Alaska
Fisheries Science
Center

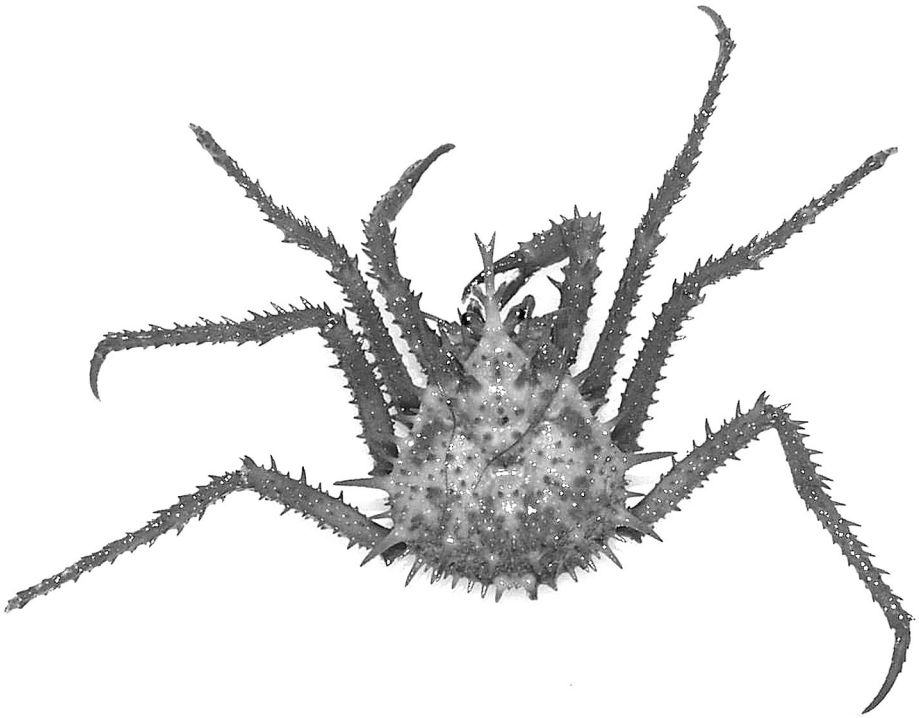
National Marine
Fisheries Service

U.S DEPARTMENT OF COMMERCE

AFSC PROCESSED REPORT 2000-07

Report to Industry on the 2000 Eastern Bering Sea Crab Survey

November 2000



Cover Photo: An immature scarlet king crab (*Lithodes couesi*) caught during the 2000 NMFS survey of the eastern Bering Sea continental slope. Scarlet king crab are found on the Alaskan continental slope and seamounts at depths of 350 to 950 m.

Notice to Users of this Document

In the process of converting the original printed document into Adobe Acrobat .PDF format, slight differences in formatting can occur; page numbers in the .PDF may not match the original printed document; and some characters or symbols may not translate.

This document is being made available in .PDF format for the convenience of users; however, the accuracy and correctness of the document can only be certified as was presented in the original hard copy format.

Alaska Fisheries Science Center
Processed Report 2000-07

REPORT TO INDUSTRY ON THE 2000 EASTERN BERING SEA CRAB SURVEY

by
B. G. Stevens, J. A. Haaga, R. A. MacIntosh, R. S. Otto, and L. Rugolo

National Marine Fisheries Service
Alaska Fisheries Science Center
Kodiak Fisheries Research Center
301 Research Court
Kodiak, AK 99615-7400

November 2000

RESULTS OF THE 2000 NMFS BERING SEA CRAB SURVEY
EXECUTIVE SUMMARY

This document summarizes data presented in the Report to Industry on the 2000 Eastern Bering Sea Trawl Survey. Numbers presented are trawl survey indices of population level and do not necessarily represent absolute abundance. For further information, contact Dr. Bradley G. Stevens at (907)481-1726 or Dr. Robert S. Otto at (907)481-1711, NMFS, 301 Research Court, Kodiak, AK 99615-7400. GHLs (Guideline Harvest Levels) are for the combined open-access and CDQ fisheries.

Red king crab (*Paralithodes camtschaticus*) Bristol Bay.

Legal males:	8.7 million crabs; 21% decrease.
Pre-recruits:	7.2 million crabs; no change.
Large Females:	17.4 million crabs; 21% increase.
Outlook:	Abundance of mature and legal males has decreased due to mortality and fishery removals. The abundance level of mature females allows use of a 10% exploitation rate.
GHL:	8.35 million pounds (3,787 metric tons, t). Fishery opens October 15, 2000.

Red king crab (*P. camtschaticus*) Pribilof District.

Legal males:	1.2 million crabs; no change.
Pre-recruits:	0.4 million crabs; 43% decrease.
Large Females:	0.6 million crabs; 81% decrease.
Outlook:	Crabs were highly concentrated, and the index has very low precision. Females are poorly estimated. Data indicate a long-term population decline. Red king crabs in the Pribilof Islands are usually harvested incidental to blue king crabs.
GHL:	Fishery will not open in 2000.

Pribilof Islands blue king crab (*P. platypus*) Pribilof District.

Legal males:	0.5 million crabs; 11% increase.
Pre-recruits:	0.2 million crabs; no change.
Large Females:	1.4 million crabs; 44% decrease.
Outlook:	Population is low and trends are not easily detectable.
GHL:	Fishery will not open in 2000.

St. Matthew blue king crab (*P. platypus*) Northern District.

Legal males:	0.8 million crabs; 31% increase.
Pre-recruits:	0.3 million crabs; 39% increase.
Large Females:	Not well estimated.
Outlook:	Population has declined steeply since 1998. Abundance estimates are affected by the portion of the stock occupying untrawlable grounds.
GHL:	Fishery will not open in 2000.

Tanner crab (*Chionoecetes bairdi*) Eastern District.

Legal males:	4.9 million crabs; 147% increase.
Pre-recruits:	18.1 million crabs; 24% increase.
Large Females:	13.7 million crabs; 15% decrease.
Outlook:	Population increasing slightly due to recent recruitment.
GHL:	Fishery will not open in 2000.

Snow crab (*C. opilio*) All districts combined.

Large males:	76.1 million crabs; 19% decrease.
Small males:	1036 million crabs; 100% increase.
Large Females:	1481 million crabs; 212% increase.
Outlook:	Population is undergoing recruitment of crab into smaller size groups, which may produce increases in large males in several years.
GHL:	27.3 million pounds (12,381 t). Fishery will open January 15, 2001.

Hair crab (*Erimacrus isenbeckii*) All districts combined.

Large males:	4.2 million crabs; 81% increase.
Large Females:	Not well estimated.
Outlook:	Population has been declining for several years. Recruitment trends are unclear.
GHL:	236,368 pounds (107 t). The fishery in the Northern District of the Bering Sea will open 10 days following the closure of the Bristol Bay red king crab fishery. The Pribilof District and Bristol Bay fisheries will not open in 2000.

THE 2000 EASTERN BERING SEA SURVEY

The National Marine Fisheries Service (NMFS) conducts an annual trawl survey in the eastern Bering Sea (EBS) to determine the distribution and abundance of crab and groundfish resources. This report summarizes survey results for commercially important crabs. It is intended to aid the fishing industry in locating productive grounds and judging overall availability of various species. Survey-derived data are also used as part of the basis for management decisions. Results are presented for red king crab (*Paralithodes camtschaticus*), blue king crab (*P. platypus*), hair crab (*Erimacrus isenbeckii*), Tanner crab (*Chionoecetes bairdi*) and snow crab (*C. opilio*). Information on groundfish resources is available from the Alaska Fisheries Science Center, 7600 Sand Point Way NE, Seattle, Washington 98115-0070.

Landing statistics for 2000 are preliminary data obtained from the Alaska Department of Fish and Game (Skip Gish, ADF&G, Dutch Harbor, personal communication). Those needing final statistics should contact ADF&G directly.

Survey Area and Methods

The 2000 EBS crab survey consisted of 371 bottom trawl tows which covered an area of approximately 139,548 square nautical miles (nmi). Twenty three additional tows were made in Bristol Bay at the end of the regular survey to assess abundance and condition of female red king crabs. These data are included in population analyses. The survey area (Figure 1) has been standardized since 1990. The survey was conducted aboard two chartered vessels, the F/V *Aldebaran* and F/V *Arcturus*, between May 23 and July 23. The same vessels have been used since 1993. Methodology was identical to that of previous surveys, and most tows were made at the centers of squares defined by a 20x20 nmi (37x37 km) grid. Near St. Matthew Island and the Pribilof Islands, additional tows were made at the corners of squares.

Both vessels fished an eastern otter trawl with an 83 ft (25.3 m) headrope and a 112 ft. (34.1 m) footrope. This has been the standard trawl since 1982. Each tow was one-half hour in duration; average length was 1.47 nmi (2.73 km). Crabs were sorted by species and sex, and then a sample of crabs was measured (to the nearest millimeter) to provide a size-frequency distribution. Crab sizes are reported as carapace width (cw) for Tanner, snow and hair crabs, and carapace length (cl) for all others. Procedures for estimating abundance were similar to previous years (see Appendix A). Note that population estimates are indexes and are most precise for large crabs; they may not represent absolute abundance and are least precise for females and small crab due to variance in crab behavior and gear selectivity.

Because of variations in tow length, catches presented in accompanying charts and tables are standardized to the nearest whole number of crab caught per square nmi. Where more than one tow was made in a square (including corner tows), charts indicate average crab density for all tows. Tables 7-11 present data for all tows where a species was caught, without averaging. It is advisable to cross-reference charts and tables.

The following abbreviations are used in the text: (in) inches, (m) meters, (km) kilometers, (mm) millimeters, (fm) fathoms, (lbs) pounds, (°C) degrees Celsius, (nmi) nautical miles, (cl) carapace length, (cw) carapace width, (MSST) minimum stock size threshold, (NPFMC) North Pacific Fishery Management Council, and (MSFCMA) Magnuson-Stevens Fishery Conservation and Management Act. GHL refers to Guideline Harvest Levels which are for the combined open-access and Community Development Quota (CDQ) fisheries.

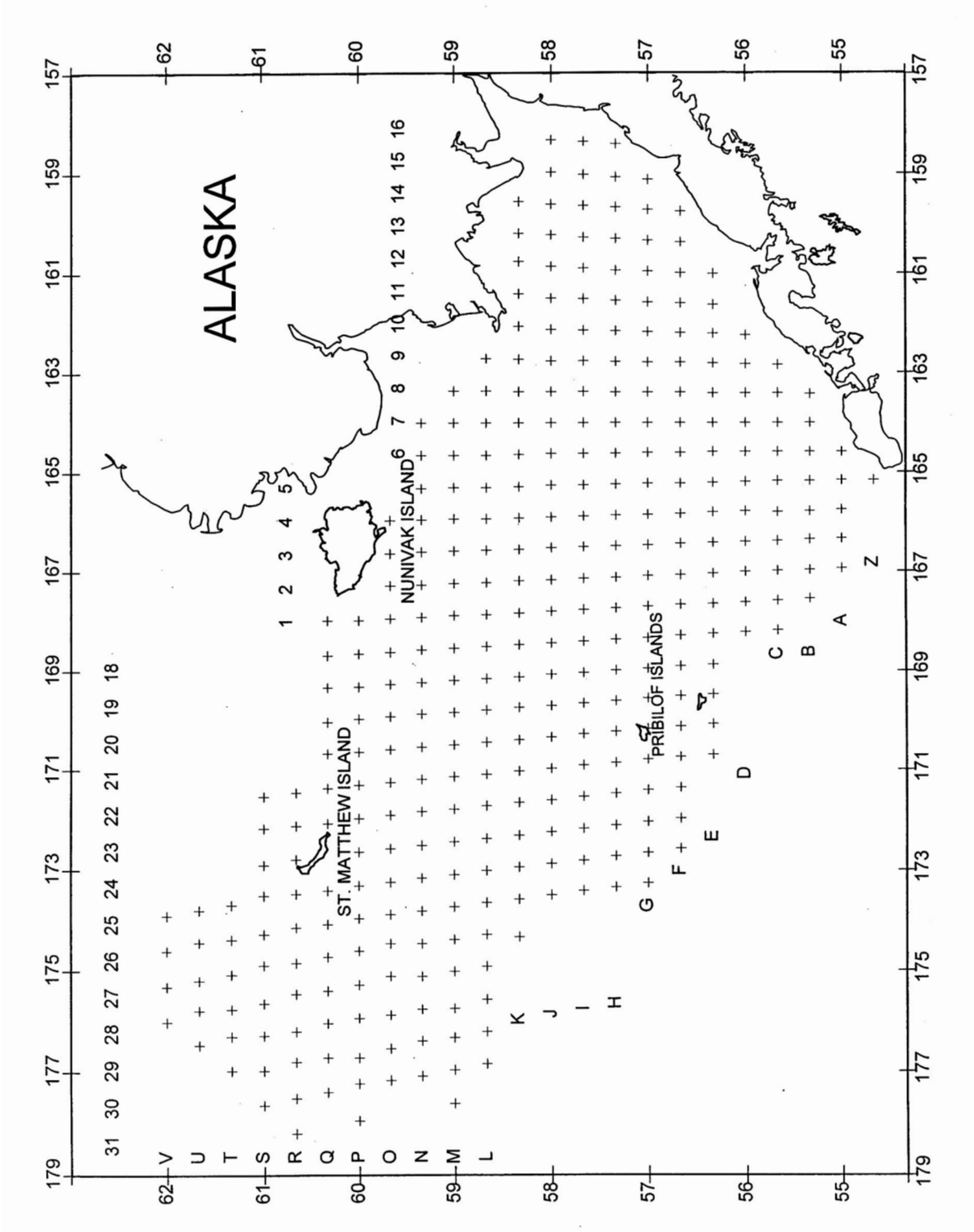


Figure 1. NMFS eastern Bering Sea crab survey area in 2000.

