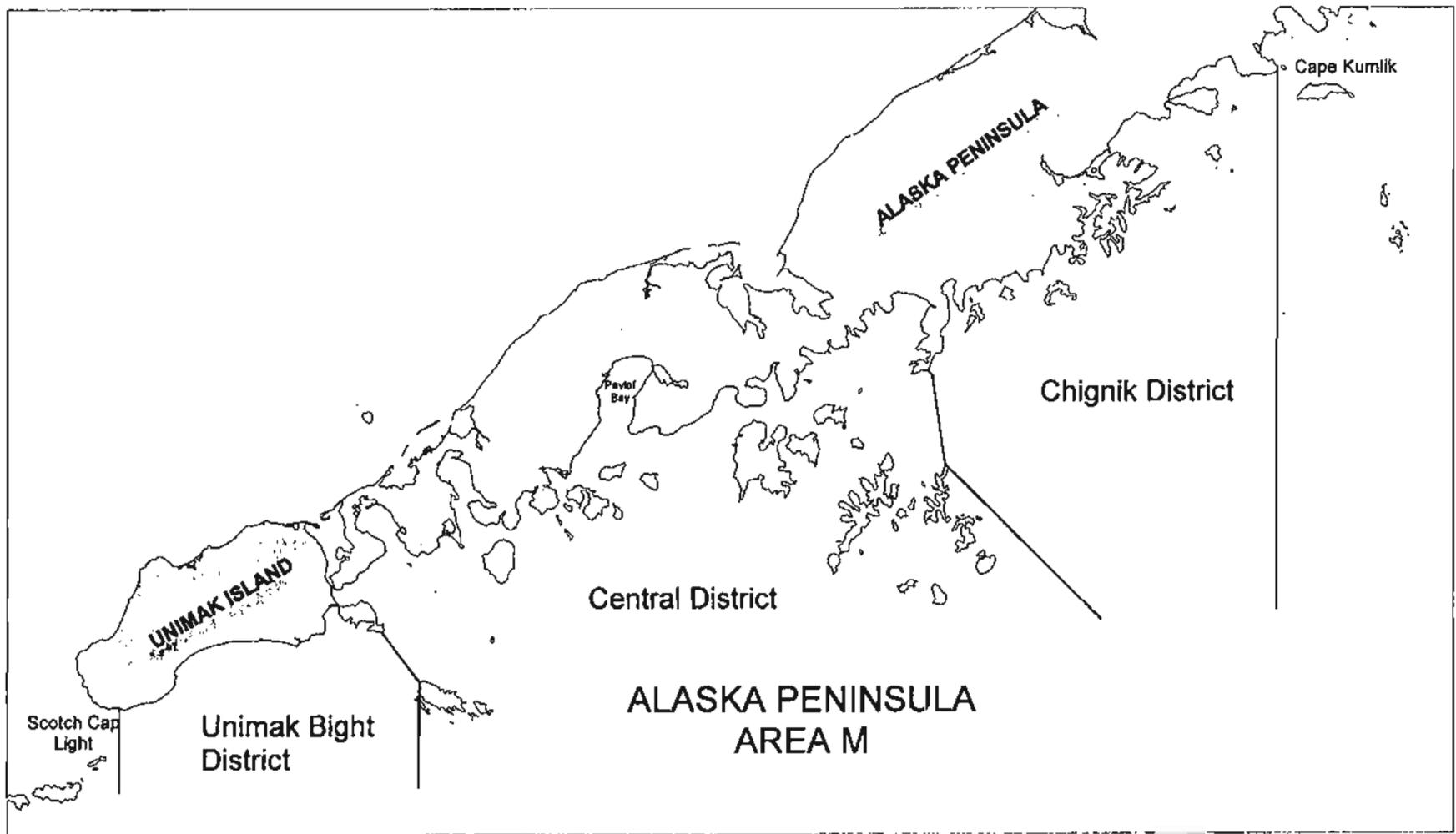


Figure 3-1. Alaska Peninsula management area with king crab districts.

ANNUAL MANAGEMENT REPORT FOR THE
SHELLFISH FISHERIES OF THE
ALEUTIAN ISLANDS

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May, 1998

ALEUTIAN ISLANDS KING CRAB MANAGEMENT AREA

Description of Area

The Aleutian Islands king crab registration area, Area O, has as its eastern boundary the longitude of Scotch Cap Light (164°44' West longitude), as its western boundary the U.S.-Russian Convention Line of 1867, and as its northern boundary a line the latitude of Cape Sarichef (54° 36' North latitude) from Unimak Island west to 171° West longitude, then north to 55°30' North latitude, and continuing west to the U.S.- Russian Convention Line of 1867 (Figure 4-1).

ALEUTIAN ISLANDS RED KING CRAB

Historic Background

In March of 1996, the Alaska Board of Fisheries (BOF) established the new Aleutian Islands king crab registration area by combining two existing king crab registration areas, Dutch Harbor and Adak. This action was in response to a proposal from fishermen regarding the brown (or golden) king crab fishery in those areas. Development of the new management area was not expected to impact management of red king crabs in this area.

The Dutch Harbor red king crab fishery, which occurred in the eastern portion of the Aleutian Islands Area, began in 1961 and rapidly became a major production area. Harvest fluctuated widely, reaching a peak during the 1966/67 season at 33 million pounds and then declining to 430 thousand pounds during the 1982/83 season. The fishery has remained closed since the 1982/83 season due to low stock abundance.

The Adak red king crab fishery, which occurred in the western portion of the Aleutian Island Area, also started in 1961; it peaked in the 1964/65 season at 21.2 million pounds. Harvest varied from almost 19 million pounds in 1972/73 to just over 400 thousand pounds in 1975/76. Harvest remained relatively stable at less than two million pounds from the 1980/81 to the 1992/93 seasons. The harvest declined from 700 thousand pounds in 1993/94 to 39 thousand pounds in 1995/96.

1997/98 Fishery

The Aleutian Islands red king crab fishery was not opened for the 1997/98 season due to low stock abundance. Regional Information Report No. 4K97-16: Annual Management Report for the Shellfish Fisheries of the Westward Region, 1995, contains historical information regarding catch and economic performance of the former Adak and Dutch

Harbor red king crab fisheries. Tables 4-1 and 4-2 contain information pertaining to the historic catch and economic performance of the Aleutian Islands red king crab fishery.

Stock Status

The last trawl survey conducted in the Aleutian Islands registration occurred in 1995 and encompassed only the eastern portion of what was previously the Dutch Harbor registration area. In that survey, conducted by the Alaska Department of Fish and Game, no red king crab were caught at any trawl station. Based on these results no stock recovery is expected in this area for the foreseeable future. The next scheduled survey of the eastern Aleutian areas is tentatively scheduled for the summer of 1999.

ALEUTIAN ISLANDS GOLDEN KING CRAB

Historic Background

In March of 1996, the Alaska Board of Fisheries established the new Aleutian Islands king crab registration area by combining two existing areas, Dutch Harbor and Adak. The board action was in response to a petition by fisherman to move the existing line separating the two areas to the east. The intent of the petition was to move the Adak line east to include the Western District of the Dutch Harbor area. This would, essentially, put all of the productive golden king crab (*Lithodes aequispinus*) waters of the Aleutian Islands into the Adak registration area. (It should be noted that *L. aequispinus* is often referred to as brown king crab and appears as such in the Alaska Department of Fish and Game's Commercial Fishing Regulations.)

In response to the petition, the Alaska Department of Fish and Game favored moving the line west to 174° West longitude, noting the existing line divided the most abundant stock of golden king crab in the area between Scotch Cap Light and the U.S.- Russian Convention Line of 1867. This would allow the department to manage that population as a discrete stock. Historic catch data from Dutch Harbor and Adak indicates a majority of the harvest from these areas occurs between 169° and 174° West Longitude (Figure 4-2).

The board eliminated the existing line between the Dutch Harbor and Adak areas forming one registration area, the Aleutian Islands, Area O. The board also eliminated district designations after testimony was presented by the department that districts were not currently used as a management tool.

The board, noting distribution of crabs in the new area (Figure 4-2), directed the department to manage the population east of 174° West longitude as a discrete stock of golden king crab. A conservative approach to the management of golden king crab in this area was stipulated by the board, as was 100% observer coverage. The level of future observer coverage will be addressed at the Spring 1999 Board of Fish meeting.

1996/97 Fishery

The inaugural Aleutian Islands Area O golden (brown) king crab fishery opened at 12:00 noon on September 1. The department established a guideline harvest level of 5.9 million for this new area. The harvest level was based on a conservative approach to the recent harvest levels observed in the Dutch Harbor and Adak golden king crab fisheries (Table 4-3). A 3.2 million pound quota was set for the area east of 174° West longitude, and 2.7 million pounds was established for the western part of the registration area.

Analysis of data for the 1996/97 season showed a total of 18 vessels made 166 deliveries for a harvest of 5.8 million pounds. This compares to a combined Adak and Dutch Harbor total of 181 landings made by 28 vessels for a harvest of 6.9 million pounds during the 1995/96 season (Table 4-3 and Figure 4-3).

Most fishing effort occurred east of 174° West longitude until that area was closed by emergency order (E. O.) on December 25, 1996. Fish ticket data for that area showed a total of 14 vessels made 70 deliveries for 3.3 million pounds (Table 4-3). Fish ticket data for the area west of 174° West longitude showed a total of 13 vessels made 100 deliveries for 2.6 million pounds. The portion of Area O west of 174° West longitude was not closed by E.O. this year; fishermen did not attain the GHL of 2.7 million pounds prior to the opening of the entire registration area for the 1997/98 season.

Catch rate (CPUE) for the entire Aleutian Islands registration area was six crabs per pot pull (Table 4-3). The average weight of legal sized male crab was 4.4 pounds. Fishery data for the eastern portion of the area show a CPUE of six crabs per pot pull, while the average weight was 4.5 pounds. This compares favorably with the 1995 Dutch Harbor fishery in this area, however, it is somewhat higher than the 1995/96 Adak fishery east of 174° West longitude. In the eastern part of Adak, CPUE was five crabs per pot pull and the average weight was 4.2 pounds. CPUE for the western portion of the Aleutian Islands was six crabs per pot pull; average weight was 4.2 pounds. This compares to five crabs per pot pull and 4.2 pounds for the average weight of crab observed in the 1995/96 Adak fishery west of 174° West longitude.

Fifteen vessels obtained observers, registered and received tank inspections at the start of the fishery. Of the 18 vessels participating in this fishery, 5 fished in waters east of 174° West longitude only, 4 fished only west of that longitude and 9 operated in both areas. This level of vessel effort (18) is similar to that recently observed in the Dutch Harbor area, but is well below the effort observed in recent years in the Adak area (average of 27 vessels for the prior three seasons).

Vessel activity varied greatly throughout the fishery, from as many as 17 vessels down to 1 vessel operating at a time. Most vessels that operated in the Aleutian Islands fishery departed the grounds to participate in other fisheries. Those fisheries included the St. Matthew and Bristol Bay king crab, Pribilof hair crab and Bering Sea *C. bairdi* and *C. opilio* fisheries. Also, a low exvessel price for golden king crab (\$2.20 per pound at the start of the fishery), combined with the anticipated early closure of the most productive

grounds (the area east of 174° West longitude) prompted many vessel owners to schedule shipyard time during the summer of 1997.

Two catcher-processors participated in this fishery during the 1996/97 season; both operated entirely in the western portion of the registration area. Two catcher-processors operated during the 1995/96 Adak fishery with activity occurring east and west of 174° West longitude, while one catcher-processor operated during the 1995 Dutch Harbor fishery. No floater-processors have operated in this area since the 1994 Dutch Harbor and the 1994/95 Adak fishery.

The exvessel price per pound observed for the Aleutian Island golden king crab fishery was \$2.23 (Table 4-4). The estimated fishery value was \$12.5 million. Approximately \$6.8 million was generated from the eastern portion of the registration area during the 115 day season, while \$5.7 million was produced by the 365 day season in the western portion.

Harvest in the area east of 174° West longitude occurred predominantly from the statistical areas around Yunaska Island and the Islands of the Four Mountains in what was previously the Dutch Harbor area (Table 4-5 and Figure 4-1). Also, Amukta Pass and Seguam Pass were areas of additional fishing concentration in what was the eastern part of the Adak area. Harvest in the area west of 174° West longitude was distributed from Amlia Island to Attu Island, but was primarily centered between Amchitka Pass and Buldir Island.

Preliminary - 1997/98 Fishery

The Aleutian Islands Area O golden king crab fishery opened at 12:00 noon on September 1. Fourteen vessels obtained observers, registered and received tank inspections at the start of the fishery. Participation in this fishery varied greatly, from one vessel to a maximum of fifteen, as vessels departed this fishery to participate in the St. Matthew, Pribilof and Bristol Bay king crab and Bering Sea snow crab fisheries.

Preliminary analysis of fish ticket data for the area east of 174° West longitude showed 14 vessels made 69 landings for 3.35 million pounds (Table 4-6). The catch rate (CPUE) was seven crabs per pot pull; the average weight was 4.5 pounds per crab. This area closed by E. O. on November 24. The western part of the registration area (west of 174° West longitude) remains open; harvest information is confidential.

Stock Status

Aleutian Islands golden king crab stocks are not regularly surveyed; the last survey with complete analysis occurred in 1991. A portion of the eastern Aleutian Islands area was surveyed in the summer of 1997. Information from this survey and that provided by

observers will yield information necessary to more accurately assess Aleutian Islands brown king crab and manage the fishery.

ALEUTIAN ISLANDS SCARLET KING CRAB

Historic Background

In March of 1996, the Alaska Board of Fisheries (BOF) established the new Aleutian Islands king crab registration area by combining two existing king crab management areas, Dutch Harbor and Adak. The new management area, the Aleutian Islands Area O, extends from Scotch Cap Light (164°44' West longitude) to the U.S.-Russia Convention Line of 1867. The management of scarlet king crab in this area was not effected by this action. Scarlet king crab are harvested under authority of a permit as authorized in 5 AAC 34.082. Prior to September 1, 1996, scarlet king crab have been primarily harvested in this area as incidental to the golden or brown king crab fishery in the former Dutch Harbor and Adak management areas and the deepwater Tanner crab fishery in the Eastern and Western Aleutian Districts.

1997 Fishery

In 1997, eight vessels registered to harvest *Lithodes couesi* as incidental bycatch in the Aleutian Island golden or brown king crab fishery. A total of 6,720 pounds of *L. couesi* were harvested from 12 landings made by only three of the eight vessels that registered in 1997 (Table 4-7).

Stock Status

There are no surveys conducted, nor any population estimates made for *L. couesi* in the Aleutian Islands Management area. However, 100% observer coverage has provided information on the size, sex and species composition of the retained and non-retained catch. This information will be used by the department to develop a harvest strategy for this deepwater crab species.

EASTERN ALEUTIAN TANNER CRAB MANAGEMENT DISTRICT

Description of Area

The Eastern Aleutian District for Tanner crab encompasses all waters of Statistical Area J between the longitude of Scotch Cap Light at 164°44' West longitude and 172° West

longitude, and south of the latitude of Cape Sarichef at 54°36' North latitude (Figure 4-4).

EASTERN ALEUTIAN TANNER CRAB

Introduction

The Eastern Aleutian District is marginal habitat for *Chionoecetes bairdi* Tanner crabs as evidenced by the presence of commercial quantities in only a few major bays and inlets. The fishery has been rather small, and except for the late 1970's (with a record catch of 2.5 million pounds in the 1977/78 season), harvest has remained significantly less than one million pounds (Table 4-8). The fishery began in Akutan and Unalaska Bays but has since expanded to include all areas known to contain Tanner crabs. The 1994 fishery produced a total harvest of 166,545 pounds. The depressed status of Tanner crab stocks in this area, based on a triennial survey last conducted in 1995, resulted in the area remaining closed during the 1995 and 1996 seasons.

1996/97 Fishery

There was no fishery for *C. bairdi* in the Eastern Aleutian District in 1997 due to low stock abundance. Tables 4-8 and 4-9 contain historical information on catch and economic fishery performance.

Stock Status

Surveys conducted of the Eastern Aleutian District conducted in 1990 and 1991 indicated a population level that could support a harvest in the 100,000 pound range. A subsequent survey in 1994 conducted by the department showed a 75% decline in the *C. bairdi* population from the levels observed in 1991. This decline prompted emergency closure of the 1995 season. The 1995 survey indicated an increase in population abundance over the 1994 survey, but still well below the levels observed in 1990 and 1991. An increase of juvenile males and immature females was observed in the 1995 survey compared to the 1994 survey. However, the abundance of legal males had declined well below the 1994 estimates prompting an extension of the fishery closure. The originally planned survey for 1998 has been rescheduled for completion in 1999. Results of that survey will be used to reevaluate the status of this Tanner crab stock

EASTERN ALEUTIAN *CHIONOECETES TANNERI* TANNER CRAB

Historic Background

In the early 1980's *Chionoecetes tanneri*, or grooved Tanner crab, were occasionally landed in the Eastern Aleutians area incidental to the developing Dutch Harbor golden or brown king crab fishery. Until 1993 however, no steady market existed for *C. tanneri* and no commercial harvest was reported.

During 1993, interest in *C. tanneri* increased and commercial landings were made from the Eastern Aleutian District. Fishing effort in this district was from July through December, and only one vessel participated during the entire season. Also in 1993 based on biometric measurements collected by onboard observers, the department restricted the harvest to males five inches or greater in carapace width.

To collect biological information on *C. tanneri*, the department implemented 100% observer coverage in 1994 as allowed by the permit provisions provided in 5 AAC 35.082 (changed in October 1996 to 5 AAC 35.551). Effort in the fishery increased from one vessel in 1993 to three in 1994, seven in 1995 and decreased back to three in 1996. Vessels typically started fishing for *C. tanneri* in March after the closure of the *C. opilio* fishery and continued into December for 1994 and 1995 while ceasing in August in 1996.

In 1997, the department set guideline harvest levels (GHL's) derived from previous season's catch information from the areas where extensive fishing for *C. tanneri* had occurred. The Eastern Aleutians, along with the Bering Sea and Alaska Peninsula registration areas were among areas where historically, effort had been extensive. A GHL of 200,000 pounds was set for each of the aforementioned areas. Smaller 100,000 pound GHL's were set for the Kodiak and Western Aleutian areas to allow for further exploration to less historically fished areas. Additionally, pots were required to have at least two escape rings of 4.5 inches minimum diameter. This provision was included to address industry concerns about viability of deepwater crabs discarded at sea because of size and sex restrictions.

1997 Fishery

No vessels registered to harvest *C. tanneri* in the Eastern Aleutian District in 1997. Table 4-10 contains information on historic catch and economic fishery performance.

Stock Status

No stock assessment surveys are conducted for *C. tanneri* Tanner crab, and consequently no population estimates are available. Onboard observers have been required on all vessels targeting *C. tanneri* since 1994. This program has yielded data on size, sex and

species composition of the retained and non-retained catch which will help provide the basis for a management strategy for this deepwater species.

EASTERN ALEUTIAN *CHIONOECETES ANGULATUS* TANNER CRAB

Historic Background

Chionoecetes angulatus Tanner crab are taken under provisions of a permit authorized under 5 AAC 35.511 (5 AAC 35.082 prior to October 1996), and have previously been harvested in the Eastern Aleutian District as incidental bycatch in the *C. tanneri* fishery. Fishermen have anecdotally reported catching this crab species in small numbers, but prior to the 1995 season no harvest was reported on fish tickets. Shellfish observers, required for all deepwater Tanner crab fisheries, reported a small percentage of *C. angulatus* in 1994. Vessels targeted *C. angulatus* for the first time in 1995.

1997 fishery

No vessels registered to harvest *C. angulatus* in the Eastern Aleutian District in 1997. Table 4-11 includes information on historical catch and economic performance for the Eastern Aleutian District *C. angulatus* fishery.

Stock Status

No stock assessment surveys information is available for *C. angulatus* and, consequently stock abundance is unknown. Onboard observers have been required on all vessels targeting *C. angulatus* and *C. tanneri* and information on size, sex and species composition of the retained and non-retained catch has been collected. This information will be used in developing a management strategy for this deepwater species in future years.

WESTERN ALEUTIAN DISTRICT TANNER CRAB DISTRICT

Description of Area

The Western Aleutian District of Statistical Area J includes all waters west of 172° West longitude, East of the U.S.-Russian Convention Line of 1867, and south of 54° 36' North latitude (Figure 4-5).

WESTERN ALEUTIAN DISTRICT TANNER CRAB

Historic Background

The harvest of Tanner crabs, *Chionoecetes bairdi*, from the Western Aleutian District have generally been incidental to the directed red king crab fishery in that area. Since the late 1970's, the harvest has ranged from a high of over 800,000 pounds in 1981/82 to the catch of less than 8,000 pounds in 1991/92 (Table 4-12).

1996/97 Fishery

The Western Aleutian District Tanner crab fishery opened by regulation on November 1, 1996. No vessels had registered in the Western Aleutian District by the regulatory closure on March 31, 1997, therefore no landings were recorded for the 1996/97 season. Tables 4-12 and 4-13 contain historic fishery and economic performance for the Western Aleutian Tanner crab District.

Stock Status

No stock assessment surveys are conducted for *C. bairdi* Tanner crab in the Western Aleutian District and consequently no population estimates are available.

WESTERN ALEUTIAN *CHIONOECETES TANNERI* TANNER CRAB

Historic Background

The first reported landings of *Chionoecetes tanneri* Tanner crab from the Western Aleutian District occurred in the late 1970's as incidental catch from the developing golden or brown king crab fishery in the Adak king crab Management Area. In 1993 the department restricted the *C. tanneri* males five inches or greater in carapace width, however no effort was recorded from the Western Aleutian District.

To collect biological information on *C. tanneri* crabs the department implemented 100% observer coverage in 1994, as allowed by the permit provisions provided in 5 AAC 35.082 (now 5 AAC 35.511). During that year six vessels registered to fish, however only two made deliveries. One vessel directed fishing effort for *C. tanneri* crab for a portion of the season, the other made deliveries only incidental to the Adak golden or brown king crab fishery. In 1995 six vessels delivered 145,795 pounds, while effort decreased to only one vessel in 1996 (Table 4-14).

In 1997, based on the data collected by onboard observers, the department instituted Guideline Harvest Levels (GHL) for *C. tanneri* crabs. The GHL's were also based on historical landings for *C. tanneri* from specific registration areas. As the Western Aleutians had seen minimal harvest of *C. tanneri*, a 100,000 pound GHL was set for the District to allow for exploratory and incidental bycatch harvest.

Anecdotal information obtained from fishermen indicate some *C. angulatus* may have been retained as incidental bycatch in the *C. tanneri* and golden king crab fisheries in the area. However, there has been no documented harvest of *C. angulatus* from the Western Aleutian District.

1997 Fishery

No vessels registered to harvest *C. tanneri* from the Western Aleutian Tanner District in 1997.

Stock Status

No stock assessment surveys are conducted for *C. tanneri* Tanner crab and therefore no population estimates are available. Onboard observers have provided information on size, sex, and species composition of the retained and non-retained catch necessary to formulate a harvest strategy for this deepwater species.

ALEUTIAN DISTRICT DUNGENESS CRAB

Description of Area

The Aleutian District for Dungeness crabs *Cancer magister* includes all waters of Statistical Area J west of the longitude of Scotch Cap Light (164°44' West longitude) and south of the latitude of Cape Sarichef (54°36' North latitude). This area encompasses all of the Aleutian Islands (Figure 4-6).

Introduction

Islands in the Aleutian chain are separated by deep passes with swift currents. They are closely bordered on the north and south by the Aleutian Basin and Trench, respectively. Dungeness crabs inhabit bays, estuaries, and other shallow water habitats. Suitable habitat for Dungeness crabs in the Aleutian Islands is sparse and widely dispersed; therefore, populations are small and fishing effort is low within the district.

Historic Background

The Aleutian District Dungeness crab fishery is primarily a small vessel, summer fishery occurring in the vicinity of Unalaska Island, mainly within Unalaska Bay. Some larger vessel effort has occurred in other bays and around other islands. Effort in these areas has been sporadic throughout the history of the fishery.

Interest and activity in this fishery has been erratic from year to year, with the first reliable reports made in 1970. Since 1974, deliveries have ranged from zero in 1976, 1977, 1980, 1981, and 1994 through 1996, to over 91,000 pounds in 1984/85 (Table 15).

1997/98 Fishery

The 1997/98 Aleutian District Dungeness crab fishery opened by regulation at 12:00 noon on May 1. Five vessels registered for this fishery though only two made commercial landings. Given the number of participating vessels, catch information from the 1997/98 Aleutian District Dungeness crab fishery is confidential. Table 4-15 contains historical catch and economic performance for the fishery. The 1997/98 fishery closed by regulation at 12:00 noon on January 1, 1998.

ALEUTIAN SHRIMP MANAGEMENT DISTRICT

Description of Area

The Aleutian District of Area J for shrimp includes all Bering Sea and Pacific Ocean waters west of the longitude of Cape Sarichef at 164° 55' West longitude (Figure 4-7). The Aleutian District includes four sections: Unalaska Bay, Makushin Bay, Usof Bay and Beaver Inlet.

ALEUTIAN DISTRICT SHRIMP

Historic Background

The shrimp fishery has primarily been for pink shrimp *Pandalus borealis*. The shrimp fishery in the Aleutian District began in 1972 and has primarily been a trawl fishery. Catch and effort increased in the following years and peaked in 1977/78 at a harvest of 6.8 million pounds. Sharp declines in catches since 1978 prompted a reduction in season length. Between the years 1983 and 1992 no fishing occurred. However, in 1992 four vessels, all catcher-processors, prospected in the Aleutian District between the pollock seasons. Low concentrations of shrimp were located and all four vessels quit after

making a total of six landings for 72,133 pounds. For the years 1993-1997 no vessels registered or participated in the Aleutian District shrimp fishery (Table 4-16).

1997 Trawl Fishery

No vessels registered to trawl for shrimp in the Aleutian District during the 1997 season; therefore, no commercial harvest was reported.

1997 Pot Fishery

Two vessels registered to harvest shrimp using pots in the Aleutian District during the 1997 season; however, no commercial harvest was reported.

ALEUTIAN DISTRICT MISCELANEOUS SHELLFISH SPECIES REPORT

Description of the Area

The Eastern Aleutian District includes all waters south of the latitude of Cape Sarichef (54° 36' North latitude), west of the longitude of Scotch Cap Light (164° 44' West longitude), and east of the U.S.-Russian Convention line of 1867 (Figure 4-8).

Introduction

Shellfish species included in this section are those which are harvested in relatively small amounts compared to the commercial king and Tanner crab fisheries which occur in the Aleutian Islands. Those miscellaneous shellfish of historic or current interest include octopus, sea urchins, sea cucumbers, hair crab and snails.

Octopus

One vessel registered to target octopus in the Aleutian District in 1997. An additional five vessels registered to retain octopus as bycatch in the groundfish fisheries. One vessel registered to target octopus in both the Aleutians and Bering Sea Districts, while eleven vessels registered to retain octopus as bycatch in both of the districts. The combined harvest from all vessels participating in the Aleutian District octopus fishery during 1997 totaled 96,118 pounds from 233 landings.

Hair Crab

No vessels registered to fish Korean hair crab, *Erimacrus isembeckii*, in the Aleutian District during 1997.

Sea Urchins

Urchins are harvested by permits issued under authority granted by 5 AAC 38.412 from October 1 to January 31. No vessels or divers registered for sea urchins during the permit period for 1997; therefore, no landings were reported. In the 1996/97 season, 3,701 pounds were harvested in Unalaska Bay from a total of 15 dives (Table 4-17).

Sea Cucumbers

No vessels or divers registered to harvest sea cucumbers from the Aleutian District during 1997.

Snails

No vessels registered to harvest snails *Neptunea* spp. and *Baccinum* spp. in the Aleutian District during 1997.

Paralomis multispina

No vessels registered to harvest the crab *P. multispina* in the Aleutian District during 1997.

Table 4-1. Aleutian Islands, Area O, red king crab commercial fishery statistics, 1960/61-1997.

Season		Number of		Crabs ^b	Harvest ^{b,c}	Pots		Average		Deadloss
		Vessels ^a	Landings			Pulled	CPUE ^d	Weight ^e	Length ^e	
1960/61	East of 172°	NA	NA	NA	NA	NA	NA	NA	NA	NA
	West of 172°	4	41	NA	2,074,000	NA	NA	NA	NA	NA
	TOTAL									
1961/62	East of 172°	4	69	NA	533	NA	NA	NA	NA	NA
	West of 172°	8	218	NA	6,114,000	NA	NA	NA	NA	NA
	TOTAL		287		6,114,533					
1962/63	East of 172°	6	102	NA	1,536	NA	NA	NA	NA	NA
	West of 172°	9	248	NA	8,006,000	NA	NA	NA	NA	NA
	TOTAL		350		8,007,536					
1963/64	East of 172°	4	242	NA	3,893	NA	NA	NA	NA	NA
	West of 172°	11	527	NA	17,904,000	NA	NA	NA	NA	NA
	TOTAL		769		17,907,893					
1964/65	East of 172°	12	336	NA	13,761	NA	NA	NA	NA	NA
	West of 172°	18	442	NA	21,193,000	NA	NA	NA	NA	NA
	TOTAL		778		21,206,761					
1965/66	East of 172°	21	555	NA	19,196	NA	NA	NA	NA	NA
	West of 172°	10	431	NA	12,915,000	NA	NA	NA	NA	NA
	TOTAL		986		12,934,196					
1966/67	East of 172°	27	893	NA	32,852	NA	NA	NA	NA	NA
	West of 172°	10	90	NA	5,883,000	NA	NA	NA	NA	NA
	TOTAL		983		5,915,852					
1967/68	East of 172°	34	747	NA	22,709	NA	NA	NA	NA	NA
	West of 172°	22	505	NA	14,131,000	NA	NA	NA	NA	NA
	TOTAL		1,252		14,153,709					

-Continued-

Table 4-1. (Page 2 of 6)

Season		Number of			Harvest ^{b,c}	Pots		Average		Deadloss
		Vessels ^a	Landings	Crabs ^b		Pulled	CPUE ^d	Weight ^b	Length ^e	
1968/69	East of 172°	NA	NA	NA	11,300,000 ^f	NA	NA	NA	NA	NA
	West of 172°	30	NA	NA	16,100,000	NA	NA	NA	NA	NA
	TOTAL				27,400,000					
1969/70	East of 172°	41	375	NA	8,950,000	72,683	NA	NA	NA	NA
	West of 172°	33	435	NA	18,016,000	115,929	NA	6.5	NA	NA
	TOTAL		810		26,966,000	188,612				
19670/71	East of 172°	32	268	NA	9,652,000	56,198	NA	NA	NA	NA
	West of 172°	35	378	NA	16,057,000	124,235	NA	NA	NA	NA
	TOTAL		646		25,709,000	180,433				
1971/72	East of 172°	32	210	1,447,692	9,391,615	31,531	46	7	NA	NA
	West of 172°	40	166	NA	15,475,940	46,011	NA	NA	NA	NA
	TOTAL		376		24,867,555	77,542				
1972/73	East of 172°	51	291	1,500,904	10,450,380	34,037	44	7		
	West of 172°	43	313	3,461,025	18,724,140	81,133	43	5.4	NA	NA
	TOTAL		604	4,961,929	29,174,520	115,170	43	5.9		
1973/74	East of 172°	56	290	1,780,673	12,722,660	41,840	43	7.1	NA	NA
	West of 172°	41	239	1,844,974	9,741,464	70,059	26	5.3	148.6	NA
	TOTAL		529	3,625,647	22,464,124	111,899	32	6.2		
1974/75	East of 172°	87	372	1,812,647	13,991,190	71,821	25	7.7		
	West of 172°	36	97	532,298	2,774,963	32,620	16	5.2	148.6	NA
	TOTAL		469	2,344,945	16,766,153	104,441	22	7.1		
1975/76	East of 172°	79	369	2,147,350	15,906,660	86,874	25	7.4		
	West of 172°	20	25	79,977	411,583	8,331	10	5.2	147.2	NA
	TOTAL		394	2,227,327	16,318,243	95,205	23	7.3		

-Continued-

Table 4-1. (Page 3 of 6)

Season		Number of			Harvest ^{b,c}	Pots		Average		Deadloss
		Vessels ^a	Landings	Crabs ^b		Pulled	CPUE ^d	Weight ^b	Length ^e	
1976/77	East of 172°	72	226	1,273,298	9,367,965 ^g	65,796	19	7.4		
	East of 172°	38	61	86,619	830,458 ^h	17,298	5	9.6	NA	NA
	West of 172°				FISHERY CLOSED					
	TOTAL		287	1,359,917	10,198,423	83,094	16	7.5		
1977/78	East of 172°	33	227	539,656	3,658,860 ^g	46,617	12	6.8		
	East of 172°	6	7	3,096	25,557 ⁱ	812	4	8.3	NA	NA
	West of 172°	12	18	160,343	905,527	7,269	22	5.7	152.2	NA
	TOTAL		252	703,095	905,527	54,698	13	6.5		
1978/79	East of 172°	60	300	1,233,758	6,824,793	51,783	24	5.5	NA	NA
	West of 172°	13	27	149,491	807,195	13,948	11	5.4	NA	1,170
	TOTAL		327	1,383,249	7,631,988	65,731	21	5.5		
1979/80	East of 172°	104	542	2,551,116	15,010,840	120,554	21	5.9	NA	NA
	West of 172°	18	23	82,250	467,229	9,757	8	5.7	152	24,850
	TOTAL		565	2,633,366	15,478,069	130,311	20	5.9		
1980/81	East of 172°	114	830	2,772,287	17,660,620 ^g	231,607	12	6.4	NA	NA
	East of 172°	54	120	182,349	1,392,923 ⁱ	30,000	6	7.6		
	West of 172°	17	52	254,390	1,419,513	20,914	12	5.6	149	54,360
	TOTAL		1,002	3,209,026	20,473,056	282,521	11	6.4		
1981/82	East of 172°	92	683	741,966	5,155,345	220,087	3	6.9	NA	NA
	West of 172°	46	106	291,311	1,648,926	40,697	7	5.7	148.3	8,759
	TOTAL		789	1,033,277	6,804,271	260,784	4	6.6		
1982/83	East of 172°	81	278	64,380	431,179	72,924	1	6.7		
	West of 172°	72	191	284,787	1,701,818	66,893	4	6.0	150.8	7,855
	TOTAL		469	349,167	2,132,997	139,817	3	6.1		

-Continued-

Table 4-1. (Page 4 of 6)

Season	Number of			Harvest ^{b,c}	Pots Pulled	CPUE ^d	Average		Deadloss	
	Vessels ^a	Landings	Crabs ^b				Weight ^b	Length ^e		
1983/84	East of 172°			FISHERY CLOSED						
	West of 172°	106	248	298,948	1,981,579	60,840	5	6.6	157.3	3,833
	TOTAL	106	248	298,948	1,981,579	60,840	5	6.6	157.3	3,833
1984/85	East of 171°			FISHERY CLOSED						
	West of 171°	64	113	206,751	1,367,672	50,685	4	6.6	155.1	0
	TOTAL	64	113	206,751	1,367,672	50,685	4	6.6	155.1	0
1985/86	East of 171°			FISHERY CLOSED						
	West of 171°	35	89	162,271	906,293	32,478	5	5.6	152.2	6,120
	TOTAL	35	89	162,271	906,293	32,478	5	5.6	152.2	6,120
1986/87	East of 171°			FISHERY CLOSED						
	West of 171°	33	69	126,146	712,243	29,189	4	5.6	NA	500
	TOTAL	33	69	126,146	712,243	29,189	4	5.6	NA	501
1987/88	East of 171°			FISHERY CLOSED						
	West of 171°	71	109	211,712	1,213,933	43,433	5	5.7	148.5	6,900
	TOTAL	71	109	211,712	1,213,933	43,433	5	5.7	148.5	6,900
1988/89	East of 171°			FISHERY CLOSED						
	West of 171°	73	156	266,053	1,567,314	64,374	4	5.9	153.1	557
	TOTAL	73	156	266,053	1,567,314	64,374	4	5.9	153.1	557
1989/90	East of 171°			FISHERY CLOSED						
	West of 171°	56	123	196,070	1,118,566	54,513	4	5.7	151.5	759
	TOTAL	56	123	196,070	1,118,566	54,513	4	5.7	151.5	759
1990/91	East of 171°			FISHERY CLOSED						
	West of 171°	7	34	146,903	828,105	10,674	14	5.6	148.1	0
	TOTAL	7	34	146,903	828,105	10,674	14	5.6	148.1	0

-Continued-

Table 4-1. (Page 5 of 6)

Season	Number of			Harvest ^{b,c}	Pots		Average		Deadloss
	Vessels ^a	Landings	Crabs ^b		Pulled	CPUE ^d	Weight ^b	Length ^e	
1991/92				FISHERY CLOSED					
1992/93				FISHERY CLOSED					
1993/94				FISHERY CLOSED					
1994/95				FISHERY CLOSED					
1995/96				FISHERY CLOSED					
1996/97				FISHERY CLOSED					
				FISHERY CLOSED					
				FISHERY CLOSED					

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Table 4-1. (Page 6 of 6)

Season	Number of		Crabs ^b	Harvest ^{b,c}	Pots Pulled CPUE ^d	Average		Deadloss
	Vessels ^a	Landings				Weight ^b	Length ^e	
1997/98	East of 174°			FISHERY CLOSED				
	West of 174°			FISHERY CLOSED				
	TOTAL							

^aSome vessels fished both sides; total counts dual registrations only one time.

^bIn pounds.

^cDeadloss included.

^dDefined as catch per pot pull.

^eIn millimeters.

^fPrior to 1968/69 fishery was open 12 months a year. 1968/69 season ran 1/1/68 to 3/15/69.

^gSplit season based on 6.5 inch minimum legal size.

^hSplit season based on 8 inch minimum legal size.

ⁱSplit season based on 7.5 inch minimum legal size.

Table 4-2. Aleutian Islands, Area O, red king crab economic performance, 1960/61-1997.

Season		Number of		Pots Pulled	Harvest ^{b,c}	Deadloss	Value	
		Vessels ^a	Landings				Exvessel	Season ^d
1960/61	East of 172°	NA	NA	NA	NA	NA	NA	NA
	West of 172°	4	41	NA	2,074,000	NA	NA	NA
	TOTAL							
1961/62	East of 172°	4	69	NA	533	NA	NA	NA
	West of 172°	8	218	NA	6,114,000	NA	NA	NA
	TOTAL		287		6,114,533			
1962/63	East of 172°	6	102	NA	1,536	NA	NA	NA
	West of 172°	9	248	NA	8,006,000	NA	NA	NA
	TOTAL		350		8,007,536			
1963/64	East of 172°	4	242	NA	3,893	NA	NA	NA
	West of 172°	11	527	NA	17,904,000	NA	NA	NA
	TOTAL		769		17,907,893			
1964/65	East of 172°	12	336	NA	13,761	NA	NA	NA
	West of 172°	18	442	NA	21,193,000	NA	NA	NA
	TOTAL		778		21,206,761			
1965/66	East of 172°	21	555	NA	19,196	NA	NA	NA
	West of 172°	10	431	NA	12,915,000	NA	NA	NA
	TOTAL		986		12,934,196			
1966/67	East of 172°	27	893	NA	32,852	NA	NA	NA
	West of 172°	10	90	NA	5,883,000	NA	NA	NA
	TOTAL		983		5,915,852			
1967/68	East of 172°	34	747	NA	22,709	NA	NA	NA
	West of 172°	22	505	NA	14,131,000	NA	NA	NA
	TOTAL		1,252		14,153,709			

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Table 4-2. (Page 2 of 6)

Season		Number of		Pots Pulled	Harvest ^{b,c}	Deadloss	Value	
		Vessels ^a	Landings				Exvessel	Season ^d
1968/69	East of 172°	NA ^e	NA	NA	11,300,000	NA	NA	NA
	West of 172°	30	NA	NA	16,100,000	NA	NA	NA
	TOTAL				27,400,000			
1969/70	East of 172°	41	375	72,683	8,950,000	NA	NA	NA
	West of 172°	33	435	115,929	18,016,000	NA	NA	NA
	TOTAL		810	188,612	26,966,000			
19670/71	East of 172°	32	268	56,198	9,652,000	NA	NA	NA
	West of 172°	35	378	124,235	16,057,000	NA	NA	NA
	TOTAL		646	180,433	25,709,000			
1971/72	East of 172°	32	210	31,531	9,391,615	NA	NA	NA
	West of 172°	40	166	46,011	15,475,940	NA	NA	NA
	TOTAL		376	77,542	24,867,555			
1972/73	East of 172°	51	291	34,037	10,450,380	NA	NA	NA
	West of 172°	43	313	81,133	18,724,140	NA	NA	NA
	TOTAL		604	115,170	29,174,520			
1973/74	East of 172°	56	290	41,840	12,722,660	NA	\$0.65	\$8,269,729
	West of 172°	41	239	70,059	9,741,464	NA	NA	NA
	TOTAL		529	111,899	22,464,124			
1974/75	East of 172°	87	372	71,821	13,991,190		\$0.37	\$5,176,740
	West of 172°	36	97	32,620	2,774,963	NA	NA	NA
	TOTAL		469	104,441	16,766,153			
1975/76	East of 172°	79	369	86,874	15,906,660	NA	\$0.42	\$6,680,797
	West of 172°	20	25	8,331	411,583	NA	NA	NA
	TOTAL		394	95,205	16,318,243			

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Table 4-2. (Page 3 of 6)

Season		Number of		Pots Pulled	Harvest ^{b,c}	Deadloss	Value	
		Vessels ^a	Landings				Exvessel	Season ^d
1976/77	East of 172°	72	226	65,796	9,367,965 ^f	NA	\$0.64	\$5,995,497
	East of 172°	38	61	17,298	830,458 ^g	NA	\$0.79	\$656,061
	West of 172°				FISHERY CLOSED			
	TOTAL		287	83,094	10,198,423			
1977/78	East of 172°	33	227	46,617	3,658,860 ^f	NA	\$0.99	\$3,622,271
	East of 172°	6	7	812	25,557 ^h	NA	\$1.35	\$34,502
	West of 172°	12	18	7,269	905,527	NA	NA	NA
	TOTAL		252	54,698	905,527			
1978/79	East of 172°	60	300	51,783	6,824,793	NA	\$1.35	\$9,213,471
	West of 172°	13	27	13,948	807,195	1,170	NA	NA
	TOTAL		327	65,731	7,631,988			
1979/80	East of 172°	104	542	120,554	15,010,840	NA	\$0.90	\$13,509,756
	West of 172°	18	23	9,757	467,229	24,850	NA	NA
	TOTAL		565	130,311	15,478,069			
1980/81	East of 172°	114	830	231,607	17,660,620 ^f	NA	\$1.02	\$18,013,832
	East of 172°	54	120	30,000	1,392,923 ^h	NA	\$1.03	\$1,434,711
	West of 172°	17	52	20,914	1,419,513	54,360	NA	NA
	TOTAL		1,002	282,521	20,473,056			
1981/82	East of 172°	92	683	220,087	5,155,345	NA	\$2.30	\$11,617,293
	West of 172°	46	106	40,697	1,648,926	8,759	NA	NA
	TOTAL		789	260,784	6,804,271			
1982/83	East of 172°	81	278	72,924	431,179	NA	\$3.43	\$1,478,944
	West of 172°	72	191	66,893	1,701,818	7,855	NA	NA
	TOTAL		469	139,817	2,132,997			

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Table 4-2. (Page 4 of 6)

Season	Number of		Pots Pulled	Harvest ^{b,c}	Deadloss	Value	
	Vessels ^a	Landings				Exvessel	Season ^d
1983/84	East of 172°			FISHERY CLOSED			
	West of 172°	106	248	60,840	1,981,579	3,833	NA
	TOTAL		248	60,840	1,981,579	3,833	NA
1984/85	East of 171°			FISHERY CLOSED			
	West of 171°	64	113	50,685	1,367,672	0	NA
	TOTAL	64	113	50,685	1,367,672	0	NA
1985/86	East of 171°			FISHERY CLOSED			
	West of 171°	35	89	32,478	906,293	6,120	NA
	TOTAL	35	89	32,478	906,293	6,120	NA
1986/87	East of 171°			FISHERY CLOSED			
	West of 171°	33	69	29,189	712,243	500	NA
	TOTAL	33	69	29,189	712,243	500	NA
1987/88	East of 171°			FISHERY CLOSED			
	West of 171°	71	109	43,433	1,213,933	6,900	NA
	TOTAL	71	109	43,433	1,213,933	6,900	NA
1988/89	East of 171°			FISHERY CLOSED			
	West of 171°	73	156	64,374	1,567,314	557	NA
	TOTAL	73	156	64,374	1,567,314	557	NA
1989/90	East of 171°			FISHERY CLOSED			
	West of 171°	56	123	54,513	1,118,566	759	NA
	TOTAL	56	123	54,513	1,118,566	759	NA
1990/91	East of 171°			FISHERY CLOSED			
	West of 171°	7	34	10,674	828,105	0	NA
	TOTAL	7	34	10,674	828,105	0	NA

-Continued-

Table 4-2. (Page 5 of 6)

Season	Number of		Pots Pulled	Harvest ^{b,c}	Deadloss	Value			
	Vessels ^a	Landings				Exvessel	Season ^d		
1991/92	East of 171°			FISHERY CLOSED					
	West of 171°		10	35	16,636	951,278	0	NA	NA
	TOTAL		10	35	16,636	951,278	0		
1992/93	East of 171°			FISHERY CLOSED					
	West of 171°		12	30	16,129	1,286,424	5,000	NA	NA
	TOTAL		12	30	16,129	1,286,424	5,000		
1993/94	East of 171°			FISHERY CLOSED					
	West of 171°		12	21	13,575	698,077	7,402	NA	NA
	TOTAL		12	21	13,575	698,077	7,402		
1994/95	East of 171°			FISHERY CLOSED					
	West of 171°		20	31	18,146	196,967	1,430	NA	NA
	TOTAL		20	31	18,146	196,967	1,430		
1995/96	East of 171°			FISHERY CLOSED					
	West of 171°		4	12	2,205	38,941	235	NA	NA
	TOTAL		4	12	2,205	38,941	235		
1996/97	East of 174°			FISHERY CLOSED					
	West of 174°			FISHERY CLOSED					
	TOTAL								

-Continued-

Table 4-2. (Page 6 of 6)

Season	Number of		Pots Pulled	Harvest ^{b,c}	Deadloss	Value	
	Vessels ^a	Landings				Exvessel	Season ^d
1997/98	East of 174°			FISHERY CLOSED			
	West of 174°			FISHERY CLOSED			
	TOTAL						

^aSome vessels fished both sides; total counts dual registrations only one time.

^bDeadloss included.

^cIn pounds.

^dBased on total harvest where deadloss figures are not available.

^ePrior to 1968/69 fishery was open 12 months a year. 1968/69 season ran 1/1/68 to 3/15/69.

^fSplit season based on 6.5 inch minimum legal size.

^gSplit season based on 8 inch minimum legal size.

^hSplit season based on 7.5 inch minimum legal size.

Table 4-3. Aleutian Islands, Area O, golden king crab commercial fishery statistics, 1981/82-1997.

Season		Number of			Harvest ^{b,c}	Pots		Percent Oldshell	Average		Deadloss
		Vessels ^a	Landings	Crabs ^b		Pulled	CPUE ^d		Weight ^b	Length ^e	
1981/82	East of 172°	6	16	22,666	115,715	2,906	8	3.8	5.1	158.1	8,752
	West of 172°	14	76	217,700	1,194,046	24,627	9	9.5	5.5	159.6	22,064
	TOTAL		92	240,458	1,319,761	27,533	9		5.4		30,816
1982/83	East of 172°	49	136	227,471	1,184,971	29,369	8	3.9	5.2	158.1	47,479
	West of 172°	99	501	1,509,001	8,006,274	150,103	10	7.6	5.3	158.2	220,743
	TOTAL		637	1,737,109	9,191,245	179,472	10		5.3		268,222
1983/84	East of 172°	47	132	238,353	1,810,973	29,595	8	NA	7.6	NA	45,268
	West of 172°	157	1,002	1,534,909	8,128,029	226,798	7	12.2	5.3	NA	171,021
	TOTAL		1,134	1,773,262	9,939,002	256,393	7		5.6		186,289
1984/85	East of 171°	13	67	327,440	1,521,142 ^f	24,044	14	NA	4.6	161.2	70,362
	West of 171°	38	85	643,597	3,180,095	64,777	10	12.5	4.9	156.7	125,073
	TOTAL		152	971,274	4,701,237	88,821	11		4.8		195,435
1985/86	East of 171°	13	67	410,977	1,968,213	34,287	12	16	4.7	155.7	38,663
	West of 171°	49	386	2,052,048	11,124,759	202,401	10	13.7	5.4	151.3	5,304
	TOTAL		453	2,463,025	13,092,972	236,688	10		5.3		43,967
1986/87	East of 171°	17	71	400,389	1,869,180	37,585	11	NA	4.7	NA	9,510
	West of 171°	62	525	2,923,947	12,798,004	392,185	7	30.9	4.4	149.5	276,736
	TOTAL		596	3,324,336	14,667,184	429,770	8		4.4		286,246
1987/88	East of 171°	22	77	299,734	1,383,198	43,017	7	25	4.6	149.6	24,210
	West of 171°	46	386	1,908,989	8,001,177	267,705	7	8.3	4.2	146.9	165,415
	TOTAL		463	2,208,723	9,324,375	310,722	7		4.2		189,625

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Table 4-3. (Page 2 of 3)

Season		Number of			Harvest ^{b,c}	Pots Pulled	CPUE ^d	Percent Oldshell	Average		Deadloss
		Vessels ^a	Landings	Crabs ^b					Weight ^b	Length ^e	
1988/89	East of 171°	21	57	323,695	1,545,113	40,869	8	23	4.8	154.3	22,960
	West of 171°	74	455	2,165,508	9,080,196	280,732	8	8.8	4.2	149.1	122,251
	TOTAL		512	2,489,203	10,625,309	321,604	8		4.3		145,211
1989/90	East of 171°	13	70	424,067	1,852,249	43,345	10	30	4.4	150.9	17,421
	West of 171°	64	505	2,520,786	10,162,400	324,153	8	4.7	4.0	148.5	100,724
	TOTAL			2,944,853	12,014,649	367,498	8		4.1		118,145
1990/91	East of 171°	16	58	384,885	1,718,848	54,618	7	3	4.3	147.5	42,800
	West of 171°	13	167	1,312,116	5,250,687 ^g	160,960	8	8.5	4.0	144.5	176,583
	TOTAL	24	235	1,697,001	6,969,535	214,578	8		4.1		219,383
1991/92	East of 171°	11	50	335,647	1,447,732	40,604	8	4	4.3	147.9	45,100
	West of 171°	16	206	1,511,751	6,254,409	192,949	8	5.6	4.1	144.7	96,848
	TOTAL	20	256	1,847,398	7,702,141	233,553	8		4.2		141,948
1992/93	East of 171°	10	44	330,159	1,375,048	37,718	9	4.17	4.1	147.8	37,200
	West of 171°	18	130	1,198,169	4,916,149	165,503	7	6.5	4.1	147.0	104,215
	TOTAL	22	174	1,528,328	6,291,197	203,221	8		4.1		141,415
1993/94	East of 171°	4	14	217,788	915,460	22,490	10	1.11	4.2	149.1	7,324
	West of 171°	21	147	1,102,541	4,635,683	212,164	5	4.6	4.2	147.8	165,358
	TOTAL	21	161	1,320,329	5,551,143	234,654	6		4.2		172,682
1994/95	East of 171°	14	45	384,353	1,750,267	67,537	6	1	4.6	147.6	29,908
	West of 171°	34	247	1,539,866	6,378,030	319,006	5	7.1	4.1	149.5	242,065
	TOTAL	35	292	1,924,219	8,128,297	386,543	5		4.2		271,973
1995/96	East of 171°	17	42	431,867	1,993,980	65,030	7	5.3	4.6	149.6	14,676
	West of 171°	25	139	1,134,274	4,896,926	226,463	5	7.1	4.2	147.3	338,223
	TOTAL	28	181	1,566,141	6,890,906	291,493	5		4.4		352,899

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Table 4-3. (Page 3 of 3)

Season		Number of		Harvest ^{b,c}	Pots Pulled	CPUE ^d	Percent Oldshell	Average		Deadloss
		Vessels ^a	Landings					Crabs ^b	Weight ^b	
1996/97	East of 174°	14	70	725,452	3,262,516	113,460	6		4.5	156,857
	West of 174°	13	100	618,498	2,591,720	100,340	6		4.2	78,973
	TOTAL	18	166	1,343,950	5,854,236	213,800	6	3.3	4.4	147.0

^aSome vessels fished both sides; total counts dual registrations only one time.

^bDeadloss included.

^cIn pounds.

^dDefined as catch per pot pull.

^eIn millimeters.

^fSix inch permit season opened July 1.

^gPartial closure August 7.



Table 4-4. Aleutian Islands brown king crab fishery economic performance, 1981/82-1996/97.

Year	Season	Number of		Number of Pots		Value		Season Length		
		Total	Vessels	Landings	Registered	Pulled	Exvessel	Total	Days	Dates
1981/82	East of 172°	0.1	6	16	0	2,906	\$2.05	\$0.22	75	11/01-01/15
	West of 172°	1.2	14	76	2,647	24,627	\$2.06	\$2.41	227	11/01-06/15
	Total	1.3	19	92	2,647	27,533	\$2.06	\$2.63	302	
1982/83	East of 172°	1.1	49	136	-	29,369	\$3.00	\$3.41	105	11/01-02/15
	West of 172°	7.8	99	501	13,111	150,103	\$3.01	\$23.43	166	11/01-04/15
	Total	8.9		637	13,111	179,472	\$3.01	\$26.85	271	
1983/84	East of 172°	1.8	47	132	4,514	29,595	\$3.05	\$5.38	105	11/01-02/15
	West of 172°	8.0	157	1,002	17,406	226,798	\$2.92	\$23.23	157	11/10-04/15
	Total	9.7		1,134	21,920	256,393	\$2.94	\$28.62	262	
1984/85	East of 171°	1.4	13	67	1,394	24,044	\$1.35	\$1.96	229	07/01-02/15
	West of 171°	3.1	38	85	5,270	64,777	\$2.00	\$6.11	240	11/10-07/08
	Total	4.5		152	6,664	88,821	\$1.79	\$8.07	469	
1985/86	East of 171°	1.9	13	67	1,479	34,287	\$2.00	\$3.86	121	07/01-10/31
	West of 171°	11.1	49	386	7,057	202,401	\$2.50	\$27.80	288	11/01-08/15
	Total	13.0		453	8,536	236,688	\$2.43	\$31.66	409	
1986/87	East of 171°	1.9	17	71	1,575	37,585	\$2.85	\$5.30	182	07/01-12/31
	West of 171°	12.5	62	325	12,958	392,185	\$3.00	\$37.56	288	11/01-08/15
	Total	14.4	64	396	14,533	429,770	\$2.98	\$42.86	470	
1987/88	East of 171°	1.4	22	77	3,591	43,017	\$2.85	\$3.87	62	07/01-09/02
	West of 171°	7.8	46	386	10,687	267,705	\$3.00	\$23.51	289	11/01-08/15
	Total	9.2		463	14,278	310,722	\$2.98	\$27.38	351	
1988/89	East of 171°	1.5	21	57	4,215	40,869	\$3.00	\$4.57	93	09/01-12/04
	West of 171°	9.0	74	455	23,627	280,732	\$3.20	\$28.66	288	11/01-08/15
	Total	10.5		512	27,842	321,601	\$3.17	\$33.23	381	

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Table 4-4. (Page 2 of 2)

Year	Season	Total	Number of		Number of Pots		Value		Season Length	
			Vessels	Landings	Registered	Pulled	Exvessel	Total	Days	Dates
1989/90	East of 171°	1.8	13	70	5,635	43,345	\$3.50	\$6.42	104	09/01-12/15
	West of 171°	10.1	64	505	14,724	324,153	\$3.00	\$30.18	288	11/01-08/15
	Total	11.9		575	20,359	367,498	\$3.08	\$36.61	392	
1990/91	East of 171°	1.7	16	68	5,225	54,618	\$3.00	\$5.03	68	09/01-11/09
	West of 171°	5.1	13	167	7,380	160,960	\$3.00	\$15.22	288	11/01-08/15
	Total	6.7	23	235	12,605	215,578	\$3.00	\$20.25	356	
1991/92	East of 171°	1.4	11	50	3,760	40,604	\$2.00	\$2.81	74	09/01-11/15
	West of 171°	6.2	16	206	7,635e	192,949	\$2.50	\$15.39	289	11/01-08/15
	Total	7.6	19	256	3,760	233,553	\$2.41	\$18.20	363	
1992/93	East of 171°	1.3	10	44	4,222	37,718	\$2.50	\$3.30	76	09/01-11/17
	West of 171°	4.8	18	130	8,236e	165,503	\$2.05	\$9.86	288	11/01-08/15
	Total	6.1	22	174	4,222	203,221	\$2.15	\$13.16	364	
1993/94	East of 171°	0.9	4	14	2,334	22,490	\$2.15	\$1.95	212	09/01-03/31
	West of 171°	4.5	21	147	11,970	212,164	\$2.50	\$11.18	288	11/01-08/15
	Total	5.4	21	161	14,304	234,654	\$2.44	\$13.13	500	
1994/95	East of 171°	1.7	14	45	7,378	67,537	\$4.00	\$6.88	57	09/01-10/28
	West of 171°	6.1	34	247	15,604	319,006	\$3.33	\$20.43	288	11/01-08/15
	Total	7.9	35	292	22,982	386,543	\$3.48	\$27.31	345	
1995/96	East of 171°	2.0	17	42	10,325	65,030	\$2.60	\$5.15	38	09/01-10/09
	West of 171°	4.6	25	139	14,213	226,463	\$2.10	\$9.57	289	11/01-08/15
	Total	6.5	28	181	24,538	291,493	\$2.25	\$14.72	327	
1996/97	East of 174°	3.1	15	67	NA	107,397	\$2.23	\$6.93	115	09/01-12/25
	West of 174°	2.5	13	92	NA	102,627	\$2.23	\$5.60	365	09/01-09/01
	Total	5.6	18	159		210,024	\$2.23	\$12.53	480	

Table 4-5. Aleutian golden king crab catch by statistical area, 1997.