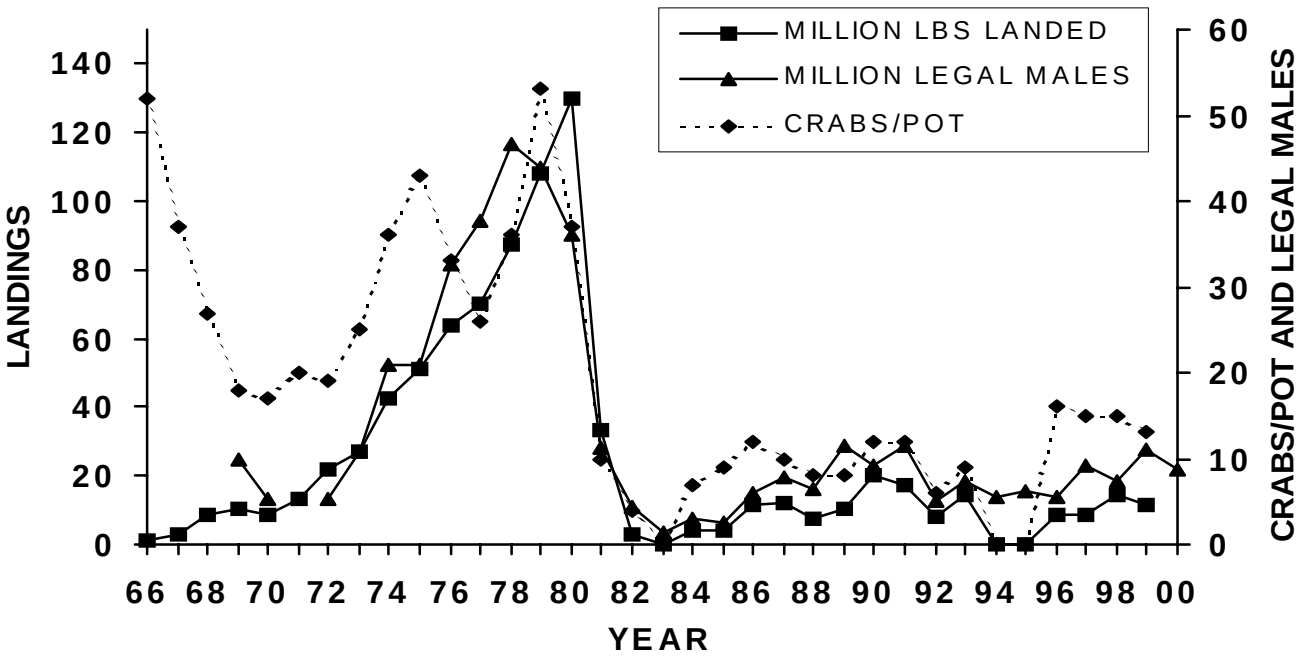


Figure 2. U.S. landings in millions of pounds, CPUE as crabs/pot-lift, and abundance of legal red king crab *(P.camtschaticus)* in millions in Bristol Bay, estimated from NMFS trawl surveys (abundance data include the Pribilof District prior to 1983).

FMP refers to the current (1998) version of the Fishery Management Plan for Bering Sea/ Aleutian Islands King and Tanner Crabs. Terminology for shell condition categories is explained in Appendix B.

Distribution and Abundance of Crab Stocks

Bristol Bay Red King Crab (*P. camtschaticus*)

Legal-sized (≥6.5 in cw or 135 mm cl) male crabs were concentrated in south central Bristol Bay (Chart 1 and Table 7). The abundance index of legal male red king crab in the Bristol Bay Registration Area (south of 58° 39'N and east of 168°W) was 8.7 million (Table 1 and Figure 2). This estimate represents a 21% decrease from last year. The index (7.2 million) for pre-recruit crab (110-134 mm cl) showed no change from last year. Abundance of small males increased by 38%. A recruiting cohort with a modal size of 60 mm in 1999 (Figure 3) grew to about 80 mm in 2000. Approximately 8% of legal male crab were in molting or softshell condition, and 27% were new-hardshell crabs; the remainder were oldshell crabs.

The initial abundance index for large (≥ 90 mm cl) females in Bristol Bay made during the regular survey was 11.4 million crabs. However, incorporation of data from 23 re-towed stations raised that estimate to 17.4 million crabs, an increase of 21% from last year. Because the survey was started earlier than normal, reproductive conditions of red king crab in May were not representative of "normal" survey conditions. Among female crabs from the re-towed stations in late July, 86% were mature, of which 99% had molted and extruded new, uneyed eggs. Fluctuations in the timing of molting, mating, and embryo extrusion may be related to annual variations in water temperature.

Table 1. Annual abundance estimates (millions of crabs) for red king crab (*P. camtschaticus*) from NMFS surveys. Bristol Bay and Pribilof Districts are combined except where noted with a (B) or (P).

	Males				Females			
	Small	Pre-rec	Legal		Small	Large		
Carapace Length(mm)	<110	110-134	≥135		<90	≥90		Grand
Width(in)	<5.2	5.2-6.5	≥6.5	Total	<4.3	≥4.3	Total	Total
1981	56.6	18.4	11.3	86.3	36.3	67.3	103.6	189.9
1982	107.2	17.4	4.7	129.3	77.2	54.8	132.0	261.3
1983	43.3	10.4	1.5	55.2	24.3	9.7	34.0	89.2
1984	81.8	12.6	3.1	97.6	57.6	17.6	75.1	172.7
1985	13.7	10.1	2.5	26.3	6.9	6.8	13.7	40.0
1986	11.8	12.3	5.9	30.1	4.5	5.4	9.8	39.9
1987	20.1	12.6	7.9	40.6	16.8	18.3	35.1	75.7
1988	8.5	6.4	6.4	21.3	2.7	15.7	18.4	39.7
1989	8.6	9.4	11.9	29.9	4.4	16.9	21.2	51.1
1990	8.2	10.2	9.2	27.6	7.2	17.5	24.7	52.2
1991	8.1	6.4	12.0	26.5	4.7	12.6	17.4	43.9
1992	7.0	5.5	5.8	18.3	2.2	13.4	15.6	33.9
1993	5.7	10.2	9.8	25.7	2.5	19.2	21.7	47.4
1994	6.2	6.7	7.5	20.4	3.4	10.1	13.5	33.9
1995	9.7	6.0	8.9	24.6	4.9	10.4	15.3	33.9
1996	17.2	3.5	6.0	26.7	13.7	12.9	26.6	53.3
1997	27.5	9.6	10.4	47.4	1.8	25.9	27.7	75.1
1998(B)	10.9	16.5	7.4	34.8	5.5	35.5	40.8	75.6
1999(B)	8.1	7.1	11.0	26.1	6.2	14.5	20.6	46.7
2000(B)	11.2	7.2	8.7	27.0	5.6	17.4	23.0	50.0
Limits[1]								
Lower	5.5	4.9	6.8	19.2	2.3	10.1	14.5	33.7
Upper	16.9	9.5	10.5	34.9	8.8	24.7	31.5	66.3
±%	51	32	21	29	58	42	37	33
1998(P)	0.2	0.5	0.4	1.1	0.0	1.0	1.0	2.2
1999(P)	6.6	0.6	1.2	8.4	6.5	3.2	9.6	18.1
2000(P)	0.0	0.4	1.2	1.5	0.0	0.6	0.6	2.2

[1] Mean ± 2 standard errors for most recent year; Bristol Bay only.

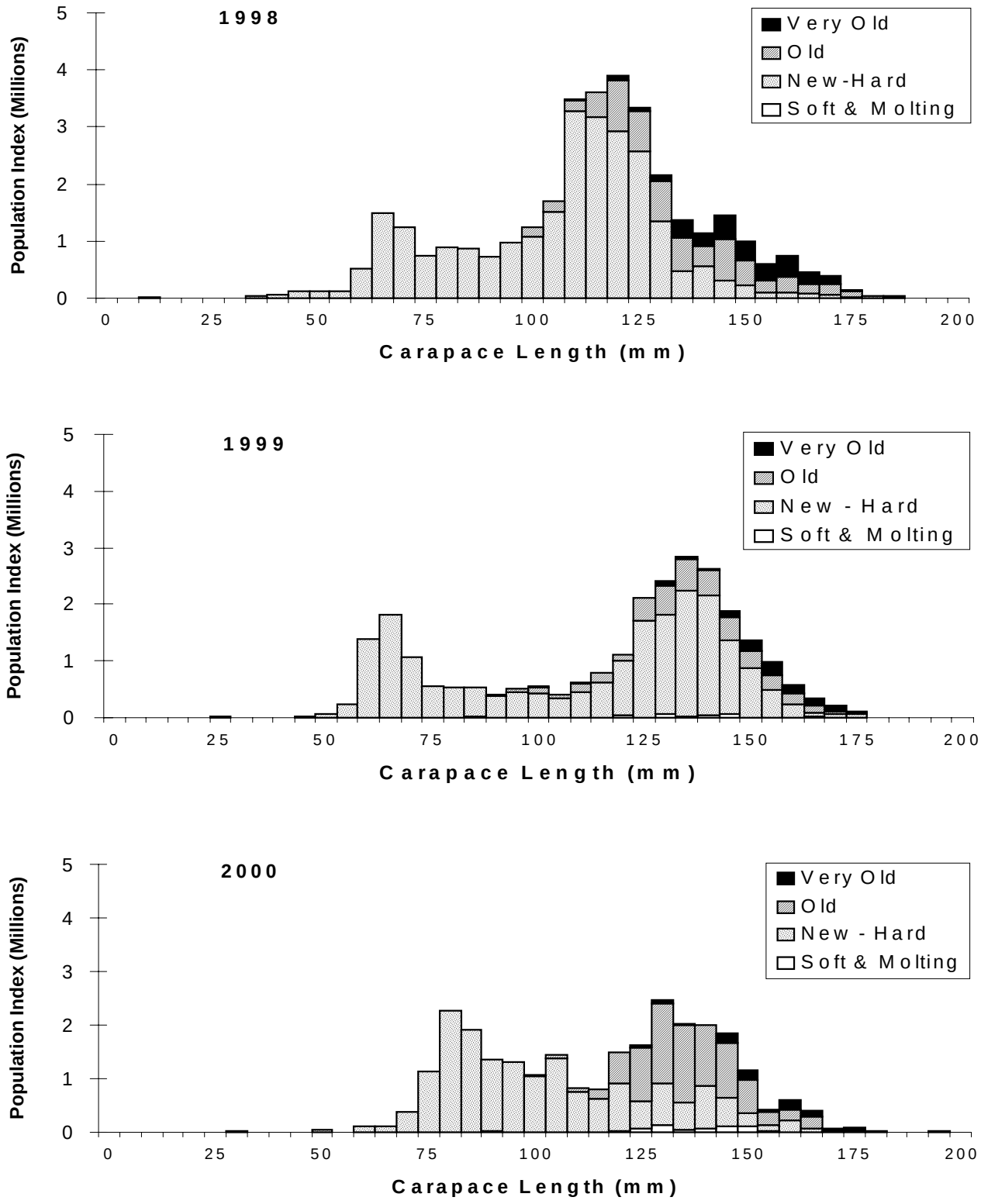


Figure 3. Size-frequency of male red king crab (*P. camtschaticus*) by 5 mm length classes, 1998-2000.

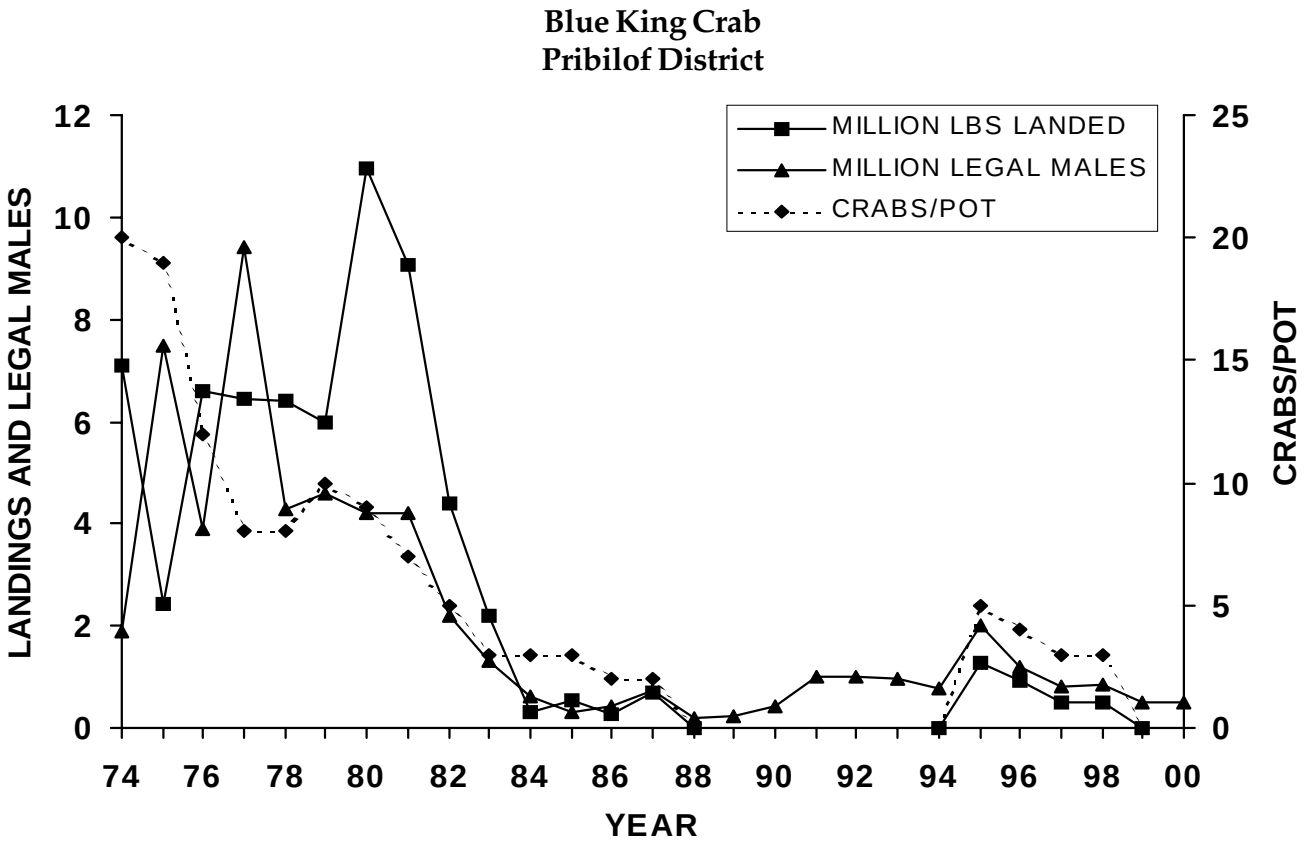


Figure 4. U.S. landings in millions of pounds, CPUE as crabs/pot-lift, and abundance of legal blue king crab (*P. platypus*) in millions in the Pribilof District, estimated from NMFS trawl surveys.

ADF&G has developed a length-based assessment (LBA) model, which was fitted to the survey time series data. Resultant estimates of the abundance of mature males and females are used to establish the fishery GHL (ADF&G Regional Information Report 5J99-09). The LBA estimate of 18.7 million mature females was slightly greater than the survey estimate for large females and equated to 39.9 million pounds of spawning biomass. The decline in spawning biomass relative to 1999 triggered a harvest rate of 10% under the current ADF&G harvest strategy. This resulted in a GHL of 8.35 million lbs (3,787 t), including 626.25 thousand lbs of CDQ. The total GHL translates into approximately 1.37 million crabs at an average weight of 6.11 lbs.

Pribilof Islands Red King Crab
(P. camtschaticus)

In the Pribilof District (south of 58° 39′N and west of 168° W), the abundance index for legal male red king crab was 1.2 million (Table 1), unchanged relative to the 1999 estimate. The index for large females showed an 81% decrease from 1999. From 1996 to 1998, a combined fishery for red and blue king crabs in the Pribilof District opened on September 15. However, due to low abundance of blue king crab (see next section), the combined fishery did not open in 1999 or 2000. Landings in 1998 were 0.5 million lbs of red king crab with a CPUE of 3 crab/pot-lift. Historically, red king crab have not been abundant in the Pribilof Islands and landings were taken incidentally during the blue king crab fishery. This stock is not considered overfished under provisions of the MSFCMA (Appendix C). The fishery will remain closed due to low stock abundance, low CPUE in recent fisheries and the desire to avoid bycatch of blue king crab that mingle in the same grounds. In the absence of a St. Matthew fishery, effort levels were also feared to be excessive.

Table 2. Annual abundance estimates (millions of crabs) for blue king crab (*P. platypus*) in the Pribilof District from NMFS surveys.

Pribilof District

	Males				Females			
	Small	Pre-rec	Legal		Small	Large		
Carapace Length(mm)	<110	110-134	≥135		<90	≥90		Grand
Width(in)	<5.2	5.2-6.5	≥6.5	Total	<4.3	≥4.3	Total	Total
1981	4.8	1.4	4.2	10.4	3.4	11.6	15.0	25.4
1982	1.2	0.7	2.2	4.1	0.7	8.6	9.3	13.4
1983	0.6	0.8	1.3	2.8	0.2	9.2	9.4	12.2
1984	0.5	0.3	0.6	1.3	0.3	3.1	3.4	4.7
1985	0.1	0.2	0.3	0.5	0.2	0.5	0.7	1.2
1986	<0.1	<0.1	0.4	0.5	<0.1	1.9	1.9	2.4
1987	0.6	0.1	0.7	1.4	0.4	0.6	1.0	2.4
1988	1.1	0.0	0.2	1.3	0.8	0.4	1.2	2.5
1989	3.2	0.1	0.2	3.5	2.3	1.3	3.6	7.1
1990	1.8	1.2	0.4	3.5	1.8	2.7	4.5	8.0
1991	1.3	1.0	1.0	3.4	0.6	2.8	3.4	6.7
1992	1.6	1.2	1.0	3.8	1.3	2.1	3.4	7.1
1993	1.0	0.8	1.0	2.8	0.3	2.2	2.5	5.3
1994	0.3	0.5	0.8	1.6	0.1	4.3	4.3	5.9
1995	0.8	1.2	2.0	3.9	0.4	4.0	4.5	8.4
1996	0.3	0.7	1.2	2.3	0.1	4.6	4.7	7.0
1997	0.3	0.4	0.8	1.5	0.1	2.5	2.6	4.1
1998	0.8	0.4	0.8	2.0	0.3	2.0	2.3	4.3
1999	0.1	0.2	0.5	0.8	<0.1	2.5	2.5	3.2
2000	0.1	0.2	0.5	0.8	0.0	1.4	1.4	2.2
Limits[1]								
Lower	0.0	0.0	0.2	0.3	0.0	0.1	0.1	0.4
Upper	0.2	0.4	0.8	1.4	0.0	2.7	2.7	4.0
±%	107	82	57	60	0	93	93	81

[1] Mean ± 2 standard errors for most recent year.

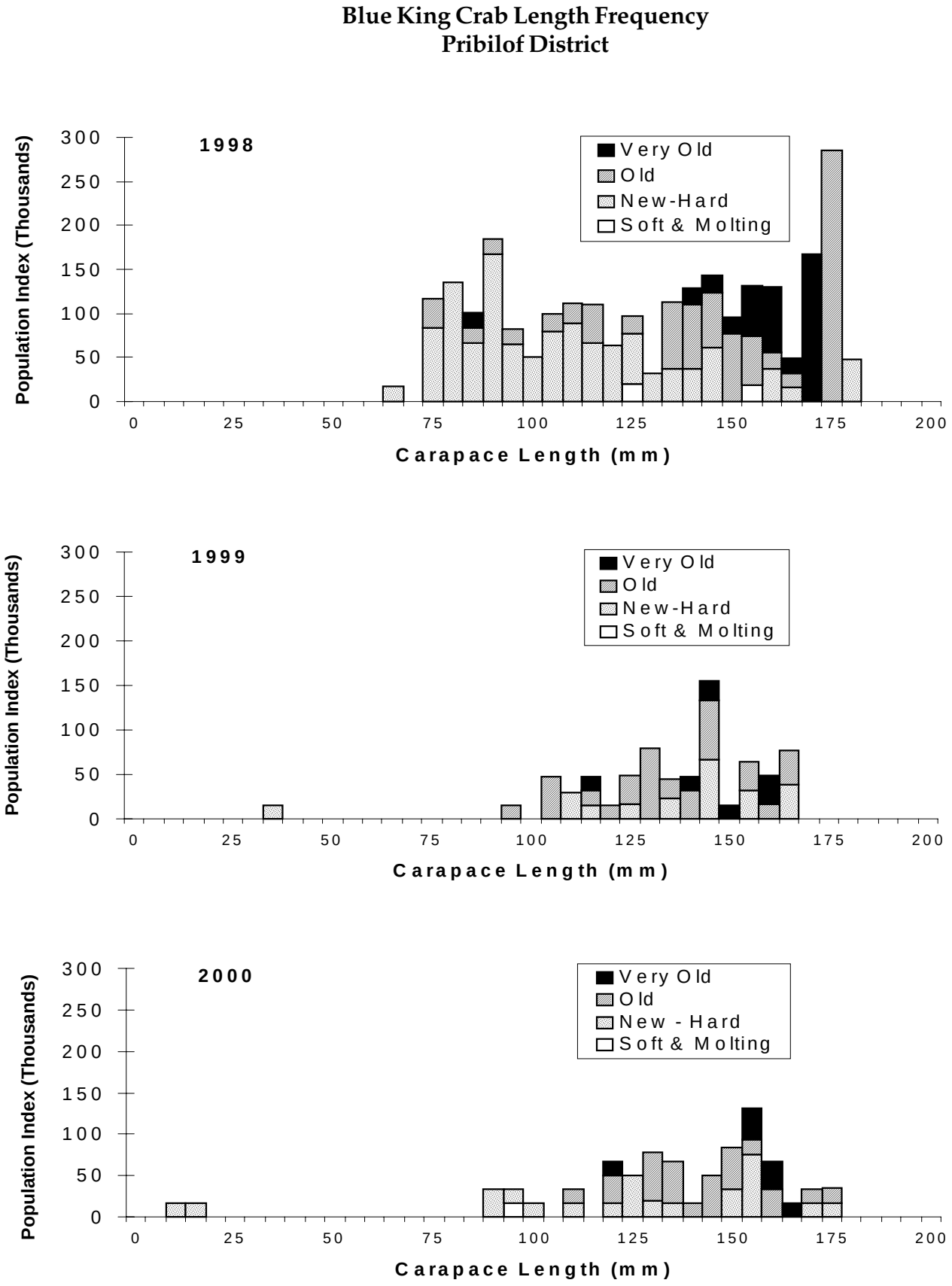


Figure 5. Size-frequency of Pribilof District male blue king crab (*P. platypus*), by 5 mm length classes, 1998-2000.

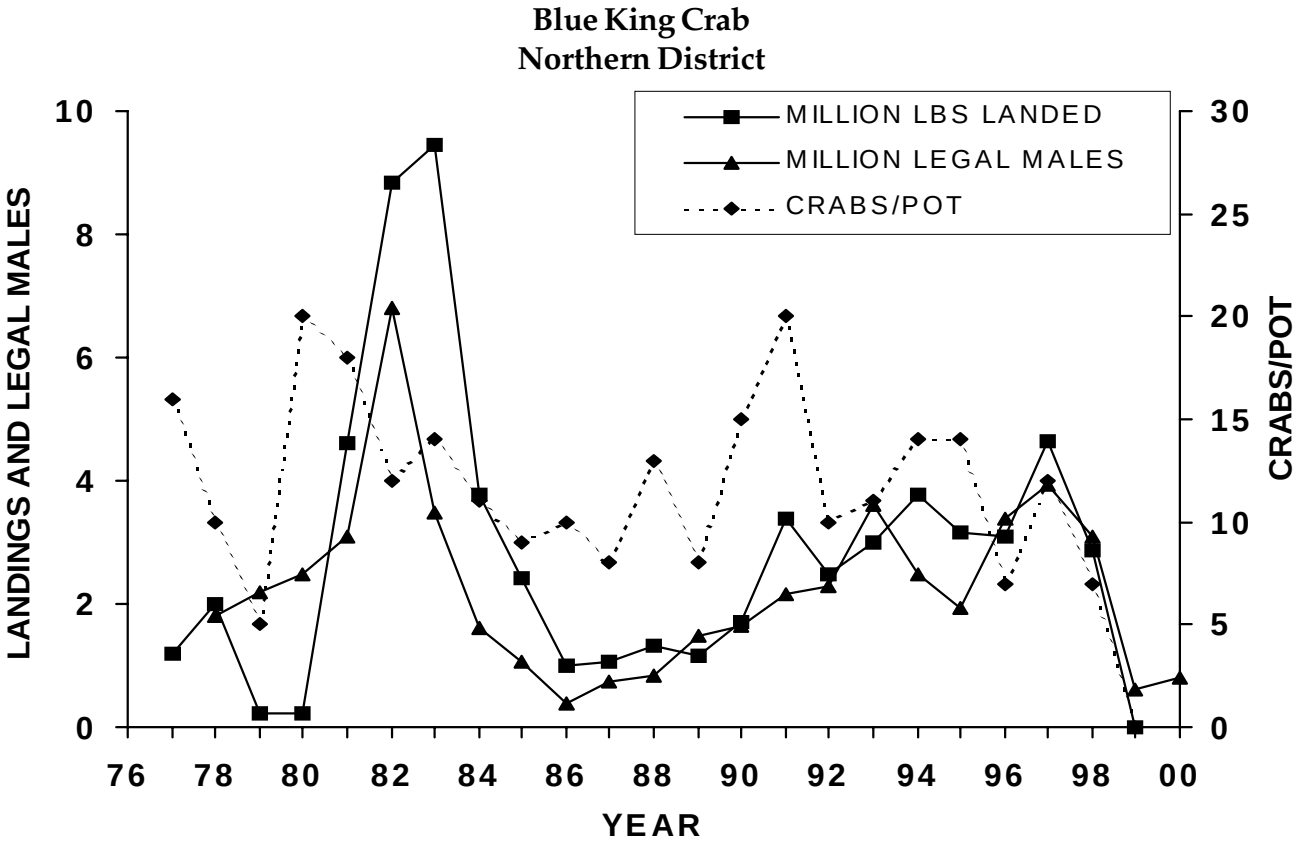


Figure 6. U.S. landings in millions of pounds, CPUE as crabs/pot-lift, and the abundance of legal blue king crabs (*P. platypus*) in millions in the Northern District (St. Matthew Island), estimated from NMFS trawl surveys.

Pribilof Islands Blue King Crab (*P. platypus*)

Legal (≥6.5 in cw or 135 mm cl) males were found primarily north and east of St. Paul Island (Chart 2 and Table 8A). The abundance index for legal males was 0.5 million (Table 2 and Figure 4), an 11% increase from last year, but well below the average for the previous 20 years (1.2 million). The index (0.2 million crab) of pre-recruits (110-134 mm cl) is unchanged relative to last year. The abundance of small males (<110 mm cl), is very difficult to determine. Size-frequency data (Figure 5) are very sparse and only 30 legal males were captured. Shell conditions among legal males were 0% softshell or molting, 33% new-hardshells, and 67% oldshells.

The abundance index (1.4 million crabs) for large (≥90 mm cl) females showed a 44% decrease from last year. However, estimates of female abundance are usually very imprecise due to the preference of these crab for rocky habitat which is not well sampled by trawls. Among sampled mature females, 3% were softshell, 45% were new hardshells, of which 100% carried new eggs, and 53% were oldshells, of which 100% carried empty embryo cases. Blue king crab are predominantly biennial spawners. Only a portion of the female population spawns in a given year, while the remainder is in a non-embryo-bearing phase. This fishery was closed from 1988 through 1994 due to low stock abundance, then re-opened from 1995-1998. The fishery was not opened in 1999 or 2000. Blue king crab landings in 1998 were 0.5 million lbs and CPUE was 3 crab/pot-lift. Declining GHLs and landings reflect declining trends in stock abundance for blue and red king crabs. This stock is not below the MSST established under MSFCMA but is closely approaching it (Appendix C). The fishery will remain closed in 2000 because of low stock abundance since both ADF&G catch-

Table 3. Annual abundance estimates (millions of crabs) for blue king crab (*P. platypus*) in the Northern District (St. Matthew Island) from NMFS surveys.

Northern District

	Males				Females			
	Small	Pre-rec	Legal		Small	Large		
Carapace Length(mm)	<105	105-119	≥120		<80	≥80		Grand
Width(in)	<4.3	4.3-5.5	≥5.5	Total	<3.8	≥3.8	Total	Total
1981	1.2	1.8	3.1	6.3	<0.1	0.5	0.5	6.8
1982	3.2	2.6	6.8	12.5	0.4	0.7	1.1	13.6
1983	1.8	1.6	3.5	6.9	0.2	2.4	2.7	9.6
1984	1.4	0.6	1.6	3.6	0.2	0.5	0.7	4.3
1985	0.5	0.4	1.1	1.9	0.1	0.1	0.2	2.1
1986	0.6	0.4	0.4	1.4	0.3	0.1	0.3	1.7
1987	1.1	0.7	0.7	2.5	0.5	0.2	0.7	3.2
1988	1.4	0.7	0.8	2.9	0.9	0.8	1.7	4.6
1989	4.8	1.0	1.5	7.3	1.6	1.7	3.3	10.5
1990	1.4	0.8	1.7	3.9	0.4	0.2	0.6	4.50
1991	2.9	1.5	2.2	6.6	0.8	0.7	1.5	8.1
1992	2.3	1.5	2.3	6.0	0.9	0.4	1.3	7.4
1993	4.6	2.0	3.6	10.2	1.4	3.0	4.4	14.6
1994	1.5	1.4	2.5	5.4	0.1	0.4	0.5	5.9
1995	1.9	1.1	1.9	4.9	0.6	0.1[1]	0.7	5.6
1996	2.6	2.0	3.4	8.0	1.1	0.9	2.0	10.0
1997	2.4	2.3	3.9	8.6	0.6	0.8	1.4	10.0
1998	2.3	1.8	3.1	7.2	0.6	0.5	1.1	8.4
1999	0.5	0.2	0.6	1.4	0.3	<0.1[1]	0.3	1.7
2000	0.6	0.3	0.8	1.7	0.1	0.1	0.2	1.7
Limits[2]								
Lower	0.2	0.1	0.3	0.7	0.0	0.0	0.0	0.4
Upper	1.0	0.5	1.3	2.7	0.2	0.3	0.4	3.0
±%	69	69	61	57	139	90	82	77

[1] These estimates are considered unreliable because few crabs were caught.

[2] Mean ± 2 standard errors for most recent year.