Area	Number of		Harvest ^{a,b}	Pots Pulled	Average		Deadloss
	Landings	Crab ^a			CPUE ^c	Weight ^b	
685231	4	3,921	20,539	618	6	5.2	1,466
685303	4	4,191	20,992	1,070	4	5.0	206
685304	7	19,316	96,131	7,561	3	4.9	1,968
695200	9	47,042	224,250	8,290	6	4.8	4,402
695232	21	45,333	223,220	10,674	4	4.9	9,424
695301	24	57,483	258,463	8,583	7	4.5	11,046
695302	9	20,587	88,682	1,874	11	4.3	7,904
705200	27	121,267	551,086	16,741	7	4.5	24,206
705231	5	1,151	4,723	233	5	4.1	231
705232	34	198,401	882,220	26,380	8	4.5	44,633
705233	5	2,516	10,735	374	7	4.3	1,830
705300	20	51,390	224,248	5,727	9	4.4	14,134
715130	3	948	4,113	200	5	4.3	242
715201	5	4,137	17,062	390	11	4.1	503
715202	16	43,602	188,305	7,199	6	4.3	14,259
715231	15	37,588	160,570	4,998	8	4.3	10,889
715232	6	17,509	69,499	1,410	12	4.1	4,405
725201	11	25,303	110,817	5,544	5	4.4	3,140
725203	7	11,783	49,503	1,907	6	4.2	610
725230	5	738	3,362	237	3	4.6	245
775131	3	2,796	11,465	532	5	4.1	343
775133	4	1,950	8,134	584	3	4.2	152
775134	4	3,505	14,398	621	6	4.1	516
775135	3	1,521	6,233	208	7	4.1	122
775136	4	9,665	39,819	1,792	5	4.1	1,021

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Table 4-5. (Page 2 of 3)

Area	Number of		Harvest ^{a,b}	Pots Pulled	Average		Deadloss
	Landings	Crab ^a			CPUE ^c	Weight ^b	
785101	3	517	2,194	48	11	4.2	221
785102	18	30,585	123,901	4,906	6	4.0	4,955
785103	3	1,194	4,733	152	8	4.0	183
785131	18	41,828	173,852	5,918	7	4.2	11,172
785132	5	3,666	15,125	566	7	4.1	881
785134	9	6,748	27,186	784	9	4.0	897
785135	12	14,112	56,672	2,293	6	4.0	2,234
795102	5	9,390	37,927	913	10	4.0	1,635
795131	10	4,296	17,548	783	6	4.1	981
795132	16	47,380	191,697	4,463	11	4.1	7,141
795200	36	23,302	98,009	3,180	7	4.2	1,046
795230	8	13,180	60,024	2,612	5	4.5	1,597
805101	3	675	2,746	95	7	4.1	42
805103	31	31,194	127,684	2,843	11	4.1	175
805131	14	7,832	31,273	1,043	8	4.0	0
805132	34	114,558	475,673	10,850	11	4.2	1,780
805201	36	32,547	132,027	4,019	8	4.1	448
815100	24	12,190	50,132	1,320	9	4.1	183
815131	24	13,841	58,643	1,576	9	4.2	336
815132	11	7,467	31,024	901	8	4.2	0
815201	3	572	2,345	148	4	4.1	20
825132	3	1,865	9,161	751	3	4.9	225
825201	4	7,597	33,493	1,775	4	4.4	1,231
825202	4	2,174	10,159	738	3	4.7	251
835130	5	3,700	17,156	1,013	4	4.6	536

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Table 4-5. (Page 3 of 3)

Area	Number of		Harvest ^{a,b}	Pots Pulled	Average		Deadloss
	Landings	Crab ^a			CPUE ^c	Weight ^b	
835200	10	19,525	85,896	5,938	3	4.4	3,797
845130	8	6,205	27,732	2,160	3	4.5	1,656
845202	10	26,783	120,606	6,697	4	4.5	6,139
855200	5	2,621	11,266	952	3	4.3	935
Other	36	19,665	85,627	5,609			2,553
Total	143 ^d	1,240,402	5,410,080	188,793	7	4.4	211,147

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dActual total landings for the fishery (one vessel may make landings in more than one statistical area).

Table 4-6. Aleutian Islands, Area O, preliminary commercial golden king crab fishery statistics, 1997/98.

Area	Numer of			Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
	Vessels	Landings	Crabs ^a			Weight ^b	CPUE ^c	
East of 174°	14	69	744,573	3,347,870	108,177	4.5	7	125,001
West of 174°				FISHERY IN PROGRESS				

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

Table 4-7. Aleutian Islands scarlet king crab *Lithodes couesi* fishery statistics, 1992 to 1997.

Year	Number of			Harvest ^a	Pots Pulled	Exvessel Value	Fishery Value ^b	Average			
	Vessels	Landings	Crabs ^a					Weight ^c	CPUE	Deadloss	
1992	Dutch Harbor			No Commercial Fishery							
	Adak			CONFIDENTIAL							
1993	Dutch Harbor			No Commercial Fishery							
	Adak			No Commercial Fishery							
1994	Dutch Harbor			CONFIDENTIAL							
	Adak	6	10	6,624	21,308	7,520	\$1.76	\$0.02	3.2	<1	10,829
	Total	7	10	6,624	21,308	7,520	\$1.88	\$0.02	3.1	<1	10,829
1995	Dutch Harbor	3	3	6,270	13,871	5,706	\$2.18	\$0.03	2.2	1	1,755
	Adak	6	18	19,544	49,126	15,046	\$1.82	\$0.09	2.5	1	2,066
	Total	8	21	25,814	62,997	20,752	\$1.89	\$0.11	2.4	1	3,821
1996	Dutch Harbor	3	10	10,190	20,924	10,247	\$1.78	\$0.03	2.0	1	3,990
	Adak	4	13	10,133	24,076	19,170	\$1.80	\$0.04	2.4	<1	1,861
	Total	7	23	20,323	45,000	29,417	\$1.79	\$0.07	2.2	<1	5,851
1997	Aleutian Islands	3	12	2,698	6,720	21,217	\$1.40	\$0.01	2.5	<1	408

^aDeadloss included.

^bMillions of dollars.

^cIn pounds.

Table 4-8. Eastern Aleutian District *Chionoecetes bairdi* fishery statistics^a, 1973/74-1997.

Season	Number of		Crabs ^b	Harvest ^{b,c}	Pots Pulled	Average		Deadloss
	Vessels	Landings				Weight ^c	CPUE ^d	
1973/74	6	14	210,539	498,836	NR ^e	2.4	60	0
1974/75	CONFIDENTIAL							
1975/76	8	13	219,166	534,295	4,646	2.4	47	0
1976/77	12	35	544,755	1,239,569	9,640	2.3	57	0
1977/78	15	198	1,104,631	2,494,631	29,855	2.3	37	0
1978/79	20	174	542,081	1,280,115	18,618	2.4	20	0
1979/80	18	107	352,819	886,487	18,040	2.4	20	NA
1981	29	119	264,238	654,514	21,771	2.4	12	NA
1982	31	138	332,260	739,694	30,109	2.2	11	NA
1983	23	107	250,774	547,830	22,168	2.1	11	NA
1984	16	91	104,761	239,585	11,069	2.3	9	NA
1985	6	56	71,918	165,529	5,620	2.3	13	NA
1986	9	37	73,187	167,339	10,244	2.3	7	NA
1987	7	63	71,338	160,292	5,294	2.2	13	NA
1988	19	130	129,468	309,918	11,011	2.4	12	NA
1989	12	109	144,746	326,396	14,685	2.2	10	NA
1990	10	75	73,269	171,785	6,858	2.3	11	0
1991	5	27	21,511	50,038	1,849	2.3	12	0
1992	4	29	42,096	98,703	2,963	2.3	14	0
1993	7	34	51,441	118,609	3,530	2.3	15	0
1994	8	120	71,962	166,545	6,323	2.3	11	40

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Table 4-8. (Page 2 of 2)

Season	Number of		Crabs ^b	Harvest ^{b,c}	Pots Pulled	Average	
	Vessels	Landings				Weight ^c	CPUE ^d
1995				NO COMMERCIAL FISHERY			
1996				NO COMMERCIAL FISHERY			
1997				NO COMMERCIAL FISHERY			

^a5½ inch minimum carapace width.

^bDeadloss included beginning 1980.

^cIn pounds.

^dDefined as catch per pot pull.

^eNo Record.

Table 4-9. Eastern Aleutian District *Chionoecetes bairdi* economic performance, 1973/74-1997.

Season	Date		Number of		Harvest ^{a,b}	Pots Pulled	Value	
	Opened	Closed	Vessels	Landings			Exvessel	Fishery ^d
1973/74	1-Oct	31-Jul	6	14	498,836	NR ^c	NR ^c	
1974/75	18-Jan	15-Oct			CONFIDENTIAL			
1975/76	20-Jan	15-Oct	8	13	534,295	4,646	\$0.20	\$0.11
1976/77	7-Nov	15-Jun	12	35	1,239,569	9,640	\$0.30	\$0.38
1977/78	1-Nov	15-Jun	15	198	2,494,631	29,855	\$0.38	\$0.95
1978/79	1-Nov	15-Jun	20	174	1,280,115	18,618	\$0.52	\$0.67
1979/80	1-Nov	15-Jun	18	107	886,487	18,040	\$0.52	NA
1981	15-Jan	15-Jun	29	119	654,514	21,771	\$0.58	NA
1982	15-Feb	15-Jun	31	138	739,694	30,109	\$1.25	NA
1983	15-Feb	15-Jun	23	107	547,830	22,168	\$1.20	NA
1984	15-Feb	15-Jun	16	91	239,585	11,069	\$0.98	NA
1985	15-Jan	15-Jun	6	56	165,529	5,620	\$1.30	NA
1986	15-Jan	15-Jun	9	37	167,339	10,244	\$1.50	NA
1987	15-Jan	15-Jun	7	63	160,292	5,294	\$2.00	NA
1988	15-Jan	10-Apr	19	130	309,918	11,011	\$2.10	NA
1989	15-Jan	7-May	12	109	326,396	14,685	\$2.90	NA
1990	15-Jan	9-Apr	10	75	171,785	6,858	\$1.85	\$0.32
1991	15-Jan	31-Mar	5	27	50,038	1,849	\$1.25	\$0.06
1992	15-Jan	31-Mar	6	29	98,703	2,963	\$1.75	\$0.18
1993	15-Jan	31-Mar	7	34	118,609	3,530	\$1.70	\$0.20
1994	15-Jan	31-Mar	8	120	166,505	6,323	\$2.35	\$0.39

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Table 4-9. (Page 2 of 2)

Season	Date		Number of		Harvest ^{a,b}	Pots Pulled	Value	
	Opened	Closed	Vessels	Landings			Exvessel	Fishery ^d
1995								
1996								
1997								

^aDeadloss not included.

^bIn pounds.

^cNo Record.

^dMillions of dollars.

Table 4-10. Eastern Aleutian District *Chionoecetes tanneri* Tanner crab harvest, 1993-1997.

Year	Number of			Harvest ^{a,b}	Pots Lifted	Average		Deadloss ^b	Value	
	Vessels	Landings	Crabs ^a			Weight ^b	CPUE ^c		Exvessel	Total ^d
1993				CONFIDENTIAL						
1994	3	27	426,230	759,239	38,106	1.8	11	19,474	\$1.73	\$1.3
1995	7	51	494,522	850,427	75,259	1.7	6	28,338	\$1.57	\$1.3
1996	3	24	55,593	106,071	24,199	1.91	2.13	7,659	\$1.00	\$0.98
1997			NO COMMERCIAL FISHERY							

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dMillions of dollars.

Table 4-11. Eastern Aleutian District *Chionoecetes angulatus* Tanner crab fishery statistics, 1993-1997.

Year	Harvest ^a	Vessels	Pots Pulled	Exvessel Value	Fishery Value ^b	Average		Deadloss
						Weight ^c	CPUE ^d	
1993								
1994								
1995								
1996								
1997								

^aDeadloss included.

^bMillions of dollars.

^cIn pounds.

^dDefined as catch per pot pull.

Table 4-12. Western Aleutians District *Chionoecetes bairdi* Tanner crab fishery statistics, 1973/74-1996/97.

Year	Number of		Crabs ^a	Harvest ^{a,b}	Pots Pulled	Average			Deadloss
	Vessels	Landings				Weight ^b	CPUE ^c	Size ^d	
1973/74	7	12	31,079	71,887	2,390	2.3	13	-	NA
1974/75				CONFIDENTIAL					
1975/76				CONFIDENTIAL					
1976/77				NO REPORTED HARVEST					
1977/78	6	7	103,190	237,512	2,700	2.3	38	5.5	NA
1978/79	6	9	84,129	197,244	4,730	2.3	18	5.5	0
1979/80	10	12	147,843	337,297	5,952	2.3	25	5.5	NA
1980/81	9	23	95,102	220,716	7,327	2.3	13	5.5	0
1981/82	17	43	364,164	838,697	21,910	2.3	17	5.5	6,470
1982/83	61	125	225,491	488,399	40,450	2.2	6	5.5	7,662
1983/84	31	86	171,576	384,146	20,739	2.2	8	5.5	200
1984/85	31	41	75,009	163,460	13,416	2.2	6	5.5	1,000
1985/86	15	30	98,089	206,814	7,999	2.1	12	5.5	0
1986/87	8	24	19,874	42,761	10,878	2.1	2	5.5	200
1987/88	15	37	63,545	141,390	7,453	2.2	9	5.5	200
1988/89	36	77	69,280	148,997	18,906	2.1	4	5.5	233
1989/90	12	30	22,937	48,746	6,204	2.1	4	5.5	3,810
1990/91	5	21	6,901	14,779	1,309	2.1	5	5.5	125
1991/92	8	8	3,483	7,825	986	2.2	4	5.5	NA
1992/93				CONFIDENTIAL					
1993/94				NO REPORTED HARVEST					
1994/95				NO REPORTED HARVEST					
1995/96				CONFIDENTIAL					
1996/97				NO REPORTED HARVEST					

^aDeadloss included.

^cDefined as catch per pot pull.

^bIn pounds.

^dMinimum size in inches.

Table 4-13. Western Aleutians District *Chionoecetes bairdi* Tanner crab fishery economic performance, 1973/74-1996/97.

Year	Vessels	Harvest ^{a,b}	Pots Pulled	Value		Average		Deadloss
				Exvessel	Fishery	Weight ^b	CPUE ^c	
1973/74	7	71,887	2,390	NA		2.3	13	NA
1974/75				CONFIDENTIAL				
1975/76				CONFIDENTIAL				
1976/77				NO REPORTED HARVEST				
1977/78	6	237,512	2,700	.38	\$90,255 ^d	2.3	38	NA
1978/79	6	197,244	4,730	.53	\$104,539	2.3	18	0
1979/80	10	337,297	5,952	.52	\$175,394 ^d	2.3	25	NA
1980/81	9	220,716	7,327	.54	\$119,187	2.3	13	0
1981/82	17	838,697	21,910	1.30	\$1,081,895	2.3	17	6,470
1982/83	61	488,399	40,450	1.27	\$610,536	2.2	6	7,662
1983/84	31	384,146	20,739	.95	\$364,749	2.2	8	200
1984/85	31	163,460	13,416	1.30	\$211,198	2.2	6	1,000
1985/86	15	206,814	7,999	1.40	\$289,540	2.1	12	0
1986/87	8	42,761	10,878	1.50	\$63,842	2.1	2	200
1987/88	15	141,390	7,453	2.10	\$296,499	2.2	9	200
1988/89	36	148,997	18,906	1.00	\$148,764	2.1	4	233
1989/90	12	48,746	6,204	1.00	\$44,936	2.1	4	3,810
1990/91	5	14,779	1,309	1.25	\$18,318	2.1	5	125
1991/92	8	7,825	986	1.00	\$7,825 ^d	2.2	4	NA
1992/93				CONFIDENTIAL				
1993/94				NO REPORTED HARVEST				
1994/95				NO REPORTED HARVEST				

-Continued-

Table 4-13. (Page 2 of 2)

Year	Vessels	Harvest ^{a,b}	Pots Pulled	Value		Average		Deadloss
				Exvessel	Fishery	Weight ^b	CPUE ^c	
1995/96				CONFIDENTIAL				
1996/97				NO REPORTED HARVEST				

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dCalculated on total harvest; deadloss figures not available.

Table 4-14. Western Aleutian District *Chionoecetes tanneri* Tanner crab fishery statistics, 1992-1997.

Year	Harvest ^a	Vessels	Pots Pulled	Value		Average		Deadloss
				Exvessel	Fishery ^b	Weight ^c	CPUE ^d	
1992				CONFIDENTIAL				
1993				NO COMMERCIAL FISHERY				
1994				CONFIDENTIAL				
1995	145,795	6	17,749	\$1.52	\$195	1.9	4	17,190
1996				CONFIDENTIAL				
1997				NO COMMERCIAL FISHERY				

^aDeadloss included.

^bMillions of dollars.

^cIn pounds.

^dDefined as catch per pot pull.

Table 4-15. Aleutian District Dungeness crab fishery statistics, 1974-1997.

Year	Season Dates	Number of			Harvest ^{a,b}	Pots Pulled	Average		Price per Pound
		Vessels	Landings	Crabs ^a			Weight	CPUE ^c	
1974	01/01-12/31	3	13	24,459	60,517	3,399	2.4	8	NA
1975	01/01-12/31				CONFIDENTIAL				
1976	05/01-12/31				NO REPORTED HARVEST				
1977	05/01-12/31				NO REPORTED HARVEST				
1978	05/01-12/31				CONFIDENTIAL				
1979	05/01-12/31				CONFIDENTIAL				
1980	05/01-12/31				NO REPORTED HARVEST				
1981	05/01-12/31				NO REPORTED HARVEST				
1982/83	05/01-02/01				CONFIDENTIAL				
1983/84	05/01-02/01				CONFIDENTIAL				
1984/85	05/01-02/01	4	50	40,128	91,739	13,555	2.3	3	\$1.35
1985/86	05/01-02/01	4	19	8,590	17,830	1,706	2.1	5	NA
1986	05/01-12/31				CONFIDENTIAL				
1987	05/01-12/31	5	43	13,247	26,627	2,987	2	4	\$0.95
1988	05/01-12/31	6	45	10,814	22,634	2,581	2.1	4	\$0.90
1989	05/01-12/31	4	31	5,165	11,124	2,078	2.1	2	\$0.90
1990	05/01-12/31	3	11	8,379	17,365	1,345	2.1	6	\$0.90
1991	05/01-12/31	4	14	3,654	7,412	732	2	5	\$1.25
1992	05/01-12/31	4	13	2,854	5,649	555	2	5	\$0.83
1993	05/01-12/31	5	12	3,448	7,531	797	2.2	4	\$0.78

-Continued-

Table 4-15. (Page 2 of 2)

Year	Season Dates	Number of			Harvest ^{a,b}	Pots Pulled	Average		Price per Pound
		Vessels	Landings	Crabs ^a			Weight	CPUE ^c	
1994/95	05/01-01/01				NO REPORTED HARVEST				
1995/96	05/01-01/01				NO REPORTED HARVEST				
1996/97	05/01-01/01				NO REPORTED HARVEST				
1997/98	05/01-01/01				CONFIDENTIAL				

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dMillions of dollars.

Table 4-16. Aleutian District historical trawl shrimp fishery statistics, 1972-1997.

Season	Date		Number of		Tows	Harvest ^a	Price per Pound
	Opened	Closed	Vessels	Landings			
1972	Jan-72	Dec-72				CONFIDENTIAL	
1973	Jan-73	Dec-73				CONFIDENTIAL	
1974	Jan-74	Dec-74	7	88	721	5,749,407	NA
1975	Jan-75	Dec-75	4	14	54	467,196	NA
1976	Jan-76	Dec-76	8	66	689	3,670,609	\$0.07
1977/78	Feb-77	Mar-78	7	93	1,372	6,800,393	\$0.12
1978/79	Apr-78	Mar-79	7	74	1,007	4,946,350	\$0.15
1979/80	Apr-79	Feb-80	7	68	799	3,292,049	\$0.20
1980	Mar-80	Dec-80	4	60	711	2,454,829	\$0.23
1981	Mar-81	Dec-81	6	45	551	2,185,326	\$0.22
1982/83 ^b	May-82	Jun-83				CONFIDENTIAL	
1983						NO REPORTED CATCH	
1984						NO REPORTED CATCH	
1985						NO REPORTED CATCH	
1986						NO REPORTED CATCH	
1987						NO REPORTED CATCH	
1988						NO REPORTED CATCH	
1989						NO REPORTED CATCH	
1990						NO REPORTED CATCH	
1991						NO REPORTED CATCH	
1992	Jan-92	Dec-92	4	6	94	72,133	NA
1993						NO REPORTED CATCH	
1994						NO REPORTED CATCH	
1995						NO REPORTED CATCH	
1996						NO REPORTED CATCH	
1997						NO REPORTED CATCH	

^aIn pounds.

^bCatch occurred May and June 1982.

Table 4-17. Aleutian Islands Miscellaneous catch statistics by season, 1996-1997.

Year	Fishery	Number of		Number of Pots		Harvest ^a	CPUE ^b	Deadloss
		Vessels	Landings	Registered	Pulled			
1996	Octopus	8	NA		17,800	66,152		0
	Sea Urchins	6	15 ^c		3,701	3,701		0
	Sea Cucumbers			NO	COMMERCIAL	HARVEST		
	Hair Crab			NO	COMMERCIAL	HARVEST		
	Snails			NO	COMMERCIAL	HARVEST		
	Paralomis multispina			NO	COMMERCIAL	HARVEST		
1997	Octopus	18	233			96,118		0
	Sea Urchins			NO	COMMERCIAL	HARVEST		
	Sea Cucumbers			NO	COMMERCIAL	HARVEST		
	Hair Crab			NO	COMMERCIAL	HARVEST		
	Snails			NO	COMMERCIAL	HARVEST		
	Paralomis multispina			NO	COMMERCIAL	HARVEST		

^aDeadloss Included

^bDefined as catch per pot pull.

^cDives

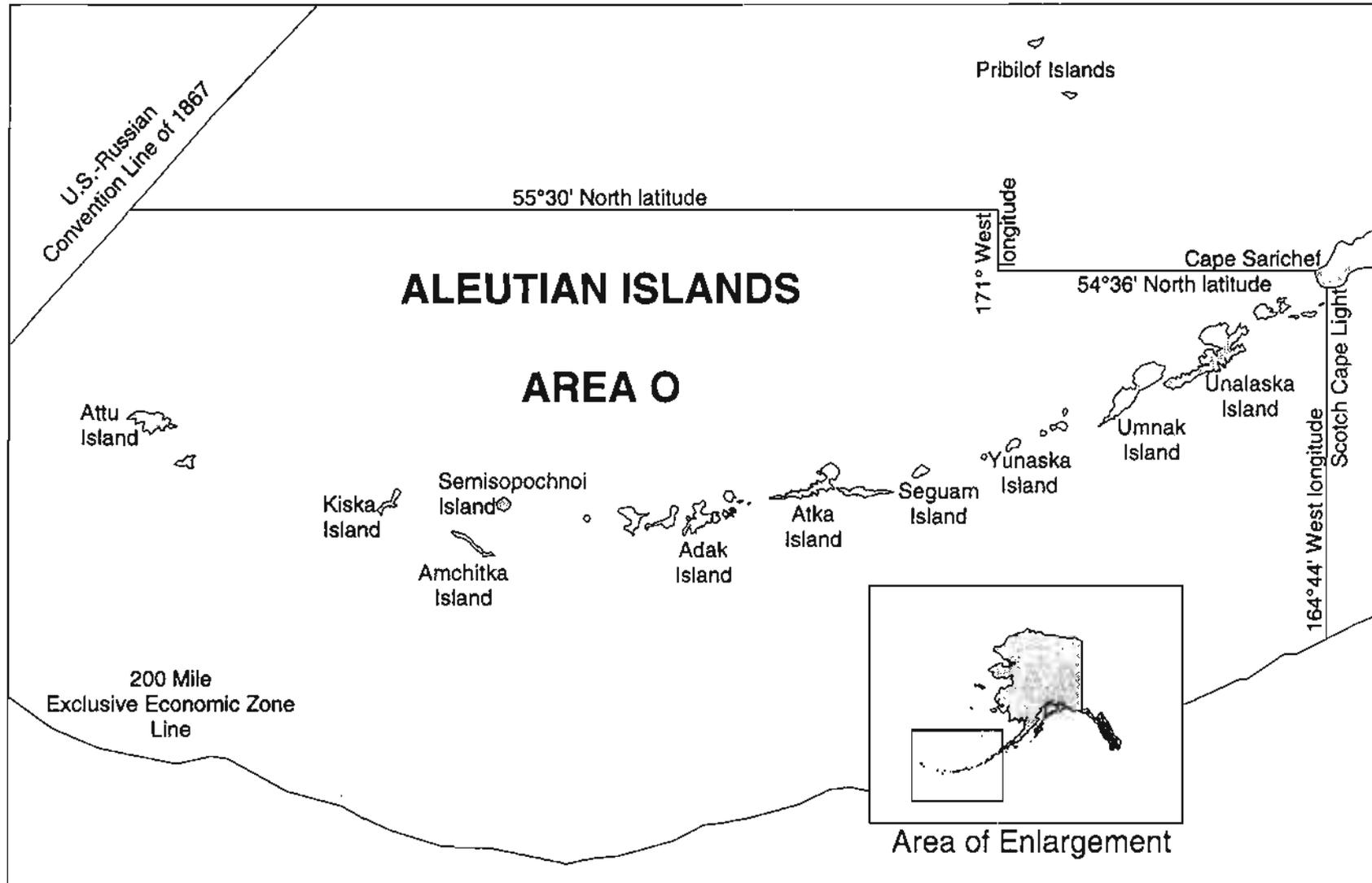


Figure 4-1. The Aleutian Islands king crab management area, Area O.

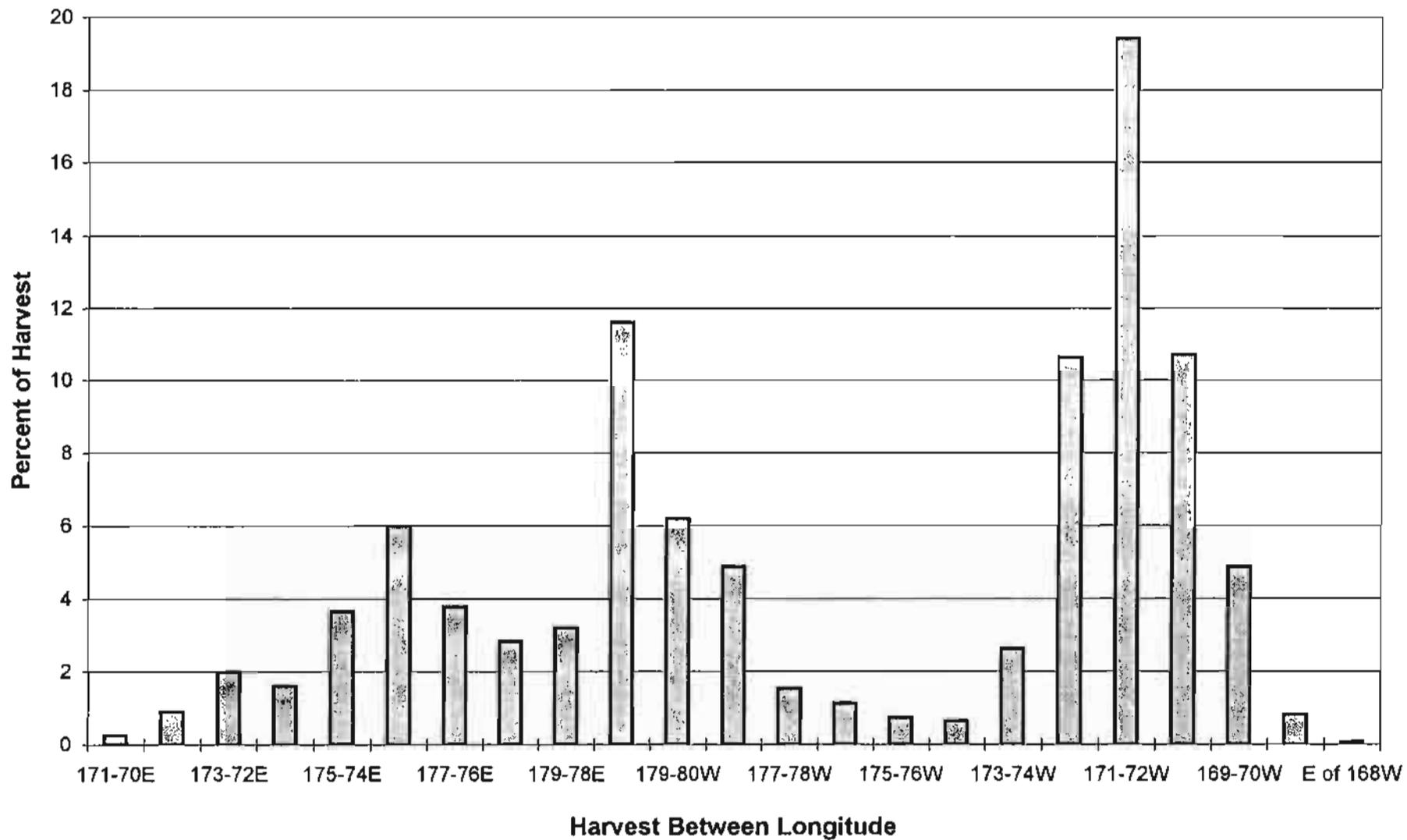


Figure 4-2. Aleutian Islands brown king crab percent harvest by longitude, 1982 to 1995.

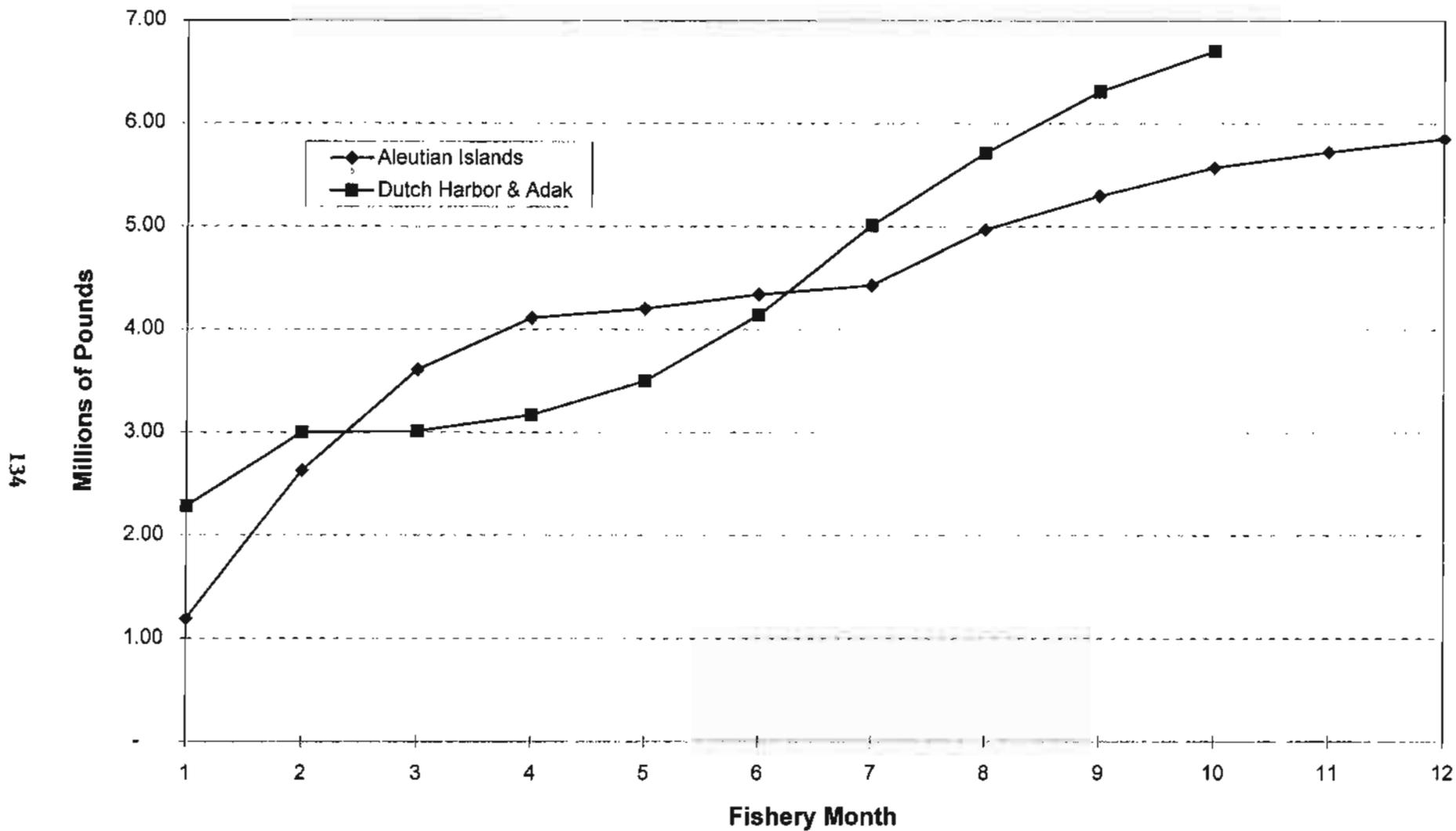


Figure 4-3. The 1996/97 Aleutian Islands golden king crab harvest by fishery month compared to the combined 1995 Dutch Harbor and 1995/96 Adak fisheries harvest by fishery month.

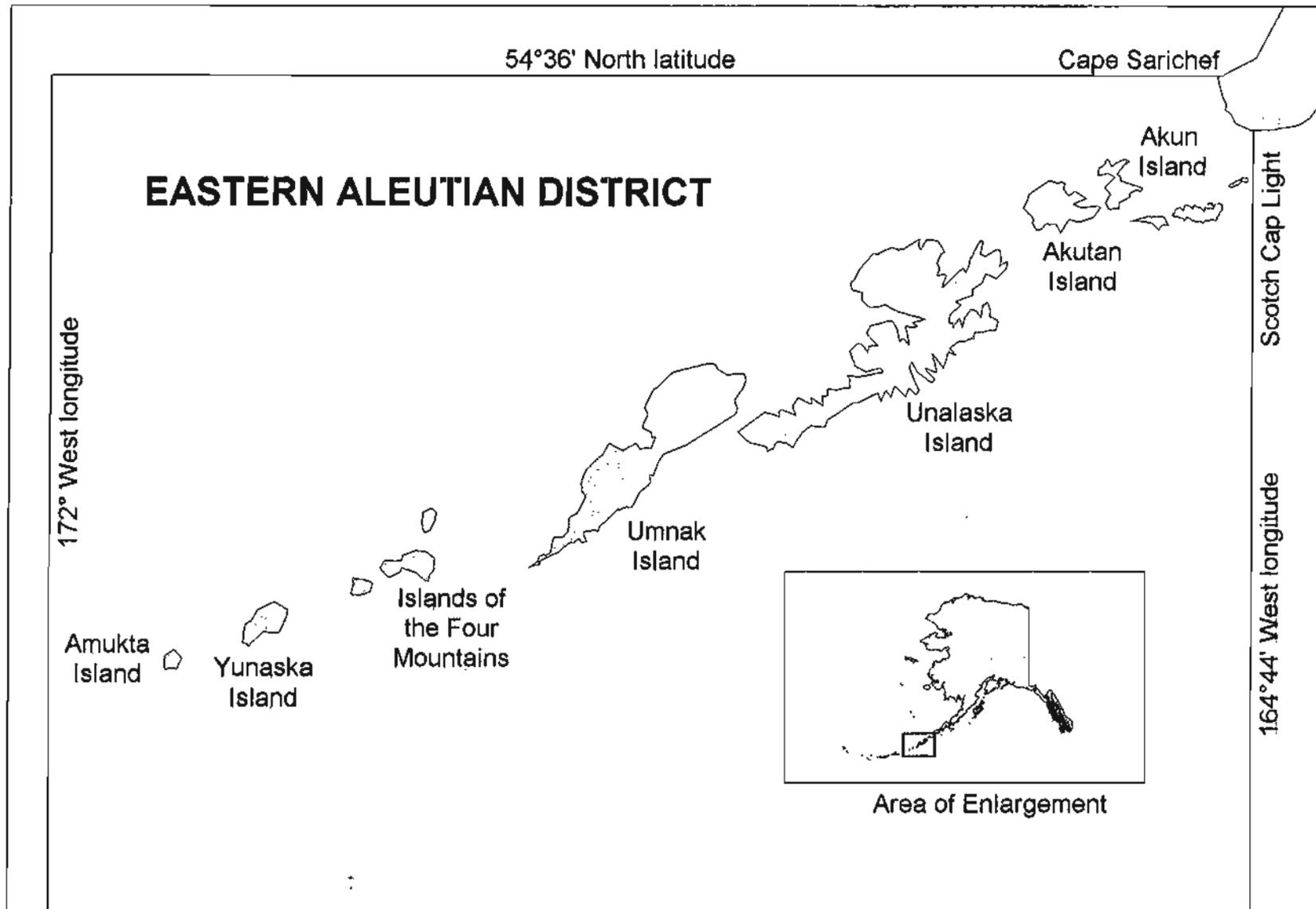


Figure 4-4. The Eastern Aleutian District for Tanner crab management.

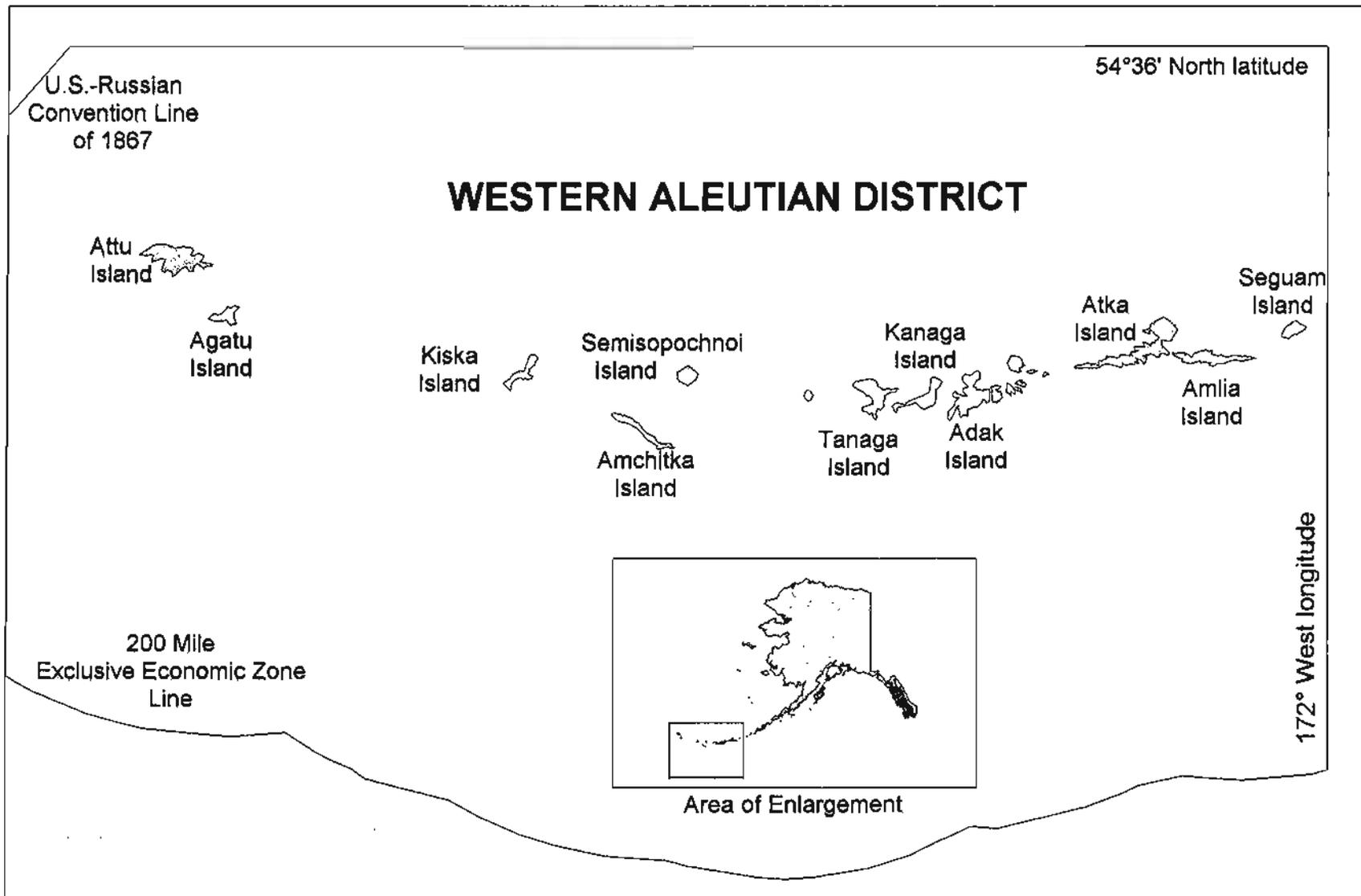


Figure 4-5. The Western Aleutian District for Tanner crab management.

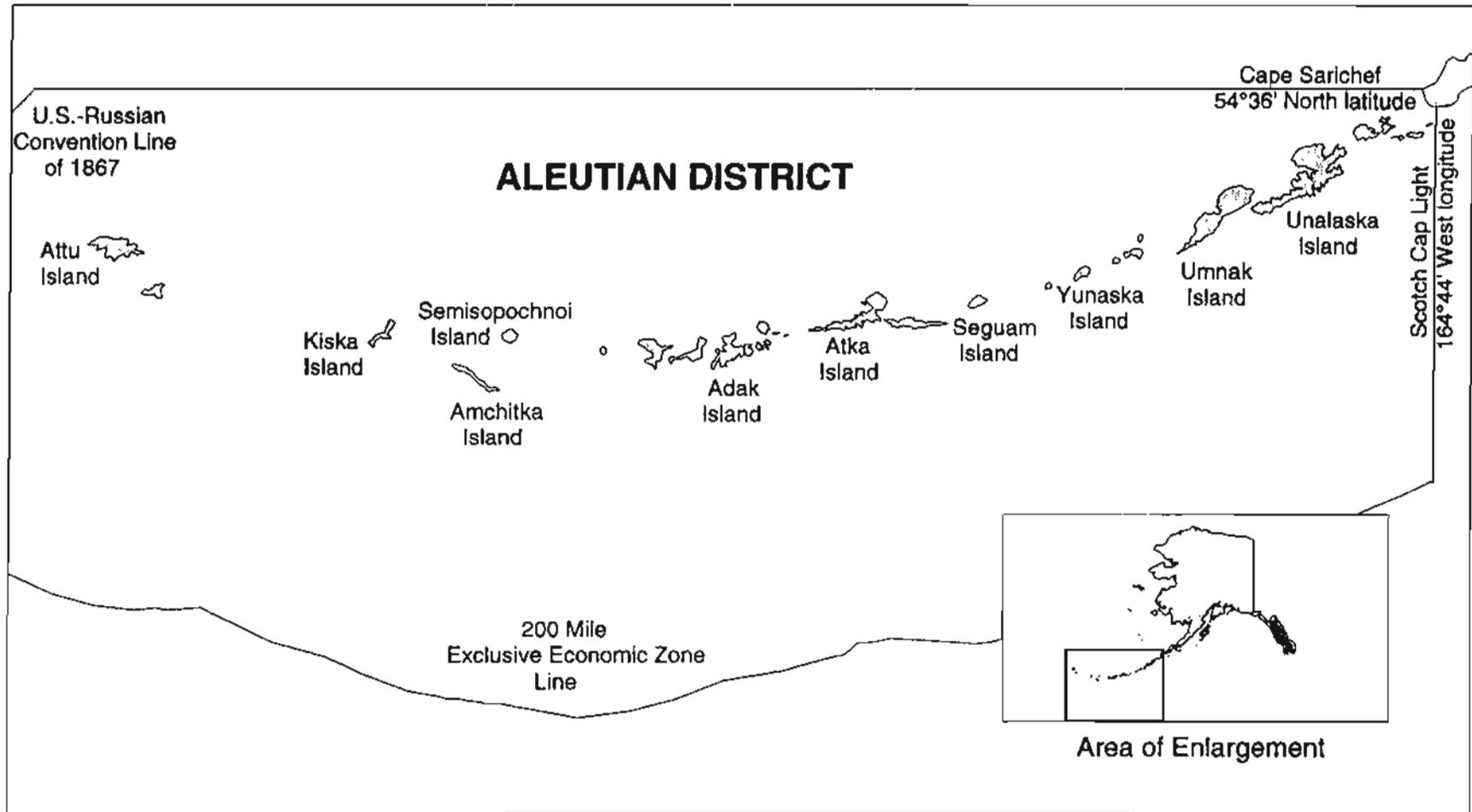


Figure 4-6. The Aleutian District for Dungeness crab management.

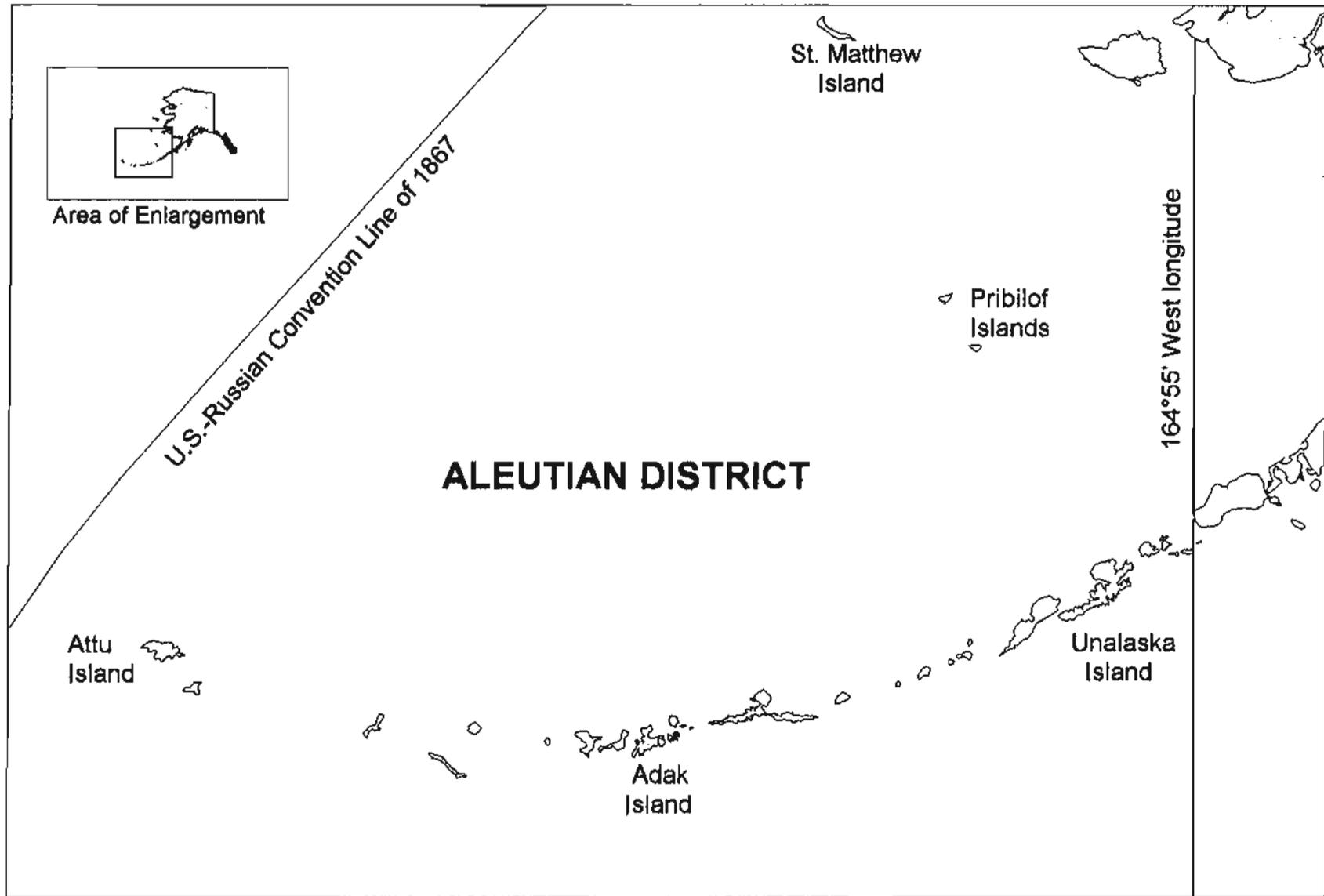


Figure 4-7. The Aleutian District for shrimp management.

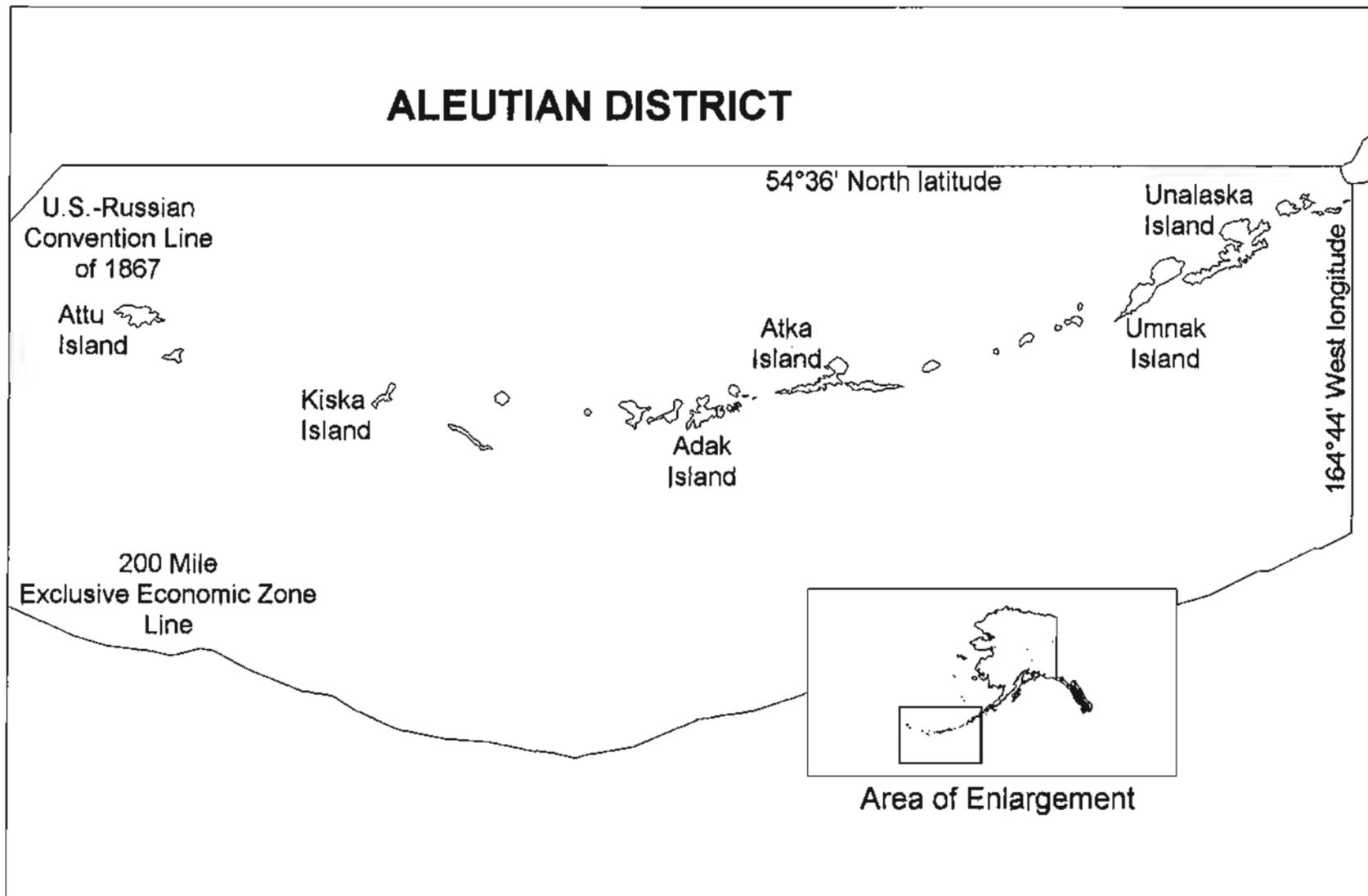


Figure 4-8. The Aleutian District for miscellaneous shellfish species.

ANNUAL MANAGEMENT REPORT FOR THE
SHELLFISH FISHERIES OF THE
BERING SEA

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July, 1998

KING CRAB REGISTRATION AREA T BRISTOL BAY

Introduction

The Bristol Bay king crab Area T includes all waters north of Cape Sarichef, east of 168° West longitude and south of the latitude of Cape Newenham and includes all waters of Bristol Bay (Figure 5-1).

Historic Background

Commercial king crab fishing in the Bering Sea began with the Japanese in 1930. Their presence continued in this fishery until 1940 and then again from 1953 until 1974. The Russian king crab fleet also operated in the eastern Bering Sea from 1959 through 1971. United States fishermen entered the eastern Bering Sea/ Bristol Bay area king crab fishery with trawl gear in 1947. Effort and catches declined in the 1950's with no catch being reported in 1959. A period of fluctuating low catches followed through 1966 before expanding into a full-scale fishery in the late 1970's.

The king crab fishery in the eastern Bering Sea traditionally harvested red king crab from waters north of Unimak Island and the Alaska Peninsula from Cape Sarichef to Port Heiden. With the decline of king crab stocks in other areas of the state in 1968, U. S. effort increased in the eastern Bering Sea with a record catch of 129.9 million pounds in 1980 (Figure 5-2 and Table 5-1). As in other areas of the state, the Eastern Bering Sea stocks crashed in the early 1980's and have since remained depressed.

In 1980 the Alaska Board of Fisheries (BOF) defined that portion of the Bering Sea south of Cape Newenham and east of 168° West Longitude as the Bristol Bay King Crab Registration T. This area was designated an exclusive registration area. During any king crab registration year (June 28 through June 27), vessels registering for and fishing in this area are prohibited from fishing in any other exclusive or super exclusive registration areas. Only nonexclusive registration areas could subsequently be fished.

The National Marine Fisheries Service (NMFS) has conducted annual abundance trawl index surveys of the eastern Bering Sea since 1968. This multi-species crab and groundfish survey is conducted during the summer months and the resulting area-swept estimates of abundance are published annually. In 1983, the NMFS trawl survey of the Bering Sea indicated a record low number of legal male crab and the lowest total king crab population ever recorded. Small females carrying fewer eggs and high predator abundance was also noted. As a result, the fishery was closed for the 1983 season. The fishery reopened in 1984 and catches slowly increased annually to over 20.3 million pounds in 1990. Due to the large number of catcher-processors and floating processors in the fishery and the inability of the Department to monitor the red king crab harvest, the BOF initiated an onboard observer program in 1988. Fishing effort increased dramatically from

89 vessels in 1984 to over 300 vessels in 1991. The number of pots fished by the fleet also increased, to almost 90,000 pots registered for the 1991 fishery.

As a result of the increased number of pots, the BOF established a 250 pot limit that was implemented for the 1992 Bristol Bay red king crab fishery. This measure was intended to improve manageability of the fishery by extending the length of the season and reduce the potential for pot loss. Pot limits were applied through a buoy sticker program.

Immediately following the 1992 Bristol Bay red king crab fishery, the 250 pot limit was repealed by the U.S. Secretary of Commerce. This action was taken 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 that set pot limits based on overall vessel length. For the Bristol Bay king red crab fishery, vessels in excess of 125 feet in overall length were limited to 250 pots and vessels 125 feet and under in length overall were allowed 200 pots total. These pot limits were applied through a buoy tag program from the Dutch Harbor and Kodiak ADF&G offices.