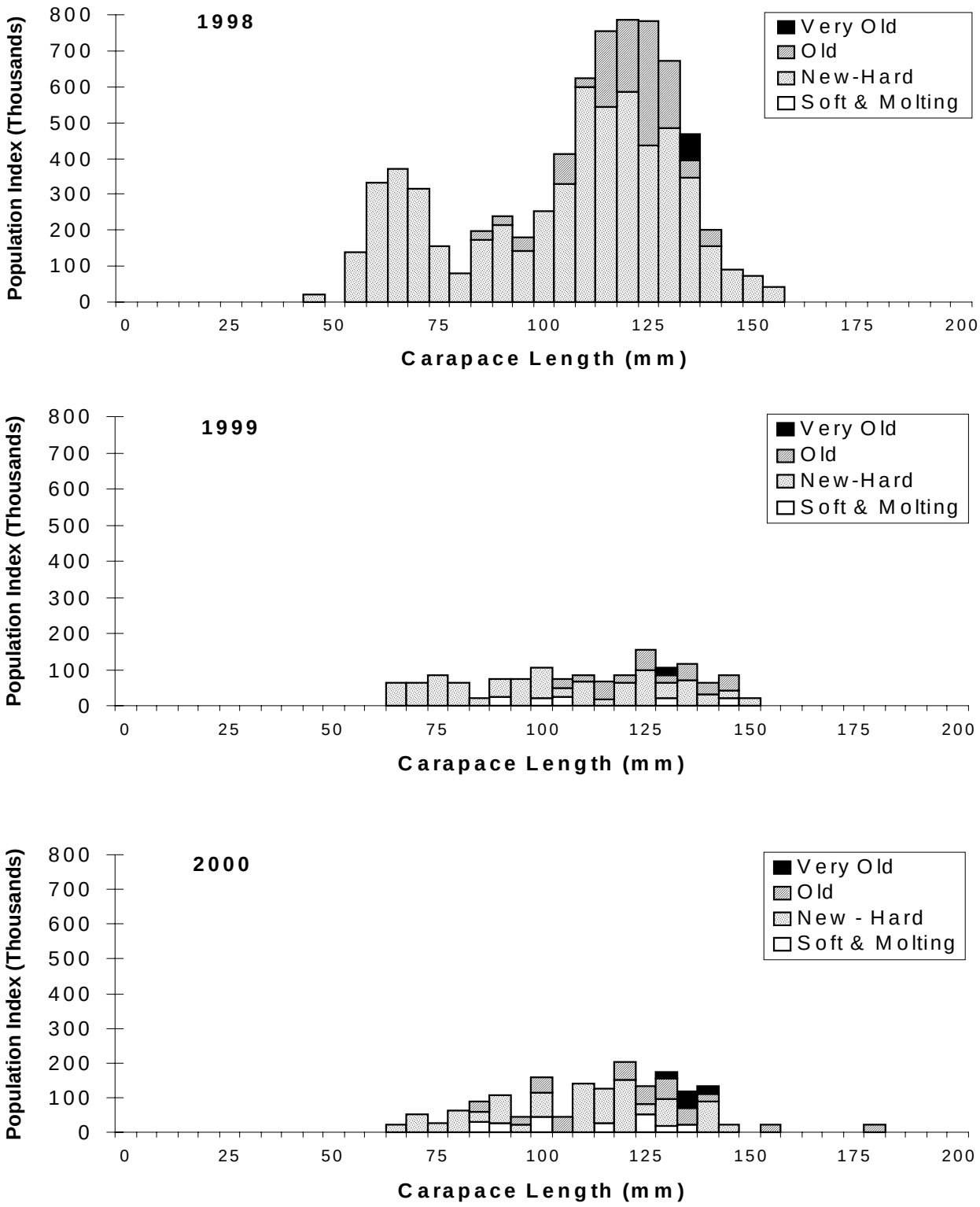


Figure 7. Size-frequency of Northern District (St. Matthew Island) male blue king crab (*P. platypus*), by 5 mm length classes, 1998-2000.

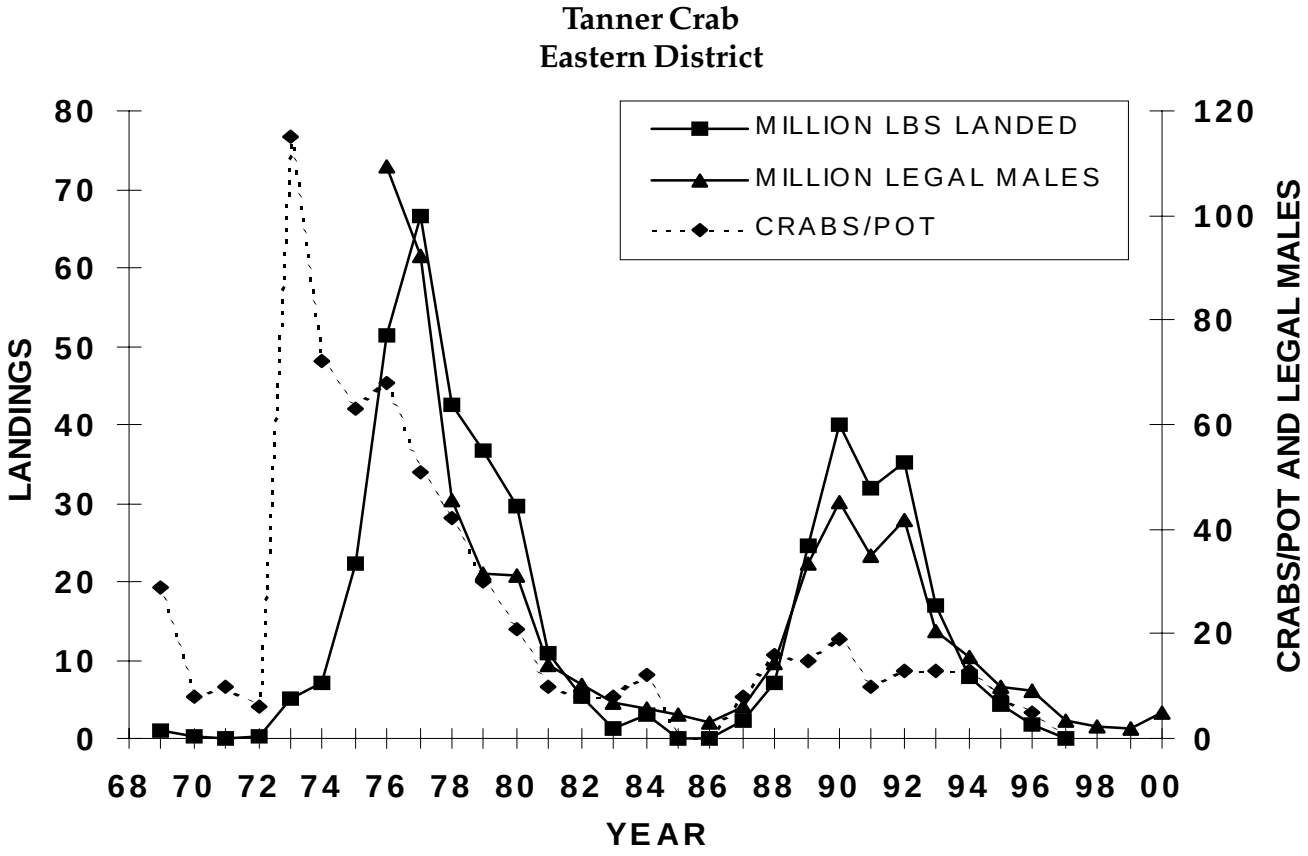


Figure 8. U.S. landings in millions of pounds, CPUE as crabs/pot-lift, and the abundance of legal male Tanner crab (*C. bairdi*) in millions in the Bristol Bay and Pribilof Districts (prior to 1989) or the Eastern District (since 1989), estimated from NMFS trawl surveys.

survey analysis and the NMFS survey estimates of mature male abundance are below the 0.77 million crab level established as a threshold in the ADF&G harvest strategy.

St. Matthew Island Blue King Crab (*P. platypus*)

Legal (≥ 5.5 in cw or 120 mm cl) males were captured primarily southwest of St. Matthew Island (Chart 2 and Table 8B). The abundance index for legal males was 0.8 million crabs (Table 3 and Figure 6), representing a 31% increase from last year. The abundance (0.3 million) of pre-recruit crabs (105-119 mm cl) is low and similar to last year. Legal and pre-recruit male abundance indices are both well below their averages for the previous 20 years which corroborates the large decline in abundance that was observed last year. Size-frequency was similar to last year (Figure 7). Among legal males captured (14), 7% were softshell, 36% were new-hardshells, and 57% oldshells. The index for large females (≥ 80 mm cl) is poorly determined due to a habitat preference for inshore, rocky and untrawlable grounds. Only 10 females were captured. Due to low stock abundance, the fishery was not opened in 1999 or 2000. Landings in 1998 were 2.9 million lbs and CPUE was 7 crab/pot-lift. This stock is considered overfished under the provisions of the MSFCMA and a rebuilding plan is being developed (see Appendix C).

Tanner Crab (*C. bairdi*)

The legal minimum size of 5.5 in cw (spine tip to spine tip) is equivalent to 138mm cw measured between the spines (scientific measure). Legal males were sparsely distributed with regions of highest abundance in southeast Bristol Bay (Chart 3 and Table 9). The abundance index for legal male *C. bairdi* in the Eastern District (east of 173° W) was 4.9 million crabs (Table 4 and Figure 8), a 147%

Table 4. Annual abundance estimates (millions of crabs) for Tanner crabs (*C. bairdi*) from NMFS surveys. Data since 1988 are for Eastern District; all prior data for Bristol Bay and the Pribilof Districts; both areas contain virtually all legal males.

	Males				Females			
	Small	Pre-rec	Legal		Small	Large		
Carapace Width(mm)	<110	110-137[1]	≥138[1]		<85	≥85		Grand
Width(in)	<4.3	4.3-5.5	≥5.5	Total	<3.4	≥3.4	Total	Total
1981	270.3	59.6	12.0	341.8	324.2	79.1	403.3	745.1
1982	77.3	60.3	8.2	145.8	126.4	83.6	210.0	355.8
1983	141.8	38.1	5.1	185.0	180.1	45.4	225.5	410.5
1984	82.5	24.9	4.7	112.1	107.0	33.4	140.4	252.5
1985	29.8	11.4	3.9	45.0	24.2	15.6	39.8	84.8
1986	109.0	14.7	2.6	126.4	68.2	13.7	81.9	208.3
1987	229.9	22.0	5.9	257.8	192.4	35.5	227.8	485.6
1988	287.3	62.8	14.3	364.4	184.8	81.0	265.8	630.2
1989	403.0	110.9	33.6	547.5	338.6	63.8	402.4	949.9
1990	286.1	87.4	45.1	418.6	266.5	97.4	363.9	782.5
1991	267.2	115.8	35.1	418.1	232.1	116.8	348.9	767.0
1992	121.0	112.7	41.8	275.5	98.9	63.9	162.8	438.3
1993	76.6	70.5	20.6	167.7	57.6	29.6	87.2	254.9
1994	47.9	43.2	15.4	106.6	57.9	27.5	85.4	192.0
1995	40.4	35.7	10.0	86.1	66.6	37.2	103.8	189.9
1996	52.6	26.7	9.2	88.5	59.3	27.7	87.1	175.6
1997	65.6	9.9	3.4	78.9	70.1	10.0	80.1	159.0
1998	74.2	12.1	2.2	88.5	61.4	6.5	67.9	156.5
1999	191.3	14.5	2.0	207.8	125.5	16.1	141.6	349.5
2000	102.8	18.1	4.9	125.8	79.7	13.1	93.4	219.2
Limits[2]								
Lower	72.0	9.8	1.7	90.6	53.4	6.0	63.5	105.2
Upper	133.7	26.4	8.1	161.0	105.9	21.4	123.3	284.3
±%	30	46	65	28	33	56	32	52

[1] Values prior to 1987 are interpolated from 5 mm width classes.

[2] Mean ± 2 standard errors for most recent year.

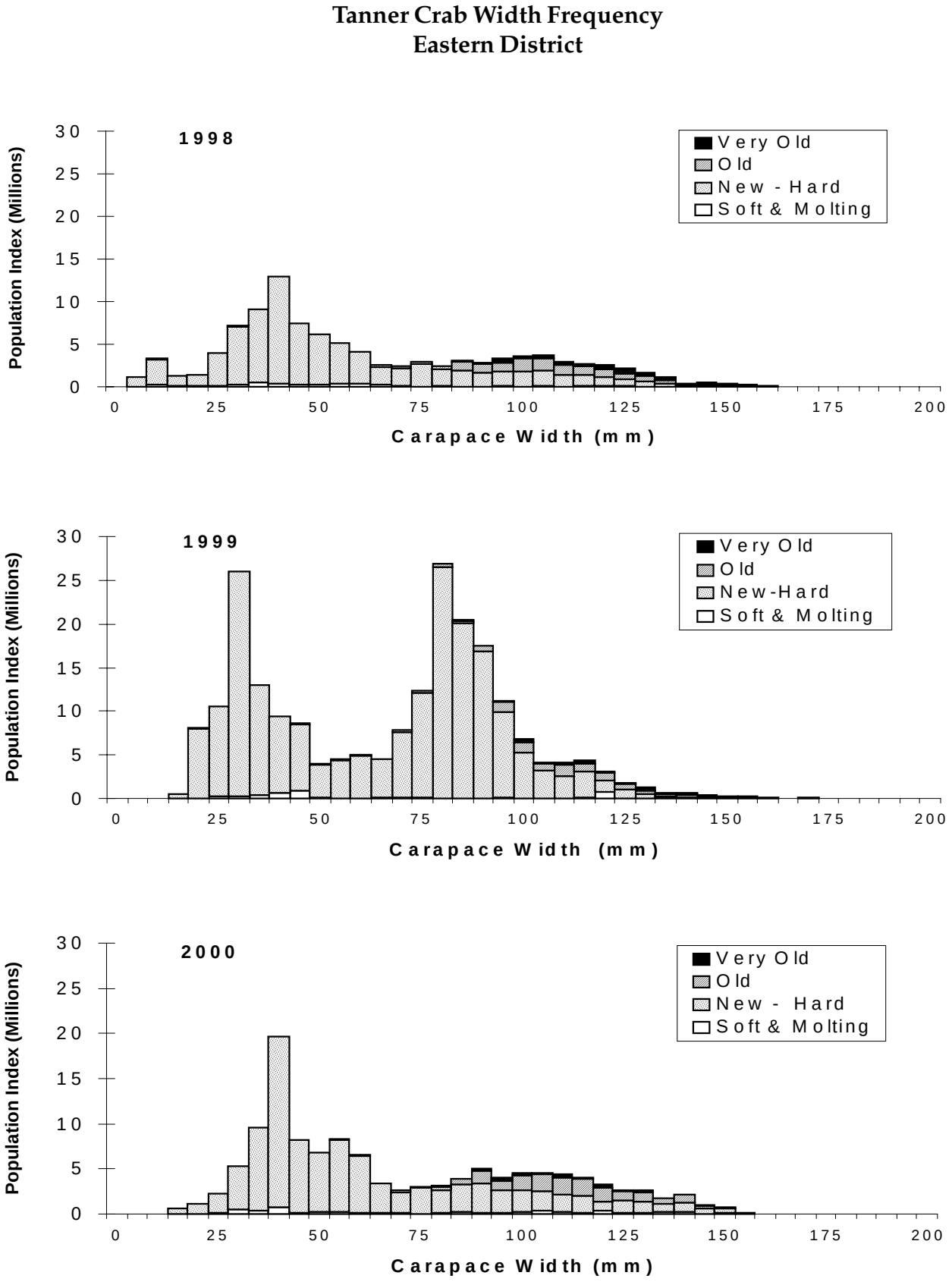


Figure 9. Size-frequency of male Tanner crab (*C. bairdi*) in the Eastern District, by 5 mm width classes, 1998-2000.

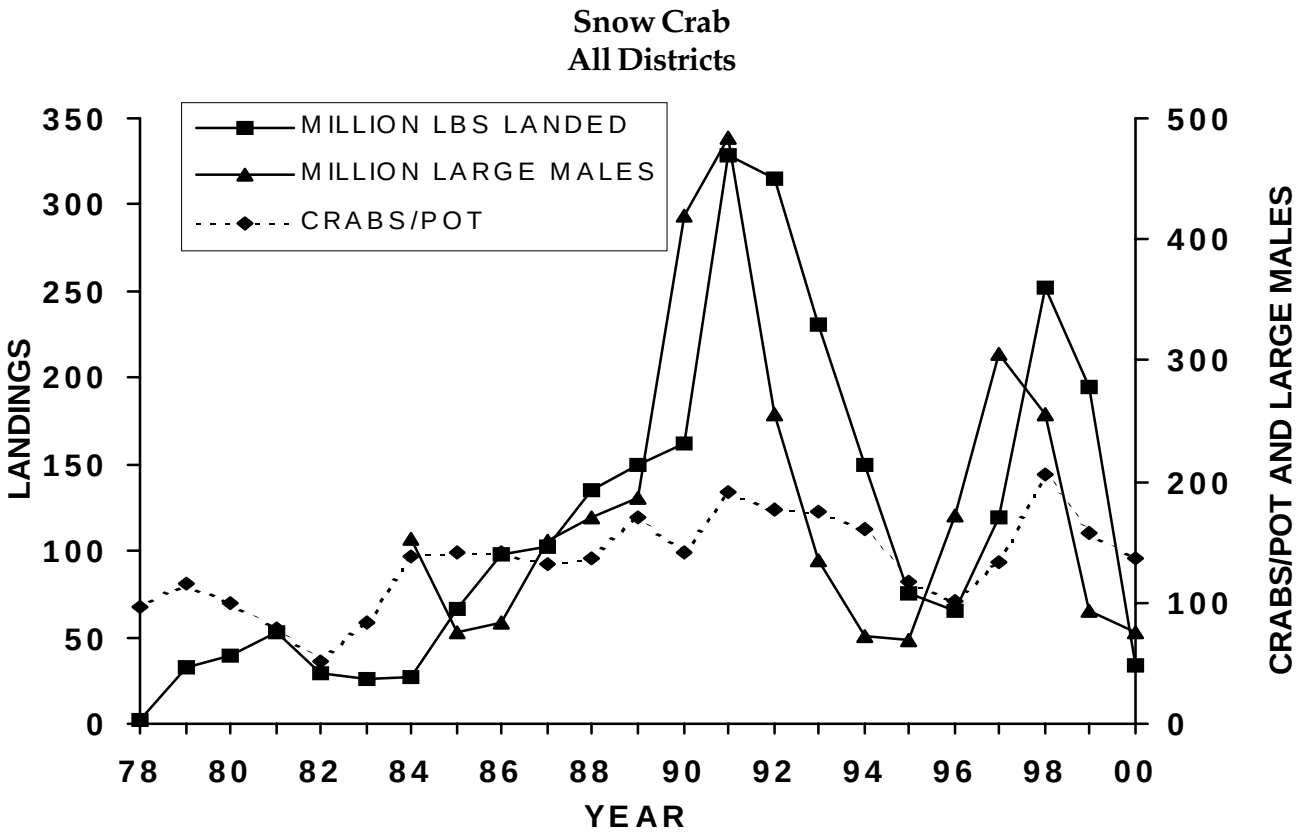


Figure 10. U.S. landings in million of pounds, CPUE as crabs/pot-lift, and the abundance of large male snow crab (*C.opilio*) in millions (all districts combined), estimated from NMFS trawl surveys.

increase from last year. Virtually all the legal males occurred in the Eastern District. The abundance index (18.1 million) for pre-recruit crabs (110-137 mm cw) showed a 24% increase, and the index of 102.8 million for small males (<110 mm cw) showed a 46% decrease. A mode of males in the 75-100 mm cw range seen in 1999 (Figure 9) was not apparent in 2000. Among legal males, 11% were molting or softshell, 56% were new-hardshells, and 34% were oldshells. Most oldshell crab will not molt again during their lifespan.

The abundance index (13.7 million) of large (≥85 cw) females showed a 15% decrease. Among sampled mature females, 4% were softshells; 28% were new-hardshells,of which 94% carried new eggs; and 67% were oldshells, of which 83% carried new eggs. About 8% of mature females sampled had not completed hatching by the time of the survey.

The fishery has been closed since 1996 due to low abundance and it will remain closed in 2000. The estimated spawning biomass for this stock has been below the MSST since 1997 (Appendix C). The fishery will remain closed this year under the Rebuilding Plan for the Bering Sea *C.bairdi* stock that has been approved by the Alaska Board of Fisheries and the North Pacific Fishery Management Council.

Snow Crab (*C. opilio*)

Although the legal minimum size limit for *C. opilio* is 3.1 in cw (78 mm), processors currently prefer a minimum size of 4.0 in cw (102 mm). The size ranges for male snow crab used in this report are defined as follows: small, <4.0 in (102 mm); large, ≥4.0 in cw (102 mm); and very large ≥4.3 in cw (110 mm).

The distribution of large males showed several areas of high concentration, north and west of the Pribilof Islands (Chart 4 and Table 10) and south and west of St. Matthew

Table 5. Annual abundance estimates (millions of crabs) for eastern Bering Sea snow crabs *(C. opilio)* from NMFS surveys (all districts combined).

	Males				Females			
	Small	Large	V. Large		Small	Large		
Carapace Width(mm)	<102[1]	≥102[1]	≥110		<50	≥50		Grand
Width(in)	<4.0	≥4.0	≥4.3	Total	<2.0	≥2.0	Total	Total
1981	1889.1	54.5	22.2	1943.6	668.6	2607.6	3276.2	5219.8
1982	2003.0	70.2	21.7	2073.2	402.6	2255.8	2658.4	4731.7
1983	1782.8	75.3	22.1	1858.1	673.1	1228.4	1912.6	3771.0
1984	1237.4	153.2	73.9	1390.6	610.5	581.7	1192.2	2582.9
1985	547.8	74.9	40.7	622.7	258.2	123.5	381.7	1004.3
1986	1179.0	83.1	45.9	1262.1	790.6	422.0	1212.5	2474.5
1987	4476.0	144.3	66.4	4620.3	2903.0	2795.0	5698.0	10318.3
1988	3467.2	171.0	90.1	3638.2	1235.3	2322.7	3556.0	7194.2
1989	3646.1	187.1	81.2	3833.2	1922.8	3790.7	5713.4	9546.6
1990	2860.4	420.3	188.7	3280.7	1463.3	2798.1	4261.4	7542.1
1991	3971.2	484.1	323.0	4455.3	3289.0	3575.0	6863.9	11319.2
1992	3158.4	256.4	163.8	3414.8	2433.9	1914.3	4348.2	7763.0
1993	5596.6	135.0	77.9	5731.5	3989.8	1982.6	5972.4	11703.9
1994	4282.5	71.6	39.9	4354.0	3417.6	1674.3	5091.8	9445.9
1995	4086.8	68.8	30.9	4155.6	2090.3	2409.4	4499.7	8655.3
1996	2700.1	171.6	64.8	2871.7	1189.0	1364.2	2553.2	5424.9
1997	1490.8	305.7	160.9	1796.6	927.9	1383.1	2311.0	4107.5
1998	1014.7	254.6	139.2	1269.3	803.0	1160.8	1964.0	3233.3
1999	517.0	94.2	55.8	611.1	315.5	474.3	789.8	1401.0
2000	1035.8	76.1	40.7	1111.9	648.4	1480.9	2129.3	3241.2
East(%)[2]	46.4	46.4	57.0	46.4	46.1	70.1	62.8	57.2
Limits[3]								
Lower	725.1	52.5	28.5	800.6	272.3	0.0	276.8	1077.4
Upper	1346.6	99.7	52.9	1423.2	1024.4	2976.6	3981.7	5405.0
±%	30	31	30	28	58	101	87	67

[1] Values prior to 1984 are interpolated from 5 mm width classes.

[2] Percent of size group in Eastern District (east of 173°).

[3] Mean ± 2 standard errors for most recent year.

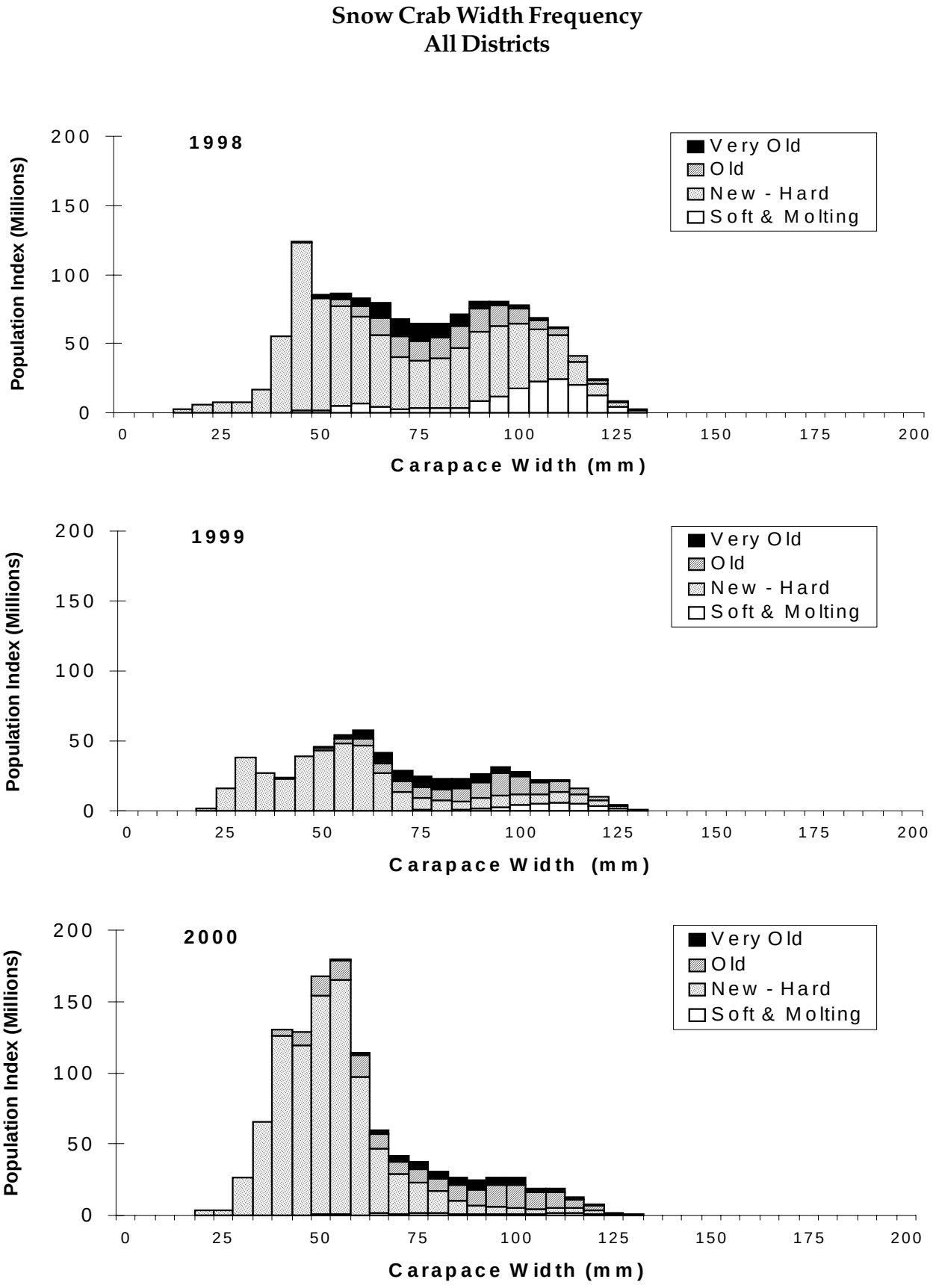


Figure 11. Size-frequency of male snow crab (*C. opilio*), all districts combined, by 5 mm width classes, 1998-2000.

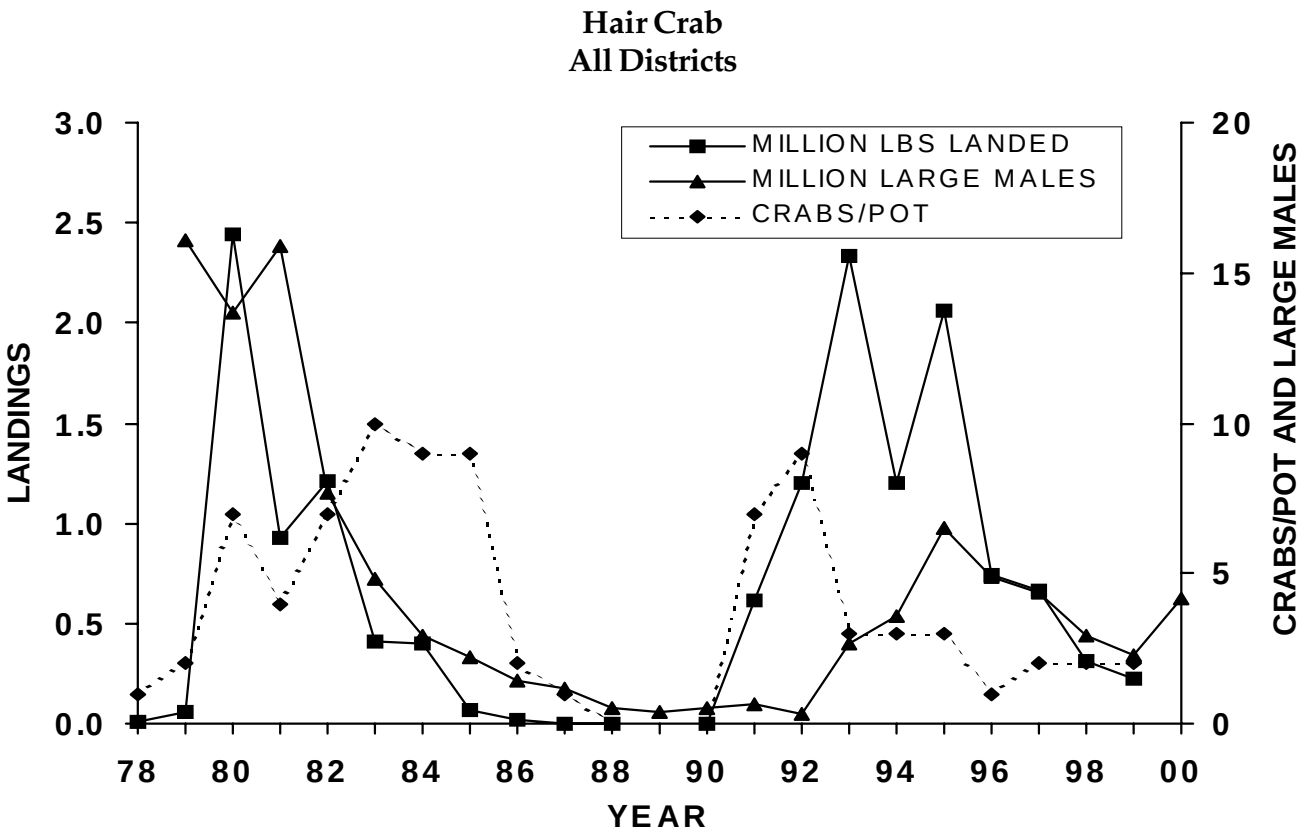


Figure 12. U.S. landings in millions of pounds, CPUE as crabs/pot-lift, and the abundance of large male hair crab (*E.isenbeckii*) in millions (all districts combined), estimated from NMFS trawl surveys.