Projected harvest shortfalls in both the St. Matthew blue king and Pribilof Islands red king crab fisheries in mid-September 1993 prompted a meeting in Seattle between fishermen, industry representatives and staff from ADF&G and NMFS to discuss methods to improve in-season data collection and management. At that meeting, a sales representative from MCI Communications Incorporated presented information about satellite communications software available for confidential communication between ADF&G and vessels at sea, which could be used for daily in-season catch reporting. As a result of this meeting, ADF&G purchased the necessary computer hardware and software for retrieval of daily satellite transmitted catch messages from vessels at sea.

Daily vessel reports received via single side band radio and MCI telex were used to manage the 1993 Bristol Bay red king crab fishery. That season ran for 9 days and the total harvest was 14.6 million pounds, approximately 2.2 million pounds short of the 16.8 million pound guideline harvest level (GHL) midpoint.

Results of the NMFS 1994 summer trawl survey of the Eastern Bering Sea indicated declines in all size classes of both male and female red king crab in the Bristol Bay area. Compared to observations made during the 1993 survey, the abundance index of large male crab declined 25%. Based on 1994 survey results, large female abundance was estimated at 7.5 million crabs, which was below the minimum threshold of 8.4 million crabs necessary to allow a fishery. As a result, the Bristol Bay area did not open to fishing in 1994.

Due to potential measurement errors in the area-swept trawl abundance estimates, ADF&G developed a length-based analysis (LBA) for estimating red king crab population abundance. This method, used for the first time prior to the 1995 season, incorporates a variety of data sources (dock side sampling, observer collected data, etc.) as well as data collected on the annual survey. This method is less susceptible to year-to-year variations in factors unrelated to population abundance (oceanographic conditions, changes in species distribution and subsequent availability to the survey gear, etc.) and is therefore more likely to minimize errors in estimation of crab abundance. Analysis of the 1995 NMFS survey using the LBA indicated no appreciable difference in the abundance of

mature male and female red king crab from estimates derived from the 1994 survey. As a result the Bristol Bay red king crab fishery remained closed for the 1995 season.

Due to the depressed nature of the Bristol Bay red king crab population, the BOF, at their March 1996 meeting adopted a revised harvest strategy to promote stock rebuilding. Among changes to the harvest strategy was a reduction in the exploitation rate of mature male crab from 20% to 10% at population levels below where the stock is considered rebuilt (55 million pounds of effective spawning biomass).

Results of the LBA analysis of the 1996 NMFS survey indicated increases from the 1995 estimate of all size classes of males and females. Relative to the prior two years fishery closures due to insufficient numbers of large female crabs, was an increase in the number of large females in 1996 to 10.2 million crabs. This level was well above the 8.4 million large female threshold necessary for a fishery. Based on a 10% exploitation rate, the 1996 GHLL was set at 5.0 million pounds. The 1996 fishery lasted four days and a total of 8.4 million pounds were harvested. This was 70% over the 5.0 million pound GHLL.

As a result of the department's difficulty with managing this fishery at low GHLL levels, the BOF held a special meeting in August of 1997 during which more stringent pot limits and vessel pre-registration requirements were adopted. Also adopted at this time were regulations that extended the tank inspection window for the Bristol Bay fishery from 24 to 30 hours and allowed fishermen to leave baited pots on the fishing grounds after the closure should the announcement for the closure be less than 24 hours. New pot limits were based, not only on vessel overall length, but also the pre-season midpoint GHLL and the number of vessel that pre-registered for the fishery. These new pot limit regulations were adopted with a sunset provision of December 31, 1998. The sunset provision exists so that the pot limit regulations will be addressed at the 1999 BOF meetings. Specific information on pot limits based on GHLL and number of vessels participating in the Bristol Bay fishery are found under 5 AAC 34.825 of the 1997-98 State of Alaska Commercial Shellfish Fishing Regulations.

1997 Fishery

The Bristol Bay Management Area T opened to fishing for red and blue king crabs at 16:00 hours on November 1, 1997. A total of 256 vessels, including 8 catcher-processors made 265 landings for a harvest of over 8.7 million pounds of red king crabs. The 1997 fishery lasted just over four days (98 hours to be exact) and was closed by emergency order (E. O.) at 18:00 hours on November 5. Three floating processors registered and purchased crab on the grounds during the fishery.

Based on the 7 million pound midpoint GHLL and the 259 vessels which registered by the October 3 pre-registration deadline, vessels greater than 125' were permitted to fish a maximum 125 pots while vessels 125' and smaller were permitted a maximum of 100 pots.

A total of 259 vessels purchased 27,870 buoy tags for the 1997 Bristol Bay king crab fishery. This compares to a total of 200 vessels that purchased 40,586 pots for the 1996 season. Two vessels purchased buoy tags for the red king crab fishery but did not participate and not all vessels

participating fished a full complement of gear. The total number of pots fished in the 1997 season was 27,499 (Table 5-2). All vessels which qualified for the concurrently opening Pribilof hair crab fishery chose to first participate in the Bristol Bay fishery before entering the directed hair crab fishery.

Tank inspections were conducted beginning at 10:00 a.m. on October 31, 30 hours prior to the fishery opening. ADF&G personnel conducted a total of 141 tank inspections in Dutch Harbor, 70 in King Cove, 44 in Akutan, and 2 in Saint Paul. (A total of 257 vessels received tank inspections; 256 vessels delivered crab during the fishery). The majority of the fleet was registered using the "Quick Registration" process where vessel holds and gear are inspected within the several days leading up to regular tank inspections. Operators of vessels, which have been pre-inspected, can then proceed to signing locations and have their vessel registrations validated within minutes of the beginning of the tank inspection period. This quick registration process was first implemented for the 1997 *C. opilio* fishery. In addition to vessel hold inspections, ADF&G staff examined fishing gear aboard all vessels for pot mesh, tag and tunnel size requirements.

The 1997 Bristol Bay king crab fishery was managed by means of daily inseason reports from fishermen. A total of 180 vessel operators, or 70% of the total participants from both the small (<125 feet) and large (126 feet and larger) vessels groups, signed up to report numbers of pots fished and number of crab retained daily. The total number of vessels that actually reported ranged from 190 (74% of the fleet) on November 3 to 36 (14% of the fleet) on November 5. The number of vessels reporting declined after the fishery closure was announced on November 4th. Reports were received via marine telex and over single side band radio. Vessels participating in marine telex reporting submitted catch information on a 12 hour basis, while single side band reporters gave information every 24 hours.

Fishery performance, calculated from the daily vessel reports, indicated a catch per unit effort (CPUE) of 8.5 crab per pot during the first 26 hours of fishing. CPUE rose to 12 and 12.4 on November 3 and 4, respectively. By 18:00 on November 4 the red king crab fleet had harvested a projected 3,660,552 pounds and fishery performance suggested that the midpoint GHLL of 7.0 million would be met by 18:00 hours on November 5. A fishery closure for 18:00 hours on November 5 was announced at 21:45 p.m. on November 4, 20 hours in advance of the closure. The fishery closure announcement was faxed to all processors and fisheries related organizations on the department's Westward Region fax distribution list and put out over single side band radio on frequency 4125 at 21:45 p.m. on November 4, 1997.

Catch projections based on inseason reports through the closure of the fishery indicated a total harvest of 9.6 million pounds and a fishery CPUE of 18.5 crabs. These figures would prove to be somewhat inflated as the postseason fish ticket information yielded an 8.8 million pound harvest total and a CPUE of 14 for the fishery. However, in the 20 hours following the closure announcement, the fleet landed approximately 3 million pounds of red king crab with a CPUE of slightly over 18 crabs. The Department did not expect landings of such magnitude in such a small time frame. The 1997 fishery CPUE of 14 was lower than the 16 observed in the 1996 fishery but higher than the 6 to 12 crabs seen in the four seasons from 1990 to 1993. Inseason CPUE in 1997 ranged from 8.5 crabs on November 2 to 18.5 crabs on November 5. Table 5-1 contains information on historical Bristol Bay fishery performance, as well as 1997 fishery performance.

A total of 90,510 pots were pulled during the 1997 Bristol Bay red king crab fishery. This is an increase over the 72,438 and 76,433 pots lifted in the 1996 and 1993 fisheries, respectively. Comparing the 90,510 pot pulls reported during the 1997 fishery to the 27,499 pots registered, it appears fishermen pulled their pots an average of 3.3 times over the course of the fishery. This compares to an average of 1.9 and 4.3 pulls for each pot registered for the 1996 and 1993 seasons, respectively. Fishermen reported acceptable levels of catch from pots that had soaked as little as 8 hours with very acceptable levels of catch being reported from gear that had soaked 12 hours. This is in contrast to reports from fishermen in 1996 who required 15 plus hours of soak time to effect acceptable catches. The past two seasons are in contrast to the 1993 season where most gear soaked an average of 24 hours before being retrieved.

The average weight of Bristol Bay red king crab harvested in 1997 was 6.7 pounds. This is the same as the 6.7 average weight observed in 1996 and greater than the 6.5 average weight observed in 1993. The 1997 average weight is among the highest recorded in the 1990's and is well above the averages seen in the 1970's and 80's. As was the case in 1996, a large percentage of crabs harvested during the 1997 fishery were post recruits and are thought to be responsible for the larger average weight.

Exvessel price of Bristol Bay red king crab for the 1997 season was \$3.26 per pound; the second lowest price paid since 1986. Total fishery value for 1997 was \$28.5 million. This compares to an exvessel value of \$4.01 per pound and a fishery value of \$33.6 million for the 1996 season (Table 5-2 and Figure 5-3).

Post-recruit crabs made up 72% of this year's harvest. The remaining 28% were made up of recruit size crab, with the majority being new shelled. The mean carapace length of crabs harvested in 1997 was 152 millimeters. (Table 5-3).

The majority of the 1997 harvest came from five statistical areas located in the center of the Bristol Bay Management Area between 162° and 164° West Longitude and 56° and 57° North Latitude (Table 5-4). This is the traditional area of harvest and the same general area where the majority of the harvest occurred in 1996 and 1993.

Under the provisions of 5 AAC 34.827 (c), vessels were permitted to leave baited gear on the grounds for up to 10 days following the closure announcement because less than 24 hours notice was given when the announcement was issued. The majority of vessels chose, however, to bring their full complement of gear to their point of delivery. One vessel experienced a major mechanical breakdown and was unable to make a landing. One vessel operator was cited for fishing within the Bristol Bay registration area within the 14 days prior to the fishery in that area according to 5 AAC 34.053 (1).

Table 5-5 contains information on the 1997 Bristol Bay red king crab fishery.

Status of Stocks

Based on analysis of the 1997 NMFS survey results, all components of the Bristol Bay red king crab stock increased from levels observed in 1996. This was expected for all segments of the stock except for legal males, which increased from an estimated 5.58 million in 1996 to 9.4 million animals in 1997. Large females (>89 mm carapace length) increased from 11.9 million in 1996 to 25.3 million crabs in 1997. Though these results are encouraging for future harvests, the increased abundances are not likely the result of recruitment into the stock. Rather, as the increased abundance is within the margin of error for the survey, estimation error in last year or this year's survey results is a more plausible explanation than the apparent doubling of large females.

Estimates based on the Length-Based Analysis (LBA) were more conservative than the survey analysis, but also showed increases in abundance for all segments of the stock from 1996 to 1997. LBA estimates of legal males increased from 5.26 million animals in 1996 to 5.90 in 1997. Large female abundance, according to the LBA increased from 10.18 in 1996 to 23.7 million crabs in 1997.

This stock remains depressed and as a result will be managed based on a 10% exploitation rate of the mature male population.

KING CRAB STATISTICAL AREA Q BERING SEA

Description of Area

The Bering Sea king crab registration Area Q, includes all waters north of Cape Sarichef, south of Point Hope, and east of the U.S.-Russian Convention Line of 1867; it excludes those waters of Bristol Bay, and south of 55°30' North latitude and west of 171° West longitude. Area Q is separated into the Pribilof and Northern Districts. The Pribilof District includes waters south of Cape Newenham. The Northern District incorporates all waters north of Cape Newenham, and is further divided into three sections. The Saint Matthew Island Section includes waters north of Cape Newenham and south of Cape Romanzof. The Norton Sound Section includes all waters north of Cape Romanzof, south of Cape Prince of Wales, and east of 168° West longitude. The Saint Lawrence Island Section encompasses all remaining waters of the district (Figure 5-4).

Historic Background

The king crab fishery in the Pribilof District began in 1973 when vessels targeted blue king crabs in the vicinity of St. George and St. Paul Islands, the two largest in the Pribilof Islands group. The first reported catch in this area was 1.2 million pounds taken by eight vessels between July and October. Crabs averaged 7.3 pounds, and catch per unit of effort (CPUE) was 26 crabs per pot. Average weight remained relatively constant through the 1987/88 season. The CPUE of 26 crabs per pot has never again been attained by the fleet; an average of 17 crabs per pot for the following

three seasons dropped to less than eight crabs per pot for the 1977/78 through 1982/83 seasons. Three crabs or less per pot were observed for the 1983/84 season and the five subsequent seasons. Due to low population estimates in this district, the blue king crab fishery was closed beginning with the 1988/89 season (Table 5-6 and Figure 5-5).

The 1993 National Marine Fisheries Service (NMFS) summer trawl survey of the Bering Sea indicated a marked increase in the abundance of red king crabs around the Pribilof Islands. Blue king crabs have historically been the dominant species of king crab in this area. While no threshold level of abundance was established for Pribilof red king crabs, survey results indicated a harvestable surplus did exist. As a result, a red king crab fishery was opened for the first time in the Pribilof district in September of 1993 with a guideline harvest level (GHL) of 3.4 million pounds. Due to the continued depressed nature of blue king crab stocks in this area, no commercial fishery for blue king crabs was permitted in 1993. In 1994, the Pribilof District was open only to the commercial harvest of red king crabs. In 1995 and 1996, slight increases in blue king crab abundance and a continued harvestable surplus of red king crabs resulted in a combined species GHL. Table 5-6 summarizes commercial red and blue king crab landings from the Pribilof District from 1973 to present.

In the St. Matthew Section of the Northern District, king crab stock abundance information from the NMFS survey of indicated a harvestable surplus of blue king crab ranging from 1.7 to 8.0 million pounds between 1983 and 1996. The midpoint GHL for the 1994-97 period was 3.0, 2.4, 4.3 and 5.0 million pound, respectively. The commercial harvest in those years was 3.8, 3.2, 3.1 and 4.6 million pounds, respectively (Table 5-7).

Regulation changes adopted by the Alaska Board of Fisheries (BOF) in 1993 moved the opening date of the St. Matthew king crab fishery from September 1 to September 15, concurrent to the king crab fishery in the Pribilof District. This action was taken to improve effort distribution between the Pribilof and St. Matthew fisheries, thereby reducing the number of vessels participating in each fishery. Also at this time, regulations were adopted which set pot limits, based on overall length, on all vessels fishing king crabs in the Bering Sea. In the Northern District of the Bering Sea, which includes the St. Matthew Island Section, vessels over 125 feet were limited to 75 pots while those equal to or less than 125 feet were allowed a maximum of 60 pots. In the Pribilof District, pot limits were established at 50 and 40 for vessels greater than 125 feet and 125 feet and less in overall length, respectively.

1997 Fishery - Pribilof District

For the third consecutive season, the 1997 king crab fishery in the Pribilof District opened to the commercial harvest of both red and blue king crabs. Results from the 1997 NMFS trawl survey of the Bering Sea, conducted in June and July, indicated a harvestable surplus of 1.3 million pounds of blue king crabs and 2.35 million pounds of red king crab in the Pribilof area. Due too poorer than expected fishery performance since the area reopened in 1993, a conservative 1.5 million pound, combined species GHL was established for 1997 season. This combined species (red and blue king crabs) GHL was a 16% reduction from the 1996 combined species harvest guideline of 1.8 million pounds.

A total of 54 catcher-only vessels purchased 2,230 buoy tags from ADF&G offices in Dutch Harbor and Kodiak for the 1997 Pribilof red and blue king crab season. One vessel which had purchased tags sank prior to the season closure and subsequently, did not make a landing. Additional six vessels, which had participated in the St. Matthew blue king crab fishery, purchased tags and entered the fishery in the final week of the Pribilof season. Two floating processors, which had participated in the St. Matthew blue king fishery, registered and purchased crab in the vicinity of St. Paul at the end of the Pribilof season.

ADF&G personnel stationed in Akutan, King Cove, Dutch Harbor and St. Paul offered tank inspections, beginning at 12:00 noon on September 14. Weather conditions in the Pribilofs allowed the majority of the fleet, 32 vessels, to receive tank inspections in St. Paul. Fourteen vessels received tank inspections in Dutch Harbor, and one vessel each in King Cove and Akutan.

The total number of participants in the 1997 Pribilof fishery, 54 vessels, was a down from the 66, 127, 104 and 112 vessels which participated in the 1993-1996 Pribilof king crab fisheries, respectively. The significant decrease in vessel effort in 1996 and 1997 is presumably due to smaller Pribilof king crab quotas than previous years and the larger 1996 and 1997 quotas in the concurrent St. Matthew fishery. In 1997 a total of 2,270 pots were registered for the Pribilof area. This was a decrease from the 2,730, 5,400, 4,675 and 4,860 pots registered for the preceding four seasons (Table 5-8).

The 1997 Pribilof red and blue king crab fishery opened concurrent to the St. Matthew blue king crab fishery on September 15 at 12:00 noon. Similar to the 1995 and 1996 seasons, management of the 1997 fishery were based on daily inseason vessel catch reports. This is in contrast to the 1994 season, which was managed on prior year's fishery performance. A total of 31 vessels (65% of the fleet) signed up to report via single side band radio (SSB) or marine satellite communications (MCI). This compares to 30 vessels (48% of the fleet) which signed up to report during the 1996 season. Catch projections based on inseason reports indicated a total of 1.4 million pounds of red and blue king crabs combined would be harvested by 12:00 noon on September 28. Based on these projections, 24 hour notice was given and the fishery was closed after 14 days of fishing at 12:00 noon on September 29. Continuous gale force winds contributed to the 1997 fishery's length as many vessels were unable to sustain fishing effort during the unfavorable weather. The 1997 fishery was the longest fishery since the season reopened in 1993. The actual harvest of 756,818 pounds of red king crabs and 512,374 pounds of blue king crabs, a combined harvest of 1.3 million pounds, was below the mid-point 1.5 million pound harvest guideline, but well within the GHF range (Tables 5-6 and 5-8).

The 1997 harvest, from reported 30,400 pot lifts (red and blue king crabs combined), came predominately from the seven statistical areas directly surrounding the Pribilof Islands. This is similar to the areas fished in the 1994 through 1996 seasons. (Tables 5-9 and 5-10).

A total of nine shore based processors, and two floating processors purchased crabs during the 1997 Pribilof area king crab fishery. The 1997 exvessel price of \$3.09 per pound for red king crabs and \$2.82 per pound for blue king crabs was higher than the price paid during the 1996 season, where exvessel price was the lowest price paid in 10 years. The 1997 exvessel price of Pribilof blue king crabs was \$.61 higher than the price paid for St. Matthew blue king crabs, likely due to the larger

average size of Pribilof blue king crabs. Total exvessel value of the 1997 Pribilof blue king crab fishery was \$1.4 million. Total exvessel value of the 1997 Pribilof red king crab fishery was \$2.3 million. Total fishery value (both red and blue king crabs combined) was \$3.7 million. This compares to a total fishery value of \$0.6 million in 1996, \$3 million in 1995, \$8.6 million in 1994 and \$13 million in 1993 (Table 5-8 and Figure 5-6).

A total of 110 landings contained red king crabs and comprised the 756,818 pound red king crab harvest total for the 1997 season. Average weight of red king crabs harvested in 1997 was 8.4 pounds, significantly higher than the 7.9 pound average observed in the 1996 fishery. The CPUE for red king crabs was up from less than one crab in 1996 to three in 1997 (Table 5-6).

A total of 105 landings contained blue king crabs and comprised the 512,374 pound harvest total of blue king crabs for the 1997 season. Average weight of blue king crabs was 7.5 pounds, only slightly higher than the 7.3 pound average observed during the 1996 fishery. A CPUE of two was a decrease from the 1996 season CPUE of four (Table 5-6).

Stock Status

Blue king crabs in the Pribilof District are in a low population state and experienced declines in legal males, pre-recruits, and large females in 1997's survey population estimates. Female abundance is considered imprecise due to inshore, rocky substrate preferred by females and poorly sampled by trawling. Red king crabs currently indicate long term decline through both survey and fishery data. Localized, high concentrations of red king crabs were not apparent during the 1997 survey, though in years past this had occurred frequently. Both red and blue king crabs in this area are managed at or below the GHL midpoint.

1997 Fishery - St. Matthew Island Section (Northern District)

Based on the 1997 NMFS summer trawl survey of the Bering Sea, a midpoint GHL of 5.0 million pounds was set for the 1997 St. Matthew blue king crab fishery (Figure 5-7). A total of 117 vessels, including one catcher-processor, purchased buoy tags from ADF&G offices in Dutch Harbor and Kodiak. This was similar to the 122 vessels, which participated in the 1996 fishery (Table 5-7).

For the 1997 fishery, a total of 78 vessels were tank inspected at Dutch Harbor, 28 at King Cove, 6 at Akutan, and 5 at St. Paul. This is similar to the 1996 season when 75 vessels were inspected in Dutch Harbor, 26 in King Cove, 12 in Akutan and 9 at St. Paul. In all locations except St. Paul harbor, department staff provided pre-tank and gear inspections two to five days prior to the regular tank inspection window in an attempt to expedite the tank inspection process. This "Quick Registration" process allows vessels to obtain a tank and gear inspection prior to the regular inspection, and then proceed to designated signing locations established by ADF&G for registration validation at the start of the regular inspection period. Many vessels did obtain a pre-inspection on their gear and tanks prior to the 1997 season, but few proceeded to Quick Registration signing

locations. Most vessel operators indicated they did not take advantage of the Quick Registration process because they needed less than 72 hours to reach the fishing grounds at St. Matthew Island.

The 117 vessels, which registered for the 1997 season remains well below the 174 vessels that, registered for the 1992 fishery (Table 5-11). A total of 7,650 pots were registered for the 1997 St. Matthew fishery, compared to an average of 6,390 pots for the period from 1993 through 1996 (Table 5-11).

The 1997 fishery opened at 12:00 noon on September 15, concurrent to the Pribilof District king crab fishery. The 1997 fishery was managed on daily in-season vessel catch reports. A total of 68 vessels (58% of the fleet) signed up to report via single side band radio (SSB) and marine satellite communications (MCI). This is an increase from the 34% of the fleet which signed up to report during the 1996 fishery. Total number of vessels which actually reported during the 1997 fishery reached a maximum of 46 (39% of the fleet) on September 21 and a minimum of 10 on September 23, the day following the closure.

Daily vessel catch reports indicated that catches declined from a CPUE of 17.7 crabs on September 16 to 9.5 crabs at the time of the closure announcement at 12:00 noon on September 21. Catch projections based on performance of the fleet at the time of the closure indicated the total harvest would be 5.1 million pounds. Unexpected declines in CPUE, which fell to 4.9 crabs during the final day of the fishery, lowered the projected season total to 4.8 million pounds. Overall CPUE for the 1997 fishery was 12 crabs. This compares to overall fishery CPUE of 7, 14 and 14 crabs per pot pull for the prior three seasons. At seven days, the 1997 fishery was one day shorter than in 1996, which was the longest since 1983 (Tables 5-11 and 5-12).

Average weight of St. Matthew blue king crabs for the 1997 season was 4.9 pounds. This is higher than the 4.7 pound average weight recorded for the 1996 fishery and the heaviest on record since 1985 (Tables 5-7 and 5-13).

The total 1997 harvest of 4,649,660 pounds came predominately from two statistical areas south of St. Matthew Island (Table 5-13) and is similar to the location of the 1992-96 harvests. However, unlike previous years, additional landings were reported from a wider area due to lower catch rates in the traditional fishing area. This situation also occurred in 1996 and resulted in more fishing in areas not normally explored.

A total of 81,117 pots were pulled during the 1997 fishery. This is less than the 91,205 pots pulled during the 1996 fishery, but greater than any of the previous seasons dating back to 1983 (Tables 5-7 and 5-11).

A total of eight shore based processors, three floating processors, and one independent buyer purchased crabs during the 1997 St. Matthew fishery. The 1997 exvessel price for St. Matthew blue king crabs was \$2.21 per pound, nearly identical to the \$ 2.20 price paid in 1996. Discounting the 1996 season, the price paid per pound in 1997 was the lowest since 1985 when the fishermen were given \$1.60 per pound (Table 5-11 and 5-12). The total exvessel value of the 1997 St. Matthew blue king crab fishery was \$9.8 million, approximately \$3.1 million greater than the value of the 1996 season. (Tables 5-11 and Figure 5-8).

Only one catcher-processor participated in the 1997 St. Matthew blue king crab fishery. This is a reduction from three catcher-processors that participated in the 1996 season and well below the 8 and 9 which participated in the 1992 and 1991 fisheries, respectively (Table 5-14). Information on the number of pots pulled and average number of crab harvested per pot for catcher-processors is confidential since fewer than three vessels participating in the 1997 fishery.

Stock Status

Blue king crabs in the St. Matthew Island area appear to be above established threshold levels. Given the rocky substrate of the St. Matthew survey area, annual abundance estimates may be affected by the availability of the stock accessible to trawling. (Otto 1997) The 1997 NMFS summer survey estimated legal male abundance at 4.06 million crabs. This resulted in a GHLL midpoint of 5.0 million pounds. This is an increase from the 4.3 million pound GHLL midpoint set for the 1996 season and the highest GHLL on record since an 8.0 million pound GHLL established for the 1983 season (Table 5-15). The increase in harvestable surplus observed since 1995 is encouraging and indicates that this stock appears to be in stable condition.

BERING SEA GOLDEN KING CRAB

Introduction

Commercial harvest of Bering Sea golden or brown king crabs, *Lithodes aequispinus*, is allowed under conditions of a permit issued by the commissioner of ADF&G as provided in 5 AAC 34.910. (It should be noted that *L. aequispinus* is often referred to as brown king crab and appears as such in the Alaska Department of Fish and Game's Commercial Fishing Regulations.) The first recorded commercial golden king crab harvest in the Bering Sea was in 1982 in the Pribilof District and in 1983 in the Saint Matthew Island Section of the Northern District (Tables 5-16 and 5-17).

At the spring 1993 Board of Fisheries (BOF) meeting, a pot limit was imposed on all vessels fishing king crab in the Bering Sea. Vessels in the Pribilof District were allowed a maximum of 50 pots, while vessels in the Saint Matthew Island Section were allowed a maximum of 75 pots.

1997 Fishery - Pribilof District

Eight vessels registered for the Pribilof District golden king crab fishery in 1997. Seven vessels made 23 landings for a total catch of 179,249 pounds. This compares to six vessels and 32 landings for a total catch of 329,009 pounds in 1996 and 7 vessels and 22 landings for a harvest of 341,700 pounds in 1995. From 1995 through 1997, the catch per unit effort (CPUE) has remained constant at nine crabs per pot. The average weight of crabs landed in the 1997 fishery was 4.1 pounds per crab. In 1996 the average weight of golden king crabs was 3.6 pounds. In 1994 and 1995 brown king crabs averaged 4.1 pounds (Table 5-16). Table 5-18 contains historic

economic performance of the Pribilof District of the Bering Sea golden king crab fishery from 1991 to 1997. The 1997 Pribilof District golden king crab harvest came predominantly from three statistical areas south of St. George Island (Table 5-19).

1997 Fishery - Saint Matthew Island Section of the Northern District

No vessels registered for the Saint Matthew Island Section golden king crab fishery in 1997. Historic catch effort and economic information is contained in Tables 5-17 and 5-20.

Stock Status

There are no annual abundance estimates made for Bering Sea golden king crabs. High catches in the early years of the fishery declined as the virgin stock was exploited and recruitment was unable to sustain the fishery at initial harvest levels. Recent increases in Pribilof District harvest may only be due to increased effort as additional vessels entered this fishery.

BERING SEA SCARLET KING CRAB

Historic Background

Scarlet king crabs, *Lithodes couesi*, are harvested under authority of a permit issued by the commissioner of ADF&G authorized in 5 ACC 34.082. Fishing effort for scarlet king crab in the Bering Sea has primarily been as bycatch in the *Chionoecetes tanneri* Tanner crab and brown king crab fisheries in that area. Although vessels have been registering for scarlet king crab since 1992, no commercial landings occurred prior to 1995. Only two vessels participated in 1996, and subsequently, all catch information is confidential.

1997 Fishery

No vessels registered to harvest scarlet king crabs in the Bering Sea during 1997. Table 5-21 contains information on historic Bering Sea scarlet king crab fishery and economic performance.

Stock Status

No annual abundance estimates are available for scarlet king crab stocks. Onboard observers have been required on most vessels targeting deep water crab species since 1994, collecting information on size, sex, and species composition of the retained and non-retained scarlet king crab catch. This information will be used to help develop management measures for these stocks in the future.

BERING SEA DISTRICT TANNER CRAB

Introduction

The Bering Sea District of Statistical Area J includes all waters of the Bering Sea north of the latitude of Cape Sarichef at 54°36' North latitude 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° West Longitude. The Eastern subdistrict is further divided at the latitude of Cape Romanzof and 168° West longitude into the Norton Sound section to the east and the General Section to the west (Figure 5-9). The two species of Tanner crabs most commercially harvested in the Bering Sea District are *Chionoecetes bairdi* and *C. opilio*.

Chionoecetes bairdi Tanner crab

Historic Background

The first reported *C. bairdi* or Tanner crab catches were made 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 22).

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 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, the National Marine Fisheries Service (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 Alaska Board of Fisheries 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 Board of Fisheries meeting, regulations were adopted which opened and closed that portion of the Bering Sea east of 168° West longitude to fishing for Tanner crabs concurrent to the regulatory opening and emergency order closure of the Area T red king crab fishery. The Board of Fisheries mandated a reopening of the Bering Sea between 163° and 173° West longitude for the directed Tanner crabs fishery 10 days following the closure of 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° West Longitude would be allowed to open on November 1 to a directed fishery for Tanner crabs. These actions 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° West longitude.

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° West Longitude. In 1994, the GHL for Tanner crab 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° west Longitude, was 5.5 million pounds. The total commercial Tanner crab harvest in that year was 4.2 million pounds (Table 22). The 1996 fishery opened November 1, concurrent with the Bristol Bay red king crab fishery. During the red king crab fishery, 994,776 pounds of Tanner crab was harvested as incidental bycatch. The 1996 directed fishery for Tanner crabs opened in that portion of the Eastern Subdistrict west of 163° West Longitude, ten days following the closure of red king crab in Bristol Bay and had an established GHL of 6.2 million pounds. The Western Subdistrict was not opened in 1996 due to lack of legal Tanner crabs encountered in the 1996 NMFS survey in that area. Poor fishery performance resulted in the Eastern Subdistrict closure with only 811,301 pounds harvested, well short of the 6.2 million pounds GHL.

1997 Fishery

The Bering Sea *Chionoecetes bairdi* Tanner crab fishery did not open in 1997 due to low abundance and poor fishery performance in the 1996 fishery. Tables 5-22 through 5-25 contain information on historic fishery catch and economic performances.

Stock Status

The 1997 survey abundance estimates for large males (≥ 135 mm carapace width) is the second lowest in the history of the survey. While the estimate of large females is the lowest on record for the survey. Legal males, pre-recruits, and large females experienced a 63%, 61%, and 64% decrease, respectively, from the 1996 survey abundance estimates. Most legal males encountered were in the Eastern District, with the highest abundance in central Bristol Bay. The cohort which began recruiting into the fishery in 1988-1992 has declined as a result of natural mortality and fishery removals. Ninety five percent of legal males encountered during the 1997 survey were old shelled and not expected to molt again in their life spans. Low abundance of males in the 50-115mm carapace width suggests that recruitment into the fishery will continue to be poor for several years. Given these two underlying factors, it is foreseeable that the Bering Sea Tanner crab population will continue to decline for several years. The stock is considered very depressed and will be managed conservatively.

Chionoecetes opilio TANNER CRAB

Historic Background

The first commercial landings of *Chionoecetes opilio* Tanner crab, or snow crab, were made during 1977 incidental to *C. bairdi* Tanner crab. Reduction in *C. bairdi* harvests resulted in increased *C. opilio* harvests through the 1981 fishery (Figure 5-10). Harvest of snow crab then fell from 52.7 million pounds in 1981 to 26.1 million by 1983. In 1984 harvest increased slightly, and the 1985 fishery produced 66 million pounds. The harvest was 97.9 million pounds in 1986, and it continued to increase annually to a high of 328.6 million pounds in 1991. Although stocks began to decline, the harvest of *C. opilio* remained over 100 million pounds through the 1994 season. In 1996 the harvest fell to 65.7 million pounds, the lowest in the preceding eleven seasons.

1997 Fishery

The 1997 Bering Sea *C. opilio* fishery opened by regulation at 12:00 noon, January 15. A total of 226 vessels, including 12 catcher-processors participated. Ten floating processors registered and processed crab on the fishing grounds. The total harvest was 119.4 million pounds (including deadloss) from 1,126 deliveries (Table 5-26). Management of the 1997 fishery was based on weekly processor reports, and inseason observer and port sampler data. The fishery closed by emergency order at 12:00 noon on March 21 (Table 5-27). A total of 753,636 pots were reported pulled during the fishery. A summary of harvest statistics for the 1977 through 1997 seasons is shown in Table 5-26 and Figure 5-11.

A preseason midpoint guideline harvest level (GHL) of 117 million pounds was established (Table 5-28). This GHL was based on male crab four inches and larger in carapace width (CW), and was divided between the Eastern and Western Subdistricts at 102 and 15 million pounds, respectively. The 1997 GHL was more than twice the 1996 GHL midpoint of 50.7 million pounds (29.5 million pounds from the Eastern Subdistrict and 21.2 million pounds from the Western Subdistrict). The 1997 harvest of 119.4 million pounds exceeded the preseason GHL midpoint by two percent.

Tank inspections for the 1997 season, conducted by ADF&G staff, began at 12:00 noon on January 12 in Dutch Harbor and King Cove, and at 12:00 noon on January 14 in Akutan and St. Paul. The majority of the fleet, 144 vessels, received inspections in Dutch Harbor. There were 49 tank inspections in King Cove, 18 in St. Paul and 17 in Akutan (228 vessels were inspected, 226 vessels participated in the fishery).

The 1997 fishery started slowly due to price dispute between shore processors and fishermen. This dispute kept most catcher-only vessels in port until January 27. The majority of the catcher-only vessels did not begin to set gear until January 31. Catcher-processors accomplished most of the initial fishery harvest, with a total of 2.3 million pounds taken by the end of the second weekly reporting period (January 26).

Weather and sea conditions during the 1997 season were not too severe; little fishing time was lost due to inclement weather. The fleet was able to exploit most productive grounds. This year the

majority of the crab were encountered in the Eastern Subdistrict, mainly to the southeast and west of the Pribilof Islands, and fishing effort was concentrated on this segment of the population (Table 5-29).

Vessels fishing north of the Pribilof Islands and in the Western Subdistrict experienced lower catch rates. In the Western Subdistrict, catches were predominantly from the traditional fishing areas along the 100 fathom contour in the eastern portion of that area. The reduction in ice cover during the 1997 season resulted in additional landings from areas west of St. Matthew Island, as far north as 60° 30' North latitude population (Table 5-29).

During the 1997 fishery the majority of crab harvested east of the Pribilof Islands were in a new-shell condition. Samples collected during the 1997 fishery averaged 96.5% new-shell crab. This compares to 75.8%, 89.6% and 93.1% new-shell crab observed in samples collected during the prior three seasons (Table 5-26). Observer and port sampler data document a higher percentage of "dirty" (skip molt) crab from north of the Pribilof Islands (6.2%) and in the Western Subdistrict (5.6%) as compared to south and east of the islands (3.3%).

The weekly harvest in the Eastern Subdistrict ranged from 1.3 million pounds taken in the first full week of fishing effort (during the price dispute), to a peak of 22.9 million pounds during the fifth week of the fishery (Figure 5-12). In the Western Subdistrict, catch ranged from 323 thousand pounds for the week ending January 26 (the first full week) to 3.8 million pounds for the last week of the fishery ending March 21. Total harvests from the Eastern and Western Subdistricts were 105.6 and 13.9 million pounds, respectively (Table 5-30).

Catch per unit of effort (CPUE), defined as catch per pot pull, in the Eastern Subdistrict ranged from 57 to 288 legal size crabs per pot (Figure 5-12). The peak CPUE was during the week ending February 2, just after conclusion of the price dispute when only catcher-processors were fishing. In the Western Subdistrict, CPUE ranged from 57 to 283 and also peaked the week ending February 2. The overall CPUE for both areas averaged 133 crabs per pot (Table 5-30). This is a significant increase in overall CPUE from the 102 crabs per pot observed during the 1996 fishery.

Analysis of observer and port sampling data, and fish ticket data shows the average weight for crabs landed during the 1997 fishery was 1.2 pounds (Table 5-26). This is the same as for the last two seasons, but a decline from the overall average weight of 1.3 pounds since 1985. The percentage of legal crab under four inches was 21.1% in 1997, down slightly from 23.3% observed in the 1996 fishery. Prior to this season the percentage of legal crab under four inches in the catch had steadily increased by four to five percent per year over the past several years.

Exvessel price per pound of *C. opilio* at the conclusion of the strike was \$0.75 on the grounds and in St. Paul, and \$0.90 in Dutch Harbor, Akutan and King Cove. The price quickly went to \$0.65 on the grounds and \$0.75 at shore-side processors in Dutch Harbor, Akutan and King Cove. During the last week of February processors in the Pribilof Islands raised their price to \$0.75, matching the price offered by processors elsewhere. By the end of the season the price per pound averaged \$0.79. The 1997 harvest of 117.1 million pounds (live crab weight) was worth an estimated \$92.5 million. This compares to an exvessel price of \$1.33 per pound and total fishery value of \$85.6 million for the 1996 fishery (Table 5-28).

In addition to the commercial catch, 461 pounds of *C. opilio* were harvested in March and October of 1997, under special charter, to be used in observer training practicums. No *C. opilio* were harvested in test fish operations during 1997.

***C. opilio* Stock Status**

Data from the 1996 NMFS Bering Sea trawl survey, presented in the NMFS Alaska Fisheries Science Center Processed Report 97-02, indicated total abundance of large males (over four inches CW) was 171.6 million crabs, a major increase (149%) over the 68.8 million large male crabs estimated from the 1995 survey. However, small male (78-101 mm) and large female (≥ 50 mm) crabs decreased by 34% and 43%, respectively, from the same survey estimates. According to the 1996 survey, the majority (87%) of large male crabs was located east of the 173° West Longitude, the boundary line between the Eastern and Western Subdistricts. Recruitment for the 1997 fishery apparently was from the growth and southward migration of a population of small males, which was previously in high concentration at the northern limit of the survey area. Based on survey results, NMFS biologists indicate stable abundance of large males is likely next year, but a lack of very small male crabs encountered in the survey indicate a possible decline in abundance in the future.

***Chionoecetes Tanneri* TANNER CRAB**

Historic Background

The first reported landings of *Chionoecetes tanneri* or grooved Tanner crabs from the Bering Sea occurred in 1988 after the Alaska Board of Fisheries (BOF) established a special permit season for deepwater Tanner crabs during their spring meeting. Also in 1993, the Department restricted the harvest to male crabs 5 inches or greater in carapace width. Differential pot limits based on vessel size, enacted by the BOF in the Spring of 1993, were not applied to vessels fishing for deepwater Tanner crab in the Bering Sea until 1994.

To obtain biological information on *C. tanneri* crabs, the Department implemented 100% onboard observer coverage in 1994, as allowed by the permit provisions in 5 AAC 35.082 (5 AAC 35.511 as of October 1996). Effort and landings decreased when Tanner crab pot limits for the Bering Sea were applied to vessels fishing for deepwater Tanner crab.

At the March 1995, meeting the BOF determined that pot limits did not apply to the deepwater permit fisheries of the Westward Region. Effort increased significantly to a harvest of over one million pounds and the value of the fishery exceeded \$1.3 million in 1995.

In 1997, the Department set guideline harvest levels (GHLs) derived from previous seasons catch information from areas where extensive fishing had occurred. Additionally, due to industry concerns about viability of undersized and female deepwater crabs discarded at sea, the Department began to require a minimum of two escape rings per pot with a minimum ring diameter of 4.5 inches. The Bering Sea, along with the Alaska Peninsula and Eastern Aleutians,

were among the areas where, historically, effort had been extensive. A GHL of 200,000 pounds was established for each of these areas of heavy effort with GHL's of 100,000 pounds to allow for exploration in the Kodiak and Western Aleutian regions.

1997 Fishery

No vessels registered to fish *C. tanneri* in the Bering Sea District in 1997. Table 5-31 contains information on historical fishery and economic performance for the Bering Sea *C. tanneri* fishery.

Stock Status

No stock assessment surveys are conducted for *Chionoecetes tanneri* crabs in the Bering Sea. Consequently no population estimates are available. Onboard observers have been required on all vessels targeting *C. tanneri* since 1994. This measure has provided information on the size, sex, and species composition of the retained and non-retained catch which was used in the development of the management strategy put into place in 1997 by the Department for this deepwater species.

***Chionoecetes angulatus* TANNER CRAB**

Historic Background

Chionoecetes angulatus or triangle Tanner crab in the Bering Sea have been harvested in the past as bycatch in the *C. tanneri* or grooved Tanner crab fishery. Vessel operators have verbally reported retention of *C. angulatus* before 1994. During 1994 an incidental catch of this species was documented by onboard observer sample data. However, fish tickets recorded prior to 1995 do not show a commercial harvest. In 1995 *C. angulatus* was the target species of two deliveries. The following year, 1996, less than three vessels delivered *C. angulatus* as bycatch.

1997 Fishery

No vessels registered for *c. angulatus* in 1997 in the Bering Sea District. Table 5-32 contains information on historical catch and economic performance in the Bering Sea District.

Stock Status

There are no population estimates for Bering Sea *Chionoecetes angulatus*. Limited information has been collected by onboard observers required on all vessels participating under the terms of the permit required for this and other deepwater crab fisheries. The information collected will be used to help develop management measures needed for this deepwater species.

BERING SEA KOREAN HAIR CRAB

Area Description

The Bering Sea hair crab registration district includes all waters north of 54° 36' North latitude, south of 58° 39' North latitude, and east of the U.S.-Russian Convention Line of 1867 (Figure 5-13). This region is divided into the Pribilof Islands Area (west of 168° West longitude), and the Bristol Bay Area (east of 168° West longitude).

Historic Background

Korean hair crab, *Erimacrus isenbeckii*, sold commercially as "kegani" by the Japanese, were fished commercially for the first time by the U.S. fleet in 1978/79 (Figure 5-14). Most fishing effort has been concentrated in waters adjacent to the Pribilof Islands. When fishermen and processors first expressed interest in hair crab, the season was opened by emergency order and ran concurrently with the Bering Sea Tanner crab fishery. During the 1980 Board of Fisheries meeting, a year long season was established under the terms of a permit issued by the Alaska Department of Fish and Game. Between 1979 and 1991, the majority of hair crab landed were reported as incidental catch in the Bering Sea Tanner crab fisheries. Beginning with the 1993 Bering Sea hair crab fishery, terms of the special permit issued by the commissioner of ADF&G included 100% observer coverage on all hair crab vessels for the purposes of collecting data on the targeted species and to monitor bycatch. At their Spring 1994 meeting in Anchorage, the Alaska Board of Fisheries defined hair crab pots as a pot with a rigid tunnel opening located in the top of the pot, with a tunnel perimeter not exceeding 26 inches, and a base that does not exceed 48 inches in any one direction.

As a result of a steady increase in the number of vessels participating in this fishery, the Alaska Legislature, during its 1996 session, passed House Bill 538 authorizing the Commercial Fisheries Commission (CFEC) to regulate vessel licenses in the Bering Sea hair crab fishery. Vessel qualification was based on participation in at least one of the qualifying years (1992-1995). Licenses were issued to 23 vessels for those waters beyond 5 nautical miles of St. George and St. Paul Islands (Pribilof Islands). Also included in this legislation were provisions which allow any vessel 58 feet and under to fish within 5 nautical miles of St. George and St. Paul Islands proper. While House Bill 538 specifically requires 100% observer coverage on all vessels participating in the Bering Sea hair crab fishery, the Alaska Department of Fish and Game (ADF&G) exempted vessels under 44 feet in length from mandatory observer coverage for observer safety considerations.

1997 Fishery

The 1997 National Marine Fisheries Service (NMFS) summer trawl survey of the Bering Sea indicated the abundance of hair crabs in the Bering Sea decreased 11% from levels observed in 1996. Estimates of abundance are considered somewhat imprecise, as these crabs are known to

bury themselves in the substrate and live in rocky in-shore areas not well suited to trawling. Based on the 1997 survey, the abundance of large (3.25" and larger) male hair crabs was estimated at 4.34 million crabs. The 1996 survey showed a large male hair crab abundance estimate of 4.90 million crabs while the 1995 survey estimate was 6.54 million large male crabs.

Calculations of total allowable harvest, based on an exploitation rate of 20% and an average weight of 1.4 pounds per crab, yielded an 800,000 pound guideline harvest level (GHL) for the 1997 season. This is a reduction from the 1.1, 1.8 and 0.9 million pound harvest guidelines established for the 1994, 1995 and 1996 seasons respectively.

Based on the 1997 survey, 62% (2.69 million) of the large male crabs were once again observed in the vicinity of the Pribilof Islands west of 168° West longitude. Very few large male crab were observed in survey tows conducted in the Bristol Bay area east of 168° West Longitude. As a result, fishing was once again confined to areas west of 168° West Longitude. A small increase in legal male abundance was observed in that portion of the Bering Sea north of the Pribilof Islands. To provide vessels an opportunity to explore this area of increased abundance, the area normally open to fishing was extended north from Cape Newenham, at 58°39' North latitude, to 60° North latitude (Figure 5-13).

The 1997 Bering Sea Korean hair crab fishery opened at 12:00 noon on November 1. No vessels registered for the hair crab fishery at that time. Instead, all moratorium qualified hair crab vessels chose to first participate in the concurrent Bristol Bay red king crab fishery. Within a week of the closure of Bristol Bay, 16 vessels registered and participated in the directed hair crab fishery. The 1997 fishery closed by emergency order at 22:00 hrs or 10:00 p.m. on November 25, and was confined to that portion of the Bering Sea south of 60° North Latitude and west of 168° West Longitude. The total harvest from 52 landings was 668,096 pounds (Figure 5-14), approximately 131,904 pounds short of the preseason GHL. From the total harvest 17,522 pounds were reported as deadloss (Table 5-33).

The 16 vessels that participated in 1997 were in excess of 44 feet and therefore carried an observer. Observers were required to report, via single side band radio, to ADF&G in Dutch Harbor each Monday, Wednesday and Friday until November 21. Inseason harvest projections then indicated that 600,714 pounds had been harvested. Shellfish observers were then requested to send their catch information on a daily basis thereby allowing ADF&G staff to more closely monitor harvest rates. Observers reported the number of crabs retained, pots pulled, number of pots sampled, and percentage of legal-sized crabs discarded from their bycatch samples.

Based on observer data, catch per unit of effort (CPUE) for the first week of fishing was 3.52 crabs per pot. During the second week of fishing CPUE decreased to 2.00 crabs per pot. After the closure announcement had been issued on November 22, daily CPUE dropped to a fishery low of 0.66 on November 23. This marked decreased in CPUE was due largely to inclement weather that prohibited most vessels from operating efficiently. CPUE climbed back to 1.73 on the November 25 closure, but never did return to the fishery's average CPUE of 1.93 (Table 5-33). In 1996, approximately 50% of legal sized male crabs were covered with barnacles and thus, discarded at sea due to poor appearance and subsequent poor marketability. In 1997 only 8% of legal sized crab were discarded due to poor shell appearance.

Preliminary harvest reports from processors indicated that in the first week of the 1997 season 219,704 pounds of hair crabs were landed from 11 deliveries. In the second week of fishing, 15 landings yielded 251,074 pounds. Eighteen landings in the third and final week resulted in a 191,402 pound harvest. A total of 211,970 pots were pulled during the 1997 season, compared to a total of 410,548 pots pulled in the 1996 fishery (Table 5-33).

Weight of crabs retained during the 1997 fishery averaged 1.6 pounds and, unlike crabs seen in 1996, was devoid of large quantities of barnacles. Average weights have increased by tenth of pound increments from 1.2 pounds in 1993 to the 1.6 pound average recorded in the 1997 fishery. The average weight observed in the 1997 fishery was still far below the historical high of 2.2 pounds per crab observed in the 1980/81 fishery (Table 5-33).

Hair crabs harvested in 1997 were purchased by shore processors and live crab shippers in the Pribilof Islands and Dutch Harbor. Approximately 60% of the total harvest were delivered to the port of St. Paul with the remaining 40% going to processors in Dutch Harbor. Number one crabs, with clean carapaces and all legs intact, were purchased in St. Paul and Dutch Harbor for \$3.50 per pound. Grade 1B crabs, with dull coloration or smaller in size but relatively clean, were purchased for \$3.15 per pound in St. Paul, with no comparable grade or price in Dutch Harbor. Number two grade crabs, with discernible amounts of barnacle growth or legs missing, brought \$2.25 and \$2.50 at shore plants in the Pribilofs and Dutch Harbor, respectively. Average exvessel price for all grades and delivery locations was \$2.97 per pound. The total estimated value of the 1997 fishery was \$1.9 million. This compares to an exvessel value of \$2.65 per pound and a fishery value of \$1.9 million for the 1996 fishery (Table 5-34 and Figure 5-15).

At 25 days, the 1997 fishery was equal to the shortest fishery on record, which occurred in 1995 (Table 5-34). The 1997 fishery closed prior to achieving the 800,000 pound season GHL, this closure was based on projections made November 22 which suggested the GHL midpoint would be fully attained by November 25 at 22:00 hrs. CPUE declined significantly between the time of the closure announcement to the actual closure. Five of the 16 vessels registered in the hair crab fishery ceased operations at least 24 hours before the closure time, with one quitting within hours of the closure announcement. Four other hair crab vessels quit within 24 hours prior to closure. Additionally, fishery performance in the last few days of the fishery was well below department projections, based on the first two and a half weeks of fishing.

The majority of the 1997 harvest came from the four statistical areas immediately surrounding St. Paul Island. This is the same areas from which the harvest has occurred in prior seasons.

Status of Stocks

The 1997 trawl survey conducted by NMFS indicates that the hair crab population is declining. Average weight continues to increase in the fishery, as does the occurrence of older shelled animals. The majority of male crabs seen were above the minimum legal size of 3.25". Recruitment of smaller crabs was not readily apparent from survey results. Additionally, trawl survey abundance estimates may experience variable annual catchability between years due to substrate, inshore distributions, and burying behavior of Hair crab.

BERING SEA SNAILS

Description of Area

Recent fishing of snails in the Bering Sea District has been limited to waters north of Cape Sarichef (54° 36' North latitude) and west of 168° West longitude (Figure 5-16).

Historic Background

Commercial fishing for snails in the Bering Sea began with the Japanese in the early 1970's. The Japanese fished for snails in the Bering Sea between 1971 and 1987; however, little information is available from this early history. In 1977 the Japanese began providing records to the United States concerning the Japanese fishery as mandated by the Fishery Conservation and Management Act of 1976 (MacIntosh 1979). Twenty-one vessels were licensed to fish; however, it is unknown how many actually participated. Data recorded in 1971 through 1974 from the National Marine Fisheries Service recorded fourteen vessels participating in 1971, five vessels in 1972, no vessels in 1973, and six vessels in 1974. There was no fishing activity in 1975 and 1976 and then in 1977 records indicate three vessels participated in the fishery (MacIntosh 1980). In the 1980's all fishing was conducted by catcher-processor vessels. The majority of the retained catch during this early fishery was composed of the Pribilof Neptune (*Neptunea pribiloffensis*). Smaller components of the retained catch were composed of the genus *Buccinum* (*B. angulosum* and *Buccinum scalariforme*) (MacIntosh 1980). Exvessel prices were estimated to be worth \$242 thousand in 1977 and escalated to \$1.3 million by 1979. A small Soviet snail fishery began in the same area in 1989.

The Foreign Fisheries Observer Program assigned observers to Japanese catcher-processors in the years 1984-1987 and later to the Soviet fishery in 1989. Most of the equipment the Soviets used was purchased from the Japanese fleet. The Soviet venture only lasted one year with minimal return. Gear used during the early foreign fishery was converted Tanner crab pots. Pots were longlined in depths of 550 to 850 meters (Nagai 1974). Data from the Foreign Fisheries Observer Program indicate that the Japanese fleet had an average soak time of 50 hours while the Soviet fleet had an average soak time of 80 hours. The Japanese pulled an average of 2,779 pots per day and the Soviets pulled an average of 1,219 pots per day.

The domestic fishery began in 1992. Two vessels registered in 1992; one as bycatch in the Tanner crab fishery and the second as a directed fishery after the June closure of the hair crab season. In 1993, observer coverage was required to collect data on the resource and assess bycatch (see 5AAC 39.210). It was found during this coverage that crab bycatch was minimal. For example, bycatch of legal blue and red king crab were less than 0.1 animals per pot. Female *opilio* had the highest incidence of bycatch at 0.9 animals per pot (Tracy 1995). Following the 1993 season, observer coverage has not been required. Interest and effort have steadily increased since the 1992 fishery. Four vessels participated in 1993 landing 312,876 pounds. Catches increased to 2,027,328 pounds in 1994 and 3,572,992 in 1995 (Table 5-35 & Figure 5-17).

Although the exvessel value has remained constant, the value of the fishery has increased from \$125 thousand in 1993 to over \$1.0 million in 1996 (Table 5-36).

LITERATURE CITED

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Tracy, Donn. 1995. Alaska Department of Fish and Game biological summary of the 1993 mandatory shellfish observer program database. Alaska Department of Fish and Game, Commercial Fisheries Management and Development, Regional Information Report No. 4K95-14.

1997 Fishery

Four vessels registered to harvest snails from the Bering Sea in 1997, however, only three vessels made landings. Two vessels registered to participate in a directed snail fishery, while the two other vessels registered to retain snails as incidental bycatch during directed crab fisheries. Three vessels actually participated in the 1997 fishery with a total of 17 landings yielding 932,048 pounds. This compares to five vessels with 67 landings for a yield of 3,510,498 pounds in the 1996 fishery (Table 5-35). The 1997 fishery exvessel value was \$307,770 based on 854,917 live pounds delivered at \$0.36 per pound. (Table 5-36) This is in comparison to an exvessel fishery value of \$1,053,149 for the 1996 fishery.

Fishing in the 1997 season was restricted to grounds west of 164° West longitude and north of 54° 36' North latitude. These restrictions were conditions of the permit issued under 5 AAC 38.062 and were enacted to allow for exploration of grounds to the east of the Pribilof Islands. Also as a condition of the permit, 100% onboard observer coverage was required for the purposes of data collection from the retained and non-retained snails as well as monitoring bycatch rates of juvenile king and Tanner crabs. The average number of snails per pot was 16 for the 1997 fishery. The 1996 fishery executed northwest of the Pribilof Islands, yielded a catch per unit effort (CPUE) of 16 snails per pot. The majority of the catch for the 1997 season was composed of *Neptunea* and *Buccinum* species.

Stock Status

There is distribution and relative abundance information pertaining to snails caught in the eastern Bering Sea trawl survey conducted by NMFS. However, inconsistent identification, enumeration and catchability of snails preclude any accurate population estimates for Bering Sea snail populations.

BERING SEA MISCELLANEOUS SHELLFISH SPECIES

Description of Area

For those shellfish other than King and Tanner crabs, the Bering Sea District is defined as all waters of the Bering Sea north of the latitude of Cape Sarichef at (54° 36' North latitude) and east of the U.S. - Russian Convention Line of 1867 (Figure 5-18). For shrimp management that portion of the Bering Sea east of Cape Sarichef is described as the North Peninsula District (Figure 5-19).

Introduction

Shellfish species included in this section are those which are harvested in relatively small amounts compared to commercial king and Tanner crab fisheries which occur in the Bering Sea. Those species of current or historic interest include octopus, Dungeness crabs, shrimps and *Paralomis multispina*, a deepwater crab closely related to king crabs. Historic catch information and economic performance of these miscellaneous fisheries is found in Table 5-37, and Dungeness crab fishery information in Table 5-38.

Octopus

Nineteen vessels registered to fish for octopus in the Bering Sea during 1997; seventeen of those registrations were for incidental bycatch only. A total of 1,107 pounds were delivered from eight landings during 1997 (Table 5-37). All octopus landed from the Bering Sea during 1997 was as incidental bycatch in the various groundfish fisheries of that area.

Dungeness

One vessel registered and harvested Dungeness crab, *Cancer magister*, in the North Peninsula District during 1997, therefore catch information is confidential. Catch information from 1996 is confidential as only one vessel made landings; in 1995 a total of six vessels made 19 deliveries for a harvest of 134,406 pounds. Table 5-38 contains information on commercial fishing effort and economic performance of the North Peninsula District Dungeness fishery.