Island. The abundance index for large (≥102 mm cw) males (Eastern and Western Districts combined) is 76.1 million crabs (Table 5 and Figure 10), which represents a 19% decrease from last year. This is well below the twenty year average (1980-1999) of 170 million. Approximately 46% of these were in the Eastern District as compared to 70% in 1999 and 83% in 1998. Small males (<102 mm cw) showed a 100% increase in abundance due to recruitment . The abundance index (1481 million) for large females (≥ 50 mm cw) showed a 212% increase. A strong year class reached its peak in 1997 and has declined rapidly since, with increasing prevalence of oldshell male crabs in the 75- 100 mm cw range (Figure 11). Among large male crabs, 8% were in molting or softshell condition, 20% were new-hardshells indicating a recent molt, and 72% were oldshells. Among sampled mature females, 32% were new-hardshells, of which 100% carried new eggs and 68% were oldshells, of which 83% carried new eggs; the remainder had not yet produced a new clutch.

The spawning biomass (472.7 million lbs) of the eastern Bering Sea stock of *C. opilio* is slightly above the minimum stock size threshold of 460.8 million lbs as defined in the FMP. The majority of the 67% increase in total spawning biomass between 1999 and 2000 resulted from a three-fold increase in mature female biomass. This increase brought the estimated spawning biomass above the MSST but is suspect since the mature female estimate is heavily influenced by a single extraordinarily high catch. A very restricted fishery was allowed under the current Rebuilding Plan for the Bering Sea *C.opilio* stock. The GHL for 2001 has been set at 27.3 million lbs (12,380 t) of large crabs (≥4.0 in cw) of which 2.05 million lbs are for CDQ fisheries. The fishery will open on January 15, 2001. In 2000, the GHL was 28.5 million lbs

Table 6. Annual abundance estimates (millions of crabs) for hair crab (*E. isenbeckii*) from NMFS surveys.

	Males			Females	
	Small	Large			
Carapace Length(mm)	<83	≥83			Grand
Width (in)	<3.25	≥3.25	Total	Total	Total
1981	2.8	14.3	17.2	0.9	18.0
1982	0.5	8.1	8.6	0.4	9.0
1983	0.2	4.4	4.6	0.8	5.5
1984	0.7	3.3	4.1	0.5	4.6
1985	0.3	2.6	2.9	0.3	3.1
1986	0.7	1.8	2.5	0.4	2.9
1987	1.6	1.3	2.9	0.9	3.8
1988	3.0	0.9	3.9	0.9	4.7
1989	11.4	1.5	12.8	0.7	13.5
1990	13.0	1.1	14.1	0.9	15.0
1991	4.5	1.3	5.7	1.2	6.9
1992	2.5	1.2	3.6	0.5	4.2
1993	9.1	2.6	11.8	1.5	13.3
1994	4.7	3.6	8.2	1.3	9.5
1995	4.6	6.5	11.1	0.7	11.8
1996	3.6	4.9	8.4	1.1	9.5
1997	1.6	4.3	5.9	0.3	6.3
1998	0.5	2.9	3.5	1.4	4.9
1999	1.4	2.3	3.7	1.9	5.6
2000	0.5	4.2	4.7	1.3	6.0
Limits[1]					
Lower	0.2	2.5	2.8	0.7	3.5
Upper	0.9	5.9	6.6	2.0	8.6
±%	69	41	40	50	42

[1] Mean ± 2 standard errors for most recent year.

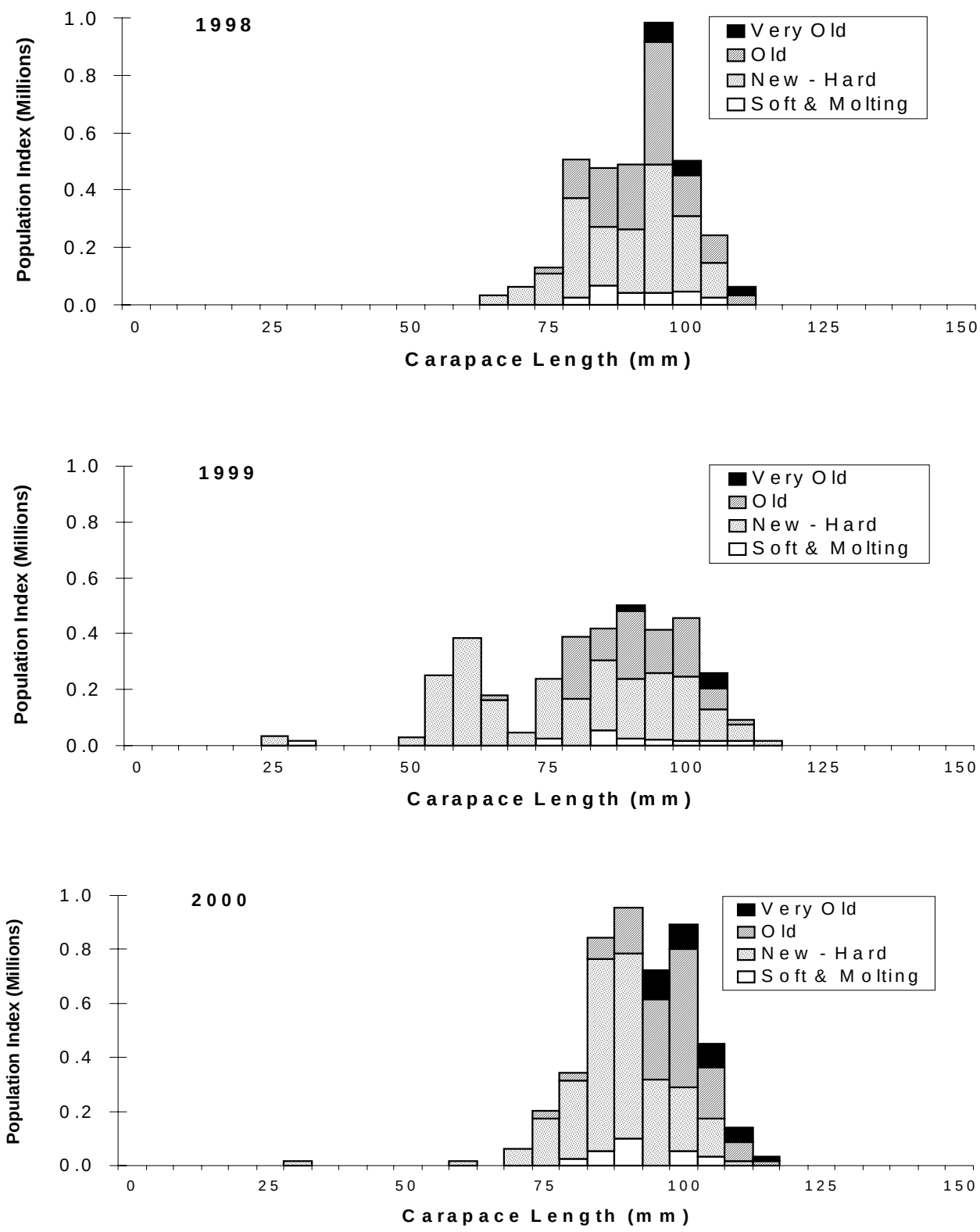


Figure 13. Size-frequency of male hair crab (*E. isenbeckii*), by 5 mm length classes, 1998-2000.

while landings were 33.3 million lbs and the average CPUE was 137 crab/pot-lift.

Hair Crab *(Erimacrus isenbeckii)*

Historically, hair crab have been concentrated just north of the Alaska Peninsula and near the Pribilof Islands (Chart 5 and Table 11). In recent years , however, abundance of hair crab north of 58° N lat. has been increasing. Female and small male crabs are infrequently encountered in this survey, therefore, these data provide little understanding of their distribution.

The abundance index for large (≥ 3.25 in cw) male hair crab (Table 6 and Figure 12), is 4.2 million, an 81% increase from last year. Size-frequencies (Figure 13) indicate little recruitment to the stock. The abundance index of total females is usually unreliable. Fifty three percent of males and 65% of females were new-hardshell crabs.

Changes in abundance indexes of hair crab are difficult to interpret due to patchy distribution, burying habits, in-shore distribution, and suspected variability in catchability between years. Further, changes in fishery practices and management over the time series decreases the usefulness of correlations between fishery and survey data (Figure 12).

The directed fishery for hair crab in the Pribilof Islands has no statutory minimum legal size regulation, so we have defined large crabs as those larger than a minimum size of 3.25 in cw that has been specified as a condition of permits during recent years. There are also no regulatory districts defined, but management is based on districts defined for red king crab (e.g. Bristol Bay, Pribilofs, and Northern districts). Currently, there are an estimated 1.9 million lbs of large male crabs in the Northern District. A GHL of 236,368 lbs was set for the Northern District in 2000. In 1999, 0.22 million lbs were taken with CPUE of 1.5 crab/pot-lift.

Acknowledgments

Successful completion of the annual EBS crab and groundfish survey is crucially dependent on the skippers and crews of the participating vessels. We wish to extend a special thanks to Glenn Sullivan and Randy Rowland of the *F/V Arcturus* and Norman Bakken and Jeff Boddington of the *F/V Aldebaran* and their crews.

We also wish to thank all of the "crabologists" who participated in this survey, including P. Anderson, C. Armistead, P. Cummiskey, B. McKenna, E. Munk, B. O'Gorman, S. Persselin, K. Smith and K. Swiney. This document was produced by J. Corlew.

APPENDIX A

Methods of Estimating Crab Population Size

Population abundance indices are determined by the 'area-swept' method, using a stratified systematic sampling design. Distance traveled by the trawl was determined from positions recorded at the beginning and ending of each tow. Area fished (area swept by the trawl) was calculated by multiplying the distance traveled by the effective width of the trawl. Wingspread on this trawl ranges from 47-58 ft. For consistency with previous reports an effective width of 50 ft (15.2 m) was assumed.

All stations (grid squares) within a district or management area were used for estimating the abundance of each species. Stations where multiple (corner or repeat) tows were made were grouped into strata; these include a block of 12 stations southwest of St. Matthew Island and 16 stations around St. Paul Island.

The catch-per-unit-effort (CPUE) was calculated for each station as number of crabs per square nautical mile. Average CPUE was calculated within each multiple tow block and each management district. Abundance indices were calculated by extrapolating the average CPUE of each size/sex group over the geographic area of each district. Variance and standard error (SE) of the index were calculated arithmetically. Confidence intervals were calculated by adding or subtracting 2 SEs to the population estimate. Note that, since the data are usually not normally distributed, variance estimates and confidence intervals are approximate. Nevertheless, they are provided in order to indicate the range of the data relative to previous years' estimates.

Threshold levels have been established for certain crab stocks by the Crab Plan Team of The North Pacific Fishery Management Council. In accordance with Alaska Board of Fisheries policy, and the Alaska Department of Fish and Game's Management Plan for Westward Region Crab stocks, such fisheries will be closed if the abundance index falls below the threshold level.

APPENDIX B

Crab Shell Condition

All crabs measured in the NMFS eastern Bering Sea trawl survey are coded as to shell condition. Shell condition incorporates several factors including exoskeleton discoloration, scratching and wear, and fouling by encrusting organisms, and can be used to estimate the time since a crab has last molted. The shell condition categories used in this report and the estimated times since last molting that they imply are given below:

Molting[1]: Joints swollen and/or well developed second exoskeleton present. Crab is actively molting or will molt within days.

Softshell[1]: Carapace is still soft and pliable from recent molt. Crab has molted within weeks.

New-hardshell: Carapace firm to hard and lacking scratches, wear, discoloration, and encrusting organisms. Crab has probably molted within the last year.

Oldshell: Usually has at least some scratching, spine wear. Crab may have darker coloration, and encrusting organisms are frequently present. Crab has probably not molted within the last year.

Very oldshell: Undersides of legs yellowed; abundant scratches and stains; spines and claws very worn; encrusting organisms almost always present and often abundant. Time since the last molting is almost certainly greater than one year but not definitely known.

Very, very oldshell: Shells extensively stained and usually with extensive cover of encrusting organisims. Time since the last molting not definitely known.

[1] Note that in the report, Molting and Softshell categories are frequently combined. The time span over which these conditions occur in a crab is only a matter of weeks. A high percentage of molting and softshell crabs in a survey population indicates that the molting season is not yet over.

APPENDIX C

Overfishing Definitions Under the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)

The Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs (FMP) was rewritten in 1998. The FMP does not include hair crab. For the king, Tanner and snow crab stocks that the NMFS surveys annually, there have been changes in management targets and constraints that reflect changes in the MSFCMA. These changes did not materially affect management decision making until the 1999-2000 fishing seasons because the Tanner crab fishery had already been closed due to low stock abundance following the 1996 season. This Appendix provides an explanation of how the North Pacific Fishery Management Council's Crab Plan Team defined management parameters as required under the new MSFCMA.

The FMP delegates many management measures to the State of Alaska, including the determination of harvest rate or annual Guideline Harvest Level (GHL) for each fishery. GHLs are constrained such that overfishing is prevented or, in the case of overfished stocks, that stocks may be allowed to recover at a rate specified by a required recovery plan (usually within 10 years). In essence, State harvest strategies may be more conservative than those specified by the FMP but may not be less so.

Crab fisheries in the eastern Bering Sea (EBS) were never prosecuted in a manner similar to finfish fisheries. In the latter, the entire mature segment of a population (frequently called spawning biomass) is typically vulnerable to fishing and sustainable yield (SY) or its maximum (MSY) can be regarded as a biological parameter related to stock productivity and mortality. By contrast, EBS crab fisheries have been subject to various constraints since their inception in the 1940s. These constraints restricted fisheries from harvesting substantial portions of the mature population. These included prohibition of harvesting of females, and the setting of size limits to ensure that males would have at least one opportunity to breed before reaching legal size. Typically, EBS crab fisheries have also been constrained by quotas or guideline harvest levels (GHLs) that, by policy, were intended to promote stability in the face of variable recruitment, even if it were necessary to forego some harvest.

In the previous editions of the FMP, the mean catch over the history of a fully developed fishery was considered as MSY for a given stock. Considering the history of regulations imposed and in light of the MSFCMA, the averaged crab catch history is more closely related to optimum sustainable yield (OSY) than to MSY. This is because the regulatory process has considered social (e.g., desire for stabilized economy), economic (e.g., processing costs and marketability of females and small males) as well as biological (e.g., growth, mortality, abundance) factors.

For the new FMP, MSY is computed on the basis of what is known of the abundance of the mature portion of the population, or total mature biomass (TMB). Note that TMB is simply an estimate, or index, of the total biomass of individuals that are physiologically mature and makes no assumptions as to what proportion of them actually spawn (spawning biomass or SB). Various State harvest strategies do consider estimated spawning biomass and are hence examples of more conservative management (see Zheng et al. 1997).