Shrimp

No vessels registered the North Peninsula District pot or trawl shrimp fishery in 1997. No vessels participated in this fishery in 1996 or 1995.

Paralomis multispina

No vessels registered or fished for *Paralomis multispina* in the Bering Sea District during 1997. One vessel, whose landings are confidential, participated in the 1996 *P. multispina* fishery. Although one vessel was registered for *P. multispina* in 1995, no commercial harvest was reported.

BERING SEA KING AND TANNER CRAB BUOY IDENTIFICATION TAGS ANNUAL REPORT

Introduction and Background

The Alaska Board of Fisheries 1992 Spring meeting discussed gear limitations for Bering Sea/Aleutian Islands king and Tanner crab fisheries. The Board requested an agenda change on March 20, 1991 to hear this issue out of cycle in response to petitions submitted by the industry. The request was supported by preliminary Alaska Department of Fish and Game data indicating high levels of gear deployed in the Bering Sea fisheries were creating conservation and management difficulties.

The Board made a decision to limit the number of pots that a vessel may use when harvesting Bering Sea king and Tanner crab. New regulations became effective on August 1, 1992. According to State statute the entire program is to be self supporting through buoy identification tag sales. Twenty days later on November 10, 1992 a temporary suspension of buoy ID sticker requirements were temporarily suspended due to sticker failure in adhering to buoys after extended exposure to water and weather. Pot limits, however, remained in effect for the Bering Sea *C. bairdi* Tanner crab fishery.

On November 30, 1992 National Marine Fisheries Service officially repealed the Bering Sea pot limits because of inconsistencies in the Bering Sea/Aleutian Island king and Tanner crab Federal Management Plan.

At their February 1993 meeting the Board of Fisheries passed differential pot limit regulations which are dependent upon overall vessel length. According to current regulation, vessels in excess of 125 feet in length overall are entitled to the maximum number of pots allowed for a fishery, while vessels 125 feet and under in length overall are allowed 80% of the number allowed for the larger vessel size class. The number of pots allowed is different for each fishery, (Table 5-39).

Implementation

According to **AS 16.05.050 POWERS AND DUTIES OF THE COMMISSIONER.**

The commissioner has, . . . The following powers and duties: (16) . . . to establish and charge fees equal to the cost of services provided by the department . . . and **AS 16.05.632 IDENTIFICATION**

OF SHELLFISH POTS OR BUOYS, OR BOTH, USED IN THE TAKING OF KING CRAB AND REQUIREMENTS FOR BUOYS.

(a) Registration tags for the identification of shellfish pots or buoys, or both, used in the taking of king crab are required in areas in which the board has regulations limiting the total amount of shellfish pots allowed per vessel. Registration tags shall (6) be issued and renewed for a fee equal to the cost of obtaining the registration tags plus reasonable administrative costs, under procedures determined to be appropriate by the Department of Fish and Game.

Beginning with the 1992/1993 Bristol Bay and Bering Sea crab seasons the Department leased additional office space and employed a Fish and Wildlife Technician III to administer the buoy identification sales program.

In May 1993 the decision was made to use a heavy duty nylon zip tie tag. These tags are available from the manufacturer in a variety of different colors, which may be rotated tri-annually through fisheries with an imposed pot limit. Each tag has a 1.5 inch by 4 inch flag printed with a unique number.

On August 27, 1997 the Alaska Board of Fisheries adopted new pot limit regulations for the Bristol Bay red king crab fisheries. Put into regulation is an eleven tiered pot limit guideline based on a season's Guideline Harvest Level and the number of participating vessels. In order to determine the pot limit, vessels wishing to participate in the Bristol Bay red king crab fishery must register on or before October 3; approximately one month before the November 1 fishery opening. These regulations are valid until December 31, 1998 at which time they will expire to be reevaluated by the Board. (Table 5-40).

Replacement Tags

The Board considered non-replacement of lost pots and double tag requirements but found that the hardship to the industry, without a provision for a tag replacement program, would be unnecessarily burdensome. The Division of Fish and Wildlife Protection anticipated difficulty proving cases if replacement tags were issued. Special conditions regarding replacement were included in the regulations to accommodate the concerns of Fish and Wildlife Protection. The Board rejected a double sticker requirement suggested by Protection.

The replacement of lost tags is permitted by **5 AAC 34.825. (f)**, **5 AAC 34.925. (j)**, and **5 AAC 35.525. (i)**

(4) . . . replacement of lost identification tags is permitted if the vessel operator and three crew members, in person, submit to the ADF&G office in Dutch Harbor, a sworn statement or affidavit, describing how the tags were lost and listing the numbers of the lost tags.

An official AFFIDAVIT TO OBTAIN REPLACEMENT BUOY IDENTIFICATION STICKERS, reviewed and approved by Fish and Wildlife Protection, is available in the Dutch Harbor office.

During the interim between the 1994 Bristol Bay red king crab and Bering Sea *C. bairdi* fisheries and again prior to the 1995 *C. opilio* season numerous complaints were received in the Dutch Harbor office regarding problems that vessels delivering to remote areas such as King Cove and St. Paul would have in replacing tags under the current regulations. Most fishermen felt the cost in time and/or money used to transport the permit holder and three crew members to Dutch Harbor to fill out required forms and purchase replacement tags was prohibitive. Some expressed feelings that the present requirement would force them to fish illegally rather than conform to the regulations. To compound problems, after the New Year, many vessels were operated by alternate skippers who inherited the arduous task of determining which tags and how many were missing before they could apply for replacements. Issuing a set of tags coded and colored specifically for the *C. opilio* season was a common suggestion since tags, other than those purchased as replacements, can be obtained through the mail or by an agent. Consequently separate tag sets were manufactured for the 1995 *C. opilio* season. A total of 88 replacement tags were issued during all 1994/95 Bering Sea crab fisheries in contrast to the total of 3,510 replacement tags that were issued during the 1993/94 Bering Sea Tanner and king crab fisheries. Reissuing tags for the January *C. opilio* season has prevented a repeat of the 1993/94 tag replacement problems.

Vessel Length Verification

All vessels in excess of 125 feet in length overall wishing to obtain the maximum number of buoy identification tags for crab fisheries with imposed pot limits must present an original or notarized copy of valid documentation from the U.S. Coast Guard or certified marine surveyor showing the vessel to be in excess of 125 feet overall. Overall length is defined as the horizontal distance, rounded to the nearest foot, between the foremost part of the stem and the aftermost part of the stern, excluding bowsprits, rudders, outboard motor brackets and similar fittings or attachments. This definition of length overall is found in the U.S. Code of Federal Regulations, Shipping, 46 CFR 69.9 and Fishery Conservation and Management, 50 CFR 672.2.

The vessel operator/permit holder is required to show documentation of vessel length the first time buoy tags are purchased and any time a change to the vessel's overall length occurs. The Department's Dutch Harbor office has established a qualifying list of vessels whose length is documented in excess of 125 feet. A total of 120 vessels are presently on the Department's qualifying list.

Administration of the Buoy Identification Program

Bering Sea buoy identification tags are issued from ADF&G office in Dutch Harbor and in limited amounts from the ADF&G office in Kodiak. An administrative fee of \$2.00 per tag is currently charged. Tags are issued only if a valid permit card for the specified fishery has been issued to the person purchasing tags. Uniquely numbered tag sets are assigned to vessel ADF&G numbers which guarantee that only one set of tags is issued per vessel.

The Department will, when requested, send, from the Dutch Harbor office, buoy tags through the U.S. Mail, priority, insured with a return receipt. Two weeks prior to each season the department discontinues tag mailings because of potential logistical problems that can be caused by weather delayed mail service.

1997/98 Tag Sales

For the concurrent September Bering Sea king crab fishery opening, St. Matthew blue king crab tag sales totaled 117 sets. At the closure of the St. Matthew fishery 6 of these vessels purchased tags and registered for the remainder of the Pribilof red and blue king crab fishery which brought the total tag sales to 54 sets (Table 5-41). Nineteen of these sale transactions were through the U.S. mail. Included in the total number of tag sales are the Kodiak Department's sales of 29 tag sets for St. Matthew's, and 14 sets for the Pribilof fishery.

Bristol Bay red king crab tag sales totaled 259 sets (Table 5-41). Forty six of these sales were processed through mail order. Included in the total number of tag sales are the 30 tag sets sold out of the department's Kodiak office. Ten replacement tags were issued previous to the season start.

Bering Sea *C. Opilio* tag sales totaled 229 sets (Table 5-41). Fifty four of these sales were processed through mail order. Included in the total number of tag sales are the department's Kodiak office sales of 44 tag sets. A total of 533 replacement tags were issued over the course of the two month fishery. Most losses were due to pots missing on the grounds. Fifty six tags broke off the line or bag with most of these sheared by ice on the grounds.

Tag purchases for vessels participating in the new Community Development Quota (CDQ) opilio Tanner crab fishery totaled 21 sets of tags. No replacement tags were sold during the CDQ fishery.

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Conclusion

A quality control problem with the tag manufacturer created some problems with an otherwise smooth program operation. Many of the tag sets were incorrectly numbered and counted. Correcting for this took up valuable staff time in both the Kodiak and Dutch Harbor offices.

Table 5-1. Bristol Bay, Area T of the Bering Sea, commercial red king crab catch statistics, 1966-1997.

Year	Number of		Crab ^a	Harvest ^{a,b}	Pots Pulled	Average		CPUE ^d	% Old Shell	Deadloss ^b
	Vessels	Landings				Weight ^b	Length ^c			
1966	9	15	140,554	997,321	2,720	7.1		52		
1967	20	61	397,307	3,102,443	10,621	7.8		37		
1968	59	261	1,278,592	8,686,546	47,496	6.8		27		
1969	65	377	1,749,022	10,403,283	98,426	5.9		18		
1970	51	309	1,682,591	8,559,178	96,658	5.1		17		
1971	52	394	2,404,681	12,955,776	118,522	5.4		20		
1972	64	611	3,994,356	21,744,924	205,045	5.4		19		
1973	67	441	4,825,963	26,913,636	194,095	5.6		25		N/A
1974	104	605	7,710,317	42,266,274	212,915	5.5		36		N/A
1975	102	592	8,745,294	51,326,259	205,096	5.7		43		1,639,483
1976	141	984	10,603,367	63,919,728	321,010	6.0	148	33	27.4	875,327
1977	130	1,020	11,733,101	69,967,868	451,273	5.9	148	26	13.0	730,279
1978	162	926	14,745,709	87,618,320	406,165	5.9	147	36	6.9	1,273,037
1979	236	889	16,808,605	107,828,057	315,226	6.4	152	53	10.4	3,555,891
1980	236	1,251	20,845,350	129,948,463	567,292	6.2	151	37	11.0	1,858,668
1981	177	1,026	5,307,947	33,591,368	542,250	6.3	151	10	47.4	711,289
1982	90	255	541,006	3,001,210	141,656	5.5	145	4	24.6	95,834
1983			NO COMMERCIAL FISHERY							
1984	89	137	794,040	4,182,406	112,556	5.2	142	7	26.5	35,601
1985	128	130	796,181	4,174,953	85,003	5.2	142	9	25.8	6,436
1986	159	230	2,099,576	11,393,934	178,370	5.4	142	12	25.5	284,127
1987	236	311	2,122,402	12,289,067	220,871	5.8	145	10	19.0	120,388
1988	200	201	1,236,131	7,387,795	153,004	6.0	147	8	15.1	23,537
1989	211	287	1,684,706	10,264,791	208,684	6.1	148	8	17.7	81,334

Continued

Table 5-1. (Page 2 of 2)

Year	Number of			Harvest ^{a,b}	Pots Pulled	Average			% Old Shell	Deadloss ^b
	Vessels	Landings	Crab ^a			Weight ^b	Length ^c	CPUE ^d		
1990	240	331	3,120,326	20,362,342	262,131	6.5	152	12	14.7	116,527
1991	302	324	2,630,446	17,177,894	227,555	6.5	152	12	12.1	119,670
1992	281	289	1,196,958	8,043,018	205,940	6.7	153	6	22.3	9,000
1993	292	361	2,261,287	14,628,639	253,794	6.5	152	9	15.2	133,442
1994	NO COMMERCIAL FISHERY									
1995	NO COMMERCIAL FISHERY									
1996 ^e	196	198	1,249,005	8,405,614	76,433	6.7	153	16	24.3	24,166
1997 ^f	256	265	1,315,969	8,756,490	90,510	6.7	152	15	11.0	13,771

^aDeadloss included.

^bIn Pounds.

^cIn millimeters.

^dDefined as catch per pot pull.

^eNot including 117,500 pounds landed in Test Fishery.

^fNot including 154,897 pounds landed in Test Fishery.

Table 5-2. Bristol Bay commercial red king crab economic performance, 1980-1997.

Year	GHL ^a	Season Total ^b	Number of		Number of Pots		Value		Season Length	
			Vessels	Landings	Registered	Pulled	Exvessel	Total ^c	Days	Dates
1980	70-120	128,089,795	236	1,251	78,352	567,292	\$0.90	\$115.3	40	09/10-10/20
1981	70-100	32,880,079	177	1,026	75,756	542,250	\$1.50	\$49.3	91	09/10-12/15
1982	10-20 ^d	2,905,376	90	255	36,166	141,656	\$3.05	\$8.9	30	09/10-10/10
1983				NO COMMERCIAL FISHERY						
1984	2.5- 6.0	4,146,805	89	137	21,762	112,556	\$2.60	\$10.8	15	10/01-10/16
1985	3.0-5.0	4,168,517	128	130	30,117	85,003	\$2.90	\$12.1	8	09/25-10/02
1986	6.0-13.0	11,109,807	159	230	32,468	178,370	\$4.05	\$45.0	13	09/25-10/07
1987	8.5-17.7	12,168,679	236	311	63,000	220,871	\$4.00	\$48.7	12	09/25-10/08
1988	7.5	7,364,258	200	201	50,099	153,004	\$5.10	\$37.6	8	09/25-10/02
1989	16.5	10,183,457	211	287	55,000	208,684	\$5.00	\$50.9	12	09/25-10/08
1990	17.1	20,245,815	240	331	69,906	262,131	\$5.00	\$101.2	12	11/01-11/13
1991	18.0	17,058,224	302	324	89,068	227,555	\$3.00	\$51.2	7	11/01-11-08
1992	10.3	8,034,018	281	289	68,189	205,940	\$5.00	\$40.2	7	11/01-11/08
1993	16.8	14,495,197	292	361	58,881	253,794	\$3.80	\$55.1	9	11/01-11/10
1994				NO COMMERCIAL FISHERY						
1995				NO COMMERCIAL FISHERY						
1996	5.0	8,381,448	196	198	39,461	76,433	\$4.01	\$33.6	4	11/01-11/05
1997	7.0	8,742,719	256	265	27,499	90,510	\$3.26	\$28.5	4	11/01-11/05

^aGuideline Harvest Level (millions of pounds).

^bMillions of pounds, deadloss not included.

^cMillions of dollars.

^dInseason revision to 4.7 million pounds.

Table 5-3. Bristol Bay commercial red king crab harvest composition by fishing season, 1973-1997.

Season	Date	Harvest ^a	Percent		Size Limit ^b	Price per Pound
	Opened-Closed		Recruit	Postrecruit		
1973	06/15-09/09	26.9	63	37	6½	\$0.84
1974	07/29-10/12	42.3	60	40	6½	\$0.38
1975	08/01-11/16	51.3	21	79	6½ ^c	\$0.38
1976	08/15-12/07	63.9	56	44	6½	\$0.58
1977	09/15-12/08	69.9	67	33	6½	\$1.11
1978	09/10-10/23	87.6	75	25	6½	\$1.23
1979	09/15-10/14	107.8	47	53	6½	\$1.01
1980	09/10-10/20	129.9	44	56	6½	\$0.90
1981	09/10-10/20	33.6	14	86	6½ ^e	\$1.50
1982	09/10-10/10	3	68	32	6½	\$3.05
1983		NO COMMERCIAL FISHERY				
1984	10/01-10/16	4.2	59	41	6½	\$2.60
1985	09/25-10/02	4.2	66	34	6½	\$2.90
1986	09/25-10/07	11.4	65	35	6½	\$4.05
1987	09/25-10/06	12.3	77	23	6½	\$4.00
1988	09/25-10/02	7.4	59	41	6½	\$5.10
1989	09/25-10/06	10.3	58	42	6½	\$5.00
1990	11/01-11/13	20.4	49	51	6½	\$5.00
1991	11/01-11/08	17.2	44	56	6½	\$3.00
1992	11/01-11/08	8	33	67	6½	\$5.00
1993	11/01-11/10	14.6	33	67	6½	\$3.80
1994		NO COMMERCIAL FISHERY				
1995		NO COMMERCIAL FISHERY				
1996 ^d	11/01-11/05	8.4	31	69	6½	\$4.01
1997 ^d	11/01-11/05	8.8	28	72	6½	\$3.26

^aDeadloss included, millions of pounds.

^bMinimum carapace width in inches.

^c6½ inches after 11/01.

^dNew shell greater than 149 mm defined as postrecruits.

^e7inches after 10/20.

Table 5-4. Bristol Bay commercial red king crab catch by statistical area, 1997.

Statistical Area	Number of		Pounds ^a	Pots Lifted	Average		Deadloss ^b
	Landings	Crab ^a			CPUE	Weight	
625700	4	5,718	38,180	395	14.5	6.68	11
635530	5	11,869	81,070	1,007	11.8	6.83	56
615700	6	43,202	287,935	1,578	27.4	6.66	924
615601	15	51,432	342,750	3,809	13.5	6.66	458
635630	24	57,604	386,618	4,921	11.7	6.71	354
635600	29	76,983	515,507	6,414	12	6.7	434
615630	53	228,996	1,551,540	13,604	16.8	6.78	4,218
625600	73	202,066	1,356,784	17,636	11.5	6.71	2,299
625630	126	610,035	4,003,308	38,727	15.8	6.56	4,847
Other ^c	14	28,064	192,798	2,419	8.2	7.15	170
TOTALS	265^d	1,315,969	8,756,490	90,510	14.5	6.65	13,771

^aDeadloss included.

^bPounds.

^cTotal of eleven statistical areas.

^dTotal landings for the fishery, does not reflect statistical area landing totals.

Table 5-5. Bristol Bay red king crab test fishery catch statistics, 1996-1997.

Year ^d	Number of		Crab ^a	Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
	Vessels	Landings				CPUE ^c	Weight ^b	
1996	1	2	17,043	117,500	648	26	6.89	1,918
1997	1	4	24,622	154,897	658	37	6.29	18,198

^aDeadloss included.

^bIn Pounds.

^cDefined as catch per pot pull.

^dPrior to 1996 test fishery statistics were not broken out from commercial catch.

Table 5-6. Bering Sea, Area Q, Pribilof District commercial red and blue king crab catch statistics, 1973/94-1997.

Year ^a	Number of			Harvest ^{b,c}	Pots Pulled	Average			Deadloss ^e
	Vessels	Landings	Crabs ^b			CPUE ^d	Weight ^c	Length ^e	
1973/74	8	13	174,420	1,276,533	6,814	26	7.3	N/A	0
1974/75	70	101	908,072	7,107,294	45,518	20	7.8	157.8	0
1975/76	20	54	314,931	2,433,714	16,297	19	7.7	159.1	0
1976/77	47	113	855,505	6,611,084	71,738	12	7.7	158.1	0
1977/78	34	104	807,092	6,456,738	106,983	8	7.9	158.9	159,269
1978/79	58	154	797,364	6,395,512	101,117	8	8.1	159.3	63,140
1979/80	46	115	815,557	5,995,231	83,527	10	7.7	155.9	284,555
1980/81	110	258	1,497,101	10,970,346	167,684	9	7.3	155.7	287,285
1981/82	99	312	1,202,499	9,080,729	176,168	7	7.6	158.2	250,699
1982/83	122	281	587,908	4,405,353	127,728	5	7.5	159.8	51,703
1983/84	126	221	276,364	2,193,395	86,428	3	7.9	159.9	4,562
1984/85	16	25	40,427	306,699	15,147	3	7.6	155.5	0
1985/86	26	49	77,607	532,735	23,483	3	6.9	146.5	7,500
1986/87	16	25	36,988	258,939	15,800	2	7.0	N/A	5,450
1987/88	38	68	95,131	701,337	40,507	2	7.4	152.7	9,910
1988/89				SEASON CLOSED					
1989/90				SEASON CLOSED					
1990/91				SEASON CLOSED					
1991/92 ^f				SEASON CLOSED					
1992/93				SEASON CLOSED					
1993g	112	135	380,217	2,607,634	35,942	11	6.9	154.4	0
1994g	104	121	167,520	1,338,953	28,976	6	8.0	162.1	2,929
1995g	117	151	107,521	871,173	33,531	3	8.1	162.5	15,316
1995h	119	152	172,987	1,267,454	34,721	5	7.3		46,263

-Continued-

Table 5-6. (Page 2 of 2)

Year ^a	Number of			Harvest ^{b,c}	Pots Pulled	Average			Deadloss ^e
	Vessels	Landings	Crabs ^b			CPUE ^d	Weight ^c	Length ^a	
1995 ⁱ	127	162	280,508	2,138,627	37,643	8	NA	61,579	
1996 ^g	66	90	25,383	200,304	29,425	<1	7.9	319	
1996 ^h	66	92	127,676	937,032	30,607	4	7.3	14,997	
1996 ⁱ	66	92	153,059	1,137,336	60,032	3	7.4	15,316	
1997 ^g	53	110	90,641	756,818	28,458	3	8.4	18,807	
1997 ^h	51	105	68,603	512,374	27,652	3	7.5	16,747	
1997 ⁱ	53	110	159,244	1,269,192	30,400	5	8.0	35,554	

^aBlue king crab, 1973 - 1988.

^bDeadloss included.

^cIn pounds.

^dDefined as catch per pot pull.

^eCarapace length (millimeters).

^f10,869 pounds illegal red king crab harvested.

^gRed king crab.

^hBlue king crab.

ⁱBlue and red king crab fisheries combined.

Table 5-7. Commercial harvest of blue king crabs in the St. Matthew Island section of statistical Area Q, 1977-1997.

Season	Number of		Crabs ^a	Harvest ^{a,b}	Pots Pulled	CPUE ^c	Percent Recruits	Average		Deadloss ^b
	Vessels	Landings						Weight ^b	Length ^d	
1977	10	24	281,665	1,202,066	17,370	16	7	4.3	130.4	129,148
1978	22	70	436,126	1,984,251	43,754	10	N/A	4.5	132.2	116,037
1979	18	25	52,966	210,819	9,877	5	80.8	4	128.8	128.8
1980	CONFIDENTIAL									
1981	31	119	1,045,619	4,627,761	58,550	18	N/A	4.4	N/A	53,355
1982	96	269	1,935,886	8,844,789	165,618	12	19.6	4.6	135.1	142,973
1983	164	235	1,931,990	9,454,323	133,944	14	26.7	4.8	137.2	828,994
1984	90	169	841,017	3,764,592	73,320	11	34	4.5	135.5	31,983
1985	79	103	484,836	2,427,110	51,606	9	9	5	139	2,613
1986	38	43	219,548	1,003,162	22,093	10	10	4.6	134.3	32,560
1987	61	62	234,521	1,075,179	28,440	8	5	4.6	134.1	400
1988	46	46	302,053	1,325,185	10,160	30	65	4.4	133.3	22,358
1989	69	69	247,641	1,166,258	30,853	8	9	4.7	134.6	3,754
1990	31	38	391,405	1,725,349	26,264	15	4	4.4	134.3	17,416
1991	68	69	726,519	3,372,066	37,104	20	12	4.6	134.1	216,459
1992	174	179	544,956	2,474,080	56,630	10	9	4.6	134.1	0
1993	92	136	629,874	2,999,921	58,647	11	6	4.8	135.4	0
1994	87	133	827,015	3,764,262	60,860	14	60	4.6	133.3	46,699
1995	90	111	666,905	3,166,093	48,560	14	47.0	4.8	135	90,191
1996	122	189	661,115	3,080,916	91,205	7	45.7	4.7	134.6	36,892
1997	117	166	939,822	4,649,660	81,117	12	34.2	4.9	139.5	209,490

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dCarapace length (millimeters).

Table 5-8. Economic performance of the commercial red and blue king crab fishery in the Pribilof District of the Bering Sea, 1980/81-1997.

Year ^a	GHL ^b	Season Total ^c	Number of		Number of Pots		Value		Season Length	
			Vessels	Landings	Registered	Pulled	Exvessel	Total ^d	Days	Dates
1980/81	5.0-8.0	10.7	110	258	31,636	167,684	\$0.90	\$9.60	60	09/15-11/15
1981/82	5.0-8.0	9.1	99	312	25,408	176,168	\$1.50	\$13.60	47	09/10-10/28
1982/83	5.0-8.0	4.4	122	281	34,429	127,728	\$3.05	\$13.40	15	09/10-09/25
1983/84	4.0 ^e	2.2	126	221	36,439	86,428	\$3.00	\$6.60	10	09/01-09/11
1984/85	0.5-1.0	0.3	16	25	3,122	15,147	\$2.50	\$0.10	15	09/01-09/16
1985/86	0.3-0.8	0.5	26	49	6,038	23,483	\$2.90	\$1.40	26	09/25-10/21
1986/87	0.3-0.8	0.3	16	25	4,376	15,800	\$4.05	\$1.20	55	09/25-11/20
1987/88	0.3-1.7	0.7	38	68	9,594	40,507	\$4.00	\$2.80	86	09/25-12/20
1988/89					NO COMMERCIAL FISHERY					
1989/90					NO COMMERCIAL FISHERY					
1990/91					NO COMMERCIAL FISHERY					
1991/92					NO COMMERCIAL FISHERY					
1992/93					NO COMMERCIAL FISHERY					
1993 ^f	3.4	2.6	112	135	4,860	35,942	\$4.98	\$13.00	6	09/15-09/21
1994 ^f	2.0 ^e	1.3	104	121	4,675	28,976	\$6.45	\$8.60	6	09/15-09/21
1995 ^f	2.5 ^h	0.9	117	151	5,400 ^h	33,531	\$3.37	\$2.90	7	09/15-09/22
1995 ^g	2.5	1.3	126	159	5,400	37,298	\$2.92	\$3.90	7	09/15-09/22
1996 ^f	1.8 ^h	0.2	66	91	2,730 ^h	29,425	\$2.76	\$0.60	11	09/15-09/26
1996 ^g	1.8 ^h	0.9	66	92	2,730 ^h	30,607	\$2.65	\$2.40	11	09/15-09/26

-Continued-

Table 5-8. (Page 2 of 2)

Year ^a	GHL ^b	Season Total ^c	Number of		Number of Pots		Value		Season Length	
			Vessels	Landings	Registered	Pulled	Exvessel	Total ^d	Days	Dates
1997 ^f	1.5 ^h	0.7	53	110	2,270	28,458	\$3.09	\$2.30	14	09/15-09/29
1997 ^g	1.5 ^h	0.5	48	105	2,270	27,652	\$2.82	\$1.40	14	09/15-09/29

^aBlue king crab, 1980-1988.

^bGuideline harvest level.

^cMillions of pounds, deadloss not included.

^dMillions of dollars.

^eSet not to exceed.

^fRed king crab.

^gBlue king crab.

^hCombined red and blue king crab.

Table 5-9. Pribilof District red king crab commercial catch by statistical area, 1997.

Statistical Area	Number of		Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
	Landings	Crab ^a			Weight ^b	CPUE ^c	
685700	6	2,955	25,740	1,293	8.7	2.3	4,100
695631	21	17,043	137,334	4,110	8.1	4.1	493
695700	62	51,233	426,323	15,784	8.3	3.2	6,709
695730	5	270	2,115	1,330	7.8	0.2	59
705630	5	4,517	38,029	1,427	8.4	3.2	498
705701	24	13,429	115,969	3,654	8.6	3.7	3,705
Other	5	1,194	11,308	860	9.5	1.4	3,243
TOTALS	128^e	90,641	756,818	28,458	8.4	3.2	18,807

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dIncludes 3 statistical areas.

^eActual total landings for the fishery.

Table 5-10. Pribilof District blue king crab commercial catch by statistical area, 1997.

Statistical Area	Number of		Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
	Landings	Crab ^a			Weight ^b	CPUE ^c	
685700	9	9,264	72,051	1,658	7.8	6	3,047
695631	21	4,293	31,844	4,054	7.4	1	1,792
695700	58	38,367	285,392	14,985	7.4	3	6,820
695730	5	8,790	64,210	1,330	7.3	7	50
705630	5	407	2,847	1,427	7.0	<1	0
705701	21	6,393	47,623	3,418	7.5	2	3,474
Other ^d	4	1,089	8,407	780	7.7	2	1,564
TOTALS	105^e	68,603	512,374	27,652	7.5	3	16,747

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dIncludes 3 statistical areas.

^eActual total landings for the fishery

Table 5-11. Economic performance of the commercial blue king crab fishery in the St. Matthew Island Section of the Northern District of the Bering Sea, 1983-1997.

Year	GHL ^{a,b}	Season Total ^b	Number of		Number of Pots		Value		Season Length	
			Vessels	Landings	Registered	Pulled	Exvessel	Total ^c	Days	Dates
1983	8	8.6	164	235	38,000	133,944	\$3.00	\$25.80	17	08/20-09/06
1984	2.0-4.0	3.7	90	169	14,800	73,320	\$1.75	\$6.50	7	09/01-09/08
1985	0.9-1.9	2.4	79	103	13,000	51,606	\$1.60	\$3.80	5	09/01-09/06
1986	0.2-0.5	1	38	43	5,600	22,093	\$3.20	\$3.20	5	09/01-09/06
1987	0.6-1.3	1.1	61	62	9,370	28,440	\$2.85	\$3.10	4	09/01-09/05
1988	0.7-1.5	1.3	46	46	7,780	10,160	\$3.10	\$4.00	4	09/01-09/05
1989	1.7	1.2	69	69	11,983	30,853	\$2.90	\$3.50	3 ^d	09/01-09/04
1990	1.9	1.7	31	38	6,000	26,264	\$3.35	\$5.70	6	09/01-09/07
1991	3.2	3.2	68	69	13,100	37,104	\$2.80	\$9.00	4	09/16-09/20
1992	3.1	2.5	174	179	17,400	56,630	\$3.00	\$7.40	3 ^d	09/04-09/07
1993	4.4	3	92	136	5,895	58,647	\$3.23	\$9.70	6	09/15-09/21
1994	3	3.7	87	133	5,685	60,860	\$4.00	\$15.00	7	09/15-09/22
1995	2.4	3.1	90	111	5,970	48,560	\$2.32	\$7.10	5	09/15-09/20
1996	4.3	3.1	122	189	8,010	91,205	\$2.20	\$6.70	8	09/15-09/23
1997	5	4.6	117	166	7,850	81,117	\$2.21	\$9.80	7	09/15-09/22

^aGuideline Harvest Level.

^bMillions of pounds, deadloss not included.

^cMillions of dollars.

^dActual length - 60 hours.

Table 5-12. Commercial harvest of king crabs by season and species, for the the St. Matthew Island section of the Northern District of the Bering Sea, 1977-1997.

Season	Date		Species	Harvest ^a	Minimum Size ^b	Price per Pound
	Opened	Closed				
1977	Jun-07	Aug. 16	Blue	1,202,066	5 1/2	\$1.00
			Red	543,041	5	
1978	Jul-15	Sept. 3	Blue	1,984,251	5 1/2	\$0.95
	Jul-15	Aug. 16	Red	2,007,910	4 3/4	
1979	Jul-15	Aug. 24	Blue	210,819	5 1/2	\$0.70
	Jul-15	Aug. 16	Red	3,024,228	4 3/4	
1980	Jul-15	Sept. 3	Blue			\$0.75
	Jul-15	Jul-31	Red	353,683	4 3/4	
1981	Jul-15	Aug. 21	Blue	4,627,761	5 1/2	\$0.90
	Jul-15	Sept. 3	Red	63,983	4 3/4	
1982	Aug-01	Aug. 16	Blue	8,844,789	5 1/2	\$2.00
	Aug-01	Aug. 16	Red	3,690	4 3/4	\$2.00
	May-01	Aug. 1	Brown	193,507	5 1/2	\$2.00
1983 ^{de}	Aug-20	Sept. 6 ^d	Blue	9,506,880 ^e	5 1/2	\$3.00
	Aug-20	Sept. 6	Red	1,635	4 3/4	\$2.50
	May-01	Aug. 1	Brown		5 1/2	-
1984	Aug-01	Sept. 8	Blue	3,764,592	5 1/2	\$1.75
	Aug-01	Sept. 8	Red	-	4 3/4	-
	May-01	Dec. 31	Brown ^d	-	5 1/2	-
1985	Sep-01	Sept. 6	Blue	2,427,110	5 1/2	\$1.60
	Aug-01	Sept. 6	NO CATCH REPORTED		4 3/4	
	Jan-01	Dec. 31	NO CATCH REPORTED		5 1/2	
1986	Sep-01	Sept. 6	Blue	1,003,162	5 1/2	\$3.20
	Aug-01	Sept. 6	NO CATCH REPORTED		4 3/4	
	Jan-01	Dec. 31	NO CATCH REPORTED		5 1/2	

Continued

Table 5-12. (Page 2 of 2)

Season	Date		Species	Harvest ^a	Minimum Size ^b	Price per Pound
	Opened	Closed				
1987	Sep-01	Sep-05	Blue	1,075,179	5 1/2	\$2.85
	Aug-01	Sep-05	NO CATCH REPORTED		4 3/4	
	Jan-01	Dec-31	Brown	424,394	5 1/2	\$2.60
1988	Sep-01	Sep-05	Blue	1,325,185	5 1/2	\$3.10
	Aug-01	Sep-05	NO CATCH REPORTED		4 3/4	
	Jan-01	Dec-31	Brown	160,441	5 1/2	\$3.10
1989	Jan-01	Sep-04	Blue	1,166,258	5 1/2	\$2.90
			Blue	0 ^f	5 1/2	NA
	Aug-01	Sep-04	Red	4,518	4 3/4	NA
	Jan-01	Dec-31	Brown	4,407	5 1/2	NA
1990	Sep-01	Sep-07	Blue	1,725,349	5 1/2	\$3.35
1991	Sep-16	Sep-20	Blue	3,372,066	5 1/2	\$2.80
1992	Sep-04	Sep-07	Blue	2,474,080	5 1/2	\$3.00
1993	Sep-15	Sep-21	Blue	2,999,921	5 1/2	\$3.23
1994	Sep-15	Sep-22	Blue	3,764,262	5 1/2	\$4.00
1995	Sep-15	Sep-22	Blue	3,166,093	5 1/2	\$2.32
1996	Sep-15	Sep-16	Blue	3,080,916	5 1/2	\$2.20
1997	Sep-15	Sep-22	Blue	4,649,660	5 1/2	\$2.21

^aIn pounds, deadloss included.

^bCarapace width in inches.

^dSome of Northern District open until September 20.

^eSt. Lawrence Island harvest of 52,557 lbs. included.

^fCombined with red king crab to total 4,518 pounds.

Table 5-13. Blue king crab commercial harvest by statistical area, for the St. Matthew Island Section of the Northern District of the Bering Sea, 1997.

Statistical Area	Number of		Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
	Landings	Crab ^a			Weight ^b	CPUE ^c	
725930	11	26,982	136,731	2,465	5.1	10.9	2,808
726001	76	349,087	1,724,458	31,008	4.9	11.3	69,128
735930	15	57,263	278,014	4,427	4.9	12.9	8,298
736001	92	473,710	2,355,592	40,392	5	11.7	122,683
736031	3	9,205	40,549	911	4.4	10.1	744
Other ^d	7	23,575	114,316	1,914	4.8	12.3	5,829
Total	166 ^e	939,822	4,649,660	81,117	4.9	12	209,490

^aDeadloss included.

^bIn Pounds.

^cDefined as catch per pot pull.

^dIncludes 6 statistical areas.

^eActual landings for fishery.

Table 5-14. St. Matthew blue king crab comparative average commercial catches of catcher-processor vs. catcher-only vessels, 1991-1997.

Season	1997	1996	1995	1994	1993	1992	1991
Number of Catcher-Processor Vessels	1	3	1	6	3	8	9
Number of Catcher-only Vessels	116	119	89	87	89	166	59
Pounds of Catcher-Processor Harvest	Confidential	77,641	Confidential	352,069	165,625	191,801	740,687
Percent of Catcher-Processor Harvest	Confidential	2.5	Confidential	10.7	5.5	7.7	22.0
Average Catcher-Processor Harvest	Confidential	25,880	Confidential	58,678	55,208	23,975	82,298
Average Catcher-Only Harvest	Confidential	25,238	Confidential	39,221	31,846	13,749	44,600
Catcher-Processor Average CPUE	Confidential	6.6	Confidential	14	14	16	26
Catcher-Only Average CPUE	11.6	7.2	14	14	11	9	18
Average # Pots Pulled Catcher-Only	694	745	541	636	632	325	525
Total Harvest	4,649,660	3,081,491	3,166,093	3,764,262	2,999,921	2,474,080	3,372,065

Table 5-15. Comparative mid-point estimates, emergency order projections and actual commercial harvests for the St. Matthew Island section blue king crab fishery, 1983-1997.

Year	Guideline Harvest Levels ^a	Projected Harvest ^a	Actual Harvest ^{a,b}
1983	8.0	8.0	9.5
1984	2.0 - 4.0	4.0	3.8
1985	0.9 - 1.9	2.0	2.4
1986	0.2 - 0.5	1.0	1.0
1987	0.6 - 1.3	1.3	1.1
1988	0.7 - 1.5	1.5	1.3
1989	1.7	1.7	1.2
1990	1.9	1.9	1.7
1991	3.2	3.2	3.4
1992	3.1	3.1	2.5
1993	4.4	4.4	3.0
1994	3.0	3.0	3.8
1995	2.4	2.4	3.2
1996	4.3	4.3	3.1
1997	5.0	5.0	4.6

^aMillions of pounds.

^bDeadloss included.

Table 5-16. Golden king crab fishery statistics in the Pribilof District of the Bering Sea, Area Q, 1981/82-1997.

Year	Number of		Crabs ^a	Harvest ^{a,b}	Pots Pulled	CPUE ^c	Average		Deadloss ^b
	Vessels	Landings					Weight ^b	Length ^d	
1981/82				CONFIDENTIAL					
1982/83 ^e	10	19	15,330	69,970	5,252	3	4.6	151	570
1983/84 ^f	50	115	253,162	856,475	26,035	10	3.4	127	20,041
1984 ^g				NO REPORTED LANDINGS					
1985				CONFIDENTIAL					
1986				CONFIDENTIAL					
1987				CONFIDENTIAL					
1988				CONFIDENTIAL					
1989				CONFIDENTIAL					
1990				NO REPORTED LANDINGS					
1991				CONFIDENTIAL					
1992				CONFIDENTIAL					
1993	5	15	17,643	67,458	15,395	1	3.8	NA	0
1994	3	5	21,477	88,985	1,845	12	4.1	NA	730
1995	7	22	82,456	341,700	9,481	9	4.1	NA	716
1996	6	32	91,947	329,009	9,952	9	3.6	NA	3,570
1997	7	23	43,305	179,249	4,673	9	4.1	NA	5,554

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dIn millimeters.

^eSix and one-half inch season.

^fFive and one-half inch season.

^gPermit fishery July through December.

Table 5-17. Golden king crab fishery statistics catch for the Saint Matthew Island Section in the Northern District of the Bering Sea, Area Q, 1982/83 -1997.

Year	Number of		Crabs ^a	Harvest ^{a,b}	Pots Pulled	CPUE ^c	Average		Deadloss
	Vessels	Landings					Weight ^b	Length ^d	
1982/83	22	30	51,714	193,507	7,825	7	3.7	138	957
1983/84			NO REPORTED LANDINGS						
1985			NO REPORTED LANDINGS						
1986			NO REPORTED LANDINGS						
1987	11	29	101,618	424,394	14,525	7	4.2	142	11,750
1988	11	23	36,270	160,441	11,672	3	4.4	150	14,000
1989			CONFIDENTIAL						
1990			NO REPORTED LANDINGS						
1991			NO REPORTED LANDINGS						
1992			CONFIDENTIAL						
1993			NO REPORTED LANDINGS						
1994			CONFIDENTIAL						
1995	4	4	245	1,200	383	1	4.9	N/A	0
1996			CONFIDENTIAL						
1997			NO REPORTED LANDINGS						

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dIn millimeters.

5-18. Pribilof District golden king crab fishery economic performance 1991-1997.

Year	Season Total ^a	Number of		Number of Pots		Value		Season Length	
		Vessels	Landings	Registered	Pulled	Exvessel	Total	Days	Dates
1991					Confidential				
1992					Confidential				
1993	67,458	5	15	3,200	15395	\$2.42	\$163,248	365	1/1-12/31
1994	88,255	3	5	130	1845	\$3.81	\$336,252	365	1/1-12/31
1995	338,750	7	22	420	9481	\$3.12	\$1,056,900	365	1/1-12/31
1996	316,600	6	32	280	9952	\$2.02	\$639,532	365	1/1-12/31
1997	173,695	7	23	340	4673	\$2.23	\$387,340	365	1/1-12/31

^aDeadloss not included.

Table 5-19. Pribilof District commercial golden king crab catch by statistical area, 1997.

Area	Number of		Harvest ^{a,b}	Pots Pulled	Average		Deadloss
	Landings	Crab ^a			CPUE ^c	Weight ^b	
685600	3	2,139	11,620	294	7	5.4	217
695600	15	13,597	60,448	2,512	5	4.5	853
705600	8	21,790	81,665	1,384	16	3.8	3,382
Other	8	5,779	25,516	483	12	4.4	1,102
Total	34 ^d	43,305	179,249	4,673	9	4.1	5,554

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dActual total landings for the fishery.

5-20. St. Matthews Island section of the Northern District golden king crab fishery economic performance, 1991-1997.

Year	Season Total ^a	Number of		Number of Pots		Value		Season Length	
		Vessels	Landings	Registered	Pulled	Exvessel	Total	Days	Dates
1991				No Landings				365	1/1-12/31
1992				Confidential					
1993				No Landings				365	1/1-12/31
1994				Confidential					
1995	1,200	4	4	270	383	\$3.12	\$3,744	365	1/1-12/31
1996				Confidential					
1997				No Landings				365	1/1-12/31

^aDeadloss not included.

Table 5-21. Bering Sea scarlet king crab *Lithodes couesi* fishery statistics, 1992-1997.

Year	Harvest ^a	Vessels	Pots Pulled	Exvessel Value	Fishery Value ^b	Average		Deadloss
						Weight ^c	CPUE	
1992				NO REPORTED HARVEST				
1993				NO REPORTED HARVEST				
1994				NO REPORTED HARVEST				
1995	26,684	4	24,551	\$2.12	\$0.06	2.4	<1	465
1996				CONFIDENTIAL				
1997				NO VESSELS REGISTERED				

^aDeadloss included.

^bMillions of dollars.

^cIn pounds.

Table 5-22. Commercial harvest statistics, by season, for the Bering Sea *C. bairdi* fishery, 1968-1997.

Year	Number of			Harvest ^{a,b}	Pots Pulled	Average			% New Shell	Deadloss ^b
	Vessels	Landings	Crab ^a			CPUE ^c	Weight ^b	Width ^d		
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	65	14,096
1986										
1987										
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
1992/93	294	2,084	15,265,880	35,130,866	1,200,885	13	2.3	148	90.5	343,955

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Table 5-22. (Page 2 of 2)

Year	Number of		Crab ^a	Harvest ^{a,b}	Pots Pulled	Average		% New Shell	Deadloss ^b	
	Vessels	Landings				CPUE ^c	Weight ^b			Width ^d
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	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 ^e	196	347	734,296	1,806,077	149,289	5	2.5	152.1	46.6	14,608
1997	SEASON CLOSED									

^aDeadloss included.

^bIn Pounds.

^cDefined as catch per pot pull.

^dCarapace width in millimeters.

^eIncludes incidental catch with Bristol Bay red king crab fishery.

Table 5-23. Economic performance of the Bering Sea *C. Bairdi* commercial fishery, 1979/80-1997.

Year	GHL ^{a,b}	Season Total ^b	Number of		Number of Pots		Value		Season Length	
			Vessels	Landings	Registered	Pulled	Exvessel	Total ^c	Days	Dates
1979/80	28-36	36.5	152	804	40,273	488,434	\$0.52	\$19.00	189	11/01-05/11
1981	28-36	29.6	165	761	42,910	559,626	\$0.58	\$17.20	88	01/15-04/15
1982	16-Dec	10.9	125	791	36,396	490,099	\$1.06	\$11.50	118	02/15-06/15
1983	5.6	5.2	108	448	15,255	282,006	\$1.20	\$6.20	118	02/15-06/15
1984	7.1	1.2	41	134	9,851	61,357	\$0.95	\$1.10	118	02/15-06/15
1985	3	3.1	44	166	15,325	104,707	\$1.40	\$4.30	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	\$4.80	93	01/15-04/20
1989	13.5	7	109	359	43,607	184,892	\$2.90	\$20.30	110	01/15-05/07
1990 ^d	29.5	24.5	179	1,032	46,440	711,137	\$1.85	\$45.30	89	01/15-04/24
1990/91	42.8	39.7	255	1,756	75,356	883,391	\$1.12	\$44.50	126	11/20-03/25
1991/92	32.8	31.5	285	2,339	85,401	1,244,633	\$1.50	\$47.30	137	11/15-03/31
1992/93	39.2	35.1	294	2,084	71,481	1,200,885	\$1.69	\$58.80	137	11/15-03/31
1993 ^e	10.7	4.1	283	347	62,302	250,501	\$1.90	\$7.60	10	11/01-11/10
1993/94 ^f	9.1	12.8	261	515	53,737	325,963	\$1.90	\$24.00	42	11/20-01/01
1994 ^f	7.5	7.6	183	349	38,670	249,536	\$3.75	\$28.50	20	11/01-11/21
1995 ^f	5.5	4.2	196	256	40,827	247,853	\$2.80	\$11.70	15	11/01-11/16
1996 ^g	2.2 ^g	1	192	195	38,300	75,753	\$2.51	\$2.50	4	11/01-11/05
1996 ^f	6.2	0.8	135	152	29,955	73,522	\$2.48	\$2.00	12	11/15-11/27
1996 ^h	8.4	1.8	327	347	68,602	149,275		\$4.50	16	

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Table 5-23. (page 2 of 2)

Year	GHL ^{a,b}	Season	Number of		Number of Pots		Value		Season Length		
		Total ^b	Vessels	Landings	Registered	Pulled	Exvessel	Total ^c	Days	Dates	
1997			NO COMMERCIAL FISHERY								

^aGuideline Harvest Level

^bMillions of pounds, deadloss not included.

^cMillions of dollars.

^dWinter fishery.

^eEast of 168° West longitude (indidental to Bristol Bay red king crab).

^f163° -173° West longitude (directed fishery).

^gEast of 163° West longitude.

^hTotal vessel count for both fisheries, some vessels fished both fisheries.

Table 5-24. Bering Sea commercial *C. bairdi* Tanner crab seasons, 1968-1997.

Season	Date		Number of Vessels	Harvest ^a	Average		Price/ Pound
	Opened	Closed			Wt.Lbs.	CPUE ^b	
1968 ^c			NA	17.9	2.8	5	NA
1969 ^c			NA	1008.9	2.9	12	NA
1970 ^c			NA	1014.7	2.1	29	NA
1971 ^c			NA	166.1	2.7	8	NA
1972 ^c			NA	108.8	2.6	10	NA
1973 ^c			NA	231.7	2.5	6	NA
1974 ^c			NA	5044.2	2	115	NA
1974/75	07/29	06/15	28	7027.4	2.5	72	\$0.20
1975/76	08/01	07/15	66	22358.1	2.5	63	\$0.19
1976/77	08/01	07/07	83	51455.2	2.5	68	\$0.30
1977/78	09/15	06/15	120	66649	2.5	51	\$0.38
1978/79	11/10	05/24	144	42547.2	2.5	42	\$0.52
1979/80	11/01	05/11	152	36614.3	2.5	30	\$0.52
1981	01/15	04/15	165	29630.5	2.5	21	\$0.58
1982	02/15	06/15	125	11008.8	2.3	10	\$1.06
1983 ^d	02/15	05/22 06/15	108	5273.9	2.3	8	\$1.20
1984	02/15	06/15	41	1208.2	2.3	8	\$0.95
1985	01/15	06/15	44	3151.5	2.4	12	\$1.40
1986			SEASON CLOSED				
1987			SEASON CLOSED				
1988	01/15	04/20	98	2210.4	2.5	8	\$2.17
1989	01/15	05/07	109	7013	2.4	16	\$2.90
1990	01/15	04/09 ^e 04/24 ^f	179	24549.3	2.3	15	\$1.85
1990/91	11/20	03/25	255	40081.6	2.4	19	\$1.12
1991/92	11/15	03/31	285	31796.4	2.5	10	\$1.50
1992/93	11/15	03/31	294	35130.9	2.3	13	\$1.69
1993/94	11/01	11/10 ^g	283	4114.9	2.4	7	\$1.90
	11/20	01/01 ^h	261	12776.4	2.3	17	\$1.90
1994	11/01	11/21 ^h	183	7766.9	2.3	13	\$3.75
1995	11/01	11/16 ^h	196	4233.1	2.3	8	\$2.80
1996 ^g	11/01	11/05	192	994.8	2.5	5	\$2.51
1996 ^h	11/15	11/27	135	811.3	2.4	5	\$2.48
1997			SEASON CLOSED				

^aThousands of pounds - deadloss included.^bDefined as catch per pot pull.^cIncidental to the king crab fishery.^dPartial Bering Sea closure.^eEast of 165° West longitude.^fEast of 165° West longitude.^gEast of 168° West longitude.^h163° -173° West longitude.

Table 5-25. Bering Sea *C. bairdi* commercial catch by subdistrict, 1974/75-1997.

Season	Subdistrict	Number of			Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
		Vessels	Landings	Crab ^a			Weight ^b	CPUE ^c	
1974/75	Southeastern		72	2,526,687	6,504,984	32,275	2.6	78	0
	Pribilofs		8	247,083	523,394	3,923	2.1	63	0
	TOTAL	28	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

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Table 5-25. (page 2 of 4)

Season	Subdistrict	Number of			Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
		Vessels	Landings	Crab ^a			Weight ^b	CPUE ^c	
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
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				SEASON CLOSED					
1987				SEASON CLOSED					
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

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Table 5-25. (page 3 of 4)

Season	Subdistrict	Number of			Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
		Vessels	Landings	Crab ^a			Weight ^b	CPUE ^c	
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
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 ^{od}	283	347	1,696,430	4,114,949	250,501	2.4	7	103,715
	163° to 173 ^{oe}	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° to 173°	183	349	3,351,639	7,766,886	249,536	2.3	13	132,780
1995	163° to 173°	196	256	1,877,303	4,233,061	247,853	2.3	8	44,508
1996	East of 168 ^{od}	192	195	393,257	994,776	75,753	2.5	5	8,464
	163° to 173 ^{oe}	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

-Continued-

Table 5-25. (page 4 of 4)

Season	Subdistrict	Number of			Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
		Vessels	Landings	Crab ^a			Weight ^b	CPUE ^c	
1997		SEASON CLOSED							

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dNovember 1 - November 10, 1993.

^eNovember 20, 1993 - January 1, 1994.

Table 5-26. Bering Sea commercial *C. opilio* Tanner catch statistics by season, 1977/78-1997.

Year	Number of		Crab ^a	Harvest ^{a,b}	Pots Pulled	CPUE ^c	% New Shell	Average		Deadloss
	Vessels	Landings						Weight ^b	Width ^d	
1977/78	15	38	1,267,546	1,716,124	13,247	96	NA	1.4	NA	0
1978/79	102	490	22,118,498	32,187,039	190,746	116	83	1.5	113.1	759,137
1979/80	134	597	25,286,777	39,572,668	255,102	99	90	1.6	118.1	228,345
1981	153	867	34,415,322	52,750,034	435,742	79	79.2	1.5	117	2,269,979
1982	122	803	24,089,562	29,355,374	469,091	51	78	1.2	109.4	1,092,655
1983 ^f	109	461	23,853,647	26,128,410	287,127	83	NA	1.1	NA	1,324,466
1984 ^f	52	367	24,009,935	26,813,074	173,591	138	78	1.1	105.4	798,795
1985 ^f	75	718	52,903,246	65,998,875	372,045	142	80	1.3	108	1,064,184
1986 ^f	88	992	76,499,123	97,984,539	543,744	141	73.7	1.3	109.5	1,378,533
1987 ^f	103	1,038	81,307,659	101,903,388	616,113	132	84	1.2	108.9	978,449
1988 ^f	171	1,285	105,716,337	135,354,637	776,907	136	71.2	1.3	109.5	3,260,020
1989 ^f	168	1,341	112,618,881	149,455,848	663,442	170	85.2	1.3	111.2	1,844,682
1990 ^f	189	1,565	128,977,638	161,821,350	911,613	141	97.4	1.3	109.1	1,796,664
1991 ^f	220	2,788	265,123,960	328,647,269	1,391,583	191	95.1	1.2	110.2	3,464,036
1992	250	2,763	227,376,582	315,302,034	1,281,796	177	97.6	1.4	111.7	2,325,852
1993	254	1,836	169,558,842	230,787,000	971,046	175	92.5	1.4	111.6	1,573,952
1994	273	1,293	114,779,014	149,775,765	716,524	160	93.1	1.3	110.4	1,799,323
1995	253	869	60,611,411	75,252,677	506,802	117	89.6	1.2	108.6	1,287,169
1996	234	766	52,912,823	65,712,797	520,651	102	75.8	1.2	107.5	1,333,014
1997	226	1,126	99,899,744	119,452,070	753,636	133	96.5	1.2	107.3	2,351,555

^aDeadloss included.

^fPartial district and subdistrict closures, see Table 5-27.

^bIn pounds.

^cDefined as catch per pot pull.

^dSoutheastern and Pribilof subdistricts only 1978 to 1987.

^eCarapace width in millimeters.

Table 5-27. Historical Bering Sea *Chionoecetes opilio* Tanner crab season dates and area closures.

Season	Opened	Closed	Comments
1977/78	09/15/77	09/23/78	Bering Sea District closure ^a
1978/79	11/01/78	09/03/79	Bering Sea District closure ^a
1979/80	11/01/79	08/15/80 09/03/80	Bering Sea District state closure Bering Sea District federal closure
1981	01/15/81	09/01/81	Bering Sea District closure ^b
1982	02/15/82	08/01/82	Bering Sea District closure ^b
1983	02/15/83	05/22/83 08/01/83	Bering Sea District closure south of 57°30' N. lat. ^b Bering Sea District closure north of 57°30' N. lat. ^b
1984	02/15/84 09/15/84	08/01/84 08/22/84 12/31/84	Bering Sea District closure south of 58° N. lat. ^b Bering Sea District closure north of 58° N. lat. to allow an orderly start to king crab season ^b Bering Sea District closure north of 58°N. lat. reopened after king season and Bering Sea District ^b
1985	1/15/85 10/9/85	05/08/85 08/01/85 08/22/85 12/31/85*	Pribilof Subdistrict closure south of 58° N. lat. ^b Bering Sea District closure south of 58°39' N. lat. ^b Northern Subdistrict closure to allow an orderly start to king crab season ^b Bering Sea District reopened, except east of 164° W. long. in Southeastern Subdistrict, *fishery was scheduled to close 12/31/85 but did not, it remained open through the 1/15/86 start date for 1986 fishery
1986	01/15/86	04/21/86 06/01/86 08/01/86 08/24/86	Southeastern Subdistrict closure west of 164° W long. ^b Pribilof Subdistrict closure ^b Northern Subdistrict closure east of 175° W. long. ^b Northern Subdistrict closure west of 175° W. long. ^b

-Continued-

Table 5-27. (Page 2 of 2)

Season	Opened	Closed	Comments
1987	01/15/87	04/12/87 06/01/87 06/22/87	Southeastern Subdistrict west of 164° W. long., and Pribilof Subdistrict closure Northern Subdistrict south of 60°30' N lat. & east of 178° W. long. closure Northern Subdistrict north of 60°30' N lat. & west of 178° W. long. closure
1988	01/15/88 05/15/88	03/29/88 06/30/88	Bering Sea District closure (Western Subdistrict to assist in an orderly closure) Western Subdistrict reopened and Western Subdistrict closure
1989	01/15/89	03/26/89 05/07/89	Eastern Subdistrict closure Western Subdistrict closure
1990	01/15/90	04/09/90 04/24/90 06/12/90	Eastern Subdistrict east of 165° W. long. closure Eastern Subdistrict west of 165° W. long. closure Western Subdistrict closure
1991	01/15/91	05/05/91 06/23/91	Eastern Subdistrict closure Western Subdistrict closure
1992	01/15/92	04/22/92	Bering Sea District closure
1993	01/15/93	03/15/93	Bering Sea District closure
1994	01/15/94	03/01/94	Bering Sea District closure
1995	01/15/95	02/17/95	Bering Sea District closure
1996	01/15/96	02/29/96	Bering Sea District closure
1997	01/15/97	03/21/97	Bering Sea District closure

^aState managed domestic fishery.