A fixed fraction of the annual TMB is considered as SY for that year and the average of SYs over a suitable period of time is considered as MSY. In the FMP, it is assumed that the level of instantaneous fishing mortality (F) that corresponds to MSY is equal to the natural mortality (M) of an unfished stock:

$$F = M = F_{msy}.$$

This strategy is considered as moderately conservative and is one of several that are recommended for situations where moderate amounts of pertinent data are available (Restrepo et al. 1998). The value of M was determined by taking the largest crab size observed during surveys or other sampling conducted prior to the development of substantial fishing (Wallace et al. 1949, NMFS unpublished), converting this to estimated age and then computing M from equations given by Hoenig (1983). Longevity of Bristol Bay red king crab was considered as representative for all king crabs (genera *Paralithodes* and *Lithodes*) and that of Bering Sea Tanner crab (*Chionoecetes bairdi*) representative for the genus *Chionoecetes*. The largest red king crab observed by Wallace et al. (1949) was 197 mm in carapace length (cl) and the largest known from Bristol Bay fisheries are 205 mm cl. Growth models (e.g., Balsiger 1974) indicate that a male crab of 157 mm is about 14 years old while tagging studies indicate that a king crab of this size may be recovered as much as 6 years later. The maximum age of red king crab near Kodiak (ADF&G unpublished, news release) was estimated at 24 years. For the purposes of computing MSY, values of 22 to 24 years were considered as maximum and correspond to F-values of 0.19 to 0.20. A value of F=0.20 was chosen for king crab. During the 1969 and 1970 NMFS trawl surveys, 20,117 Tanner crab were measured and a maximum size of 199 mm carapace width (cw) was obtained. Using Somerton's (1981) growth model as well as tagging data, a Tanner crab of this size would be approximately 15 years of age, which corresponds to F = 0.295. A value of F=0.30 was chosen for computing MSY.

In each year, the TMB for surveyed stocks was computed by considering the vulnerability (V = probability of capture in the survey), the proportion mature (P), the mean weight (W) and unadjusted survey index (N) for of the i-th size group (5 mm steps) of each sex group. The mature biomass (B) for a given (i-th) 5 mm size group for the j-th sex (males=1, females =2) was calculated as :

$$B_{i,j} = N_{i,j} * W_{i,j} * P_{i,j} / V_{i,j}.$$

The TMB for a given year is the sum of B over size and sex. This is considered as an estimate of the annual average biomass theoretically available for harvest (W * NA/Z considered equivalent to TMB). This simplifies Baranov's catch (C) equation to:

$$C = F * TMB = SY.$$

This was done because the timing of fisheries relative to the survey or to recruitment is in part an OY consideration and also varies from stock to stock.

MSY computations require that environmental (including ecological) conditions remain reasonably constant over the period during which SYs are averaged. In this FMP, the 15-year period (1983-1997) was considered representative of current environmental conditions because: 1) several crab stocks declined from the 1970s until the early 1980s and then stabilized somewhat (e.g., Bristol Bay red king crab); 2) predator/competitor fish populations that increased sharply in the late 1970s (regime shift) seem to have stabilized somewhat by 1983; 3) recruitment from the generally high crab populations of the 1970s would have been evident or have dissipated by 1983 ; and 4) for less stable stocks, abundance went through both high and low periods within these 15 years although it was generally less than that of the 1970s. In choosing 1983-97, the Plan Team recognized that MSY would be much reduced, for many stocks, as compared to a longer time series but felt that it was extremely important to choose a period that was representative of current environmental conditions. It is recognized that MSY estimates will have to be periodically evaluated and updated as more information

becomes available and as environmental conditions may change. Over a representative period, the MSY is considered as the average harvest that could be sustained by a stock if the fishery were to exploit all mature crabs. In practice, due to constraints noted above, the harvest of legal male crab will be much less than MSY.

The average of annual sustainable yields (SY) is taken as MSY, and the average of the TMBs, providing these SY estimates are taken as the MSY biomass. A stock is considered overfished if the TMB falls below 50% of the MSY biomass, which is also referred to as the minimum stock size threshold (MSST). The status of surveyed stocks relative to MSST is summarized in Figures C-1 through C-3.

Tanner crab, St. Matthew Island blue king crab, and snow crab are currently considered overfished. A rebuilding plan for Tanner crab has been approved by the Alaska Board of Fisheries, previewed by the NPFMC, and approved by the Secretary of Commerce. Rebuilding plans for St. Matthew Island blue king crab and EBS snow crab have both been through similar development to the Tanner crab rebuilding plan, and have been published in the Federal Register for public review. These two plans will be revised as necessary before Secretarial review.

Citations

Balsiger, J.W. 1974. A computer simulation model for the eastern Bering Sea king crab population, Ph.D. dissertation, Univ. Washington, Seattle, 198p.

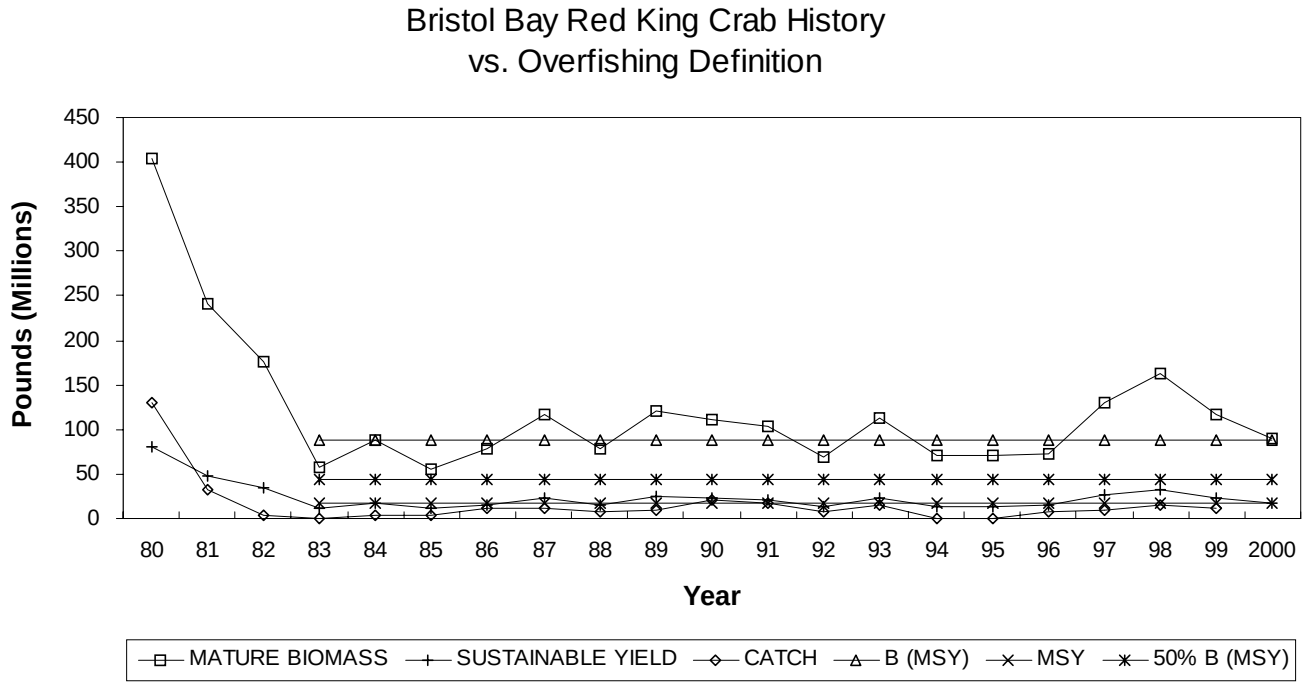
Hoenig, J.M. 1983. Empirical use of longevity to estimate mortality rates. Fish. Bull., U.S. 81:898-903.

Restrepo, V.R., G.G. Thompson, P.M. Mace, W.L. Gabriel, L.L. Low, A.D. MacCall, R.D. Methot, J.E. Powers, B.L. Taylor, P. R. Wade, and J.F. Witzig. 1998. Technical guidance on the use of precau tionary approaches to implementing National Standard 1 of the Magnuson-Stevens Fishery Conservation and Management Act. U. S. Dep. Commer., NOAA Tech. Memo. NMFS-F/SPO-40, 54p.

Somerton, D.A. 1981. Life history and population dynamics of two species of Tanner crab, *Chionoecetes bairdi* and *C. opilio*, in the eastern Bering Sea with implications for management of the commercial harvest. Ph.D. dissertation, Univ. Washington, Seattle, 220p.

Wallace, M.M., C.J. Pertuit, and A.V. Hvatum. 1949. Contribution to the biology of the king crab, *Paralithodes camtschatica* (Tilesius). U. S. Fish. Wildl. Serv. Fish Leaflet 340:50p.

Zheng, J., M.C. Murphy, and G.H. Kruse. 1997. Analysis of harvest strategies for red king crab, *Paralithodes camtschaticus*, in Bristol Bay, Alaska. Can. J. Fish. Aquat. Sci. 54:1121-1134.



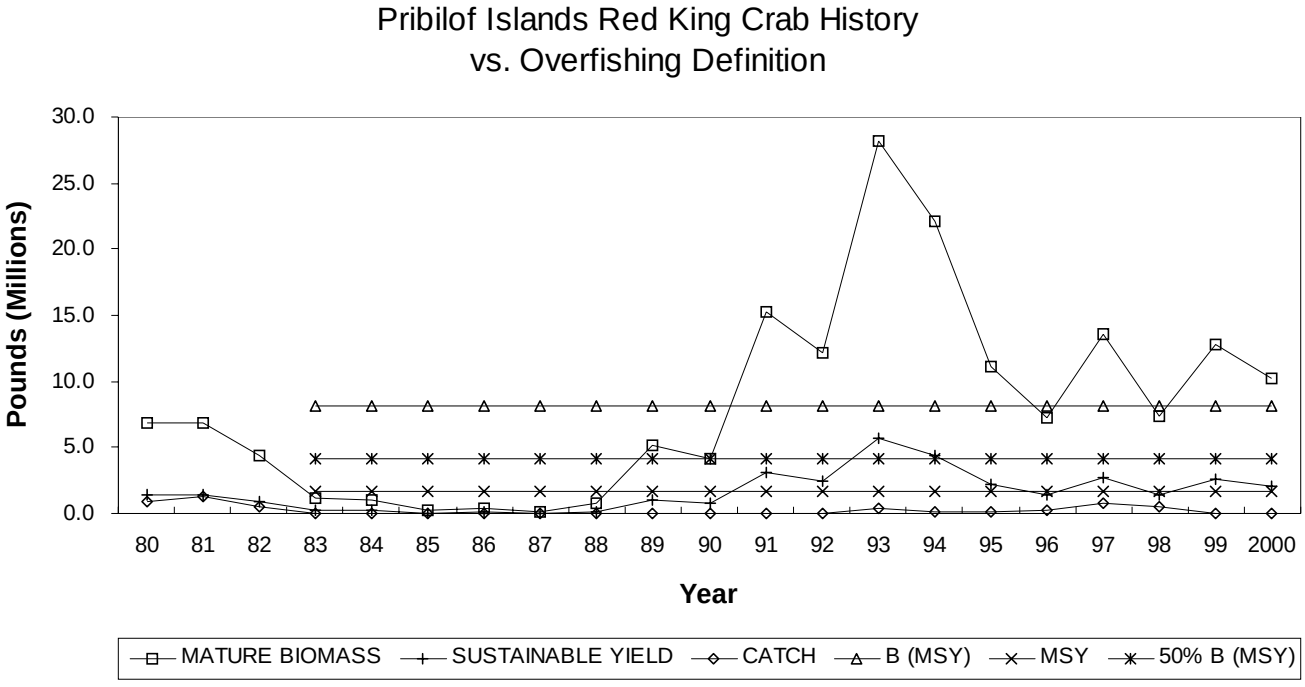
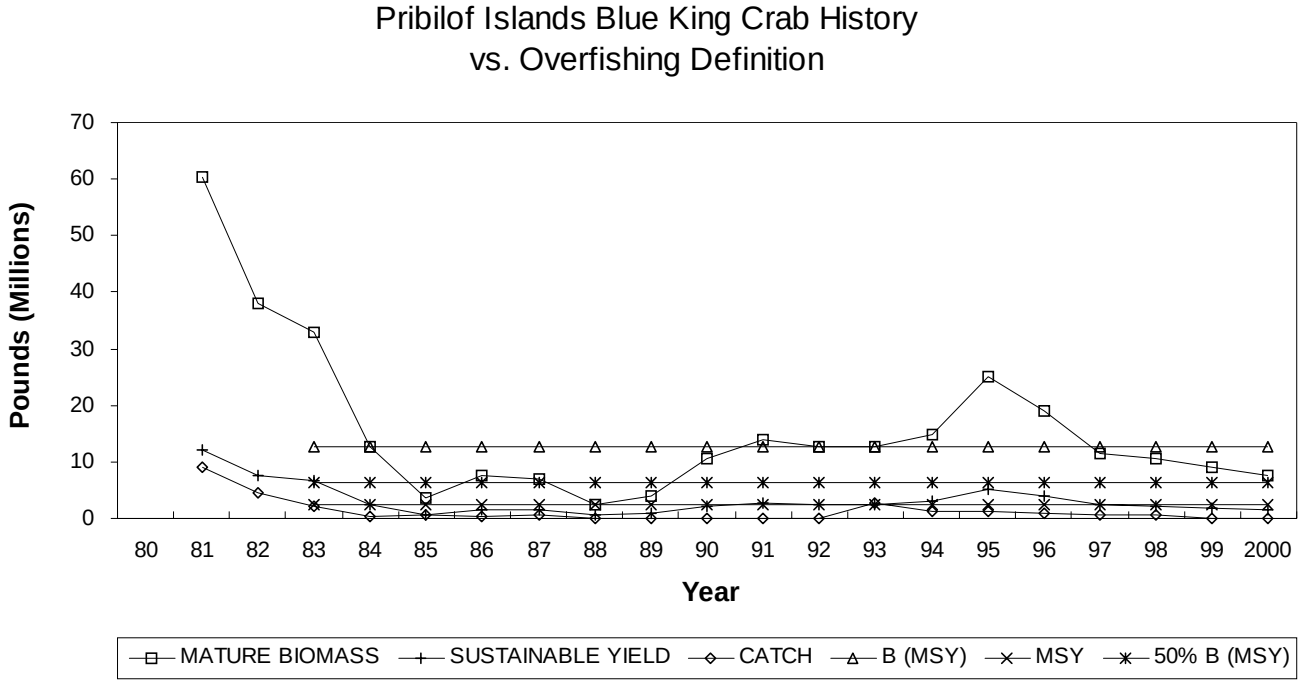


Figure C-1. History of Bristol Bay and Pribilof Islands red king crab fisheries relative to overfishing under the Magnuson-Stevens Fishery Conservation and Management Act. Stocks are considered overfished if mature biomass is below 50% MSY.