^bConcurrent state and federal date.

Table 5-28. Economic performance of the commercial Bering Sea *C. opilio* Tanner crab fishery, 1979/80-1997.

Year	GHL ^a	Season Total ^{a,b}	Number of		Number of Pots		Value Exvessel	Season	
			Vessels	Landings	Registered ^c	Pulled		Total ^d	Length ^e
1979/80	N/A	39.3	134	597	35,503	255,102	\$0.21	\$82.50	307
1981	39.5-91.0	50.5	153	867	39,789	435,742	\$0.26	\$13.10	229
1982	16.0-22.0	28.3	122	803	35,522	469,091	\$0.73	\$20.70	167
1983 ^f	15.8	24.8	109	461	15,396	287,127	\$0.35	\$8.70	120
1984 ^f	49	26	52	367	12,493	173,591	\$0.30	\$7.80	320
1985 ^f	98	64.9	75	718	15,325	372,045	\$0.30	\$19.50	333
1986 ^f	57	96.6	88	992	13,750	543,744	\$0.60	\$60.00	252
1987 ^f	56.4	100.9	103	1,038	19,386	616,113	\$0.75	\$75.70	158
1988 ^f	110.7	130.8	171	1,285	38,765	776,907	\$0.77	\$100.70	120
1989 ^f	132	147.6	168	1,341	43,607	663,442	\$0.75	\$110.70	112
1990 ^f	139.8	160	189	1,565	46,440	911,613	\$0.64	\$102.30	148
1991 ^f	315	325.2	220	2,788	76,056	1,391,583	\$0.50	\$162.60	159
1992	333	313	250	2,763	77,858	1,281,796	\$0.50	\$156.50	97
1993	207.2	229.2	254	1,836	65,081	971,046	\$0.75	\$171.90	59
1994	105.8	148	273	1,293	54,837	716,524	\$1.30	\$192.40	45
1995	55.7	74	253	869	53,707	506,802	\$2.43	\$180.00	33
1996	50.7	64.4	234	766	50,169	520,651	\$1.33	\$85.60	45
1997	117	117.1	226	1,126	47,036	753,636	\$0.79	\$92.50	65

^aMillions of pounds.

^bDeadloss not included.

^cIncludes *C. bairdi* gear prior to 1992.

^dMillions of dollars.

^eIn days.

^fPartial district and subdistrict closures, see Table 5-27.

Table 5-29. Bering Sea commercial *C. opilio* Tanner crab catch by statistical area, 1997.

Area	Number of		Harvest ^{a,b}	Pots Pulled	Average		Deadloss
	Landings	Crab ^a			CPUE ^c	Weight ^b	
645530	5	276,983	380,948	2,816	98	1.4	1,306
655500	8	270,398	371,403	3,222	84	1.4	2,059
655530	21	828,441	1,074,362	9,925	84	1.3	8,775
655600	8	236,382	300,014	3,313	71	1.3	4,205
665430	11	315,519	407,933	3,409	93	1.3	8,128
665500	57	2,181,514	2,885,616	23,443	93	1.3	41,219
665530	120	6,911,435	8,882,613	56,438	123	1.3	75,649
665600	41	1,885,110	2,246,707	15,527	121	1.2	49,315
665630	8	322,805	403,769	2,931	110	1.3	3,661
675430	3	41,324	51,039	471	88	1.2	631
675500	83	4,956,902	6,246,156	37,520	132	1.3	110,569
675530	149	10,804,078	13,303,758	75,182	144	1.2	196,807
675600	145	8,920,252	10,308,915	59,505	150	1.2	248,577
675630	38	2,190,573	2,551,581	12,962	170	1.2	47,896
675700	3	100,260	115,304	678	148	1.2	790
685500	7	171,471	208,997	2,931	59	1.2	1,868
685530	61	6,060,005	7,272,596	34,500	176	1.2	117,342
685600	176	12,678,093	14,354,825	73,079	174	1.1	400,294
685630	88	5,485,678	6,225,060	35,255	156	1.1	206,442
685700	8	536,831	609,281	4,464	120	1.1	12,334
695600	24	883,713	1,016,301	7,942	111	1.2	24,892
695631	10	438,523	511,714	4,273	103	1.2	3,186
705600	12	479,241	543,092	4,443	108	1.1	6,637
705630	8	170,888	201,196	1,504	114	1.2	5,354

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Table 5-29. (Page 2 of 2)

Area	Number of		Harvest ^{a,b}	Pots Pulled	Average		Deadloss
	Landings	Crab ^a			CPUE ^c	Weight ^b	
715600	21	1,703,306	1,948,939	11,299	151	1.1	36,083
715630	81	4,475,568	5,223,125	35,799	125	1.2	149,352
715700	44	1,721,546	2,044,764	20,575	84	1.2	48,383
715730	5	47,279	59,493	849	56	1.3	4,606
725600	4	131,306	169,353	1,127	117	1.3	1,176
725630	91	6,822,111	8,079,244	46,159	148	1.2	146,478
725700	77	4,293,010	5,060,744	37,407	115	1.2	70,298
725730	32	1,388,898	1,643,501	13,187	105	1.2	50,655
735630	13	755,287	943,130	5,553	137	2.3	26,241
735700	47	2,246,838	2,636,642	20,146	112	1.2	50,427
735730	70	3,699,053	4,378,552	31,836	116	1.2	71,674
735800	26	987,304	1,182,037	11,930	83	1.2	30,045
735830	10	577,669	703,843	3,285	176	1.2	5,836
745800	12	146,283	175,755	1,755	83	1.2	1,842
745830	30	1,491,552	1,781,347	12,242	122	1.2	24,042
755830	9	83,634	102,008	1,088	77	1.2	1,342
755900	3	47,981	60,488	764	63	1.3	836
765930	4	133,514	184,694	2,330	57	1.4	4,880
775930	5	208,243	286,399	2,276	92	1.4	2,043
785930	3	165,149	239,418	1,359	122	1.5	2,907
786030	4	442,562	591,671	5,495	81	1.3	8,387
Other	35	1,185,232	1,483,743	11,442		1.3	36,086
Total	1,126 ^d	99,899,744	119,452,070	753,636	133	1.2	2,351,555

^aDeadloss included.^cDefined as catch per pot pull.^bIn pounds.^dActual total landings for the fishery.

Table 5-30. Bering Sea commercial *C. opilio* Tanner crab harvest by season and subdistrict, 1977/78-1997.

Season	Subdistrict	Number of			Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
		Vessels	Landings	Crab ^a			Weight ^b	CPUE ^c	
1977/78	Southeastern		33	1,063,872	1,439,959	11,560	1.4	92	0
	Pribilof		5	203,674	276,165	1,687	1.4	121	
	TOTAL	15	38	1,267,546	1,716,124	13,247	1.4	96	0
1978/79	Southeastern	101	476	21,279,794	31,102,832	184,491	1.5	115	659,137
	Pribilof	10	14	838,704	1,084,039	6,225	1.5	135	100,000
	TOTAL	102	490	22,118,498	32,187,039	190,746	1.5	116	759,137
1979/80	Southeastern	133	561	23,199,446	36,406,391	237,375	1.6	98	187,945
	Pribilof	19	36	2,087,331	3,166,777	17,727	1.5	118	40,400
	TOTAL	134	597	25,286,777	39,572,668	255,102	1.6	99	228,345
1981	Southeastern		624	24,498,642	37,866,229	309,304	1.6	79	1,475,078
	Pribilof		243	9,916,617	14,886,705	126,438	1.5	78	794,901
	TOTAL	153	867	34,415,322	52,750,034	435,742	1.5	79	2,269,979
1982	Southeastern		468	10,207,174	13,079,583	257,193	1.3	40	422,979
	Pribilof		335	13,882,388	16,276,421	211,898	1.2	66	669,676
	TOTAL	122	803	24,089,562	29,355,374	469,091	1.2	51	1,092,655
1983	Southeastern		153	3,553,281	4,197,304	94,470	1.2	38	165,298
	Pribilof		239	19,076,553	20,514,000	153,458	1	124	1,078,643
	Northern		69	1,223,813	1,417,106	39,199	1.1	31	80,525
	TOTAL	109	461	23,853,647	26,128,410	287,127	1.1	83	1,324,466

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Table 5-30. (page 2 of 4)

Season	Subdistrict	Number of			Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
		Vessels	Landings	Crab ^a			Weight ^b	CPUE ^c	
1984	Southeastern		76	3,534,370	3,990,621	33,091	1.1	107	54,678
	Pribilof		230	17,909,096	19,727,493	112,078	1.1	160	708,706
	Northern		61	2,566,469	3,094,960	28,422	1.2	90	35,411
	TOTAL	52	367	24,009,935	26,813,074	173,591	1.1	138	798,795
1985	Southeastern	55	301	21,963,882	27,373,232	158,819	1.4	138	461,001
	Pribilof	60	301	24,089,526	29,804,093	142,937	1.2	169	505,146
	Northern	24	116	6,849,838	8,821,550	70,289	1.3	97	98,037
	TOTAL	75	718	52,903,246	65,998,875	372,045	1.3	142	1,064,184
1986	Southeastern	47	112	8,491,694	10,957,578	63,889	1.3	133	44,755
	Pribilof	80	508	39,851,767	50,525,150	281,337	1.3	142	472,342
	Northern	67	372	28,155,662	36,501,811	198,518	1.3	142	861,436
	TOTAL	88	992	76,499,123	97,984,539	543,744	1.3	141	1,378,533
1987	Southeastern	28	64	4,116,778	5,106,473	24,619	1.2	167	24,619
	Pribilof	94	458	38,604,802	47,676,734	261,337	1.2	148	261,337
	Northern	99	516	38,586,079	49,120,181	330,157	1.2	117	330,157
	TOTAL	103	1,038	81,307,659	101,903,388	616,113	1.2	132	978,449
1988	Eastern	162	770	59,811,702	75,781,258	431,310	1.3	139	775,104
	Western	151	515	45,904,635	58,278,927	335,597	1.3	137	2,484,916
	TOTAL	171	1,285	105,716,337	134,060,185	776,907	1.3	136	3,260,020

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Table 5-30. (page 3 of 4)

Season	Subdistrict	Number of			Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
		Vessels	Landings	Crab ^a			Weight ^b	CPUE ^c	
1989	Eastern	163	871	77,698,698	104,399,693	391,451	1.3	198	1,128,971
	Western	127	470	34,920,183	45,056,155	271,991	1.3	128	715,711
	TOTAL	168	1,341	112,618,881	149,455,848	663,442	1.3	170	1,844,682
1990	Eastern	177	956	76,331,829	94,831,897	512,259	1.2	149	1,010,755
	Western	152	659	52,645,809	66,989,453	399,354	1.3	132	785,909
	TOTAL	189	1,565	128,977,638	161,821,350	911,613	1.3	141	1,796,664
1991	Eastern	218	2,013	190,139,612	240,090,666	912,751	1.3	208	1,593,021
	Western	186	867	74,984,348	88,556,603	478,832	1.2	157	1,871,015
	TOTAL	220	2,788	265,123,960	328,647,269	1,391,583	1.2	191	3,464,036
1992	Eastern	250	N/A	217,375,564	302,363,005	1,228,280	1.4	177	2,268,467
	Western	55	N/A	10,001,018	12,939,029	53,516	1.3	187	57,385
	TOTAL	250	2,763	227,376,582	315,302,034	1,281,796	1.4	177	2,325,852
1993	Eastern	251	1,384	110,760,099	151,328,721	675,996	1.4	164	1,108,520
	Western	185	633	58,798,743	79,458,279	295,050	1.4	199	465,432
	TOTAL	254	1,836	169,558,842	230,787,000	971,046	1.4	175	1,573,952
1994	Eastern	220	820	56,012,017	72,008,424	375,928	1.3	149	901,674
	Western	171	586	58,766,997	77,767,341	340,596	1.3	173	897,649
	TOTAL	273	1,293	114,779,014	149,775,765	716,524	1.3	160	1,799,323

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Table 5-30. (page 4 of 4)

Season	Subdistrict	Number of			Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
		Vessels	Landings	Crab ^a			Weight ^b	CPUE ^c	
1995	Eastern	217	627	32,630,348	39,736,986	313,910	1.2	104	657,051
	Western	153	357	27,981,063	35,515,691	192,892	1.3	145	630,118
	TOTAL	253	869	60,611,411	75,252,677	506,802	1.2	120	1,287,169
1996	Eastern	161	462	23,676,069	28,244,924	252,227	1.2	94	555,118
	Western	146	351	29,236,754	37,467,873	268,424	1.3	109	777,896
	TOTAL	234	766	52,912,823	65,712,797	520,651	1.2	102	1,333,014
1997	Eastern	225	1,040	88,410,807	105,557,817	648,815	1.2	133	2,115,217
	Western	83	164	11,488,937	13,894,253	104,821	1.2	108	236,338
	TOTAL	226	1,126	99,899,744	119,452,070	753,636	1.2	133	2,351,555

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

Table 5-31. Bering Sea *Chionoecetes tanneri* Tanner crab fishery statistics, 1992-1997.

Year	Harvest ^a	Number of		Pots Pulled	Exvessel Value	Fishery Value ^b	Average		Deadloss
		Crabs ^a	Vessels				Weight ^c	CPUE	
1992					CONFIDENTIAL				
1993	658,796	342,095	6	35,650	\$0.94	\$0.60	1.9	9	71,000
1994	332,454	165,365	4	13,739	\$1.20	\$0.40	2	11	30,585
1995	1,005,721	38,313	8	60,993	\$1.40	\$1.31	2.1	7	69,177
1996	106,886	40,849	3	14,504	\$1.08	\$0.10	2.1	3	11,186
1997					NO LANDINGS				

^aDeadloss included.

^bMillions of dollars.

^cIn pounds.

Table 5-32. Bering Sea *Chionoecetes angulatus* Tanner crab fishery statistics, 1992-1997.

Year	Harvest ^a	Number of		Pots Pulled	Exvessel Value	Fishery Value ^b	Average		Deadloss
		Vessels	Crabs ^a				Weight ^c	CPUE	
1992									
1993									
1994									
1995	49,007	4	41,914	22,180	\$1.35	\$0.05	1.2	1	14,147
1996									
1997									

^aDeadloss included.

^bMillions of dollars.

^cIn pounds.

Table 5-33. Korean hair crab catch statistics from the Bering Sea, 1978-1997.

Year	Number of		Crab ^a	Harvest ^{a,b}	Registered	Pots Pulled	Average		Deadloss
	Vessels	Landings					CPUE ^c	Weight ^b	
1978/79	11	16	2,457	5,213		9,908	<1	2.1	0
1979/80	9	17	25,417	53,914		14,506	2	2.1	0
1980/81	67	192	1,127,309	2,439,483		172,695	7	2.2	265,369
1981/82	48	159	466,560	932,584		117,518	4	2.0	29,749
1982/83	52	161	575,453	1,211,420		84,346	7	2.1	122,456
1983/84	19	48	200,670	406,538		20,414	10	2.0	28,062
1984 ^e	7	26	197,209	396,630		22,392	9	2.0	19,436
1985 ^e	3	9	34,410	66,042		3,905	9	2.0	593
1986 ^e	3	7	7,289	14,835		4,720	2	2.0	500
1987 ^e				CONFIDENTIAL					
1988 ^e				NO FISHING					
1989 ^e				NO FISHING					
1990 ^e				NO FISHING					
1991 ^e	7	42	441,533	377,708		44,444	10	.9	0
1992 ^{e,f}	9	20	203,758	240,767		38,808	5	1.2	11,495
1992 ^{e,g}	10	47	1,127,948	1,198,590		125,943	9	1.1	65,674
1993 ^{e,f}	4	5	2,347	3,038		9,345	<1	1.3	0
1993/94 ^{e,g,h,j}	19	129	1,936,795	2,331,686		585,913	3	1.2	124,596
1994 ^{e,g}	10	55	897,070	1,199,246	13,350	287,954	3	1.3	49,275
1995 ^{e,g}	21	81	1,485,097	2,059,988	25,750	441,494	3	1.4	73,882

-Continued-

Table 5-33. (Page 2 of 2)

Year	Number of		Crab ^a	Harvest ^{a,b}	Registered	Pots Pulled	Average		Deadloss
	Vessels	Landings					CPUE ^c	Weight ^d	
1996	19	99	485,735	745,804	20,680	410,548	1	1.5	32,495
1997	16	52	420,121	668,096	18,180	211,970	2	1.6	17,522

^aDeadloss included.

^bIn pounds.

^cDefined as catch per pot pull.

^dMillions of dollars.

^ePermit fishery.

^fSpring fishery.

^gFall fishery.

^hFishery opened Nov. 1, 1993 and closed April 20, 1994.

^jIncludes 7 vessels which landed hair crab incidental to *C. bairdi*.

Table 5-34. Bering Sea Korean hair crab economic performance, 1978/79-1997.

Year	Season		Number of		Number of Pots		Value		Season	
	GHL ^{a,b}	Total ^b	Vessels	Landings	Registered	Pulled	Exvessel	Total ^c	Days	Dates
1978/79		5,213	11	16		9,908	\$0.54	\$0.003	257	04/19-12/31
1979/80		53,914	9	17		14,506	\$0.75	\$0.04	244	01/01-08/30
1980/81 ^{d,e}		2,174,114	67	192		172,695	\$0.80	\$1.7	242	11/01-06/30
1981/82		902,835	48	159		117,518	\$0.55	\$0.5	288	11/01-08/15
1982/83		1,088,964	52	161		84,346	\$0.65	\$0.7	297	10/08-08/01
1983/84		378,476	19	48		20,414	\$1.20	\$0.5	335	08/01-06/30
1984 ^f		377,194	7	26		22,392	\$1.60	\$0.6	184	07/01-12/31
1985 ^f		65,449	3	9		3,905	\$1.60	\$0.1	365	01/01-12/31
1986 ^f		14,335	3	7		4,720	\$1.15	\$0.2	365	01/01-12/31
1987 ^f			CONFIDENTIAL						365	01/01-12/31
1988 ^f			NO FISHING							
1989 ^f			NO FISHING							
1990 ^f			NO FISHING							
1991 ^f		377,708	7	42		44,444	\$3.08	\$1.2	365	01/01-12/31
1992 ^{f,g}		229,272	9	20		38,808	\$2.25	\$0.5	32	01/01-06/04
1992 ^{f,h}		1,132,916	10	47		125,943	\$2.46	\$2.8	156	10/01-11/01
1993 ^{t,g}		3,038	4	5		9,345	NA	NA	45	04/01-05/15
1993/94 ^{f,h,i}	3.0 ^j	2,207,090	19	129	14,345	585,913	\$2.42	\$5.3	171	11/01-04/20
1994 ^{f,h}	1.1	1,149,971	10	55	13,350	287,954	\$3.55	\$4.0	41	11/01-12/12
1995 ^{f,h}	1.8	1,986,106	21	81	25,750	441,494	\$2.87	\$5.7	25	11/01-11/26

-Continued-

Table 5-34. (page 2 of 2).

Year	Season		Number of		Number of Pots		Value		Season	
	GHL ^{a,b}	Total ^b	Vessels	Landings	Registered	Pulled	Exvessel	Total ^f	Days	Dates
1996 ^{f,h}	0.9	713,309	19	99	20,680	410,548	\$2.65	\$1.9	31	11/01-12/02
1997 ^h	0.8	650,574	16	52	18,180	211,970	\$2.97	\$1.9	25 ^k	11/01-11/25

^a Prior to 1993 the fishery was managed to historical harvest levels.

^b Does not include deadloss.

^c Millions of dollars.

^d Season opened within three miles year round.

^e Emergency Order reopened within three miles.

^f Permit fishery.

^g Spring fishery.

^h Fall fishery.

ⁱ Includes 7 vessels which landed hair crab incidental to *C. bairdi*.

^j GHL was 2.5 and 0.5 million pounds West and East of 168° W. long., respectively.

^k Season opened at noon and closed at 10:00 pm.

Table 5-35. Bering Sea snail catch statistics by season, 1992 - 1997.

Year	Number of		Number of Pots		Harvest ^c	CPUE	Pounds per Pot ^b	Deadloss
	Vessels	Landings	Registered	Pulled				
1992					Confidential			
1993	4	10	13,800	44,686	312,876	25.01	7	NA ^a
1994	4	42	14,850	279,349	2,027,328	21.34	7.26	62,571
1995	4	38	18,800	262,096	2,352,825	28.05	8.98	22,371
1996	5	67	31,300	741,326	3,572,992	16.07	4.82	62,494
1997	3	17	14,500	191,893	932,048	15.67	4.86	77,131

^aHistorical data unavailable in some years.

^bWhole weight.

^cDeadloss Included

Table 5-36. Bering Sea snail economic performance, 1993-1997.

Year	Season Total ^a	Number of		Value	
		Vessels	Landings	Exvessel	Total
1992			Confidential		
1993	312,876	4	10	\$0.40	\$125,150
1994	1,964,757	4	42	\$0.34	\$668,017
1995	2,330,454	4	38	\$0.30	\$699,136
1996	3,510,498	5	67	\$0.30	\$1,053,149
1997	854,917	3	17	\$0.36	\$307,770

^aWeight in pounds

Table 5-37. Bering Sea Miscellaneous catch statistics by season, 1996-1997.

Year	Fishery	Number of		Number of Pots		Harvest ^a	CPUE	Deadloss
		Vessels	Landings	Registered	Pulled			
1995	Octopus Shrimp <i>Paralomis multispina</i>	10	15	2,273 NO COMMERCIAL HARVEST NO COMMERCIAL HARVEST	19,154	9,307	0.04	0
1996	Octopus Shrimp <i>Paralomis multispina</i>	9		NA ^b NO VESSEL PARTICIPATION CONFIDENTIAL	NA ^b	27,115	NA ^b	NA ^b
1997	Octopus Shrimp <i>Paralomis multispina</i>	19	8 ^c	NA ^b NO VESSEL PARTICIPATION NO VESSEL PARTICIPATION	NA ^b	1,107	NA ^b	NA ^b

^aDeadloss Included

^bHistorical data unavailable in some years.

^cAll landings incidental to other fisheries.

Table 5-38. North Peninsula District Dungeness crab fishery statistics; 1992-1997.

Year	Harvest ^a	Number of		Pots Pulled	Value		Average		Deadloss
		Crabs ^a	Vessels		Exvessel	Total ^b	Weight ^c	CPUE	
1992									
1993									
1994									
1995	134,407	63,732	6	34,499	\$1.32	\$0.18	2.1	4	367
1996									
1997									

^aDeadloss included.

^bMillions of dollars.

^cIn pounds.

Table 5-39. Bering Sea fisheries with imposed pot limits, 1997/98.

Fishery	Pot Limits	
	<=125 Feet	>125 Feet
Norton Sound King Crab	40	50
St. Lawrence King Crab	40	50
Pribilof King Crab	40	50
St. Matthew King Crab	60	75
Bristol Bay King Crab	100	125
Bering Sea Tanner	200	250

Table 5-40. Multi-tiered pot limit guidelines established by the Board of Fisheries and adopted for regulation on August 27, 1997 to be valid through December 31, 1998.

GHLa Range (Million Pounds)	Number of Vessels	Number of Pots		Management Type
		Vessels <125ft	Vessels >125ft	
<4.0	Any	0	0	Season Closed
4.0 to 5.9	<200	80	100	Inseason
	200-250	60	75	Inseason
	>250	60	75	Pre-announced Closure
6.0 to 8.9	<200	120	150	Inseason
	200-250	100	125	Inseason
	>250	100	125	Pre-announced Closure
9.0 to 12	<200	200	250	Inseason
	200-250	160	200	Inseason
	>250	160	200	Pre-announced Closure
>12	Any	200	250	Inseason

^aGuideline harvest level

Table 5-41. Number of Bering Sea buoy tags printed and issued by fishery, 1997/98.

Fishery	Number of Tags Printed ^a	Number of Tag Sets issued		Number of Tags Issued	
		<=125 ^b	>125 ^b	<=125 ^b	>125 ^b
Pribilof Red and Blue King Crab	6,250	47	7	1,880	350
Pibilof Brown King Crab	surplus tags used	5	2	200	100
St. Matthew Blue King Crab	10,000	75	42	4,500	3,150
Bristol Bay Red King Crab	62,500	181	78	18,120	9,750
Bering Sea Opilio Tanner Crab	62,500	149	80	29,025	19,830
Bering Sea CDQc Opilio Tanner Crab	surplus tags used	15	6	2,850	1,400
Totals	141,250	472	215	56,575	34,580
Totals for Vessels of Both Size Categories	141,250	687		91,155	

^aTags were printed in sets of 250 then separated numerically into appropriate sized sets for each fishery.

^bVessel length in feet.

^cCommunity Development Quota.

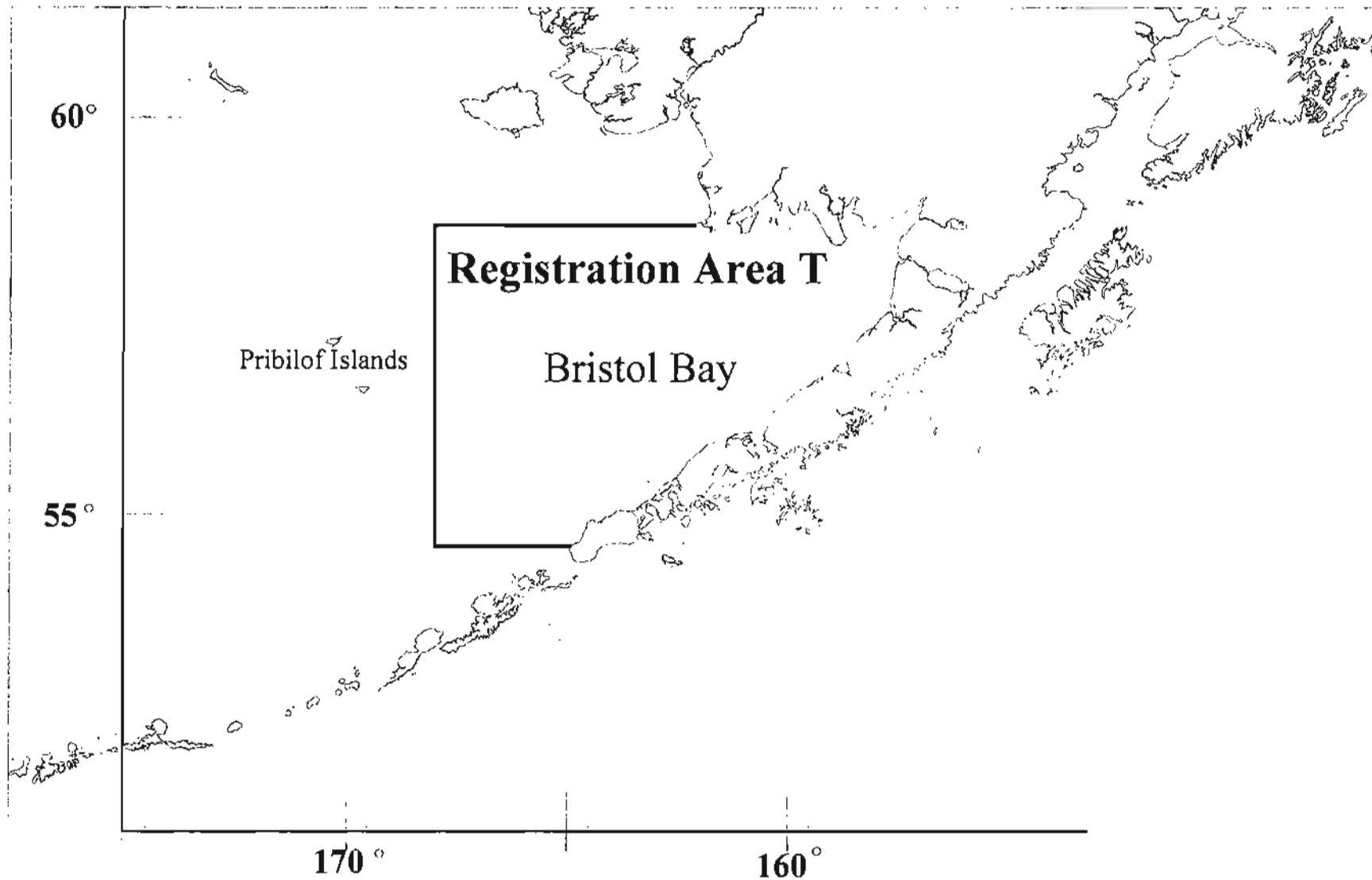


Figure 5-1. Bristol Bay king crab management area, Registration Area T.

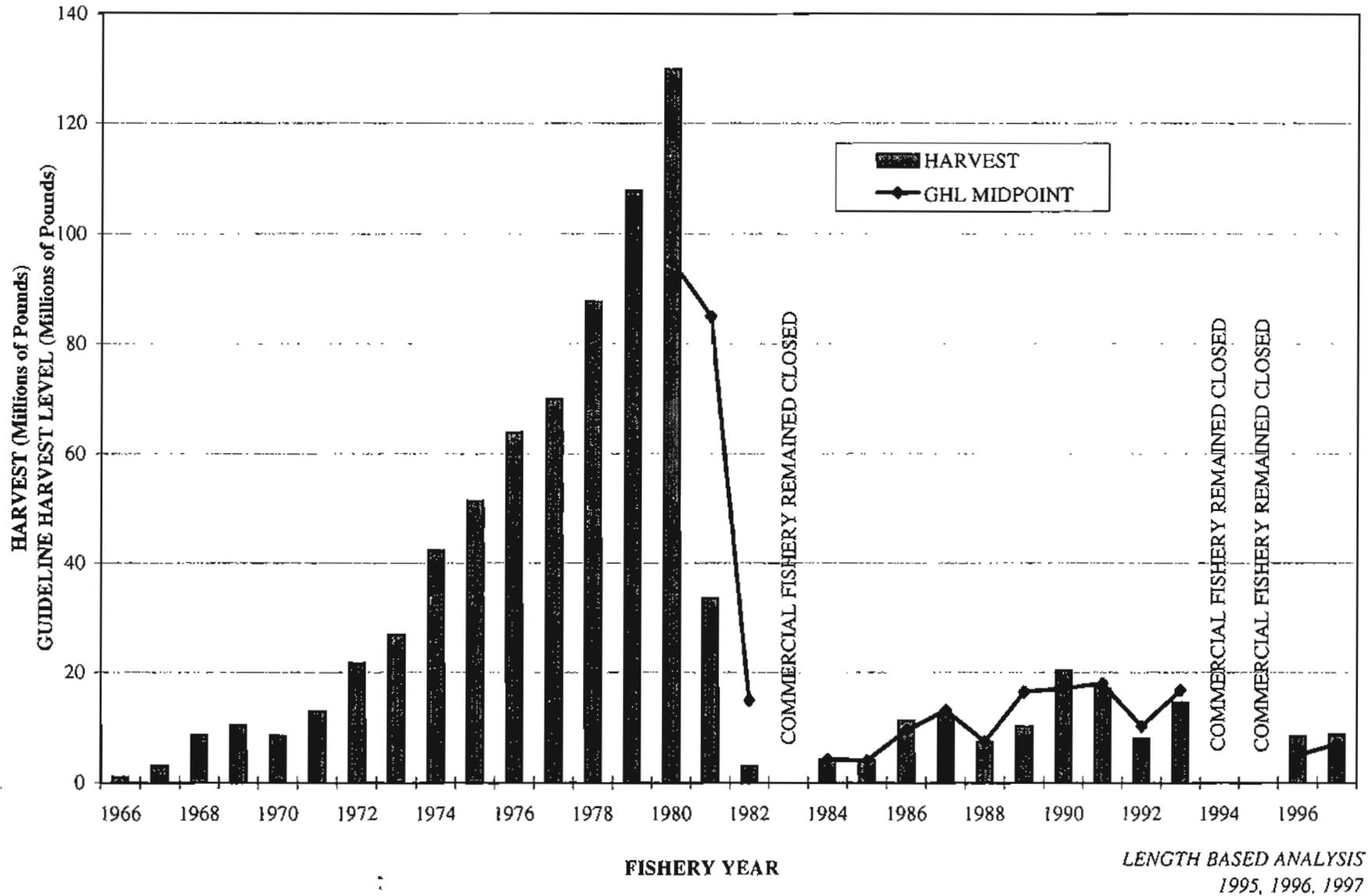


Figure 5-2. Historic Bristol Bay red king crab harvest and Guideline Harvest Midpoint, 1966 - 1997.

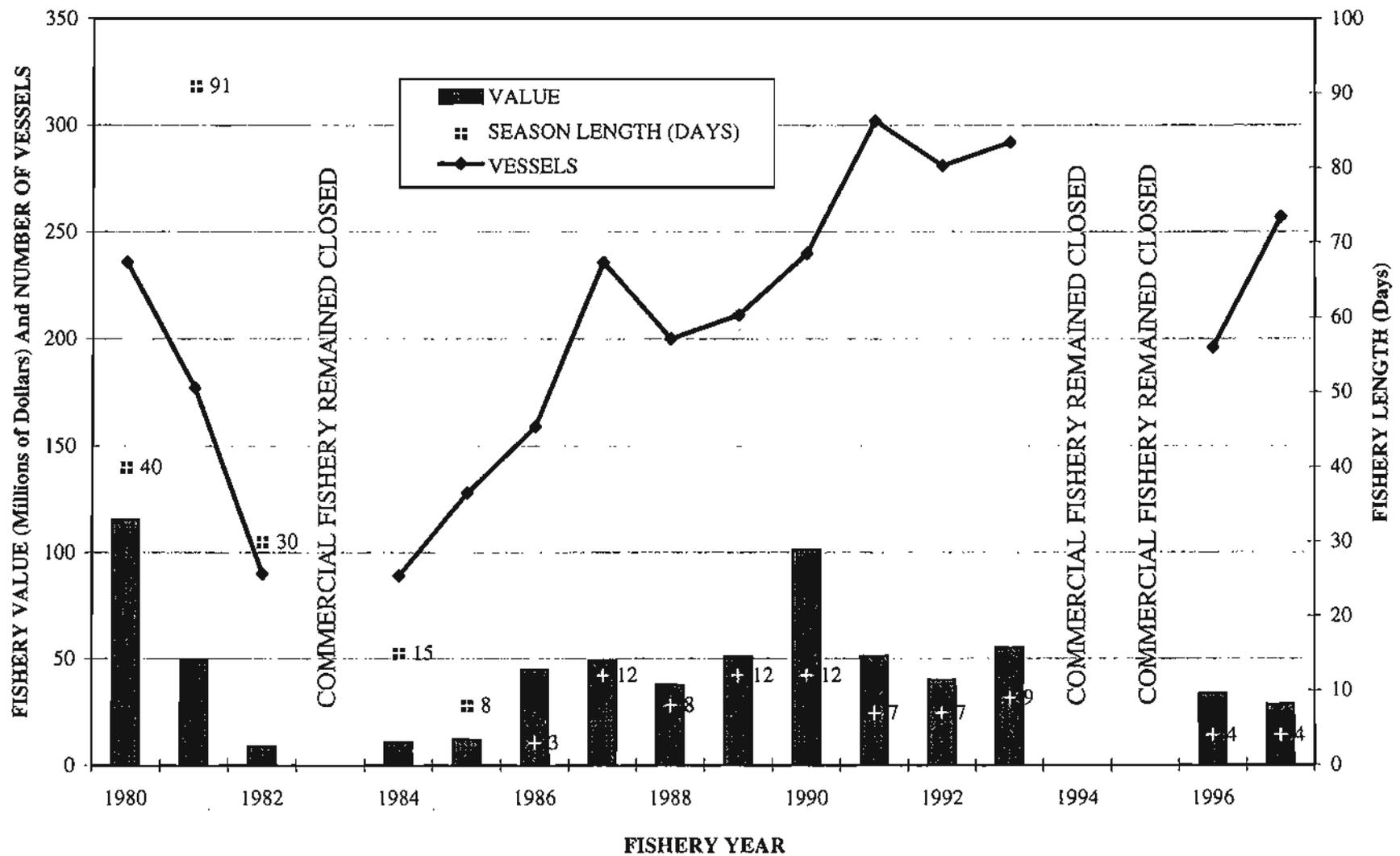


Figure 5-3. Economic performance of the Bristol Bay red king crab fishery in terms of vessel effort, season length (days), and total fishery value, 1980 - 1997.

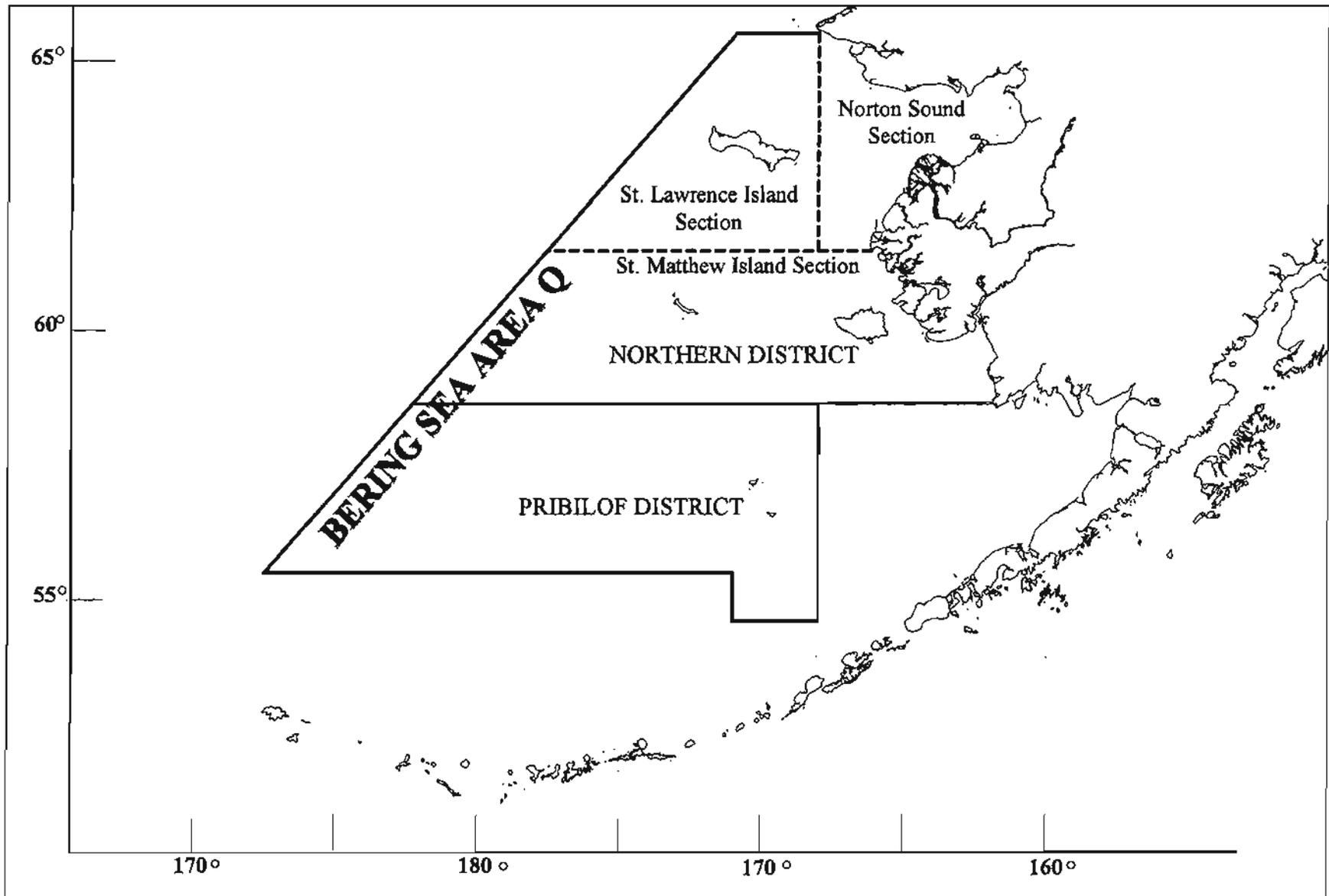


Figure 5-4. Bering Sea, Area Q, king crab registration area with districts and sections.

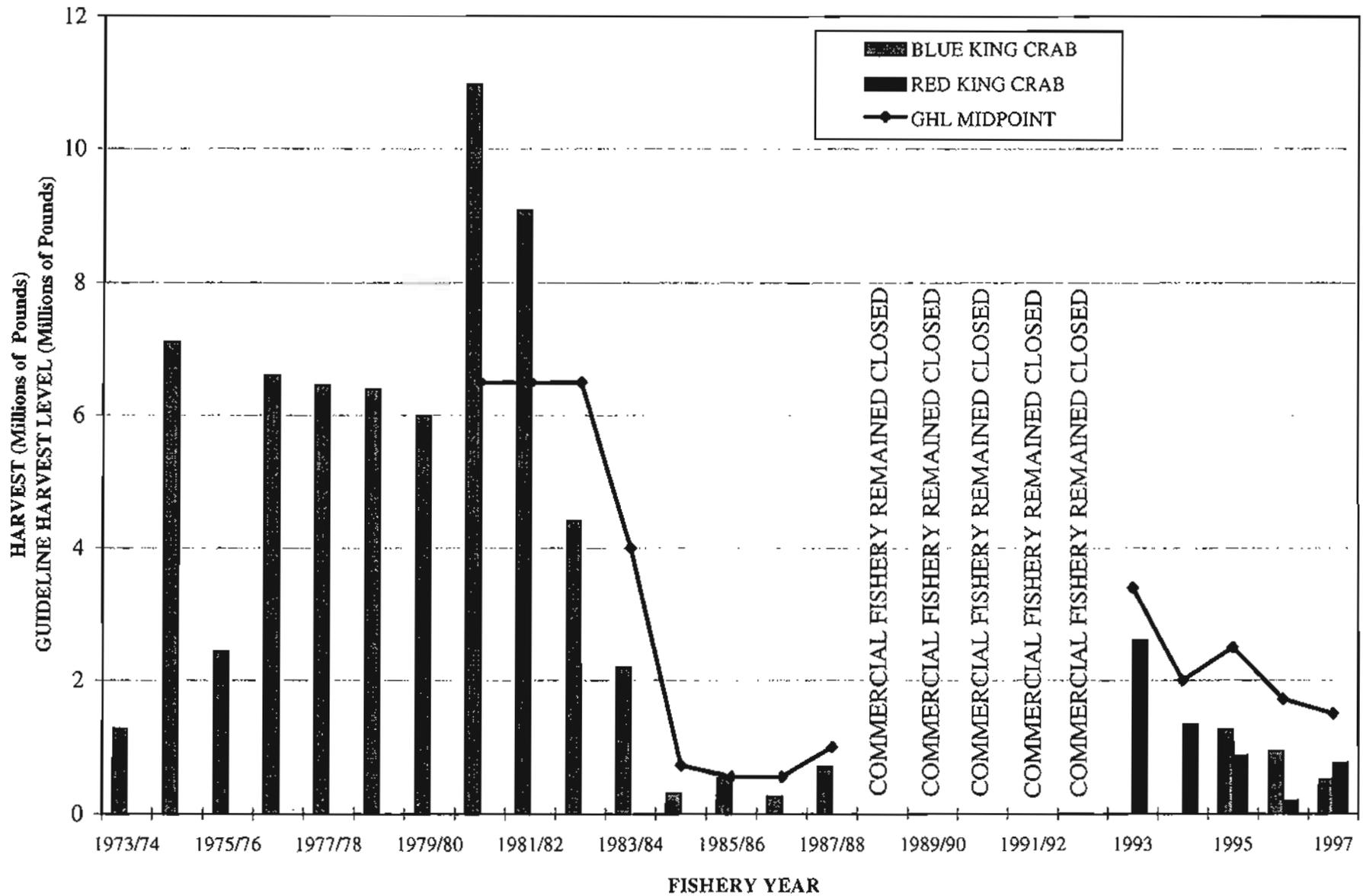


Figure 5-5. Historic red and blue king crab harvest in pounds with Guideline Harvest Level midpoints for the Pribilof District of the Bering Sea, 1973 - 1997.

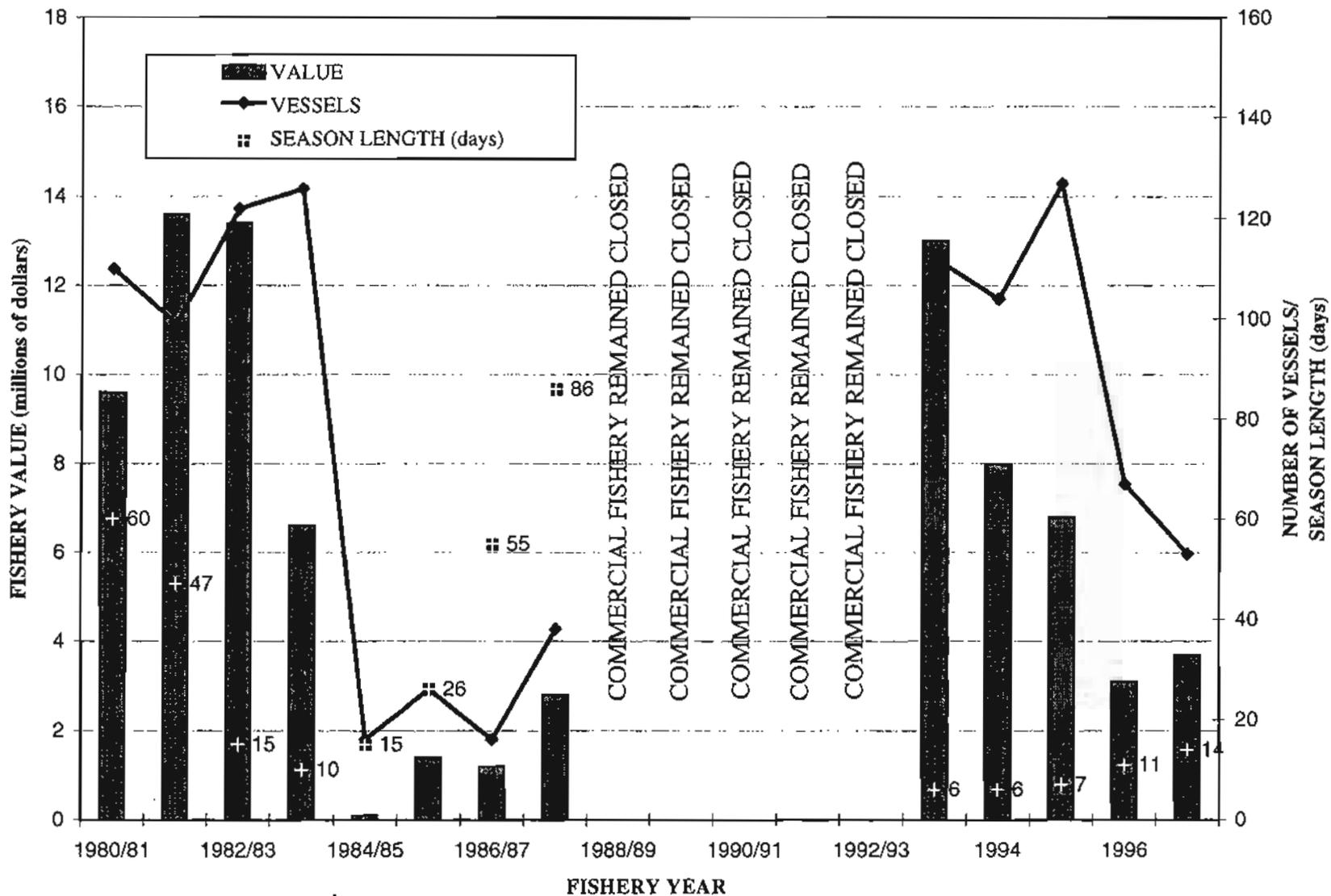


Figure 5-6. Economic performance of the Pribilof District king crab fishery in terms of vessel effort, season length (days), and total fishery value, 1980 - 1997. ...

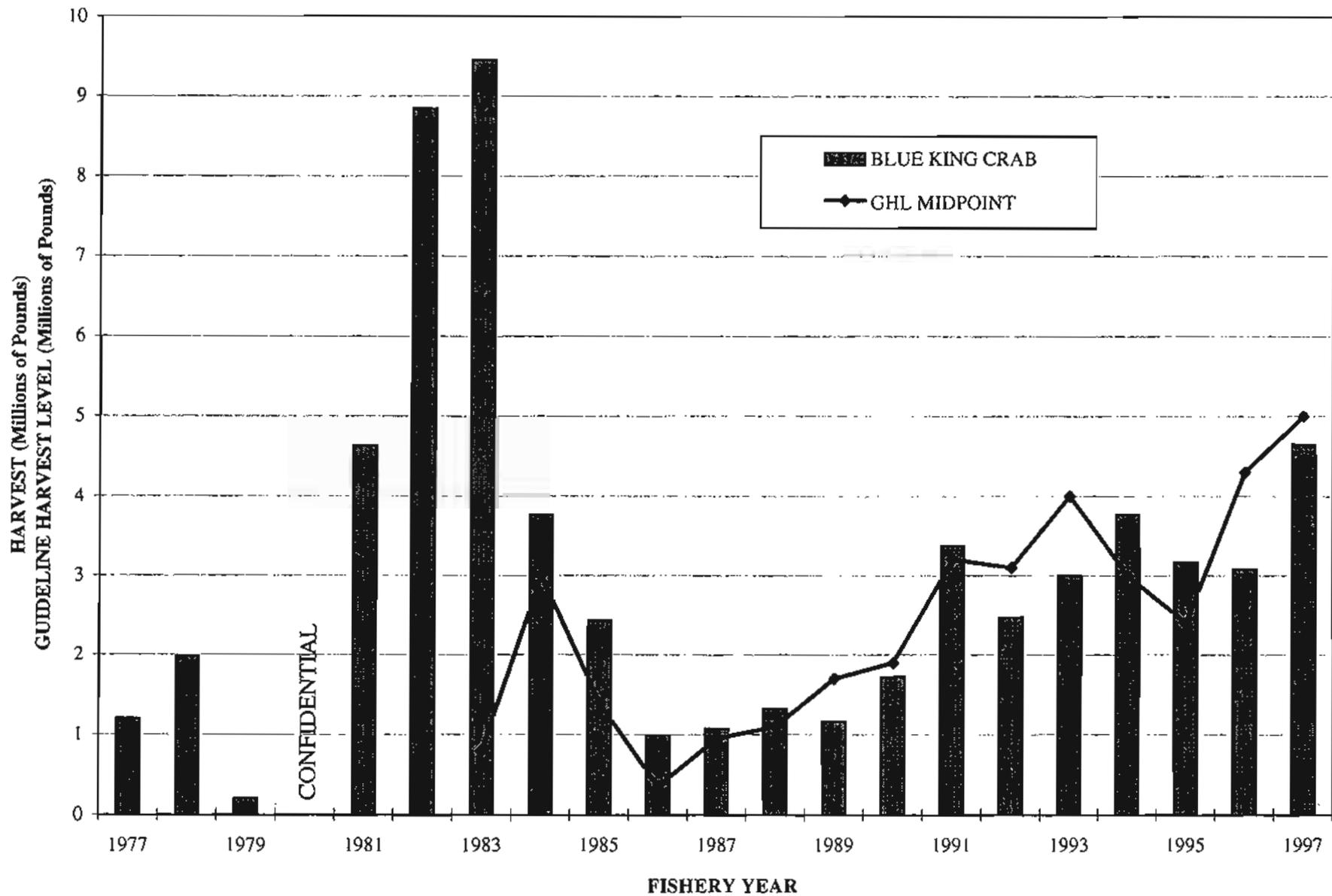


Figure 5-7. Historic blue king crab harvest in millions of pounds with Guideline Harvest Level Midpoint for the St. Matthew Island Section of the Northern District, 1977 - 1997.

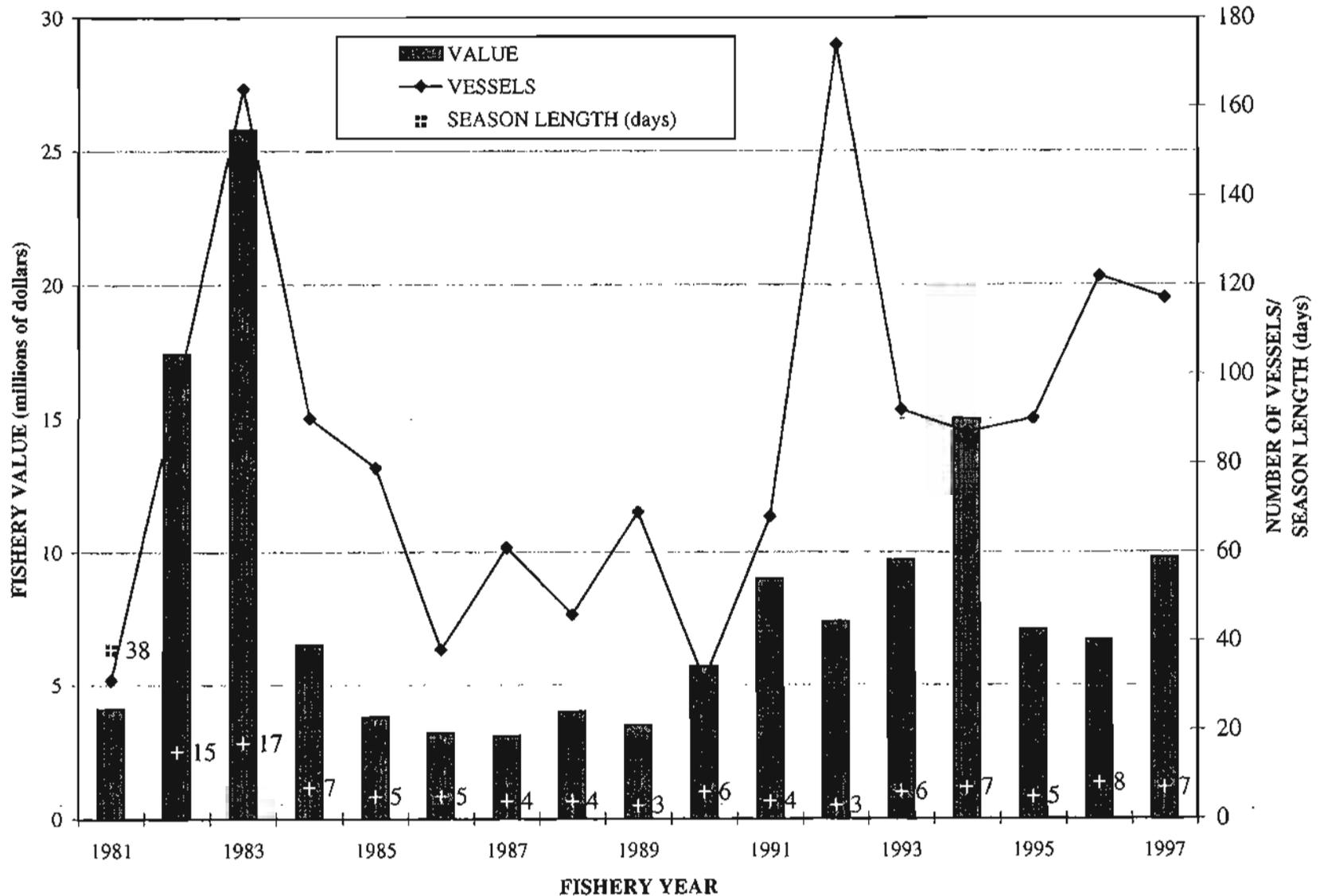


Figure 5-8. Economic performance of the St. Matthew Island Section of the Northern District king crab fishery in terms of vessel effort, season length (days), and total fishery value, 1981 - 1997.

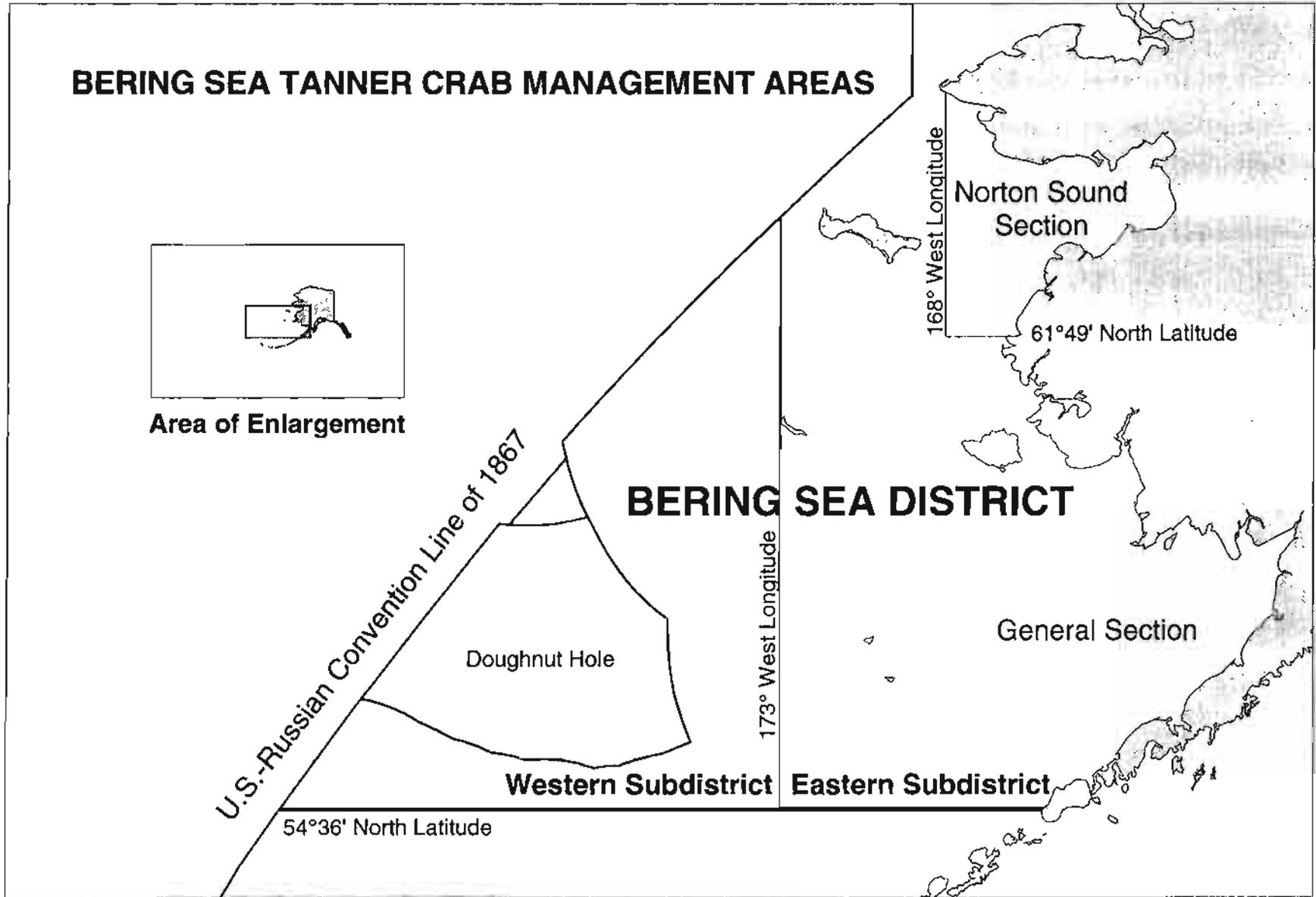


Figure 5-9. The Bering Sea Tanner crab management area, Area Q, with subdistricts and sections.

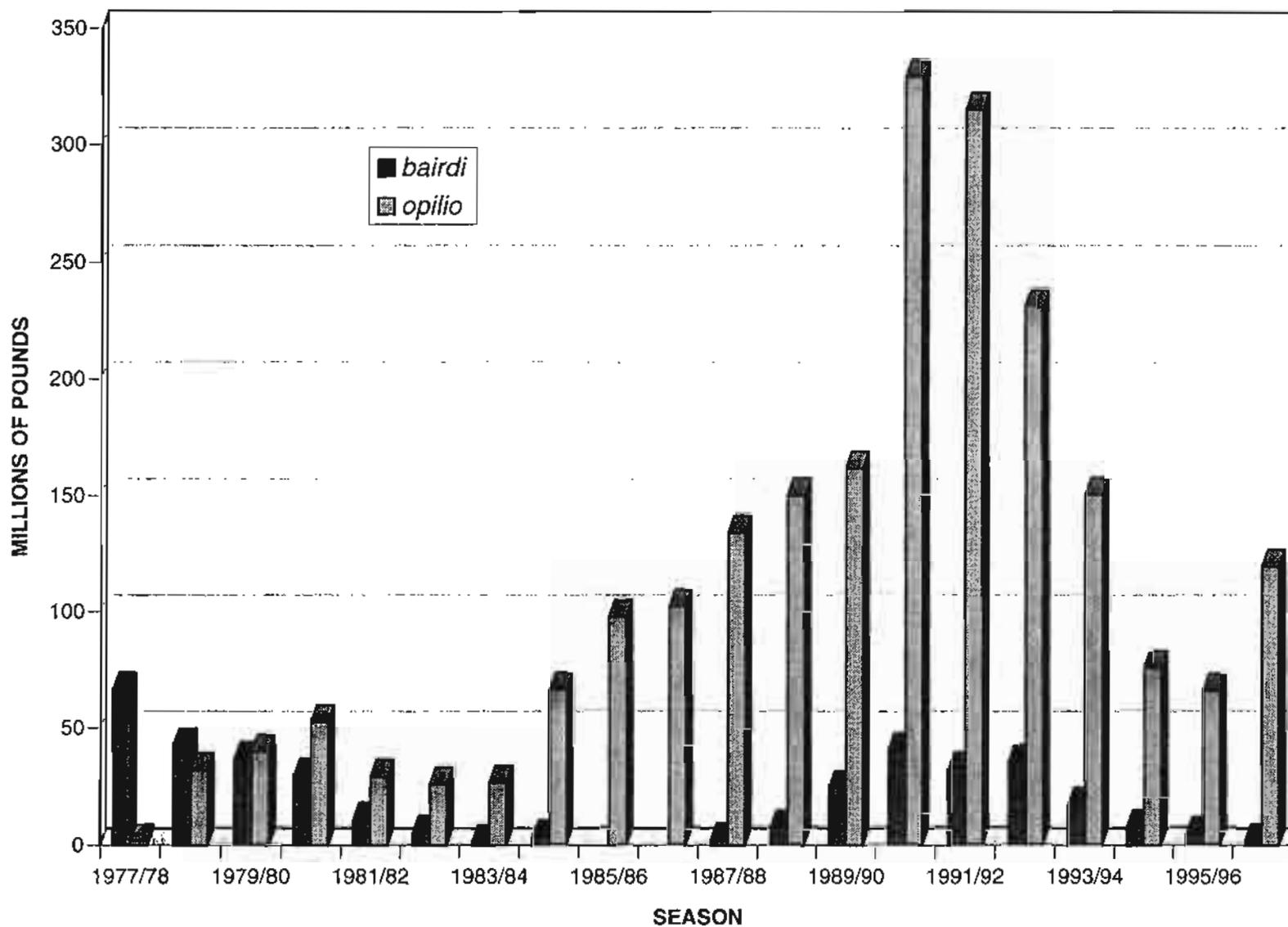


Figure 5-10. Comparison of historic Bering Sea *Chionoecetes bairdi* and *C. opilio* harvest, 1977/78 - 1996/97.

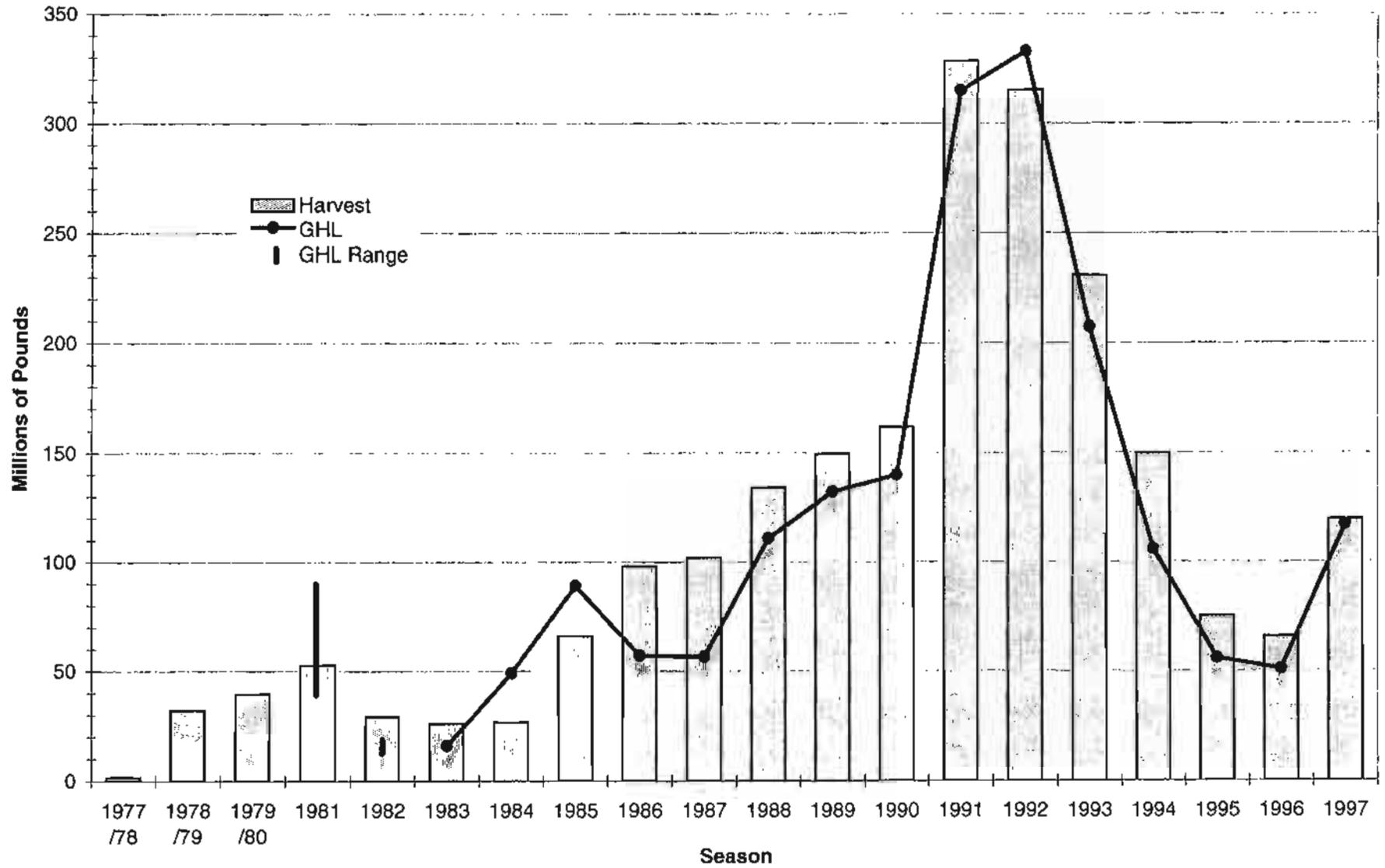


Figure 5-11: Historic Bering Sea *Chionoecetes opilio* harvest and guideline harvest level (GHL) and ranges, 1977/78 - 1997.

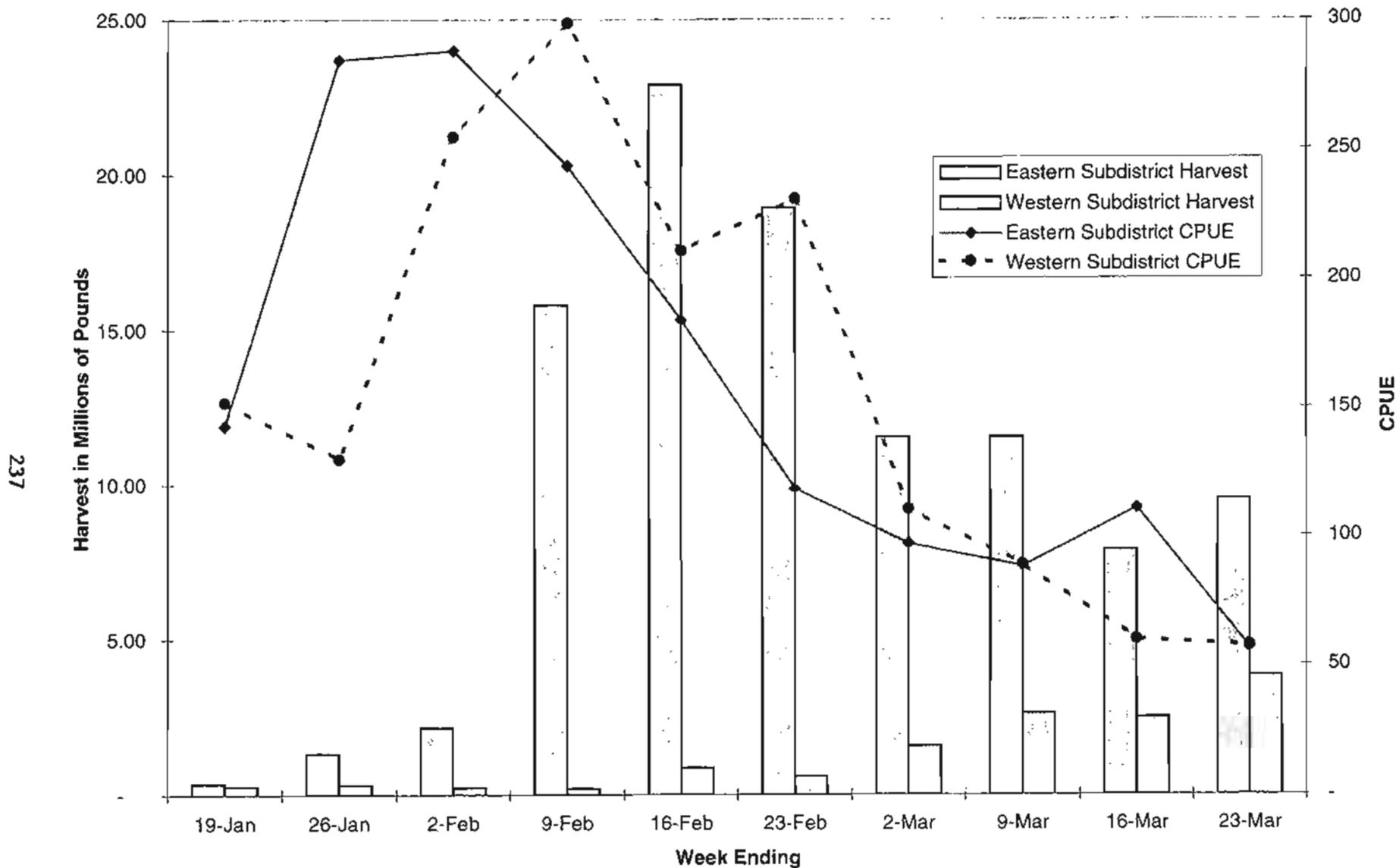


Figure 5-12. Harvest and CPUE by week in the 1997 *Chionoecetes opilio* fishery.

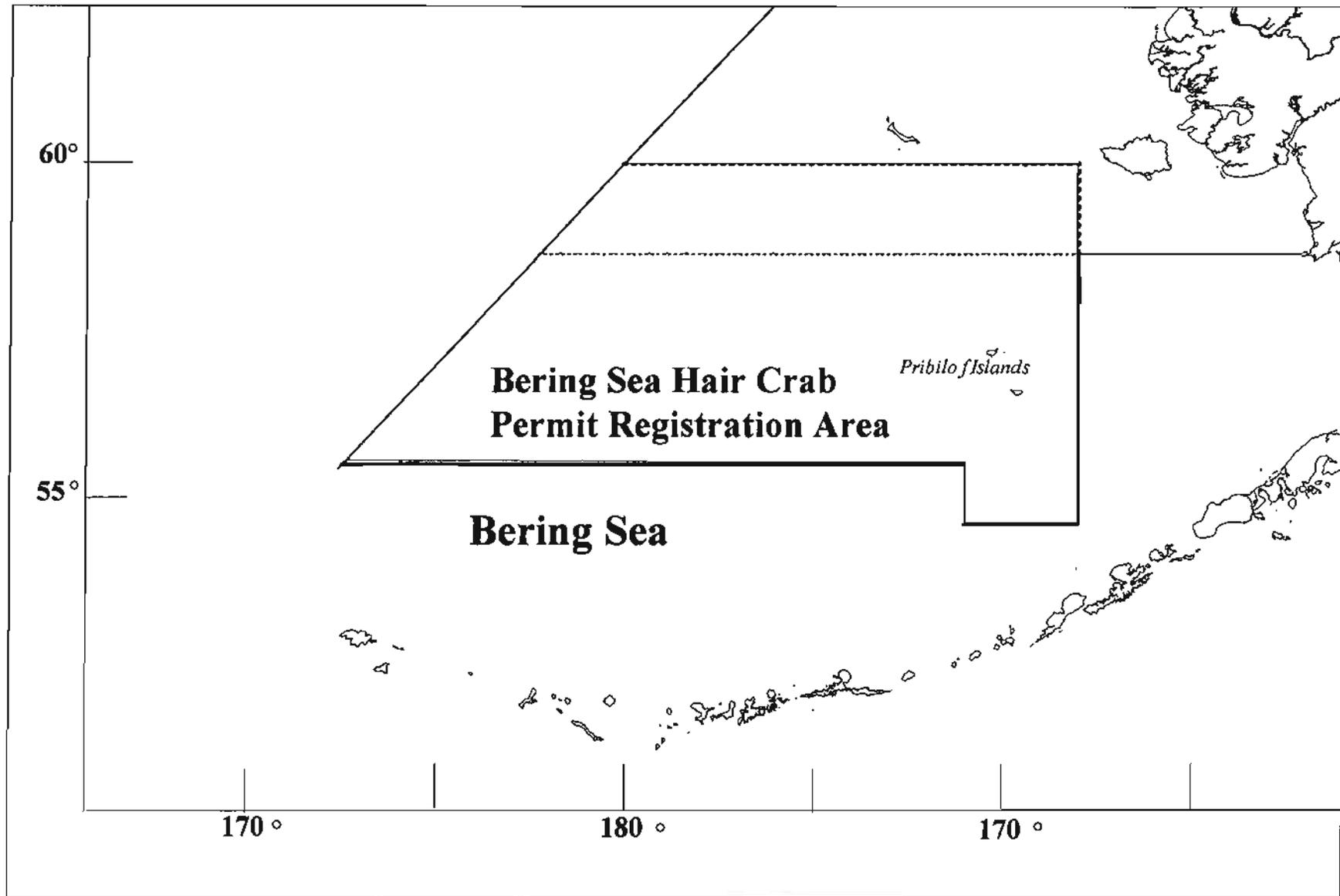


Figure 5-13. Bering Sea Hair Crab Registraion Area.

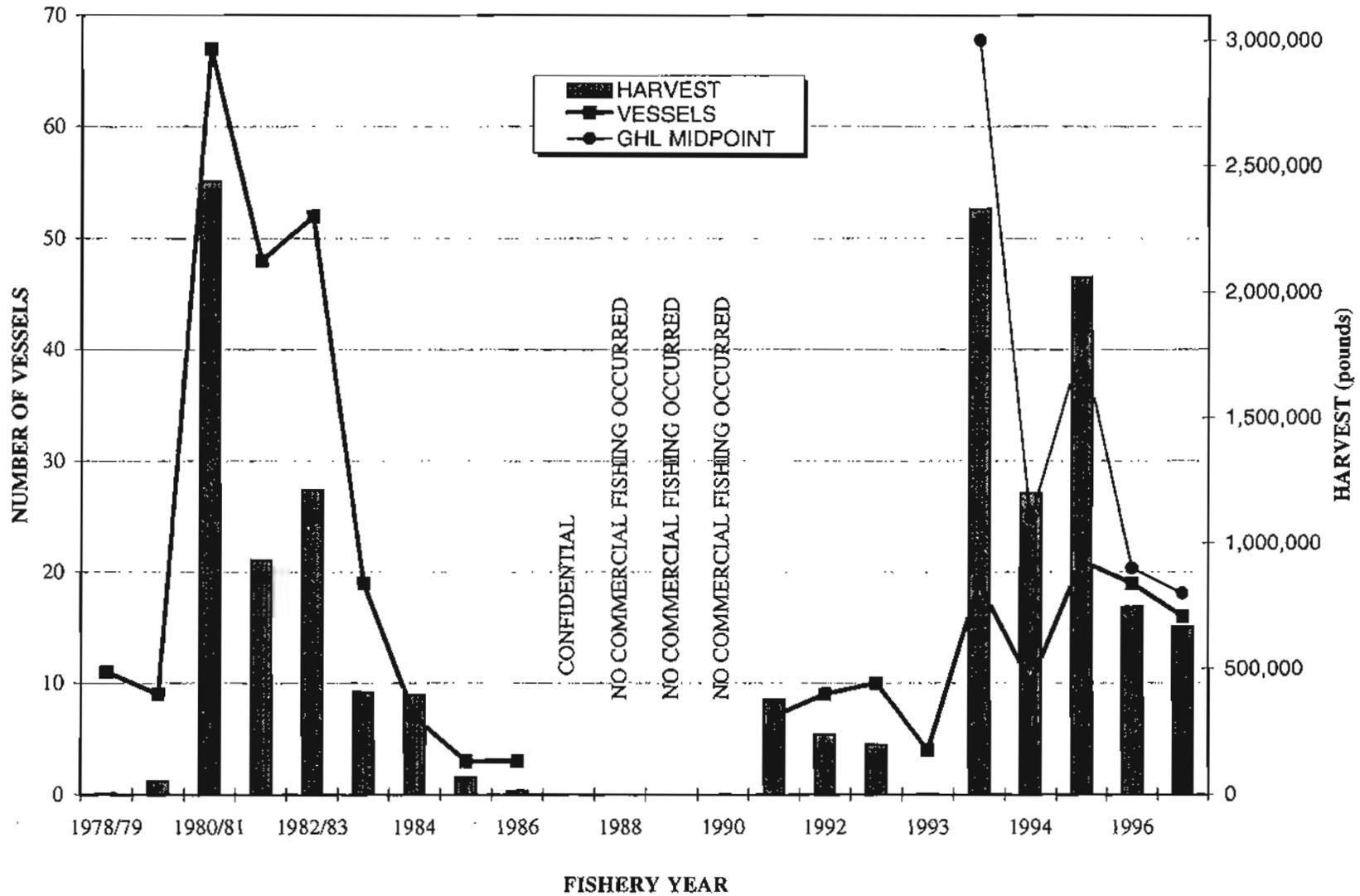


Figure 5-14. Historic harvest and vessel participation in the Bering Sea Korean hair crab fishery, 1978/79 - 1997.

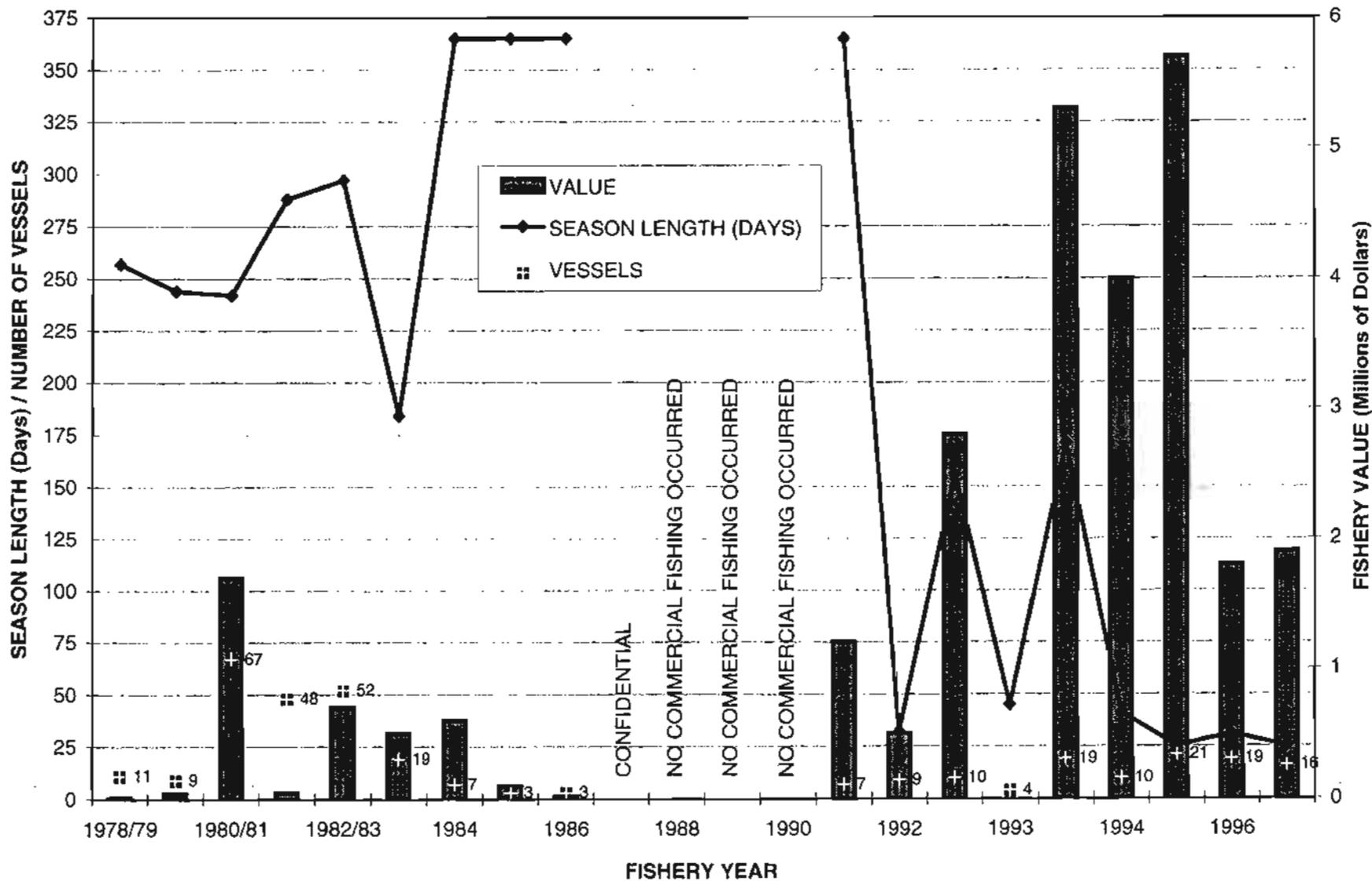


Figure 5-15. Bering Sea Korean Hair crab fishery Value (Million of dollars), Season Length (Days), and Number of Vessels Participating, 1978- 1997.

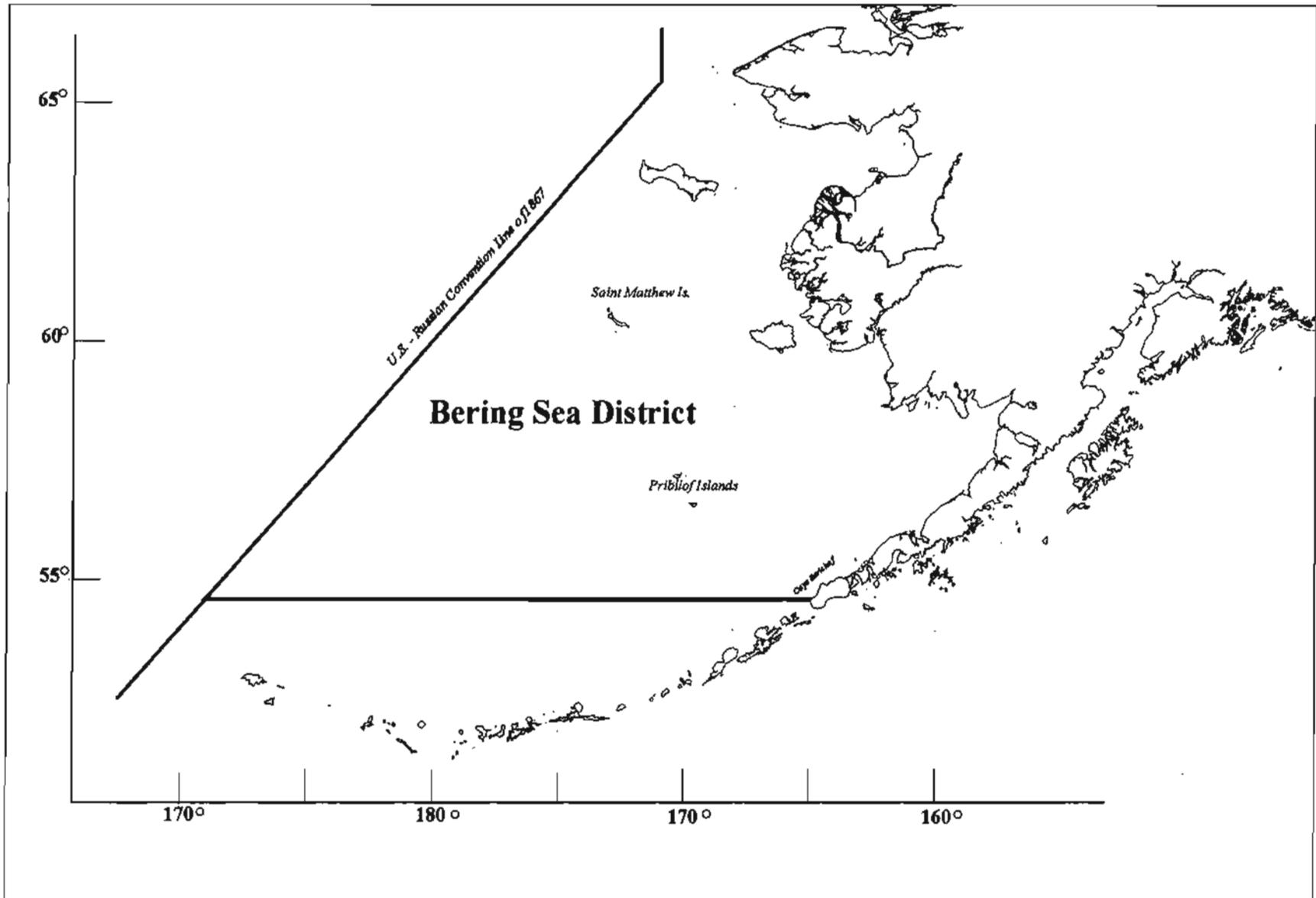


Figure 5-16. Bering Sea miscellaneous shellfish registration area for the harvest of snails.

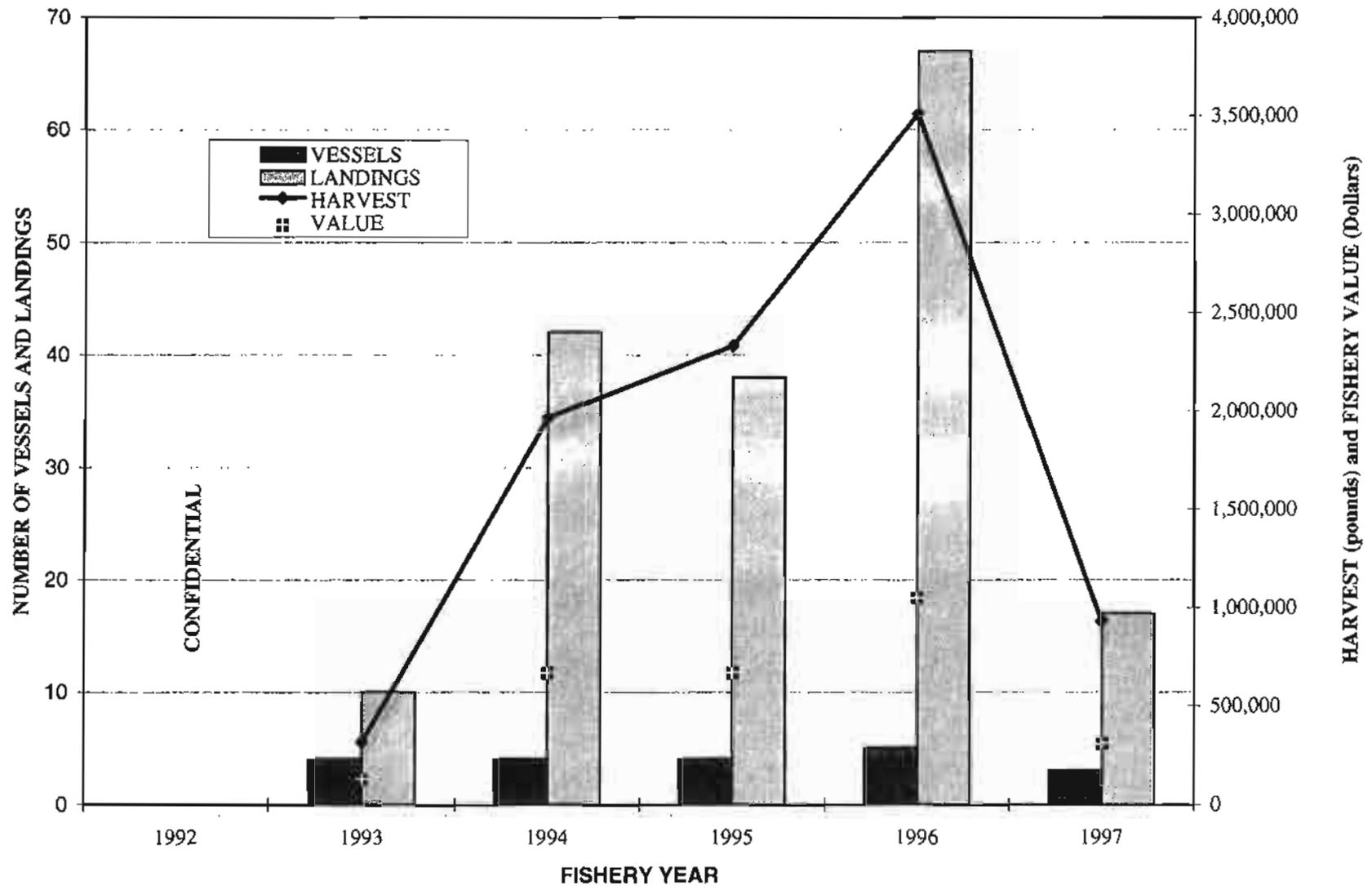


Figure 5-17. Bering Sea snail fishery number of vessels participating, landings, harvest, and exvessel fishery value, 1992 - 1997.

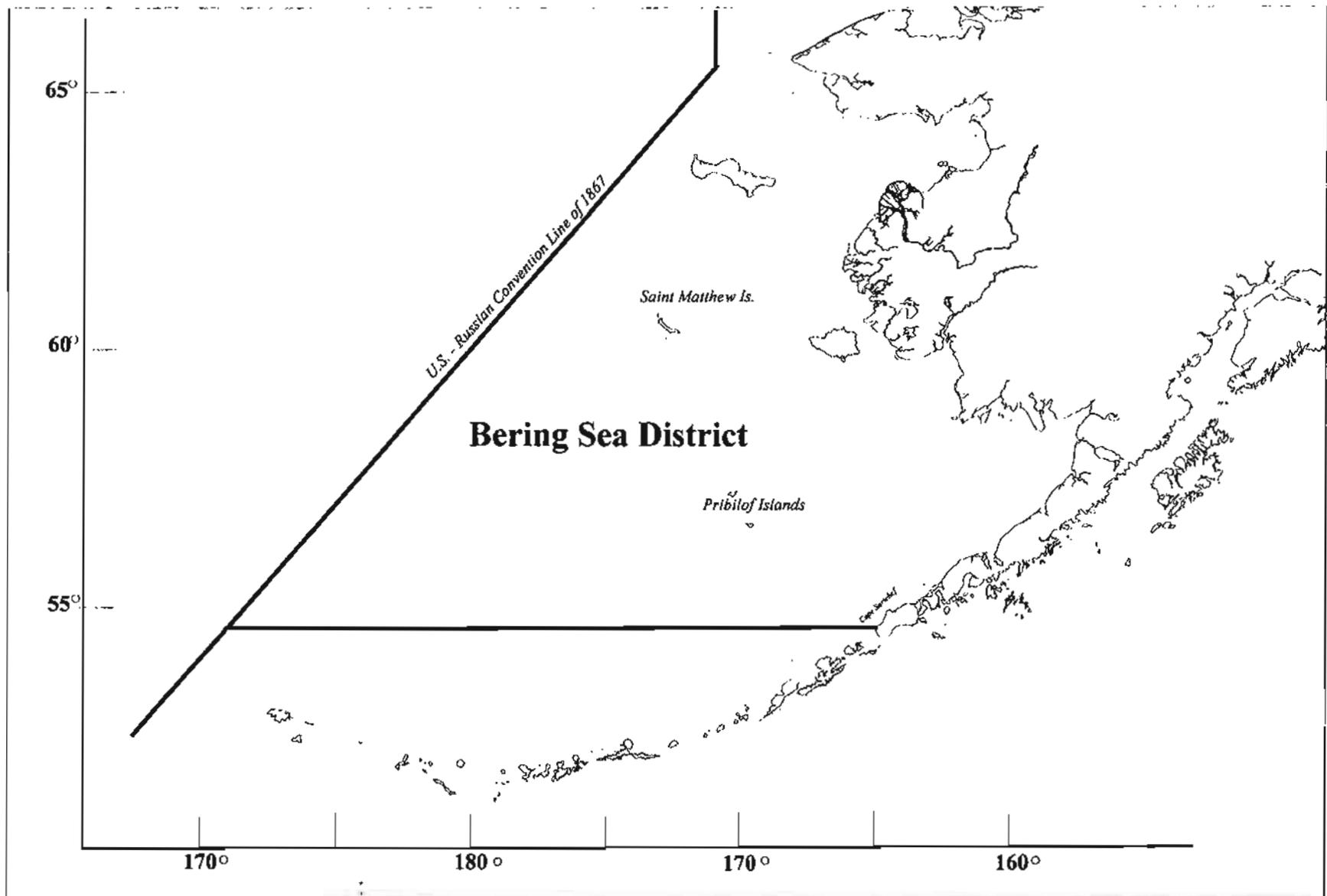


Figure 5-18. Bering Sea District for miscellaneous shellfish species.

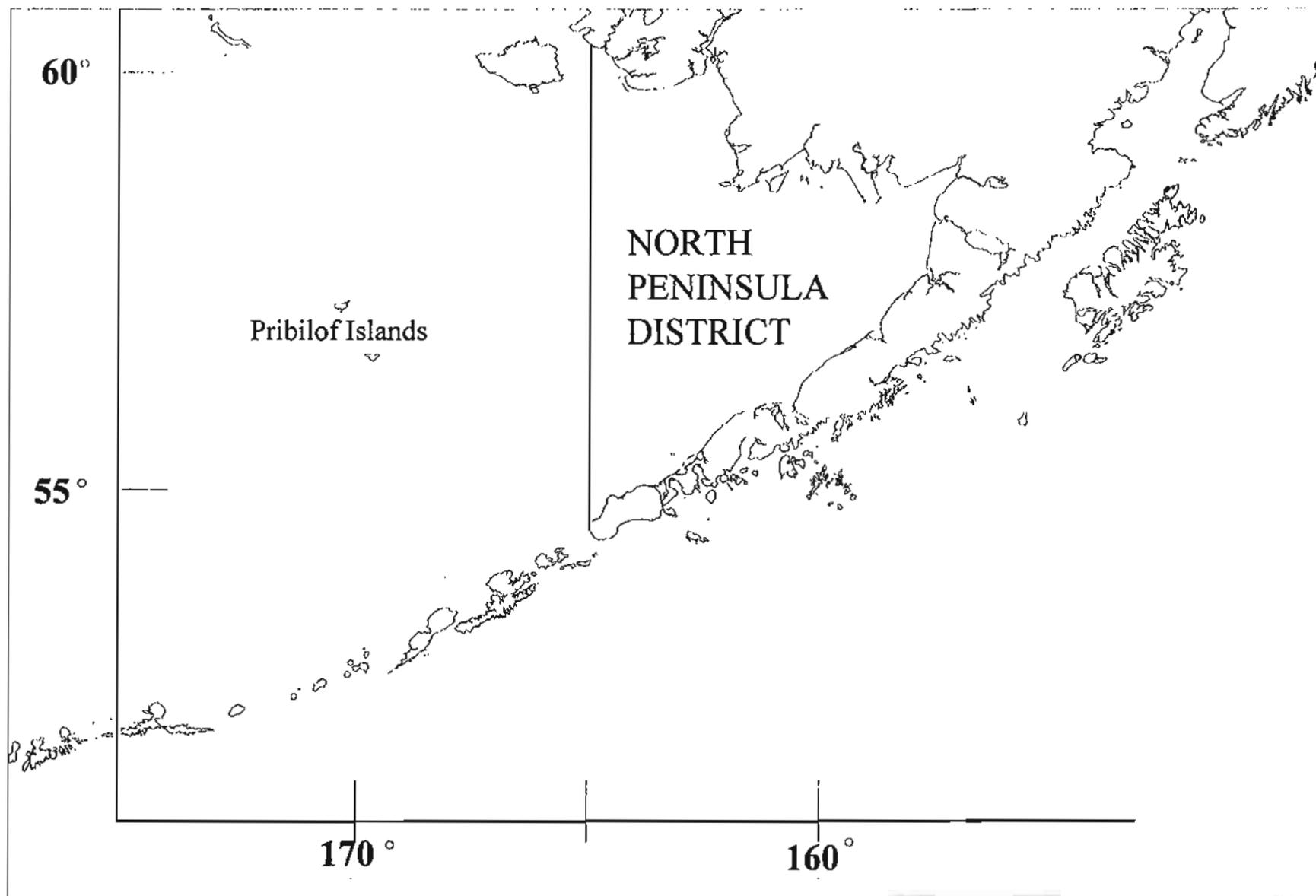


Figure 5-19. The North Peninsula District of the Shrimp and Dungeness Management Area J.

ANNUAL MANAGEMENT REPORT FOR THE SCALLOP FISHERIES OF THE
WESTWARD REGION, 1997/98

By

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July 1998

INTRODUCTION

Weathervane scallops *Patinopecten caurinus* in Alaska range from Southeastern Alaska to the Bering Sea. Scallops are found in elongated beds along the continental shelf. The majority of the commercial fishing effort occurs in 40-60 fathoms, although scallops are found to at least 125 fathoms (Tom Minio, personal communications).

Alaskan scallop populations have been evaluated for their commercial potential by both government research and private commercial exploratory cruises since the early 1950's. The Alaska commercial scallop fishery began in 1967 when 2 vessels explored the waters off Kodiak Island. In 1968, the first full year of fishing, 19 vessels (New England type scallop vessels, converted Alaskan crab vessels, salmon seiners, halibut long liners, and shrimp trawlers) entered the fishery (Kaiser 1986). Over time, the fleet has changed to one consisting of highly specialized vessels. The majority of the fleet now fish exclusively for weathervane scallops

The Alaska scallop fishery is managed by the Alaska Department of Fish and Game (ADF&G) under a federal Fishery Management Plan implemented August 1, 1996. ADF&G coordinates openings and closures with the Alaska Regional office of the National Marine Fisheries Service (NMFS) to achieve similar inseason measures in federal waters.

There are 9 scallop registration areas in Alaska (Figure 6-1). This report describes fisheries occurring in the Westward Region including registration areas K, M, O, Q, and R.

OBSERVER PROGRAM

An influx of scallop boats from the East Coast of the United States into the weathervane scallop fishery during the early 1990's and corresponding concerns about crab bycatch in the scallop fishery prompted ADF&G commissioner Rosier to declare the scallop fishery a high impact emerging fishery on May 21, 1993. This action required the department to close the fishery and implement an interim management plan prior to reopening the fishery. The interim management plan became effective June 27, 1993 and included an onboard observer program to monitor crab bycatch as well as collect biological and fishery based information on weathervane scallops

The management plan contained provisions for king and Tanner crab bycatch caps for most areas within the Westward Region. Caps were based on the same percentages for bycatch of crabs in groundfish fisheries around Kodiak. A bycatch cap of one percent of the surveyed crab population was applied in areas where a directed commercial crab fishery occurred in the same year. If an area did not open to commercial crab fishing, a cap of one-half of one percent was applied. With the exception of the Bering Sea, bycatch caps were based on crab population estimates derived from trawl surveys. In the Bering Sea, crab bycatch caps were

determined by historical bycatch rates in the scallop fishery. Four registration areas were established in the Westward Region including: Kodiak (K), Alaska Peninsula (M), Dutch Harbor (O), and Adak-Bristol Bay-Bering Sea (Q). Scallop Area R (Adak), was established at the March 1994 Board of Fish (BOF) meeting.

The weathervane scallop onboard observer program has been in place since July 1, 1993. Initial data collection efforts in 1993 and 1994 were aimed at collecting baseline information relative to scallop biology, and detailed examination of incidental crab bycatch. Data collection has evolved and expanded since 1993 to focus more on scallop biology and stock assessment in an effort to answer critical management questions. Efforts are underway to use observer collected data to estimate scallop abundance using a fishery based stock assessment model. The analysis of biological reference points based on historical scallop data has been updated using observer collected data. Ongoing work with scallop age analysis from shells collected by observers is expected to increase the department's understanding of population dynamics and fishery effects. Other data is collected to define the biological season, define the time period of highest quality and quantity of product, gain insights into scallop recruitment and maturity, estimate number and weight of discarded scallops, map scallop beds, determine extent of bottom area dredged, and calculate catch per unit effort (CPUE).

KODIAK REGISTRATION AREA

Historic Background

The Kodiak Registration Area, designated Area K, includes waters of the Pacific Ocean south of the latitude of Cape Douglas and east of the longitude of Cape Kumlik (Figure 6-2).

Commercial fishing for weathervane scallops in Alaska began in 1967 when 2 vessels explored the east and northeast parts of Kodiak Island, harvesting 778 pounds of scallop meats. During 1968, the first full year of fishing, 8 vessels harvested 734,084 pounds of scallop meats in the Kodiak Registration Area. The Kodiak scallop fishery peaked in 1970 when 7 vessels landed over 1.4 million pounds of scallop meats. Catches declined to zero harvest in 1977 and 1978. Since 1980, landings have fluctuated from a low of 46,971 pounds to a high of 689,402 pounds of scallop meats, with the exception of the 1995/96 season which was closed by federal emergency rule (Table 6-1).

Concern about the impact of scallop dredging on the crab resource dates from 1969 when the department closed the south end of Kodiak Island and Marmot Bay to scallop fishing by emergency order due to the observed high bycatch of king crab. Subsequently, the Board of Fisheries (BOF) made the closure permanent. During the early 1970's the regulatory season ending date was also changed to March 31 to protect king crab. In 1990, the BOF closed areas to scallop fishing that had previously been closed to non-pelagic trawls in order to protect depressed king and Tanner crab populations. This included Kodiak's Westside bays. Crab resources in the Kodiak Area remain depressed. The commercial Tanner crab fishery in

Kodiak failed to open in 1995 for the first time in 28 years. The king crab fishery has not opened since 1983.

1997/98 Fishery

The 1997/98 scallop fishing season was open from 12:00 noon July 1, 1997 through February 15, 1998 (Appendix A.1.). To facilitate distribution of fishing effort and crab bycatch limits, king crab districts as described in 5AAC 34.405 were applied.

Shelikof District. The Shelikof District of the Kodiak Registration Area includes all waters north of a line from the westernmost tip of Cape Ikolik to the southernmost tip of Cape Kilokak, west of a line from the northernmost tip of Inner Point to the southernmost tip of Afognak Point, west of 152° 30' W. long., in Shuyak Strait, and west of the longitude of the northernmost tip of Shuyak Island (152° 20' W. long.)

Initial Kodiak effort was concentrated in the Shelikof Strait. All vessels were required to carry observers who reported the scallop harvest, crab bycatch, and area fished to ADF&G three times weekly. An emergency order was issued closing the Shelikof District to scallop fishing at 12:00 noon on August 10, 1997 (Appendix A.2.). The guideline harvest range in the scallop management plan (0 - 400,000 pounds of shucked scallop meats), established by the Alaska Board of Fisheries for the Kodiak Area is based on the average harvest during the period 1986 - 1991. For this same time period the average harvest in the Shelikof was 260,000 pounds. The closure was prompted by concerns for localized depletion of scallop stocks in the Shelikof if fishing continued beyond the historic average of 260,000 pounds. End-of-season fish tickets tabulations totaled 258,346 pounds of shucked scallop meats. Based on observer reports, approximately 36,228 Tanners and 0 king crab were taken from a bycatch cap of 51,000 Tanners and 35 king crab. Approximately 4,233 Dungeness were taken as bycatch. No Dungeness bycatch cap has been established for the Shelikof District. After the Shelikof District closed on August 10 1997, fishing effort concentrated in the Alaska Peninsula Management Area.

Semidi District. The Semidi District of the Kodiak Registration Area includes all Pacific Ocean waters west of the longitude of Cape Kilokak and east of the longitude of Cape Kumlik.

No crab bycatch caps have been established for the Semidi Islands because the department does not conduct a Tanner crab survey in this area. The department closely monitors the scallop harvest and crab bycatch in-season to determine appropriate closure levels. The Semidi area remained open until February 15, 1998 when it closed by regulation although no effort occurred after December 10, 1997. Only one vessel fished the Semidi District during the 1997/98 season. Because less than three vessels fished, the data is considered confidential. However, the vessel operator has given the department written permission to

release his confidential fishing data. The scallop harvest in the Semidi District was approximately 6,000 pounds of scallop meats. Approximately 8,600 Tanner crab, 1 king crab, and 800 Dungeness were taken as bycatch.

Northeast District. The Northeast District of the Kodiak Registration Area includes all waters northeast of the longitude of Cape Barnabas, east of a line from the northernmost tip of Inner Point to the southernmost tip of Afognak Point, east of 152° 30' in Shuyak Strait, and east of the longitude of the northernmost tip of Shuyak Island (152° 20' W. long).

The 1997/98 scallop fishing season in the Northeast District was open from July 1, until November 19, 1997 when it closed by emergency order (Appendix A.3.). Scallopers did not begin fishing the Northeast District until mid-August, with most of the effort occurring in September and October. Three vessels harvested 95,858 pounds of scallop meats. Observer reports indicate approximately 13,000 Tanner crab taken as bycatch from a cap of 91,600 Tanners.

ALASKA PENINSULA REGISTRATION AREA

Historic Background

The Alaska Peninsula Registration Area, designated Area M, includes the waters of the Pacific Ocean west of the longitude of Cape Kumlik and east of the longitude of Scotch Cap Light, excluding the waters of the Bering Sea (Figure 6-3).

Closed areas include waters within three miles of shore and the offshore waters of Unimak Bight and around Mitrofanina Island. The Unimak closure was adopted in the early 1970's to protect king crab habitat. The Mitrofanina Island closure was adopted in the mid-1980's to protect Tanner crab populations.

Historic fishing effort for scallops in the Alaska Peninsula Registration Area has been sporadic. Most catch and effort information is confidential due to less than three vessels participating. The average scallop harvest for the 7 confidential years (1975, 1983, 1985, 1987, 1988, 1990, 1991) is 18,148 pounds. The highest harvest was in 1982 when six vessels landed 205,691 pounds of scallop meat (Table 6-2).

1997/98 Fishery

The 1997/98 fishery opened July 1, however no effort occurred in the Alaska Peninsula Registration Area until mid-August. The Alaska Peninsula remained open until February 15, 1998 when it closed by regulation. Preliminary bycatch estimates based on observer collected data indicate approximately 22,000 Tanner crab were taken from a bycatch cap of 45,300. Four vessels harvested 51,616 pounds of scallop meats.

BERING SEA REGISTRATION AREA

Historic Background

The Bering Sea scallop registration area, designated Area Q, has a southern boundary at a line from the latitude of Cape Sarichef to 171° W. long, north to 55° 30' and west to the U.S. - Russia Convention Line of 1867 and encompasses all waters of the Bering Sea north of this line (Figure 6-4). Area Q was established as the Bering Sea Area by the BOF in 1994. Prior to this change Area Q included Adak, Area R.

Closed waters are shown in figure 6-4. The closed area around the Pribilof Islands, described as the Pribilof Island area habitat conservation zone was established to protect blue king crab. The closed area between 162°00' W. long. And 164°00' W. long. and between 56°00' N. lat. and 57° 00' N. lat. was established as a red king crab savings area. A portion of this area between 56°00' N. lat. And 56°10' is described as the red king crab savings subarea. The closed area between 160° 00' W. long. and 162° 00' W. long. and south of 58° 00' N. lat. was established as a halibut savings area.

Department of Fish and Game records indicate scallops were first harvested from the Bering Sea in 1987, and then again in 1991 (Table 6-3). During those years fewer than three vessels participated, consequently catch and effort information is confidential. Additional landings were made each year between 1993 and 1997/98 with the exception of 1995/96 when the season was closed.

Prior to 1993, the Bering Sea scallop season was open to fishing year around. Declaring the scallop fishery a high impact emerging fishery required the department to close the fishery and implement an interim management plan prior to reopening. Five vessels were fishing scallops in the Bering Sea when the department closed the season on May 24, 1993. The Bering Sea reopened June 1, 1993 under conditions of a permit which required an onboard observer. The statewide scallop observer program was implemented on July 1, 1993. A season change occurred in 1993 establishing the season as July 1 through February 15.

1997/98 Fishery

The 1997/98 fishery opened July 1, 1997. Two vessels fished the Bering Sea Management Area. Because less than three vessels participated the data is considered confidential, however both vessel operators provided the department with written permission allowing the release of their confidential data. The two vessels harvested 97,002 pounds of scallop meats. Based on observer reports, an estimated 187,000 *C. opilio* and 28,000 *C. bairdi* were taken as bycatch from a cap of 172,000 *C. opilio* and 238,000 *C. bairdi*. The season was closed by emergency order Monday, August 11, 1997 (Appendix A.4.).

DUTCH HARBOR REGISTRATION AREA

Historic Background

The Dutch Harbor Registration Area, designated Area O, includes the waters west of the longitude of Scotch Cap Light, east of the longitude of 171° W. long., and south of the latitude of Cape Sarichef. The southern boundary extends 200 miles seaward from the territorial sea baseline (Figure 6-5). Closed waters were established as a protective measure for crab nursery areas

Alaska Department of Fish and Game records show the first harvest of weathervane scallops from the Dutch Harbor Registration Area took place in 1982 when 5 vessels landed 62,105 pounds of scallop meats (Table 6-4). The average annual catch from 1985 through 1992 was 201,383 pounds of scallop meats. Prior to 1993, the Dutch Harbor Management Area scallop season was open to fishing year around.

During the 1993/94 fishing season three vessels landed 39,346 pounds of scallop meats. Catch declined further during the 1994/95 season when 1,931 pounds of scallop meats were landed by three vessels. During the 1995/96 season only state waters were open to scallop fishing. Federal (EEZ) waters were closed by federal emergency rule. Catch and effort information is confidential because less than three vessels participated in the fishery. No vessels participated in the fishery during the 1996/97 fishing season.

1997/98 Fishery

The 1997/98 fishery opened July 1, 1997. Participation in this fishery was limited to one vessel which began fishing in mid-August. The Dutch Harbor area was closed by emergency order on August 25, 1997 based on the projected achievement of the 10,700 Tanner crab bycatch cap (Appendix A.5.). Because less than three vessels participated in this fishery the data is considered confidential. However the vessel operator provided the department with written permission allowing the release of the confidential data. Based on observer reports the preliminary Tanner crab bycatch estimate was 12,196 crabs. One king crab was caught. The fishery yielded 5,790 pounds of scallop meats.

ADAK REGISTRATION AREA

Historical Background

The Adak Registration Area, designated Area R, includes all of the Bering Sea waters west of 171° W. Longitude and east of the U.S. - Russia Convention Line of 1867 and south of 55° 30' N. latitude (Figure 6-6). At the March 1994 BOF meeting, Area R (Adak) was

established as a separate registration area. Prior to that time it was included in Area Q (Adak-Bristol Bay-Bering Sea)

The Petrel Bank, north of 51° 30' N. latitude, south of 54° 30' N. latitude, west of 179° W. longitude and east of 179° E. longitude was closed by emergency order on March 21, 1991 due to concerns about king crab bycatch in the *Chlamys* (pink scallop) fishery. On November 1, 1991 before the initial emergency order expired, a second emergency order was issued. The area remained closed until June 1, 1994 providing time for the department to bring the situation to the attention of the BOF. In 1993 the BOF made the closure permanent.

Alaska Department of Fish and Game records indicate three years of reported harvest, the first in 1979 then again in 1992 and 1995. Catch and effort information remains confidential for those years because less than three vessels participated in any year.

Little is known about the scallop population in Area R, but it is thought to be limited. The continental shelf adjacent to the Aleutian Islands is narrow, with little weathervane scallop habitat.

1997/98 Fishery

The 1997/98 fishery opened July 1, 1997 and closed by regulation on February 15, 1998. No vessels participated in this fishery.

LITERATURE CITED

- Kaiser, R. J. 1986. Characteristics of the Pacific weathervane scallop (*Pecten* [*Patinopecten*] *caurinus*, Gould 1850) fishery in Alaska, 1967 - 1981. Alaska Department of Fish and Game. Kodiak, Alaska.

Table 6-1. Historic commercial catch, effort, and value of weathervane scallops, Kodiak Management Area, 1967 through 1997/98.

Year	Number Vessels	Number Landings ^a	Commercial Catch (pounds) ^b	Average Landings (pounds) ^b	Average Price/Lb.	Est. Value Ex-Vessel (dollars)	Number Tows
1967 ^c	2	6	778	130	0.70	545	-
1968 ^c	8	89	734,084	8,248	0.85	623,971	-
1969	11	86	1,012,860	11,777	0.85	861,000	-
1970	7	102	1,417,612	13,898	1.00	1,500,000	-
1971	5	48	841,211	17,525	1.05	883,000	-
1972	5	68	1,038,793	15,276	1.15	1,200,000	-
1973	4	42	935,705	22,279	1.20	1,123,000	-
1974	3	14	147,945	10,568	1.30	192,000	-
1975	3	29	294,142	10,143	1.40	412,000	-
1976	1	6	75,245	12,541	1.59	119,000	-
1977	0	0	0	0	0	0	-
1978	0	0	0	0	0	0	-
1979	1	4	24,826	6,206	2.78	69,000	-
1980 ^c	7	33	355,200	10,763	3.60	1,278,720	-
1981	15	60	424,394	7,073	4.00	1,698,000	-
1982	8	62	435,645	7,026	3.25	1,416,000	-
1983	4	24	147,747	6,156	5.00	739,000	-
1984	7	37	309,502	8,365	4.00	1,238,000	-
1985	3	10	46,971	4,697	4.00	188,000	-
1986	5	21	180,600	8,600	4.25	767,550	-
1987	3	25	253,451	10,138	3.45	874,406	-
1988	3	21	195,811	9,324	3.68	720,584	-
1989	5	29	242,557	8,364	3.87	938,696	-
1990	7	73	689,497	9,445	3.43	2,364,974	10,950
1991	4	61	514,348	8,432	3.82	1,964,809	12,884
1992	3	44	389,854	8,860	3.96	1,543,822	8,328
1993 ^{d,e}	4	16	88,279	5,517	5.15	454,637	1,708
1993/94	10	48	318,361	6,633	5.15	1,639,559	7,060
1994/95	10	32	355,628	11,113	5.79	2,052,543	6,449
1995/96				Season Closed			
1996/97	4	13	268,545	20,657	6.30	1,691,833	2,760
1997/98	5	14	360,339	25,739	6.50	2,342,203	4,757

^aPrior to 1995/96: number of landings = number of fish tickets.

After 1995/96: number of landings = number of deliveries (off-loads). Fish tickets required weekly.

^bPounds of shucked scallop meats.

^cUnshucked deliveries were converted to shucked meats using a 10% conversion factor.

^dJanuary 1 - June 30 time period.

^eIncludes harvest from exploratory fishery.

Table 6-2. Historic commercial catch, effort and value of weathervane scallops, Alaska Peninsula Management Area, 1975 through 1997/98.

Year	Number Vessels	Number Landings ^a	Commercial Catch (pounds) ^b	Average Landings (pounds) ^b	Average Price/Lb	Est. Value Ex.-Vessel (dollars)	Number Tows
1975				Confidential			
1976				No Fishing			
1977				No Fishing			
1978				No Fishing			
1979				No Fishing			
1980				No Fishing			
1981				No Fishing			
1982	6	20	205,691	10,284	3.35	689,064	-
1983				Confidential			
1984				No Fishing			
1985				Confidential			
1986				No Fishing			
1987				Confidential			
1988				Confidential			
1989				No Fishing			
1990				Confidential			
1991				Confidential			
1992				No Fishing			
1993 ^c	1	1	19,020	19,020	5.15	97,953	208
1993/94	6	7	112,087	16,012	5.15	577,248	928
1994/95	7	11	65,282	5,935	5.79	377,983	1,006
1995/96				Closed			
1996/97	2 ^d	2	12,560	6,280	6.30	79,128	185
1997/98	3	6	51,616	8,603	6.50	335,504	1,054

^aPrior to 1995/96: number of landings = number of fish tickets.

After 1995/96: number of landings = number of off-loads. Fish tickets required weekly

^bPounds of shucked scallop meats.

^cJanuary 1-June 30 time period.

^dVessel operators released confidential data.

Table 6-3. Historic commercial catch, effort and value of weathervane scallops, Bering Sea Management Area, 1987 through 1997/98.

Year	Number Vessels	Number Landings ^a	Commercial Catch (pounds) ^b	Average Landing (pounds) ^b	Average Price/Lb	Est. Value Ex-Vessel (dollars)	Number Tows
1987				Confidential			
1988				No Reported Catch			
1989				No Reported Catch			
1990				No Reported Catch			
1991				Confidential			
1992				No Reported Catch			
1993 ^c	6	23	629,399	27,365	NA	NA	3,792
1993/94	9	16	284,414	17,776	NA	NA	3,578
1994/95	8	29	505,439	17,429	NA	NA	6,619
1995/96				Season Closed			
1996/97	1 ^d	2	150,295	75,147	NA	NA	952
1997/98	2 ^d	5	97,002	19,400	7.05	683,864	1,276

^aPrior to 1995/96: number of landings = number of fish tickets.

After 1995/96: number of landings=number of deliveries (off-loads). Fish tickets required weekly.

^bPounds of shucked scallop meats.

^cJanuary 1- June 30.

^dVessel operators released confidential data.

Table 6-4. Historic commercial catch, effort, and value of weathervane scallops, Dutch Harbor Management Area, 1982 through 1997/98.

Year	Number Vessels	Number Landings ^a	Commercial Catch (pounds) ^b	Average Landings (pounds) ^b	Average Price/Lb.	Est. Value Ex-Vessel (dollars)	Number Tows
1982	5	8	62,105	7,763	\$3.11	193,147	NA
1983			No Reported Catch				
1984			No Reported Catch				
1985			Confidential				
1986	5	37	406,642	10,990	\$3.50	1,423,247	8,752
1987			Confidential				
1988			Confidential				
1989			Confidential				
1990			Confidential				
1991			Confidential				
1992			Confidential				
1993/94	3	6	39,346	6,558	NA		572
1994/95	3	3	1,931	644	NA		52
1995/96			Confidential/State Water Only				
1996/97			No Reported Fishing				
1997/98	1 ^c	1	5,790	5,790	\$7.05	40,819	105

^aPrior to 1995/96: number of landings = number of fish tickets.

After 1995/96: number of landings=number of deliveries (off-loads). Fish tickets required weekly.

^bPounds of shucked scallop meats.

^cVessel operator released confidential data.

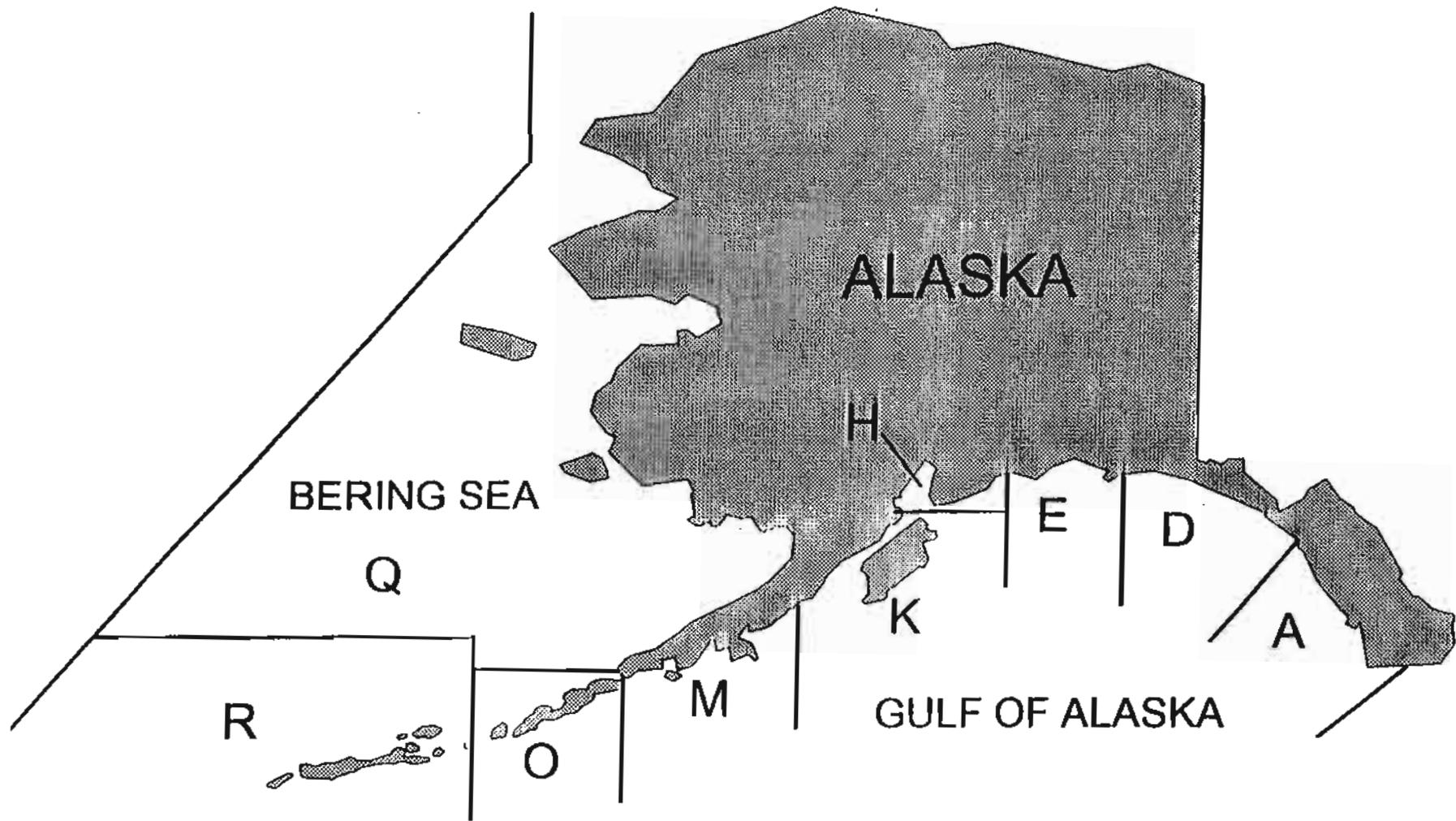


Figure 6-1. Statewide scallop fishing registration areas.

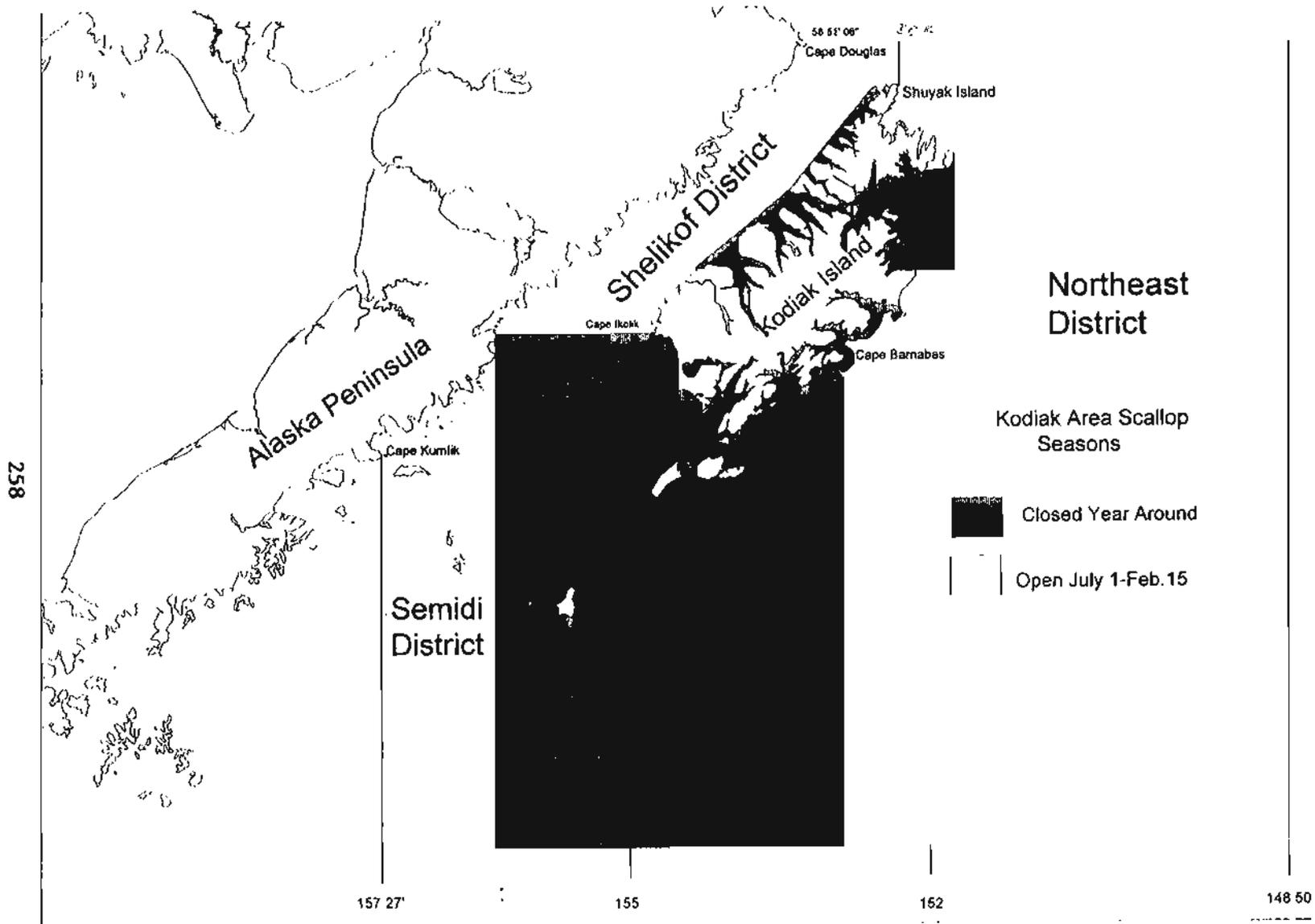


Figure 6-2. Kodiak scallop fishing registration area and closed waters.

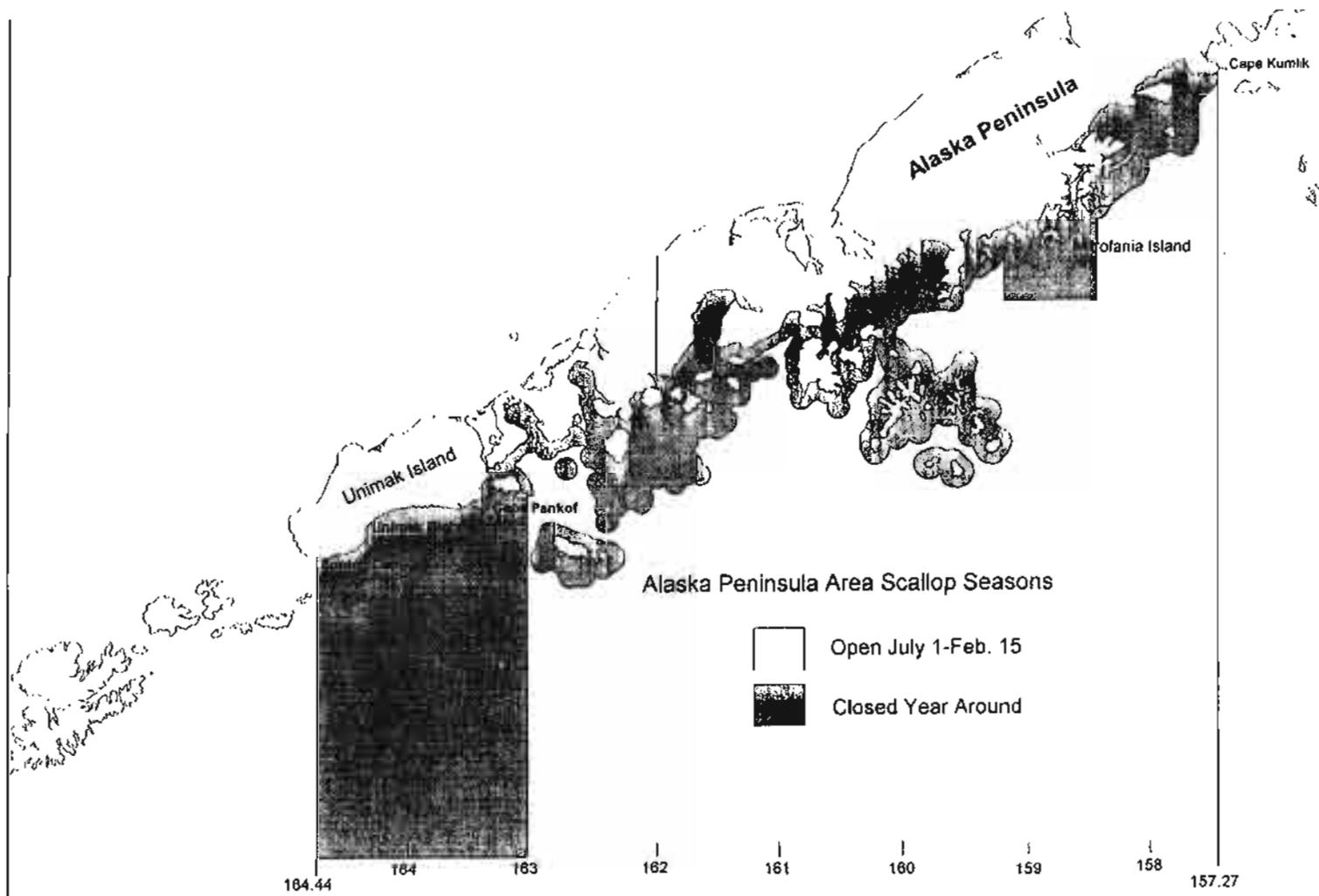


Figure 6-3. Alaska Peninsula scallop fishing registration area and closed waters.

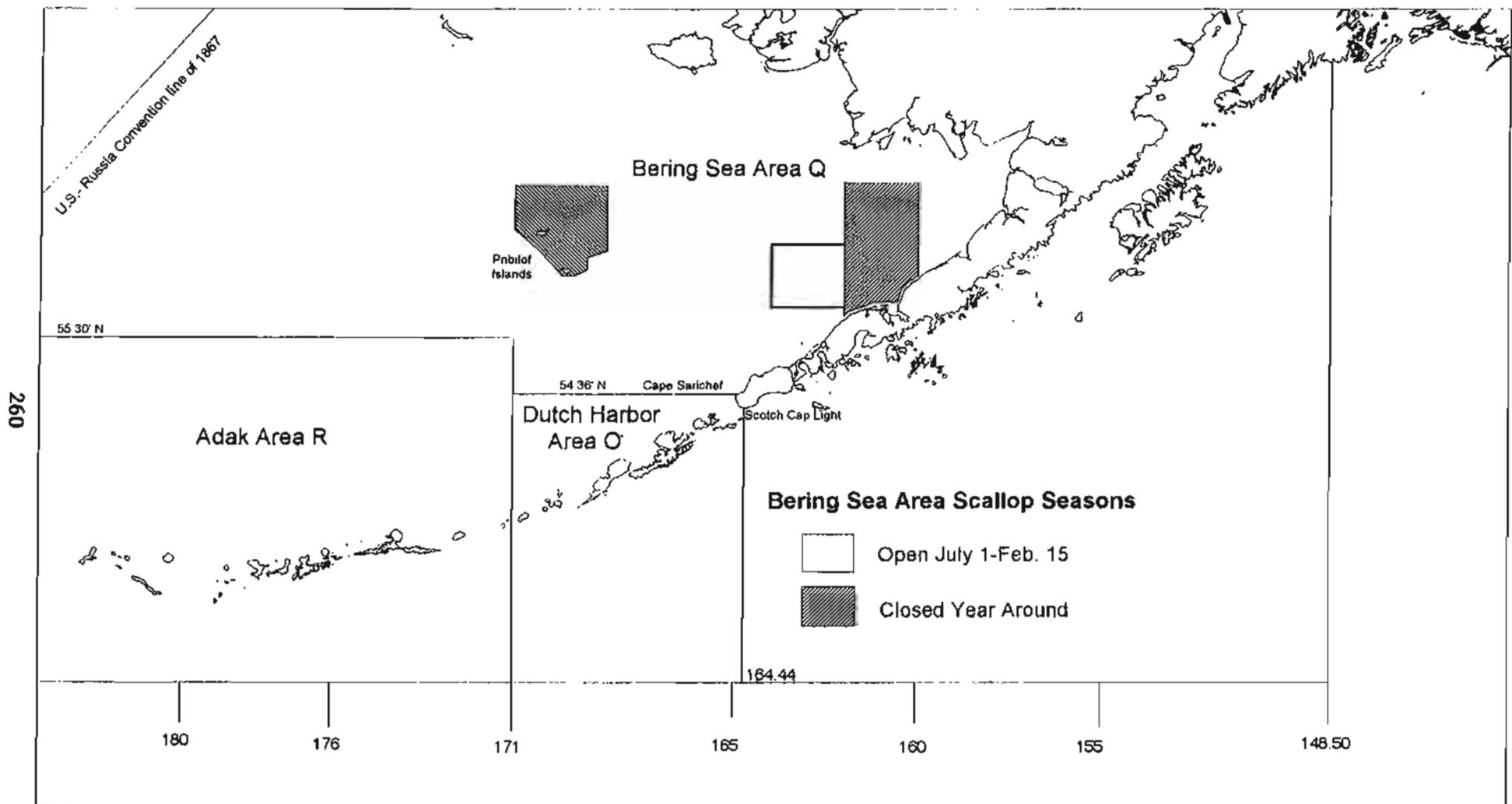


Figure 6-4. Bering Sea scallop fishing registration area and closed waters.

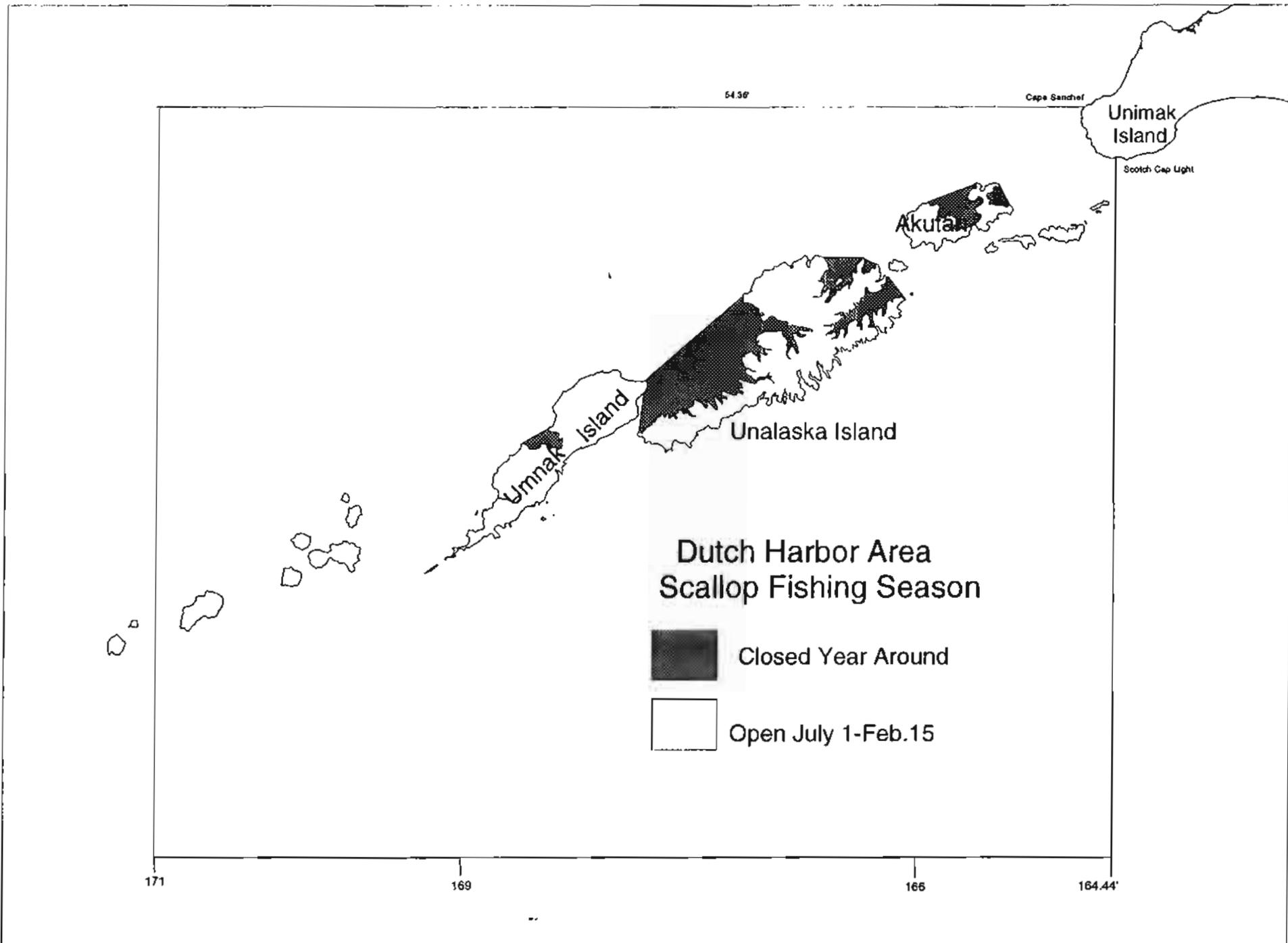


Figure 6.5 Dutch Harbor scallop fishing registration area and closed waters.

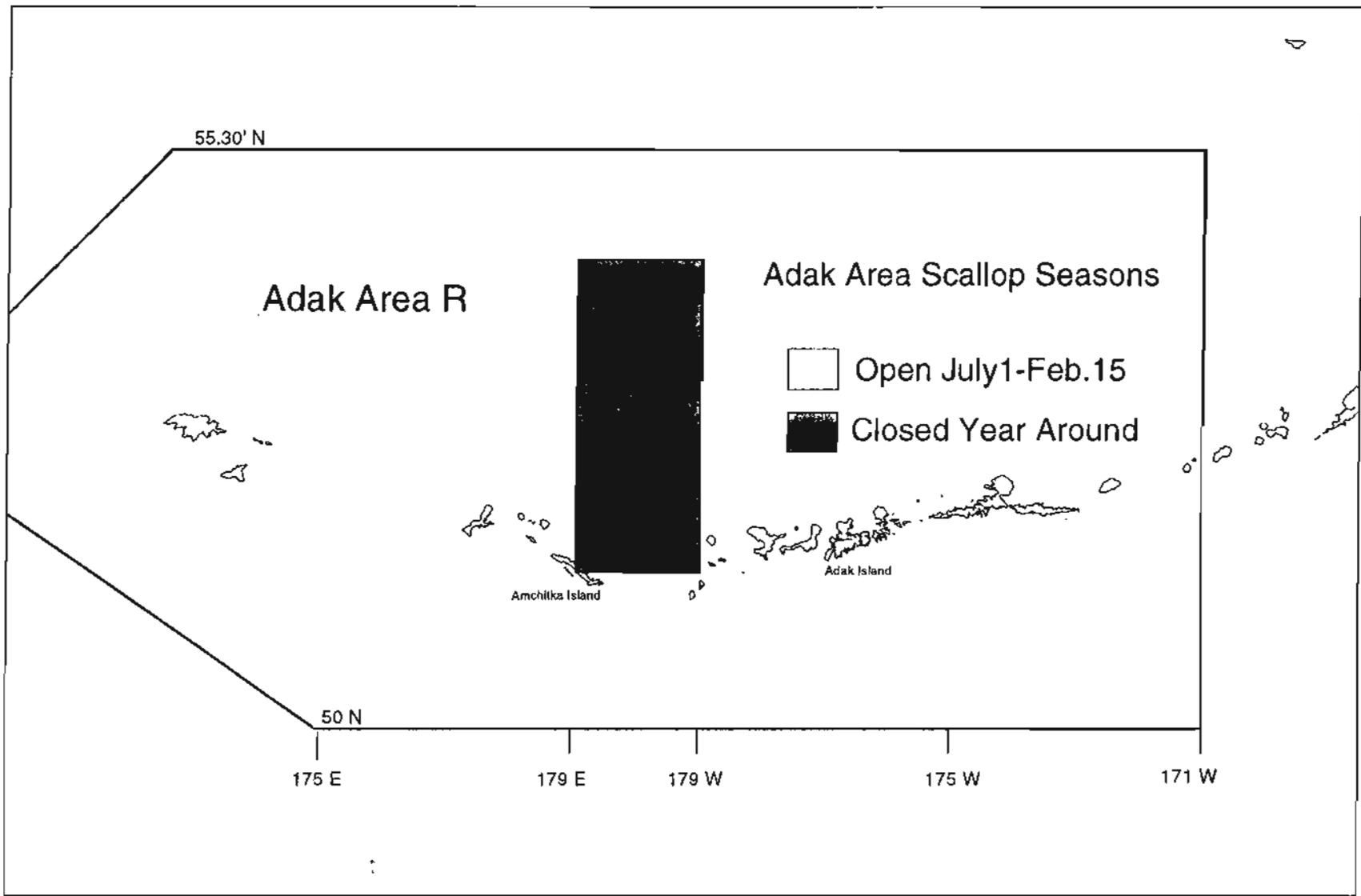


Figure 6-6. Adak scallop fishery registration area and closed waters.

Appendix A.1. Emergency order issued for the weathervane scallop fishery, Westward Region, 1997.

EMERGENCY ORDER NO.
4-S-03-97

Issued at: Kodiak, Alaska
June 10, 1997

EFFECTIVE DATE:
July 1, 1997
12:01 AM

Expiration Date: February 15, 1998
11:59 PM

EXPLANATION:

This emergency order delays the Kodiak (K), Alaska Peninsula (M) Bristol Bay-Bering Sea (Q), Dutch Harbor (O) and Adak (R) registration areas to Weathervane scallop fishing until 12:00 noon on July 1, 1997.

REGULATION:

5 AAC 38.420 FISHING SEASONS FOR SCALLOPS is amended to read.

5 AAC 38.420. FISHING SEASONS FOR SCALLOPS. (a) In scallop registration areas K, M, O, Q and R, Weathervane scallops may be taken from 12:00 noon July 1 through February 15.

JUSTIFICATION:

Scallop fisheries in Alaska are managed by the Alaska Department of Fish and Game under the auspices of a Fishery Management plan (FMP) developed by the North Pacific Fisheries Management Council (NPFMC). State regulations govern fisheries within the Alaska territorial sea. Federal regulations which are generally consistent with state regulations govern fisheries in the exclusive economic zone (EEZ).

One point that differs between state and federal regulation is the starting time of the fishery opening. Current state regulations begin the fishery at 12:01 AM on July 1 while federal regulation sets the opening time at 12:00 noon on July 1.

A delay in opening state waters to scallop fishing until 12:00 noon July 1, 1997 will provide for a concurrent opening of both state and federal waters. This will aid in enforcement of regulations and an orderly start to the fishery.

-Continued-

Therefore, the Territorial waters of Alaska within the registration areas K, M, O, Q and R will open to Weathervane scallop fishing at 12:00 noon July 1, 1997.

DISTRIBUTION

This emergency order is distributed to those individuals and organizations maintained on a list in the Westward Region Shellfish office, 211 Mission Road, Kodiak, Alaska.

Appendix A.2. Emergency Order issued for the weathervane scallop fishery, Kodiak Management Area, 1997.

EMERGENCY ORDER NO.
4-S-04-97

Issued at: Kodiak, Alaska
August 6, 1997

EFFECTIVE DATE: 12:00 Noon
August 10, 1997

Expiration Date: February 15, 1998
11:59 PM

EXPLANATION:

This emergency order closes the Shelikof District of the Kodiak Area (K), registration area to Weathervane scallop fishing after 12:00 noon on Sunday, August 10, 1997.

REGULATION:

The provisions of Emergency Order 4-S-03-97 are superseded to read:

5 AAC 38.420. FISHING SEASONS FOR SCALLOPS. (a) In scallop registration areas K, M, O, Q, and R, Weathervane scallops may be taken from 12:00 noon July 1 through February 15.

(b) except from 12:00 noon, July 1 through 12:00 noon August 10 in the Shelikof District of the Kodiak Area as described in 5 AAC 34.405(e).

JUSTIFICATION:

The 1997 fishing season opened July 1. Through August 3, 1997 there has been an estimated harvest of 223,000 pounds of shucked meats taken by 4 fishing vessels. Effort has concentrated in the Shelikof Straits. Scallop catch rates and crab bycatch have been monitored by 100% observer coverage and relayed to ADF&G three times a week. Tanner crab bycatch has been moderate with a total of approximately 29,000 crabs taken through August 3, 1997. The limit as announced by ADF&G news release and published in the federal register is 51,000 Tanner crab.

Scallop fisheries in Alaska are managed jointly by the Alaska Department of Fish and Game and National Marine Fisheries Service. The guideline harvest range in the scallop management plan, (0-400,000 pounds of shucked scallop meats), established by the Alaska Board of Fisheries for the Kodiak Area is based on the average harvest during the period 1986 - 1991. For this same time period the average harvest in the Shelikof has

-Continued-

been 260,000 pounds. The department is concerned for localized depletion of the scallop stocks in the Shelikof if the fishing continues beyond the historic average of 260,000 pounds.

Closing the fishery will allow the fleet to explore a fishery in other known scallop beds in the Kodiak area. This will allow a fishery of up to 140,000 pounds of shucked meats prior to a closure of the Kodiak area.

Catch rates started at 102 pounds of shucked scallop meats per tow and are currently at 84 pounds of shucked scallop meats per pound.

Based on current scallop harvest rates, 260,000 pounds of shucked scallop meats will be harvested by Sunday, August 10. Therefore, to avoid localized depletion, the Shelikof Straits portion of the Kodiak Area as described in 5 AAC 34.405 (e) will close to scallop fishing at 12:00 noon on Sunday, August 10, 1997.

DISTRIBUTION

This emergency order was distributed to those individuals and organizations maintained on a list in the Westward Region Shellfish office, 211 Mission Road, Kodiak, Alaska.

Appendix A.3. Emergency order issued for the weathervane scallop fishery, Kodiak Management Area, 1997.

EMERGENCY ORDER NO.
4-S-15-97

Issued at Kodiak, Alaska
November 21, 1997

EFFECTIVE DATE: 6:00 PM
November 19, 1997

Expiration Date: February 15, 1998
11:59 PM

EXPLANATION:

This emergency closes the Northeast District of the Kodiak Area (K) registration area to Weathervane scallop fishing after 6:00 PM on Wednesday, November 19, 1997.

REGULATORY LANGUAGE:

The provisions of Emergency Order 4-S-06-97 are superseded to read:

- 5 AAC 38.420 FISHING SEASONS FOR SCALLOPS.** (a) In Scallop Registration Areas K, M, Q, O, and R, Weathervane scallops may be taken from 12:00 noon July 1 through February 15 with the following exceptions:
- (b) from 12:00 noon, July 1 through 12:00 noon August 10 in the Shelikof District of the Kodiak area as described in 5AAC 34.405(e)
 - (c) from 12:00 noon July 1 through 6:00 PM August 11 in the Bering Sea Registration Area (Q) as described in 5AAC 34.800 and 5AAC 34.900, and
 - (d) from 12:00 noon July 1 through 6:00 PM August 25 in the Dutch Harbor Registration Area (O) east of 171° West longitude as described in 5AAC 34.600.
 - (e) from 12:00 noon, July 1 through 6:00 PM November 19 in the Northeast District of the Kodiak Area east of a line extending 180° from the easternmost tip of Cape Barnabas at 152°52' W. longitude, east of a line from the northernmost tip of Inner Point to the southernmost tip of Afognak Point, east of 152°30' W. longitude in Shuyak Strait and east of the longitude of the northernmost tip of Shuyak Island (152°20' W. longitude).

-Continued-

JUSTIFICATION:

The 1997 Weathervane scallop fishery season opened July 1, 1997 under joint management of the Alaska Department of Fish and Game and the National Marine Fisheries Service. Scallop catch rates and crab bycatch have been monitored by 100% observer coverage and relayed to ADF&G three times a week. The scallop management plan established a guideline harvest range in the Kodiak Management Area of 0 to 400,000 pounds of shucked scallop meats. No guideline harvest range has been established for the Northeast District. During the period 1986-1996, the average harvest in the Northeast District has been 78,000 pounds.

Participation in the Northeast District of the Kodiak Registration began on August 11. Through November 17, 1997, there has been an estimated harvest of 96,000 pounds of shucked meats taken by 3 fishing vessels, well in excess of the average harvest. Catch rates peaked in early September and have declined steadily. Tanner crab bycatch has been moderate with a total of approximately 13,000 crabs taken through November 17, 1997. The limit announced by ADF&G news release and published in the federal register is 91,600 Tanner crabs.

The department is concerned for localized depletion of the scallop stocks in the Northeast District. Therefore, the area east of a line extending 180° from the easternmost tip of Cape Barnabas at 152°52'W. longitude, east of a line from the northernmost tip of Inner Point to the southernmost tip of Afognak Point, east of 152°30'W. longitude in Shuyak Strait, and east of the longitude of the northernmost tip of Shuyak Island (152°20'W. longitude) will close to scallop fishing at 6:00PM Tuesday, November 18, 1997.

DISTRIBUTION:

This emergency order was distributed to those individuals and organizations maintained on a list in the Westward Region office of the Department of Fish and Game, 211 Mission Road, Kodiak, Alaska.

Appendix A.4. Emergency Order issued for the weathervane scallop fishery, Bering Sea Management Area, 1997.

EMERGENCY ORDER NO.
4-S-05-97

Issued at: Kodiak, Alaska
August 6, 1997

EFFECTIVE DATE: 6:00PM
August 11, 1997

Expiration Date: February 15, 1998
11:59 PM

EXPLANATION:

This emergency order closes all waters of the Bering Sea Area (Q) registration area to Weathervane scallop fishing after 6:00PM on Monday, August 11, 1997.

REGULATORY LANGUAGE:

The provisions of Emergency Order 4-S-04-97 are superseded to read:

- 5 AAC 38.420. FISHING SEASONS FOR SCALLOPS. (a) In scallop registration areas K, M, O, Q, and R, Weathervane scallops may be taken from 12:00 noon July 1 through February 15.
- (b) except from 12:00 noon, July 1 through 12:00 noon August 10 in the Shelikof District of the Kodiak Area as described in 5 AAC 34.405(e).
- (c) except from 12:00 noon July, 1 through 6:00 PM August 11 in the Bering Sea Registration Area (Q) as described in 5AAC34.800 and 5AAC34.900.

JUSTIFICATION:

The 1997 Weathervane scallop fishery season opened July 1, 1997. During the course of the fishery a total of 2 vessels registered and participated. Scallop catch rates and crab bycatch have been monitored by 100% observer coverage and relayed to ADF&G on a weekly basis.

In a news release on August 5, 1997 the department released information collected by onboard observers indicating the *C. opilio* Tanner crab bycatch was excessive, and exceeded 100,000 crabs. The established *C. opilio* Tanner crab bycatch level for the Bering Sea scallop fishery is set at 172,000 crab. The ratio of *C. opilio* catch per unit effort to scallop catch per unit effort was two crabs per pound of shucked scallop meats.

-Continued-

In previous fisheries rates of less than one crab per pound of shucked scallop meats were not exceeded.

The most recent observer reports through Sunday, August 10, 1997 indicate the accumulative *C. opilio* Tanner crab bycatch at 181,000 crabs. The limit as announced by ADF&G news release and published in the federal register is 172,000 *C. opilio* Tanner crab.

Therefore, the Bering Sea Area Scallop Registration Area (Q) as described in 5AAC 34.800 and 5AAC 34.900 will close to scallop fishing at 6:00PM on Monday, August 11, 1997.

DISTRIBUTION

This emergency order was distributed to those individuals and organizations maintained on a list in the Westward Region Shellfish office, 211 Mission Road, Kodiak, Alaska.

Appendix A.5. Emergency Order issued for the weathervane scallop fishery, Dutch Harbor Management Area, 1997.

EMERGENCY ORDER NO.
4-S-06-97

Issued at Dutch Harbor, Alaska
August 25, 1997

EFFECTIVE DATE: 6:00 PM
August 25, 1997

Expiration Date: February 15, 1998
11:59 PM

EXPLANATION:

This emergency closes all waters of the Dutch Harbor Area (O) registration area to Weathervane scallop fishing after 6:00 PM on Monday August 25, 1997.

REGULATORY LANGUAGE:

The provisions of Emergency Order 4-S-05-97 are superseded to read:

- 5 AAC 38.420 FISHING SEASONS FOR SCALLOPS.** (a) In Scallop Registration Areas K, M, Q, O, and R, Weathervane scallops may be taken from 12:00 noon July 1 through February 15,
- (b) except from 12:00 noon, July 1 through 12:00 noon August 10 in the Shelikof District of the Kodiak area as described in 5AAC 34.405(e),
 - (c) except from 12:00 noon July 1 through 6:00 PM August 11 in the Bering Sea Registration Area (Q) as described in 5AAC 34.800 and 5AAC 34.900, and
 - (d) except from 12:00 noon July 1 through 6:00 PM August 25 in the Dutch Harbor Registration Area (O) east of 171° West longitude as described in 5AAC 34.600

JUSTIFICATION:

The 1997 Weathervane scallop fishery season opened July 1, 1997. Participation in the Dutch Harbor Registration Area (O) fishery began in mid-August. During the course of the fishery one vessel registered and participated. The Tanner crab bycatch limit as announced by ADF&G news release and published in the federal register is 10,700 Tanner crab.

Scallop catch rates and crab bycatch have been monitored through 100% onboard observer coverage and relayed to ADF&G three times a week. Based on the recent observer reports, the allowable bycatch of Tanner crab will be reached on August 25.

-Continued-

Therefore, the Dutch Harbor Scallop Registration Area (O) east of 171° West longitude as described in 5AAC 34.600 will close to scallop fishing at 6:00 PM on Monday, August 25, 1997.

DISTRIBUTION:

This emergency order was distributed to those individuals and organizations maintained on a list in the Westward Region office of the Department of Fish and Game, 211 Mission Road, Kodiak, Alaska.

STATE OF ALASKA
MANDATORY SHELLFISH ONBOARD OBSERVER PROGRAM

By

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July 1998

INTRODUCTION

In April 1988 the Alaska Board of Fisheries (BOF) adopted regulations requiring onboard observers on all vessels which processed king crab and *Chionoecetes bairdi* Tanner crab within Alaskan waters. The observer requirement was prompted by Alaska Department of Fish and Game (ADF&G) reports which suggested that illegal processing of undersized and female crabs by at-sea processors was occurring. The reports showed consistently higher production rates by catcher-processors compared to catcher-only vessels. These regulations resulted in creation of the Mandatory Shellfish Onboard Observer Program (Observer Program), which first deployed observers in the September 1988 Bristol Bay red king fishery. Primary goals of the program were to determine the legality of retained crabs, collect catch composition data from sampled crab pots, and collect shell size, age, and condition information from delivered product.

In the spring of 1990 the BOF made regulations which broadened mandatory observer coverage to include vessels processing *Chionoecetes opilio* Tanner crab. This change was made due to reports of undersized *C. bairdi* Tanner crab being processed as *C. opilio* Tanner crab. The BOF also defined observer qualifications standards, observer and contractor conflict of interest guidelines, and observer duties and responsibilities. In the fall of 1991 the BOF adopted new regulations concerning observer certification and decertification.

During the spring 1993 BOF meeting, the scallop fishery was designated a high-impact emerging fishery for which the board developed a fishery management plan. One adopted regulation mandated ADF&G institute an observer program for the scallop fishery. The primary goals of the Scallop Observer Program are assessing scallop population dynamics and documenting the impact on other fisheries through analysis of data from scallop dredge samples. The scallop observer program was implemented on June 27, 1993.

Additional changes were adopted to the program in 1993-1995. In 1993, the requirement of carrying shellfish observers as a condition of the permit for all vessels fishing for hair crab in the Bering Sea was enacted. Regulations enacted in 1994 required shellfish observers as a condition of the permit for all registration areas for vessels targeting *C. tanneri*, *C. angulatus*, *Lithodes couesi*, or *Paralomis* spp., and for vessels fishing hair crab in the Bering Sea. Regulations requiring shellfish observers on all vessels fishing for king crabs in the Aleutian Islands registration area were enacted in 1995.

Although Observer Program regulations apply statewide, activities have focused on the Bering Sea and Aleutian Islands crab fisheries, where all at-sea processing of king and Tanner crabs occurs. The policy of ADF&G is that all observer activities for a fishery be handled by the management office responsible for that fishery. Consequently a vast majority of the crab observer activity has been handled by the Observer Program staff in Dutch Harbor. Scallop observer activity has been more dispersed. The Dutch Harbor office conducted scallop briefings of observers deploying to the Bering Sea, Dutch Harbor and South Peninsula scallop registration areas. Area ADF&G area offices in Kodiak, Cordova and Yakutat also briefed and debriefed observers for scallop fisheries managed from those offices.

SHELLFISH OBSERVER PROGRAM GUIDELINES

Shellfish Observer Program guidelines were originally defined by the BOF in 1988 and have been refined over time. Guidelines defining the responsibilities of each group (ADF&G, contractors, observers, and vessels) involved in the Observer Program are in regulation.

ADF&G: The Alaska Department of Fish and Game is responsible for establishing observer qualifications, conflict of interest standards and sampling procedures. The department also establishes contractor conflict of interest standards as well as certification and decertification of contracting agents. The department is further charged with review and approval of observer training programs, observer testing, certification, decertification, briefing, debriefings, analysis of observer data, and progress reports.

Contractors: Contractors are required to hire, train, and deploy observers. Contractors also provide all observer logistical support including food, accommodations, sampling equipment, and transportation. Contractors secure contracts directly with vessel owners/operators.

Observers: Observer qualifications include a minimum of a Bachelor of Science degree in the Natural Sciences; or a valid National Marine Fisheries Service observer certification; or previous employment history demonstrating the ability, once trained, to perform the duties of a shellfish observer.

Observer candidates are required to undergo ADF&G approved training and pass a written exam. They must also pass a practical training exam administered by Observer Program staff in Dutch Harbor. Observers may not have a financial interest in the fishery or vessel to which they are assigned. They are limited to no more than 90 days of duty on a specific vessel during any 12 month period. Trainee Observers have 180 days to gain their certification. Certified observers who are inactive for 12 consecutive months lose their certification. To regain certification they must be retrained and re-tested.

Vessels: Regulations require the cost of observers to be borne by the shellfish industry. Vessel owner/operators are required to procure and pay for observers through a qualified contractor and provide food and accommodations equal to that of the vessel's crew.

The vessel must also provide the observer a safe work area, necessary gear, and the opportunity to adequately sample the catch according to ADF&G requirements. Fishing effort and harvest data is provided daily to the observer. Access to communication equipment must also be provided by the vessel.

Contractors have conducted training of their observers in the past. However, most shellfish observer training since 1991 has been conducted by the staff of the North Pacific Observer Training Center (OTC) in Anchorage. All shellfish observers since 1993 have been trained by the OTC.

OBSERVER DUTIES

Catcher-processor vessels: Observers assigned to catcher-processors (C/P) are required to conduct various sampling duties. Observers have daily biological sampling duties which include measuring 100 retained crabs for size and shell age, and weigh an assigned number of crabs to determine average weight. Observers obtain daily catch records and report production to ADF&G. Additionally, observers sample a specified number of pots to: identify pot location, depth, soak time, pot contents, and document the incidence of non-target species. New sampling duties include examining a sample of non-retained crabs for fishing related injuries, and also recording the elapsed time that non-retained crabs are on the vessel before being returned to the sea. To monitor compliance of size and sex regulations, observers randomly sample 600 retained crabs throughout the day to determine legal status.

Floating processor vessels: Observers assigned to floating processors (F/P) sample the harvest of catcher vessels delivering to that floating processor. Observers conduct confidential interviews with vessel operators to determine fishing effort and location. They conduct random legal tally sampling of 600 crabs and measure 100 crabs for size and shell age from each delivery. Observers also determine average crab weight by counting the number of crab in three brails of known weight.

Catcher-only vessels: The duties of observers assigned to catcher-only vessels (F/V) are similar to those on a catcher-processor. Observers sample a specified number of pots on a daily basis to identify pot contents and document the incident of non-target species. They also record fishing locations and monitor fishing activities. Daily catch records, fishing efforts, and sampling rates are reported to ADF&G. At each delivery, observers measure 100 crabs per retained species for size and shell age. Observers obtain average crab weight by counting the number of crab in three brails of known weight. To monitor compliance with crab size and sex regulation, observers randomly sample 600 crabs during delivery.

In addition to these normal duties, observers are often assigned special projects ranging from specimen collection and morphometric data collection to documenting observations of endangered bird species.

If a potential violation is encountered, observers are instructed in the proper documentation, evidence collection and handling procedures. They will later be interviewed by the Alaska Department of Public Safety, Fish and Wildlife Protection Division, and a written statement may be required. Observers are also expected to testify in court when necessary.

FISHERIES REVIEW

Tracking of observer deployments and vessel assignments for all shellfish fisheries in this report are by calendar year. An observer deployment is determined by the total number of days from

their briefing until their debriefing. Observer-days are converted to observer-months. One observer-month is the equivalent to 30 observer-days.

Vessel effort and Observer Coverage: Observer activity increased during the first three years of the program (Table 6-1 and Figure 6-1) then experienced a dramatic increase in activity in 1991. This is the result of BOF decision requiring observer coverage of the Bering Sea *C. opilio* Tanner crab fishery. An increase in the number of at-sea processing vessels also contributed to the increased demand for observers. During the 1993 season, the expanding trend reversed as quotas in the Bering Sea Tanner crab fisheries declined and seasons shortened. Furthermore, fewer catcher-processors participated in the king crab fisheries in the Adak and Dutch Harbor registration areas.

The number of at-sea processors participating in the Bering Sea and Aleutian Islands crab fisheries continued to decline from 51 vessels in 1992 to 27 vessels in 1997. Many catcher-processors have left U.S. fisheries, being sold to Russian companies and now fishing in their waters. The decrease in observer catcher-processor activity was partially offset by additional observer coverage requirements enacted by the BOF. Beginning in 1993, all vessels fishing for Bering Sea Korean hair crab and vessels fishing for scallops were required to carry an observer as a condition of their fishing permit. During 1994, all vessels fishing for *C. tanneri*, *C. angulatus*, *Lithodes couesi*, and *Paralomis* spp. were required to carry an observer as a condition of their fishing permit. In 1995 regulations requiring observers on all vessels fishing for king crabs in the Dutch Harbor and Adak registration areas were also enacted. The trend of increasing observer activity since 1994 has been attributed to the requirement of observers on all vessels fishing for king crabs in the Aleutian Islands area fisheries. By BOF action, the former Dutch Harbor and Adak king crab registration areas were combined to form a single Aleutian Islands king crab registration area in September, 1996. Historic summaries of 1988-1996 vessel and observer activity, by fishery, are presented in Tables 6-2 through 6-10.

1997 OBSERVER DEPLOYMENT ACTIVITY BY FISHERY

Observers made 157 trips and logged 184.4 months at sea in 1997 (Tables 6-1 and 6-11).

1997 Aleutian Islands King Crab: The Aleutian Islands brown king crab fishery runs from September 1 to August 31 of the following year unless the fishery is closed by emergency order. The observer deployments in the report are for the calendar year 1997, a period encompassing parts of two seasons for this fishery. During 1997 the portion of the Aleutian Islands registration area west of 174° West longitude did not close, while the eastern portion opened September 1 and was closed by emergency order on November 24, 1997. Observers were deployed on three catcher-processor and 12 catcher-only vessels, which totaled 82.2 months of observer deployment.

1997 Bering Sea *C. opilio* Tanner Crab: This fishery opened on January 15, with a quota of 117 million pounds. It closed on March 21, with a harvest of 119.4 million pounds. Observers

were deployed on 13 catcher-processors and 11 floating processors, accounting for 56.7 months of observer time.

1997 Pribilof Red and Blue King Crabs: This fishery opened on September 15, with a combined quota of 1.5 million pounds. This fishery closed by emergency order on September 29, with a combined harvest of 1.3 million pounds. No catcher-processor vessels participated in this fishery.

1997 St. Matthew Blue King Crab: This fishery also opened on September 15, with a quota of 5.0 million pounds. This fishery closed by emergency order on September 22, with a harvest of 4.7 million pounds. Observers were deployed on one catcher-processor and three floating processors including one floating processor which accepted deliveries from both the St. Matthew and the Pribilof fisheries. Observer deployments for both fisheries totaled 2.4 months.

1997 Bering Sea Korean Hair Crab: This fishery opened on November 1, with a quota of 800,000 pounds. This fishery closed by emergency order on November 25, with a harvest of 660,000 pounds. Observers were deployed on 16 catcher-only vessels, logging 11.6 months at sea.

1997 Bristol Bay Red King Crab: The fishery opened November 1, with a quota of 7.0 million pounds. The fishery was closed by emergency order on November 5, with a harvest of 8.7 million pounds. Observers were deployed on eight catcher-processors and three floating processors, spending a total of 5.0 months at sea.

Weathervane Scallop Fishery: The 1997 weathervane scallop fisheries opened in Federal and state waters on January 1. Efforts remained low in all registration areas in 1997 due to most of the permitted scallop vessels having returned to the East Coast in 1996. Statewide, observers were deployed on six unique scallop vessels (S/V) completing 24 trips in six different scallop registration areas. These deployments totaled 21.2 months at sea (Table 6-11 and 6-13). Table 6-12 is a summary of observer activity in the scallop fisheries from 1993-1997.

1997 Bering Sea Scallops: Observers were deployed on two scallop vessels during this fishery, spending 2.6 months at sea.

1997 Dutch Harbor Scallops: One vessel with an observer was deployed in this fishery with the total deployed time of 0.5 months.

1997 Alaskan Peninsula Scallops: Observers were deployed for a total of 2.1 months on four scallop vessels during this fishery. One observer was briefed in Dutch Harbor for this fishery. All debriefing of observers was conducted in the Kodiak ADF&G office.

1997 Kodiak Scallops: Observers were deployed on five scallop vessels during this fishery, spending 10.0 months at sea. Briefing and debriefing of observers was conducted by staff in the Kodiak ADF&G office.

1997 Prince William Sound Scallops: One vessel with an observer was deployed for 0.4 months in the PWS fishery. The briefing and debriefing was completed by the staff in the Cordova ADF&G office.

1997 Yakutat Scallops: Observers were deployed on four scallop vessels during the January fishery, spending 5.6 months at sea. The area staff in the Yakutat ADF&G office briefed and debriefed observers for the fishery.

1997 Miscellaneous Fisheries: Observers were deployed on one catcher processor and three fishing vessels during different times of the year spending a total of 5.3 months at sea. The miscellaneous fisheries included Bering Sea Snails, Bering Sea *Opilio* Experimental, and Southeast urchins. The area staff in the Ketchikan ADF&G office briefed and debriefed the observer for the urchin fishery.

Observer Briefing and Debriefing Activity: During the 1997 fishing year Observer Program staff in Dutch Harbor conducted 135 shellfish observer briefings and 213 debriefings, which included mid-trip debriefings (Table 6-14). Figure 6-2 depicts briefings, mid-trip debriefings, and final debriefings by month.

During the first four years of the Observer Program, briefing and debriefing activity was high during the fall, winter, and spring months corresponding to the commercial crab fishing seasons in the Bering Sea and Aleutian Islands areas. Observer activity in 1994-96 increased substantially during the summer months due to Dutch Harbor/Adak/Aleutian Island area king crab fisheries, the deep water Tanner crab fisheries, and the scallop fisheries prior to 1996. The 1997 activity was lower, primarily because no vessels fished the deep water Tanner crabs. The numbers of briefings and debriefing sessions for the years 1991-1997 are presented in Tables 6-1 and 6-14 and illustrated in Figure 6-1.

Observer Exams, Certification, and Decertification: Twenty-four certification exams have been held since inception of the Observer Program, attended by 446 candidates, of which 386 passed (86.5 percent). The North Pacific Fisheries Observer Training Center (OTC) in Anchorage has conducted fifteen of these training courses since 1991, accounting for 198 students. Through the end of 1997 there were 55 observers remaining in the Observer Program.

Two shellfish observer training classes were held at the OTC in 1997, one in March and the other in October. A total of 25 individuals attended training and 23 passed the written exam. A training practicum exam was held in Dutch Harbor following each training class. A total of 23 candidates participated and passed the practicum exams. All 23 candidates were issued shellfish observer trainee permits. Eight observers subsequently received full certification by the end of 1997; five were never deployed by their contractor and their trainee permits expired; and one observer was not certified during the trainee period. The remaining nine observers remain in trainee status at this time. Certification data by year since inception of the Observer Program is presented in Table 6-16.

Thirty crab observers were decertified in 1997 for 12 months of inactivity or for the expiration of their 180 day trainee permit. One certified observer was demoted to trainee for sub-standard performance.

The OTC also conducted two scallop observer training sessions in 1997. Ten candidates attended the training and were issued trainee permits. Seven subsequently received full certification by the end of 1997. Certification data by year since inception of the scallop Observer Program is presented in Table 6-15.

Evidence Collection: Evidence pertaining to illegal activities was collected by observers on 18.0 percent of the observer trips conducted during the 1997 fisheries. Evidence collection by observers for the years 1991-1997 is summarized in Tables 6-17 and Figures 6-3 through 6-6.

For the years 1991-1995, the fisheries where most evidence was collected were the Bering Sea Tanner crab fisheries. In 1996 the brown king crab fisheries in the Aleutian Islands accounted for most evidence collected by observers. This was also the case in the 1997 fishing year where 54.2 percent of all evidence collected by observers came from the Aleutian Islands brown king crab fishery.

Data Analysis: The considerable biological data collected by shellfish observers is summarized annually by the Shellfish Observer Program Database staff. A summary and analysis of these data is available in a separate Regional Information Report. The most recent report is entitled "1996 Shellfish Observer Program Database Summary Report." (RIR No. 4K97-51). The report includes all fisheries with crab observer coverage in 1996.

PROBLEMS WITH THE OBSERVER PROGRAM

Some earlier problems with the Observer Program have been resolved through tightening of regulations and better cooperation between industry, observer contractors, observers, and ADF&G. The problems inherent to the current system have not been addressed. Vessel fishing companies now directly negotiate with the observer contractors for observer services which creates the serious potential for conflict of interest. The competitive pressure on contractors to procure and maintain contracts with fishing vessel companies creates incentives for vessels to manipulate the system to their advantage. The pressure on the contractors to provide observers who meet the needs of their clients' can influence contractors hiring practices.

The current system can place the observer in a position of potential compromise between ADF&G requirements (which include documenting illegal activities and collecting evidence) and possible pressure from the vessel and contractors to ignore violations. This could increase profits to the vessels and ensure the contractor future contracts with the fishing vessel company. Observer profit sharing incentives with their contractor company could further exacerbate the conflict of interest in the current system.

Competitive pressures have also resulted in reduced observer salaries which has contributed to the high turn over rate of observers. Low observer morale spanning the past several years has been principally caused by decreases in observer pay and deploying new, trainee observers over experienced observers. This low morale could influence the quality and integrity of the observer data.

These factors lead observers in the state shellfish and federal groundfish observer programs to vote to unionization under the Alaska Fishermen's Union during 1997. Collective bargaining agreements with the five observer contractors were negotiated; one contractor signing a three year agreement while the other contractors signed one year agreements. Also, new regulations enacted by the BOF require that 65 percent of a contractor's annual observer deployment days be performed by certified observers. These developments should contribute, over time, to improving observer morale and retention of experienced observers.

Observers for the National Marine Fisheries Service (NMFS) ground fish observer program are supplied by the same five independent contractors that provide shellfish observers. The NMFS is seeking to eliminate the direct negotiations between the observer contractors and the fishing vessel companies and that conflict of interest in the current system. The intended 'arms length' relationship between the vessels and contractors does not exist. NMFS is entering into a joint partnership agreement (JPA) with the Pacific States Marine Fisheries Commission (PSMFC) to sever the direct link between the contractors and the fishing vessel companies. All vessel requests and payments for observers would be made through PSMFC. However, PSMFC and the NMFS were unable to resolve legal issues and are no longer working together.

As a result of public testimony, the BOF directed ADF&G to evaluate alternative ways to administer the shellfish observer program, to reduce observer costs to vessels, and to address issues of observer salaries and benefits. On October 28, 1996 ADF&G presented an outline of a proposal to the BOF. Included in the proposal was to fund observer deployments through the harvest and sale of king and Tanner crabs from the Westward Region crab stocks; to give the department flexibility to determine observer coverage levels to meet data needs, by fishery; and also to make shellfish observers state employees. The BOF will deliberate on the Department's findings during the spring 1999 meetings.

SUMMARY

Dutch Harbor was again the focal point of the Observer Program during 1997. All observer deployments in the crab fisheries were managed through the Dutch Harbor office. Shellfish observer in the scallop fisheries occurred in seven shellfish registration areas. Observers deployed in the scallop fisheries were briefed and debriefed by the local ADF&G area office that managed each fishery.

During 1997 two crab observer training classes were held at the OTC in Anchorage. Two candidates failed the written exam and 23 passed the exam. The successful candidates traveled to Dutch Harbor for further training and evaluation before receiving their shellfish observer

trainee permits. Eight of the trainee observers eventually obtained full certification by year's end and nine are continuing to work towards their certification. Also in 1997, there were 30 observers decertified due to inactivity or trainee permit expiration, and one observer was demoted to Trainee status for substandard performance. A total of 64 observers remained in the crab program at year's end.

Ten scallop observers were also trained during two classes at the OTC in 1997. Seven of these completed their full certification by the end of 1997. A total of nine observers were in the scallop program at that time.

Observers collected evidence on 18.0 percent of all shellfish observer trips during the 1997 fishing year. The largest portion of evidence (54.2 percent) was collected by observers deployed in the Aleutian Islands brown king crab fishery.

Problems with the Observer Program continue to center around the original third-party contractor system of vessels obtaining and deploying observers. Recent unionization by observers may improve morale. An alternative to the existing program is being developed by Westward Region staff. The BOF will deliberate on these and other shellfish observer program issues in the spring of 1999.

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Table 7-1. Summary of vessels, observer trips, number of deployed observers, number of certified observers at year's end, observer months at sea, number of active contractors, and number of briefings and debriefings in Dutch Harbor from inception (first briefing September 20, 1988) through December 31, 1997.

Year	C/P	Vessels ^a			Observer Trips	Deployed Observers	Certified @ Year's End ^b	Observer Months	Brief ^c	Total		Active Contractors
		F/P	F/V	S/V						Debrief ^d		
1988	21	6	0	0	46	28	80	31.4	43	42	6	
1989	22	12	0	0	124	53	98	124.0	127	123	7	
1990	26	15	0	0	140	61	119	163.5	142	137	7	
1991	33	18	0	1	282	105	99	352.2	282	370	6	
1992	32	19	2	0	225	100	103	280.3	221	310	7	
1993	29	21	14	11	235	80	62	216.8	181	231	7	
1994	24	17	19	12	185	74	83	178.8	152	198	7	
1995	21	15	50	8	211	91	77	213.0	205	273	5	
1996	16	13	38	5	209	82	75	250.5	190	301	5	
1997	15	11	30	6	157	71	72	184.4	135	213	5	

^aUnique vessels requiring observer coverage: C/P = Catcher Processor, F/P = Floating Processor, F/V = Fishing Vessel, and S/V = Scallop Vessel.

^bTotal number of observers who possess either a shellfish observer trainee permit or a full shellfish observer certification permit on December 31st, of each year.

^cIncludes some briefings for the next fishing year.

^dIncludes mid-trip debriefings.

Table 7-2. Summary of registered vessels, total observer trips, percentage of total observer trips, observer months at sea, and percentage of total observer months at sea by fishery for the year ^a 1988.

Fishery	Registered Vessels C/P	Vessels F/P	Observer Trips	Percent of Total Observer Trips	Observer Months	Percent of Total Observer Months
Adak Brown King	13	4	20	43.5	21.3	67.8
Bristol Bay Red King	20	5	25	54.3	9.5	30.3
Dutch Harbor Brown King	1	0	1	2.2	0.6	1.9
Totals	34	9	46	100	31.4	100

^a September 1st, 1988 through December 31st, 1988.

Table 7-3. Summary of registered vessels, observer trips, percentage of total observer trips, observer months at sea, percentage of total observer months at sea by fishery, for the year 1989.

Fishery	Registered Vessels		Observer Trips	Percent of Total Observer Trips	Observer Months	Percent of Total Observer Months
	C/P	F/P				
Bering Sea Brown King	2	0	2	1.6	1.5	1.2
Bering Sea Bairdi	5	0	6	4.8	8.4	6.8
South Peninsula Bairdi	0	2	2	1.6	0.7	0.6
Norton Sound Red King	7	0	7	5.6	1.6	1.3
Chukchi Sea Experimental	5	0	5	4.0	2.3	1.9
Dutch Harbor Brown King	4	2	8	6.5	7.7	6.2
St. Matthew Blue King	15	6	21	16.9	8.8	7.1
Bristol Bay Red King	18	12	30	24.2	16.6	13.4
Adak King	17	5	43	34.7	76.4	61.6
Totals	73	27	124	100	124.0	100

Table 7-4. Summary of registered vessels, observer trips, percentage of total observer trips, observer months at sea, percentage of total observer months at sea by fishery, for the year 1990.

Fishery	Registered Vessels		Observer Trips	Percent of Total Observer Trips	Observer Months	Percent of Total Observer Months
	C/P	F/P				
Bering Sea Bairdi (Season A)	9	9	22	15.7	28.8	17.6
Norton Sound Red King	4	0	4	2.9	0.5	0.3
Dutch Harbor Brown King	6	1	7	5.0	8.4	5.1
St. Matthew Blue King	7	3	10	7.1	4.2	2.6
Adak King	11	2	27	19.3	60.7	37.1
Bristol Bay Red King	20	15	35	25.0	19.6	12.0
Bering Sea Bairdi (Season B)	21	10	35	25.0	41.3	25.3
Totals	78	40	140	100	163.5	100

Table 7-5. Summary of registered vessels, observer trips, percentage of total observer trips, observer months at sea, percentage of total observer months at sea by fishery, for the year 1991.

Fishery	Registered Vessels		Observer Trips	Percent of Total Observer Trips	Observer Months	Percent of Total Observer Months
	C/P	F/P				
Bering Sea Opilio	26	17	149	52.8	216.8	61.6
Dutch Harbor Brown King	4	0	4	1.4	7.3	2.1
St. Matthew Blue King	9	2	11	3.9	5.3	1.5
Adak King	8	0	21	7.5	29.6	8.4
Bristol Bay Red King	25	14	39	13.8	19.8	5.6
Bering Sea Bairdi	26	12	53	18.8	68.8	19.5
Westward Region Scallops	1	0	5	1.8	4.6	1.3
Totals	99	45	282	100	352.2	100

Table 7-6. Summary of registered vessels, observer trips, percentage of total observer trips, observer months at sea, percentage of total observer months at sea by fishery, for the year 1992.

Fishery	Registered Vessels			Observer Trips	Percent of Total Observer Trips	Observer Months	Percent of Total Observer Months
	C/P	F/P	F/V				
Bering Sea Opilio	30	16	0	106	47.1	156.3	55.8
Bering Sea Brown King	2	0	0	2	0.9	1.2	0.4
Norton Sound Red King	5	0	0	5	2.2	0.9	0.3
St. Lawrence Blue King	1	0	0	1	0.4	0.2	0.1
Dutch Harbor Brown King	5	0	0	6	2.7	7.2	2.6
St. Matthew Blue King	8	7	0	15	6.7	5.8	2.0
Bering Sea Hair Crab ^a	1	0	2	3	1.3	1.3	0.5
Bering Sea Bairdi	23	9	0	43	19.1	64.0	22.8
Adak King	8	1	0	20	8.9	32.8	11.7
Bristol Bay Red King	17	6	0	24	10.7	10.6	3.8
Totals	100	39	2	225	100	280.3	100

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^aFishing vessels volunteering to carry Alaska Department of Fish and Game staff personnel.

Table 7-7. Summary of registered vessels, observer trips, percentage of total observer trips, observer months at sea, percentage of total observer months at sea by fishery, for the year 1993.

Fishery	Registered Vessels			Observer Trips	Percent of Total Observer Trips	Observer Months	Percent of Total Observer Months
	C/P	F/P	F/V ^a				
Western Aleutian Hair Crab	1	0	0	1	0.4	0.9	0.4
Bering Sea Snails	1	0	3	5	2.1	5.5	2.5
Bering Sea Surf Clam	0	0	1	1	0.4	0.7	0.3
Bering Sea Opilio	25	21	0	63	26.9	93.8	43.3
Bristol Bay Hair Crab	0	0	7	7	3.0	3.2	1.5
Norton Sound Red King	0	1	0	1	0.4	2.0	0.9
Pribilof Red King	2	2	0	4	1.7	1.8	0.8
St. Matthew Blue King	3	4	0	7	3.0	3.5	1.6
Adak King	5	0	0	12	5.1	18.8	8.7
Bering Sea Bairdi Crab	18	5	0	23	9.8	15.8	7.3
Bering Sea Hair Crab	0	0	12	14	6.0	20.8	9.6
Bristol Bay Red King	16	7	0	25	10.6	13.8	6.4
Statewide Scallops	0	0	11	72	30.6	36.2	16.7
Totals	71	40	34	235	100	216.8	100

^a Fishing vessels required to carry onboard Shellfish Observers.

Table 7-8. Summary of registered vessels, observer trips, percentage of total observer trips, observer months at sea, percentage of total observer months at sea by fishery, for the year 1994.

Fishery	Registered Vessels			Observer Trips	Percent of Total Observer Trips	Observer Months	Percent of Total Observer Months
	C/P	F/P	F/V ^a				
Western Aleutian Tanneri	0	0	1	1	0.5	0.6	0.3
Bering Sea Tanneri	0	0	4	4	2.1	4.9	2.7
Eastern Aleutian Tanneri	0	0	3	9	4.7	6.4	3.6
Kodiak Tanneri	1	0	0	1	0.5	0.7	0.4
Alaskan Peninsula Tanneri	2	0	0	2	1.0	1.4	0.8
Bering Sea Opilio	24	17	0	55	29.0	76.6	43.0
Dutch Harbor Brown King	0	1	0	2	1.0	1.6	0.9
Pribilof Red King	0	4	0	4	2.1	2.2	1.2
St. Matthew Blue King	6	1	0	7	3.7	3.6	2.0
Adak King	3	1	0	11	8.4	15.1	8.4
Bering Sea Bairdi	9	1	0	10	5.3	7.0	3.9
Bering Sea Hair Crab	0	0	10	12	6.3	15.2	8.5
Statewide Scallops	0	0	12	67	35.4	43.4	24.3
Totals	45	25	30	185	100	178.7	100

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^a Fishing vessels required to carry onboard Shellfish Observers.

Table 7-9. Summary of registered vessels, observer trips, percentage of total observer trips, observer months at sea, percentage of total observer months at sea by fishery, for the year 1995.

Fishery	Registered Vessels			Observer Trips	Percent of Total Observer Trips	Observer Months	Percent of Total Observer Months
	C/P	F/P	F/V ^a				
Western Aleutian Tanneri	0	0	3	4	1.9	4.9	2.3
Bering Sea Octopus	0	0	3	3	1.4	1.0	0.5
Bering Sea Surf Clam	0	0	1	1	0.5	1.0	0.5
Bering Sea Tanneri	0	0	8	16	7.6	19.5	9.2
Eastern Aleutian Angulatus	0	0	1	1	0.5	1.0	0.5
Eastern Aleutian Tanneri	0	1	7	15	7.1	23.2	10.9
Southeast Tanneri	1	0	0	1	0.5	0.2	0.1
Alaskan Peninsula Tanneri	1	0	8	16	7.6	11.3	5.3
Bering Sea Opilio	19	15	0	50	23.7	51.4	24.1
Dutch Harbor Brown King	1	0	16	19	9.0	20.0	9.4
Pribilof Red King	1	0	0	1	0.5	0.4	0.2
St. Matthew Blue King	1	4	1 ^b	6	2.8	3.1	1.5
Adak King	2	2	14	29	13.7	35.4	16.6
Bering Sea Bairdi	11	1	0	12	5.7	8.1	3.8
Bering Sea Hair Crab	0	0	21	22	10.4	21.5	10.0
Statewide Scallops	0	0	8	15	7.1	11.0	5.1
Totals	37	23	91	211	100	213.0	100

^aFishing vessels required to carry onboard Shellfish Observers.

^bFishing Vessel volunteered to carry onboard Shellfish Observer.

Table 7-10. Summary of registered vessels, observer trips, percentage of total observer trips, observer months at sea, percentage of total observer months at sea by fishery, for the year 1996.

Fishery	Registered Vessels			Observer Trips	Percent of Total Observer Trips	Observer Months	Percent of Total Observer Months
	C/P	F/P	F/V ^a				
Adak Brown King	1	0	18	46	22.0	73.6	29.4
Eastern Aleutian Angulatus	0	0	1	1	0.5	2.6	1.0
Alaska Peninsula Tanneri	0	0	6	10	4.9	10.5	4.2
Western Aleutian Tanneri	0	0	1	2	1.0	4.3	1.7
Bering Sea Tanneri	0	0	3	3	1.4	5.0	2.0
Eastern Aleutian Tanneri	0	0	3	6	2.9	5.8	2.3
Bering Sea Opilio	15	13	0	49	23.4	54.8	21.9
Aleutian Islands Brown King ^b	1	0	16	34	16.3	49.9	19.9
St. Matthew Blue King ^c	3	3	0	7	3.3	3.8	1.5
Bering Sea Hair Crab	0	0	18	21	10.0	19.6	7.8
Bristol Bay Red King	4	1	0	7	3.3	2.5	1.0
Bering Sea Bairdi	2	1	0	3	1.4	1.1	0.4
West. Aleutian Hair Crab/ Bairdi	0	0	1	1	0.5	0.3	0.1
Statewide Scallops	0	0	5	19	9.1	16.7	6.8
Totals	26	18	72	209	100	250.5	100

^aFishing vessels required to carry onboard Shellfish Observers.

^bCombination of the former Adak and Dutch Harbor registration areas.

^cIncludes Pribilof red Red and Blue King Crab Fishery.

Table 7-11. Summary of registered vessels, observer trips, percentage of total observer trips, observer months at sea, percentage of total observer months at sea by fishery, for the year 1997.

Fishery	Registered Vessels			Observer Trips	Percent of Total Observer Trips	Observer Months	Percent of Total Observer Months
	C/P	F/P	F/V ^a				
Aleutian Islands Brown King	3	0	12	53	33.8	82.2	44.6
Bering Sea Opilio	13	11	0	40	25.5	56.7	30.7
St. Matthew Blue King ^b	1	3	0	4	2.5	2.4	1.3
Bering Sea Hair Crab	0	0	16	16	10.2	11.6	6.3
Bristol Bay Red King	8	3	0	15	9.5	5.0	2.7
Statewide Scallops	0	0	6	24	15.3	21.2	11.5
Miscellaneous ^c	1	0	3	5	3.2	5.3	2.9
Totals	26	17	37	157	100	184.4	100

^a Fishing vessels required to carry onboard Shellfish Observers.

^b Includes Pribilof Red and Blue King Crab Fishery.

^c Includes Bering Sea Snails, Opilio Experimental, and Southeast Urchin.

Table 7-12. Summary of scallop vessel registrations, number of observer trips, and observer months at sea for the Alaskan scallop fisheries during 1993 through 1997.

Fishery	Vessel Registrations					Observer Trips					Observer Months				
	1993	1994	1995	1996	1997	1993	1994	1995	1996	1997	1993	1994	1995	1996	1997
Adak Scallops	0	0	1	0	0	0	0	1	0	0	0	0	0.3	0	0
Bering Sea Scallops	9	8	0	1	2	12	8	0	1	2	9.7	12.6	0	2.6	2.6
Cook Inlet Scallops	0	2	0	0	0	0	2	0	0	0	0	0.3	0	0	0
Dutch Harbor Scallops	5	3	1	0	1	6	4	3	0	1	2.0	0.6	2.0	0	.5
Kodiak Scallops	9	11	0	5	5	30	26	0	9	10	15.5	18.7	0	7.6	10.0
Prince Wm. Sound Scallops	7	0	2	0	1	7	0	2	0	1	2.1	0	0.9	0	.4
South Peninsula Scallops	7	7	0	2	4	9	12	0	2	6	3.5	4.9	0	1.1	2.1
Southeast Scallops	1	0	0	0	0	1	0	0	0	0	0.3	0	0	0	0
Yakutat Scallops - January	x	10	8	3	4	x	10	9	3	4	x	3.6	7.8	1.7	5.6
Yakutat Scallops - July	7	5	x	3	x	7	5	x	3	x	3.1	2.7	x	3.7	x
Totals	45	46	12	14	17	72	67	15	19	24	36.2	43.4	11.0	16.7	21.2

x = Constitutes year in which selected fisheries did not occur.

Table 7-13. Summary of registered vessels, total observer trips, percentage of total observer trips, observer months at sea, and percentage of total observer months at sea for the Alaskan scallop fisheries during 1997.

Fishery	Registered Vessels	Observer Trips	Percent of Total Observer Trips	Observer Months	Percent of Total Observer Months
Kodiak Scallops	5	10	41.6	10.0	47.1
Yakutat Scallops- January	4	4	16.7	5.6	26.4
Bering Sea Scallops	2	2	8.3	2.6	12.3
Dutch Harbor Scallops	1	1	4.2	.5	2.4
Alaskan Peninsula Scallops	4	6	25.0	2.1	9.9
Prince William Sound Scallops	1	1	4.2	.4	1.9
Totals	17	24	100	21.2	100

Table 7-14. Number of briefing, debriefing, and midtrip debriefing sessions by month and by year, 1991 through 1997.

Briefings	Month												Totals
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
1991	44	18	34	31	27	9	5	3	12	38	46	14	281
1992	52	19	11	33	3	5	9	17	5	23	32	12	221
1993	44	7	25	3	1	6	7	6	19	32	30	1	181
1994	42	2	25	6	1	3	14	10	19	22	6	2	152
1995	39	18	9	10	9	5	6	23	17	49	17	3	205
1996	32	10	28	5	7	10	11	21	11	25	27	3	190
1997	28	6	16	4	4	3	2	17	8	19	27	1	135

Debriefings	Month												Totals
	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	
1991	29	23	28	28	30	37	18	4	11	3	46	24	281
1992	31	21	11	73	5	5	3	13	17	5	27	15	226
1993	18	9	49	10	1	5	5	8	22	3	26	27	183
1994	7	2	54	13	3	3	8	15	19	1	14	16	155
1995	2	48	6	6	12	6	7	10	13	28	33	26	197
1996	6	10	36	3	13	8	10	18	10	9	30	26	179
1997	5	4	31	4	7	5	0	8	7	11	43	9	135

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Table 7-14 (Page 2 of 2)

Mid trip debriefings	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Totals
1991	0	15	32	9	6	3	1	0	1	2	4	16	89
1992	18	20	19	5	0	0	1	1	0	0	3	17	84
1993	9	8	1	2	2	3	2	6	1	0	6	8	48
1994	0	0	2	6	4	1	6	13	0	3	6	2	43
1995	0	4	5	7	10	6	3	3	14	7	15	2	76
1996	4	2	4	20	16	8	18	3	13	19	7	8	122
1997	4	12	7	6	4	2	8	0	12	8	12	3	78

Table 7-15. Mandatory Scallop Observer Program candidates by exam, number of candidates, number passed, number currently certified at year's end, and number of decertified observers.

Year	Number of Exams	Number of Candidates	Number Passed	Number Currently Certified	Number Certified at Year's End	Number Decertified	
						Inactivity ^a	Other ^b
1991	0	5 ^c	5 ^c	0	5 ^c	4	1
1992	0	0	0	0	0	0	0
1993	3	19	19	0	22 ^c	18	1
1994	4	17	16	0	20 ^c	13	3
1995	0	0	0	0	17	0	0
1996	2	10	10	1	6	9	0
1997	2	10	10	7	8	3	0
Totals	11	61	60	8	Not Applicable	47	5

^a Decertified due to 12-month scallop observer employment inactivity or trainee permit expiration after 180 days.

^b Decertification for non-compliance with Shellfish Observer Program standards.

^c Additional people briefed and deployed without attending a class.

Table 7-16. Mandatory Shellfish Observer Program candidates by exam, number of candidates, number passed, number currently certified at year's end, and number of decertified observers.

Year	Number of Exams	Number of Candidates	Number Passed	Number Currently Certified	Number Certified at Year's End	Number Decertified	
						Inactivity ^a	Other ^b
1988	3	105	84	0	80	68	16
1989	1	54	42	2	98	33	7
1990	3	47	29	1	119	26	2
1991	4	66	61	3	99	53	5
1992	2	41	39	3	103	36	0
1993	2	19	19	1	62	15	3
1994	1	6	6	0	83	5	1
1995	3	53	53	16	77	33	4
1996	3	30	30	19	75	9	2
1997	2	25	23	8 ^c	55	6	0
Totals	24	446	386	54	Not Applicable	284	40

^a Decertified due to 12-month shellfish observer employment inactivity or trainee permit expiration after 180 days.

^b Decertification for non-compliance with Shellfish Observer Program standards.

^c At year's end, 9 of the 1997 trainees were still working to obtain certification.

Table 7-17. Number of observer trips and observer trips where evidence was collected, excluding scallop trips. (Page 1 of 3)

Fishery	Fishing Season (Year)	Observer Trips	Trips with Evidence	Percent of Observed Trips	Percent of Year's Evidence ^b
Saint Matthew/ Pribilof Red and Blue King Crab	1991	11	0	0	0
	1992	15	1	6.7	2.4
	1993	11	1	9.1	5.6
	1994	11	1	9.1	6.7
	1995	7	1	14.3	4.3
	1996	7	4	57.1	19.0
	1997	4	0	0	0
Dutch Harbor Brown King	1991	4	1	25.0	2.4
	1992	6	1	16.7	2.4
	1993	0	0	0	0
	1994	2	1	50.0	6.7
	1995	19	0	0	0
Adak Area Red and Brown King	1991	21	3	14.3	7.1
	1992	20	5	25.0	11.9
	1993	12	1	8.3	5.6
	1994	11	2	18.2	13.3
	1995	29	5	17.2	21.7
	1996	46	3	6.5	14.3
Aleutian Island Brown King ^c	1996	34	6	5.9	28.6
	1997	53	13	24.5	54.2
Bristol Bay Red King	1991	39	8	20.5	19.0
	1992	24	8	33.3	19.0
	1993	25	3	12.0	16.7
	1994	<i>No Fishery</i>	**	**	**
	1995	<i>No Fishery</i>	**	**	**
	1996	7	0	0	0
	1997	15	3	20.0	12.5

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Table 7-17. Number of observer trips and observer trips where evidence was collected, excluding scallop trips. (Page 2 of 3)

Fishery	Fishing Season (Year)	Observer Trips	Trips with Evidence	Percent of Observed Trips	Percent of Year's Evidence ^b
Bering Sea <i>C. opilio</i>	1991	149	18	12.1	42.9
	1992	106	19	17.9	45.2
	1993	63	8	12.7	44.4
	1994	55	8	14.5	53.3
	1995	50	14	28.0	60.9
	1996	49	3	6.1	14.3
	1997	40	4	10.0	16.7
Bering Sea <i>C. bairdi</i>	1991	53	12	22.6	28.6
	1992	43	8	18.6	19.0
	1993	23	5	21.7	27.8
	1994	10	2	20.0	13.3
	1995	12	2	16.7	8.7
	1996	3	0	0	0
	1997	No Fishery	**	**	**
Bering Sea Hair Crab	1992	3	0	0	0
	1993	14	0	0	0
	1994	12	0	0	0
	1995	22	0	0	0
	1996	21	3	14.3	14.3
	1997	16	4	25.0	16.7
<i>C. tanneri</i> All Areas ^d	1994	17	1	5.9	6.7
	1995	52	1	1.9	4.3
	1996	21	2	9.5	9.5
	1997	0	0	0	0

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Table 7-17 Number of observer trips and observer trips where evidence was collected, excluding scallop trips. (Page 3 of 3)

Fishery	Fishing Season (Year)	Observer Trips	Trips with Evidence	Percent of Observed Trips	Percent of Year's Evidence ^b
Miscellaneous Fisheries ^c	1992	8	0	0	0
	1993	15	0	0	0
	1994	0	0	0	0
	1995	5	0	0	0
	1996	2	0	0	0
	1997	5	0	0	0
Summary	1991	277	42		15.2
	1992	225	42		18.7
	1993	163	18		11.0
	1994	118	15		12.7
	1995	196	23		11.7
	1996	190	21		11.0
	1997	133	24		18.0

^a Percentage of trips evidence collected by fishery.

^b Percentage of total evidence collected for the fishing year January 1 through December 31.

^c In 1996 the Adak and Dutch Harbor king crab registration areas were consolidated into the Aleutian area 'O' king crab registration area and

opened on September 1st, the traditional opening time of the former Dutch Harbor area.

^d *C. tanneri* areas include the following: Bering Sea, Western Aleutian, Eastern Aleutian, Kodiak, Alaskan Peninsula, and Southeast Alaska.

^e Miscellaneous fisheries for all years can include: Bering Sea brown king crab, Bering sea and Eastern or Western Aleutian Octopus, Surf Clam,

Snail, St. Lawrence blue King crab, Norton Sound red king crab, Eastern Aleutian *C. angulatus*, Western Aleutian *C. bairdi*, Western Aleutian

hair crab, Southeast Miscellaneous (urchins, shrimp, etc.), and Bering Sea *Opilio* CDQ Experimental.

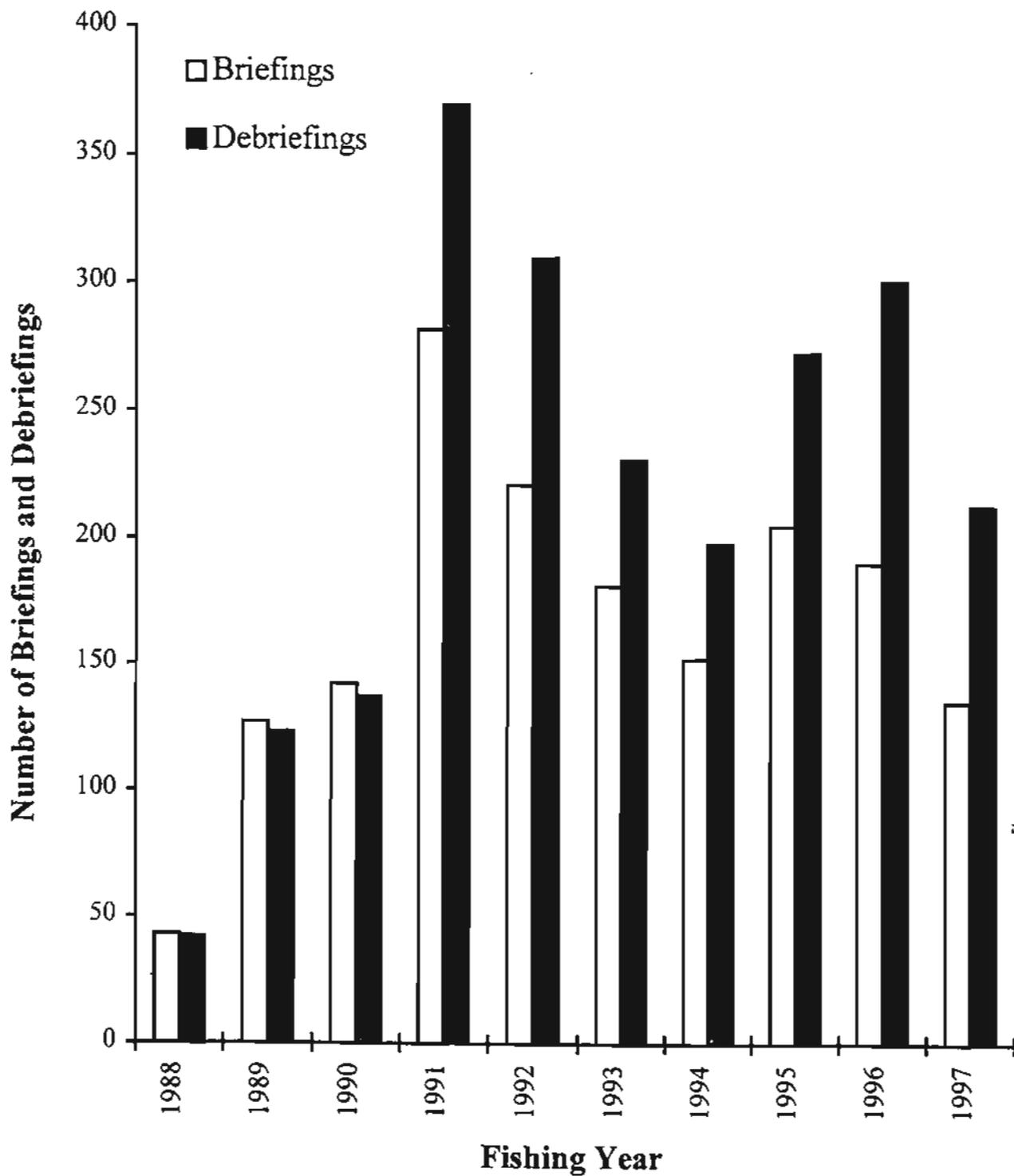


Figure 7-1. Number of briefing and debriefing (including midtrip debriefing) sessions by fishery year, 1988-1997.

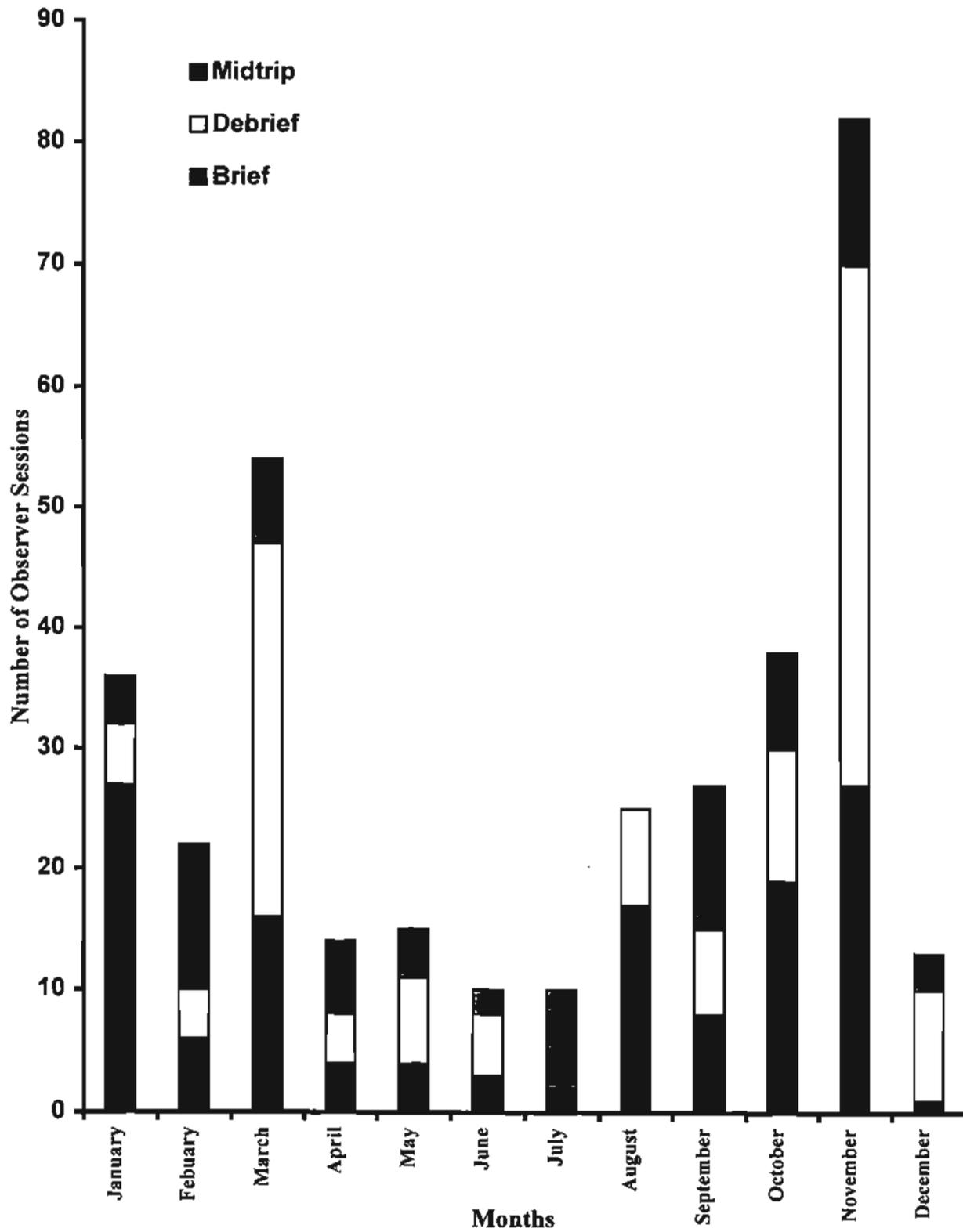


Figure 7-2. Number of observer sessions by month and session type (briefings, debriefings, midtrip debriefings) for the year 1997.

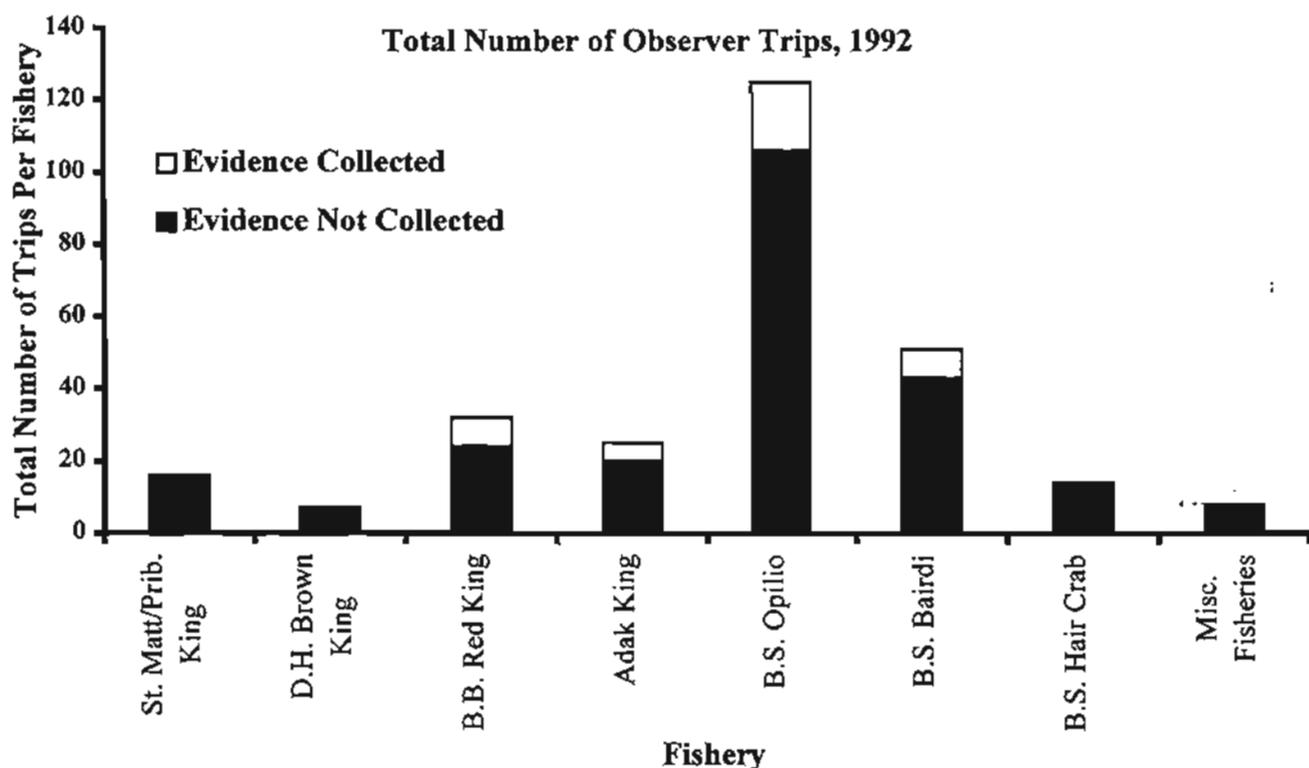
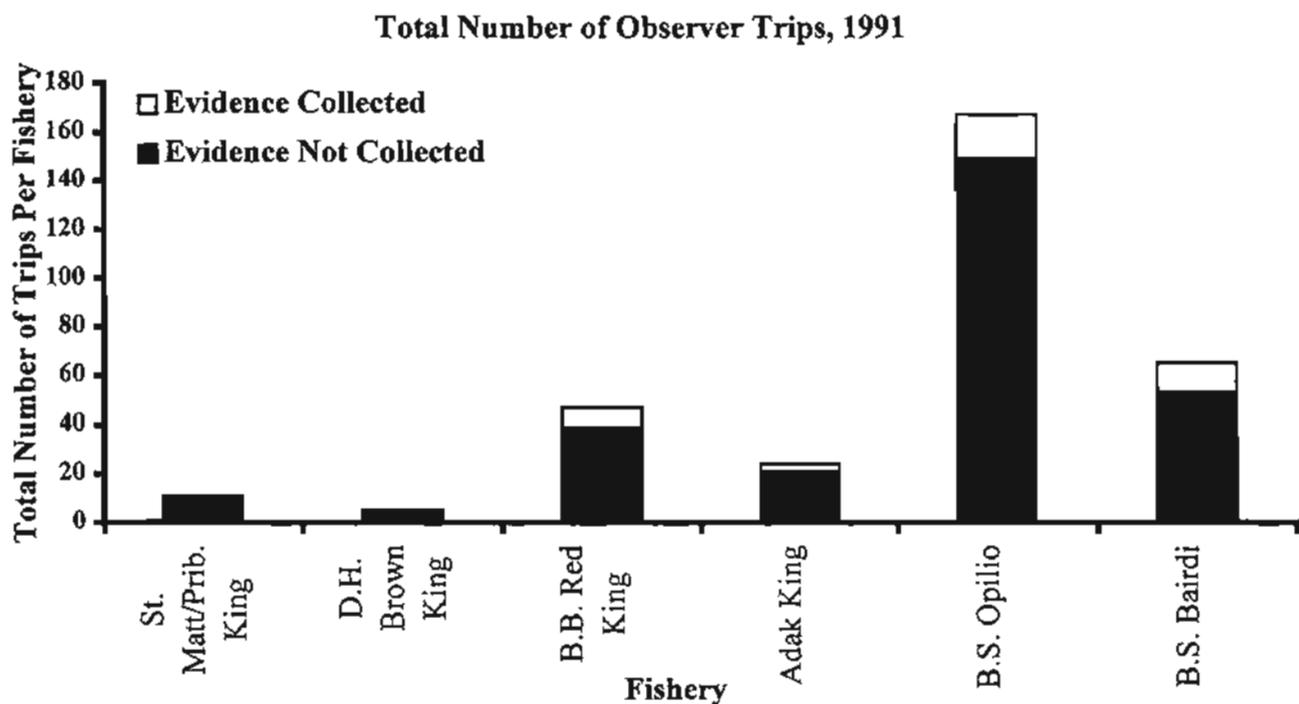
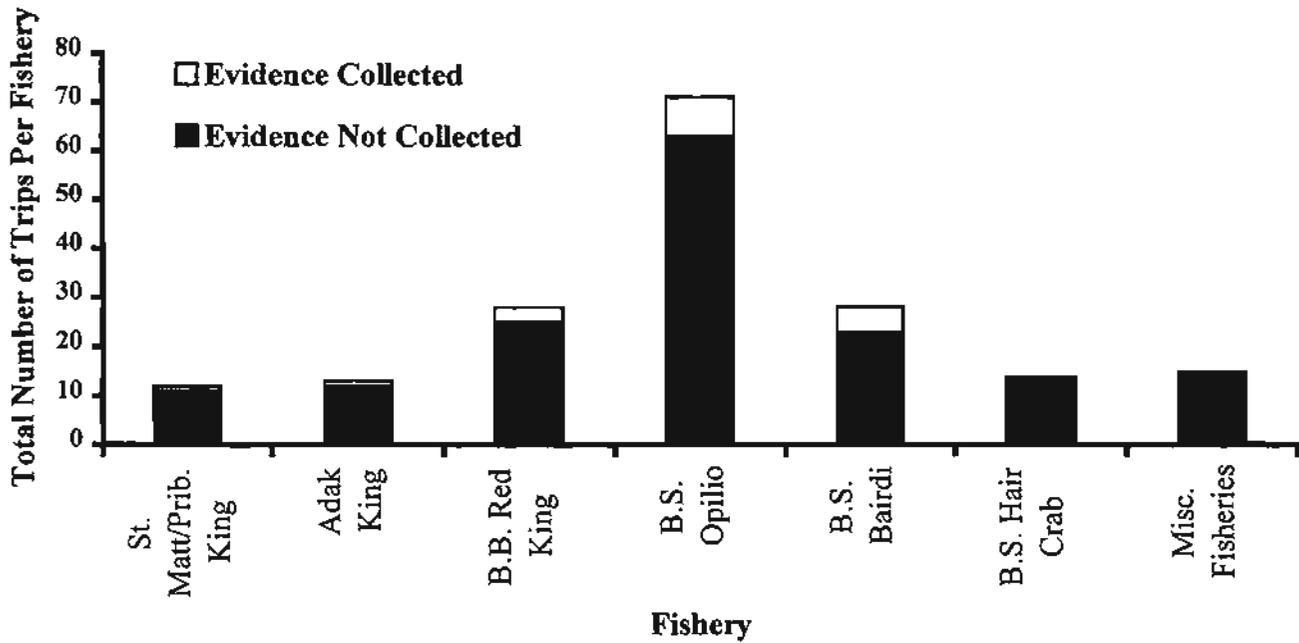


Figure 7-3. Total number of observer trips and trips where evidence was collected for the years 1991 and 1992.

Total Number of Observer Trips, 1993



Total Number of Observer Trips, 1994

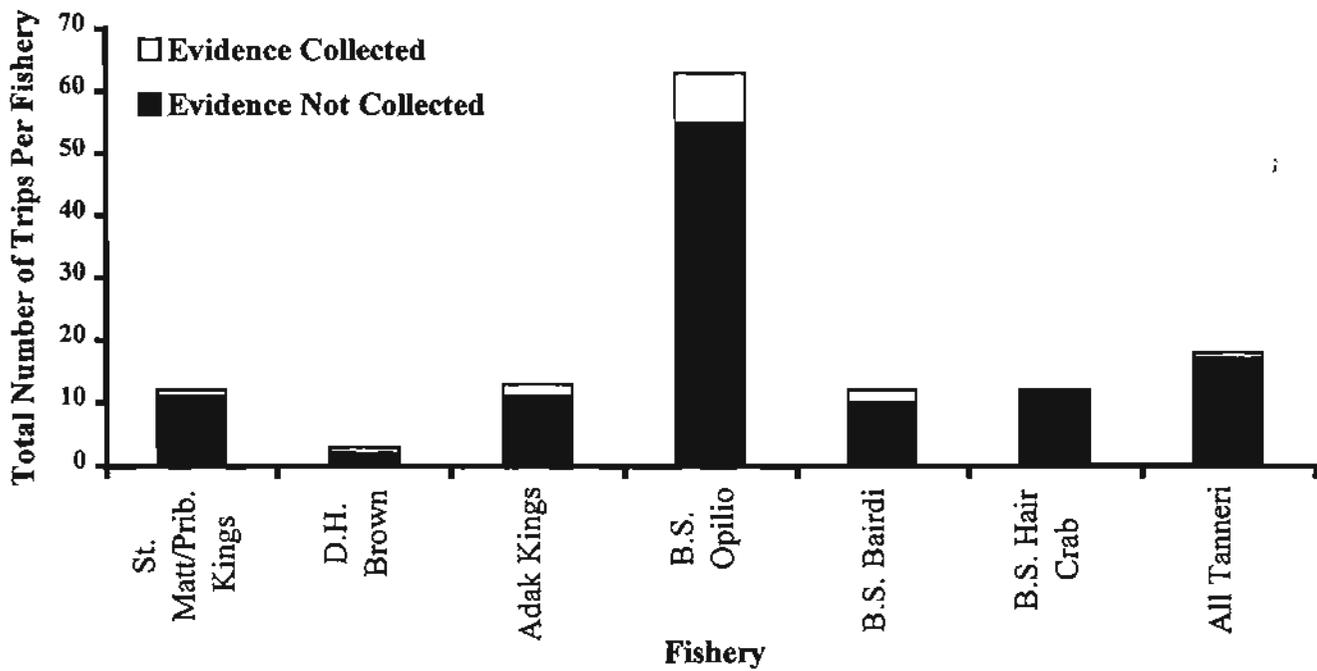
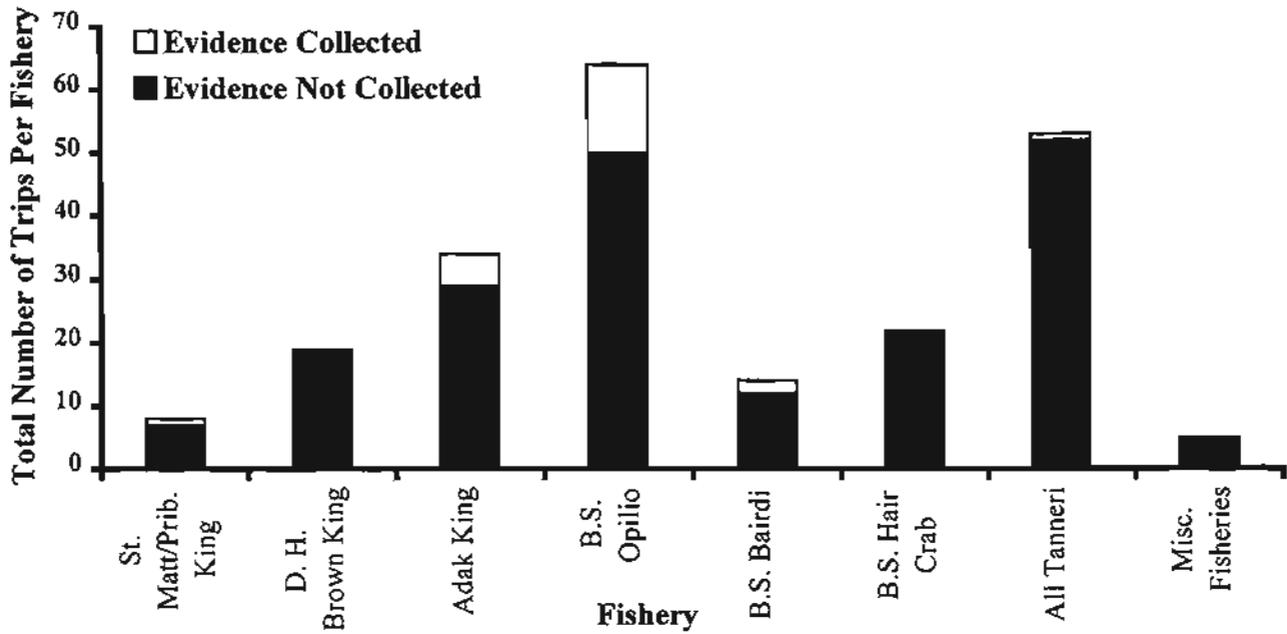


Figure 7-4. Total number of observer trips where evidence was collected for the years 1993 and 1994.

Total Number of Observer Trips, 1995



Total Number of Observer Trips, 1996

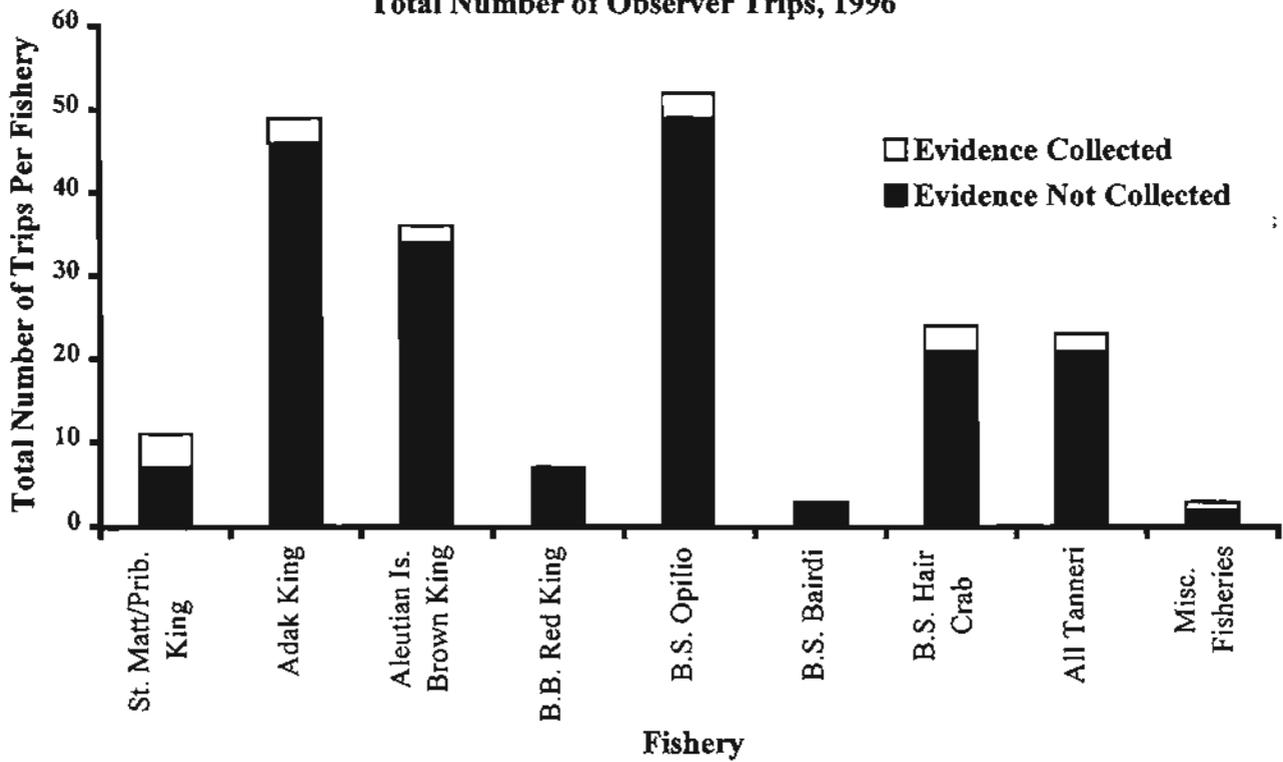


Figure 7-5 Total number of observer trips and trips where evidence was collected for the years 1995 and 1996.

Total Number of Observer Trips, 1997

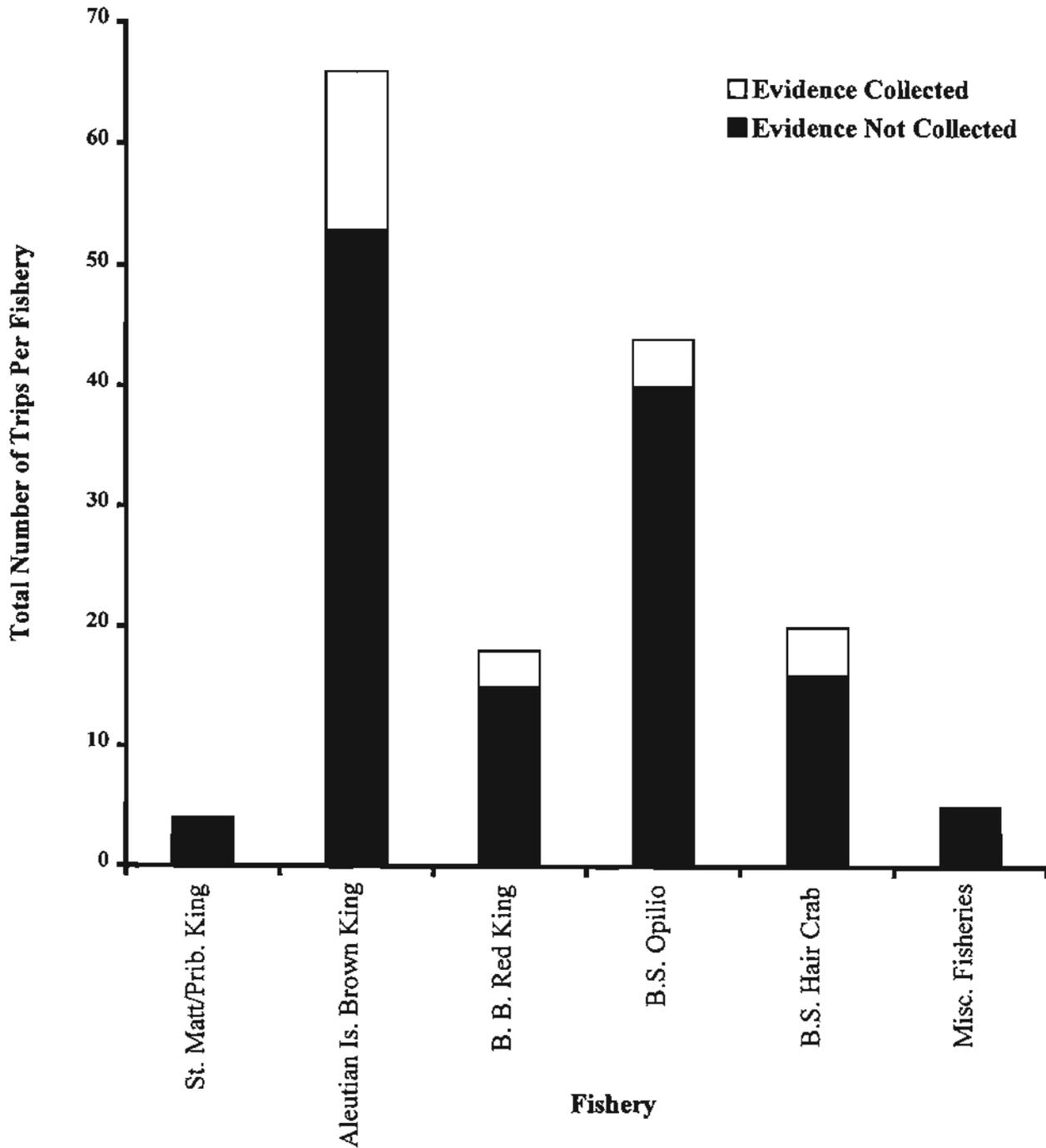


Figure 7-6 Total number of observer trips and trips where evidence was collected for the year 1997.

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