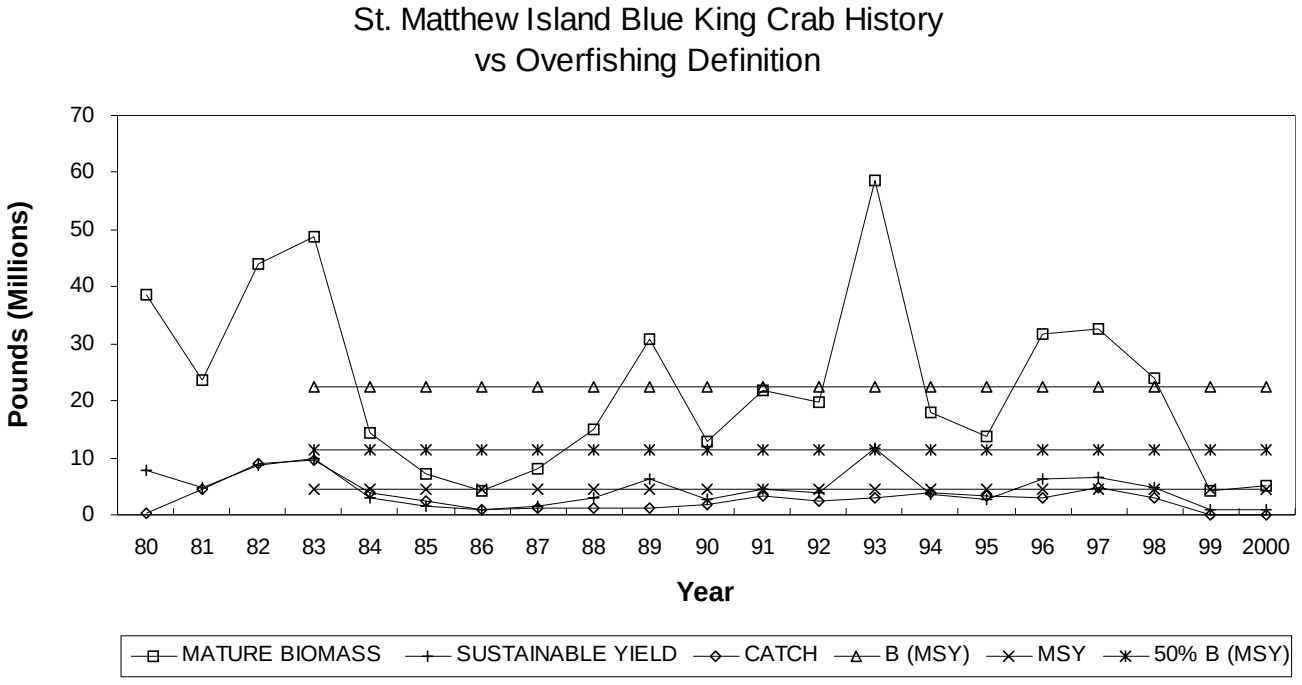
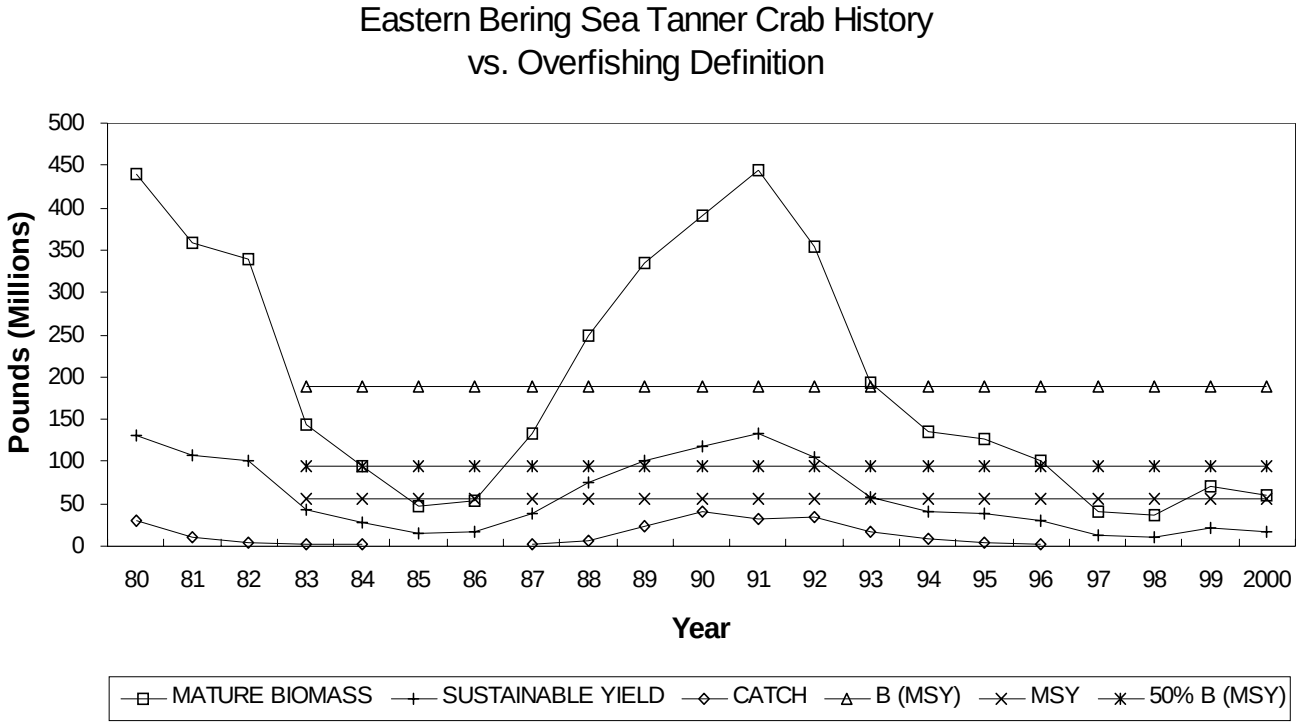


Figure C-2. History of Pribilof Islands and St. Matthew Island blue king crab fisheries relative to overfishing under the Magnuson-Stevens Fishery Conservation and Management Act. The St. Matthew Island stock is considered overfished because mature biomass falls below 50% MSY.



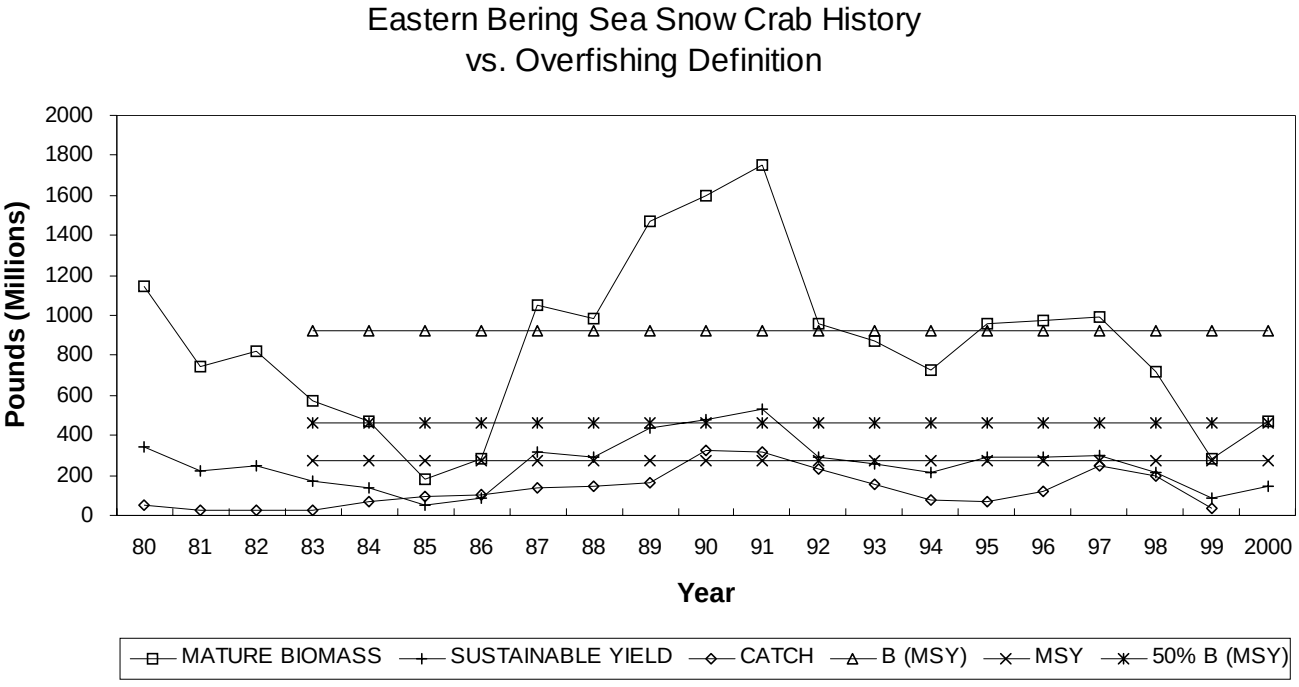
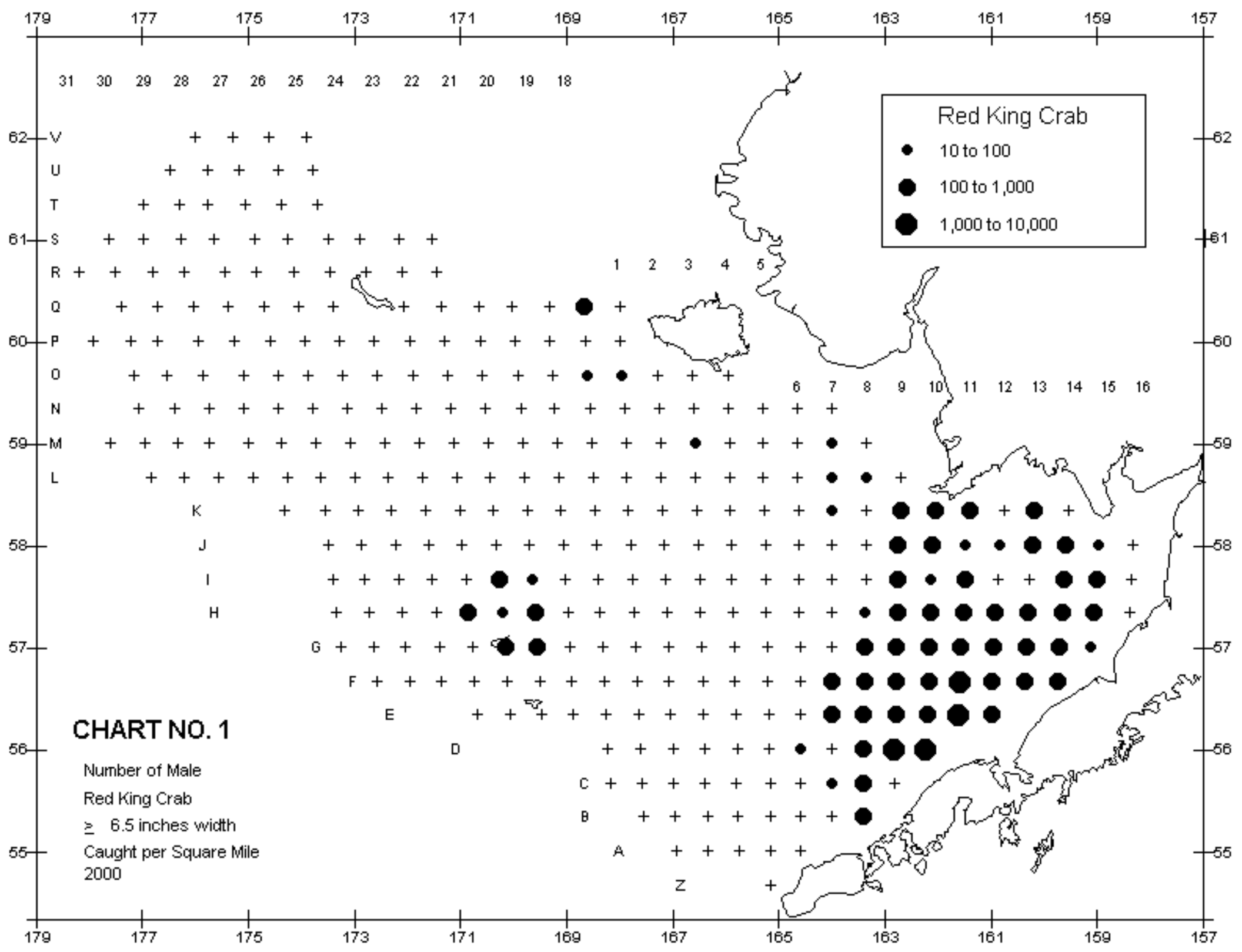
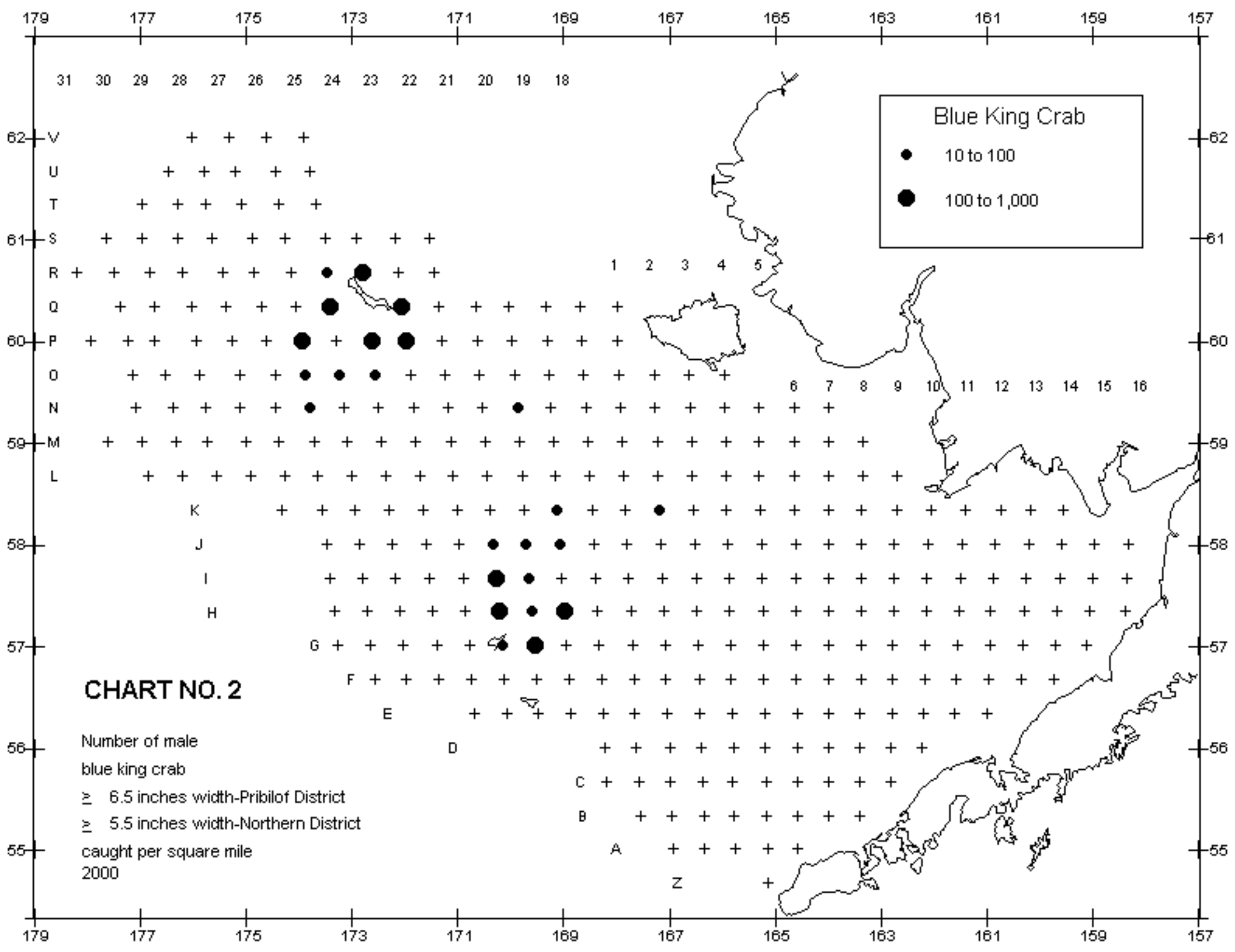
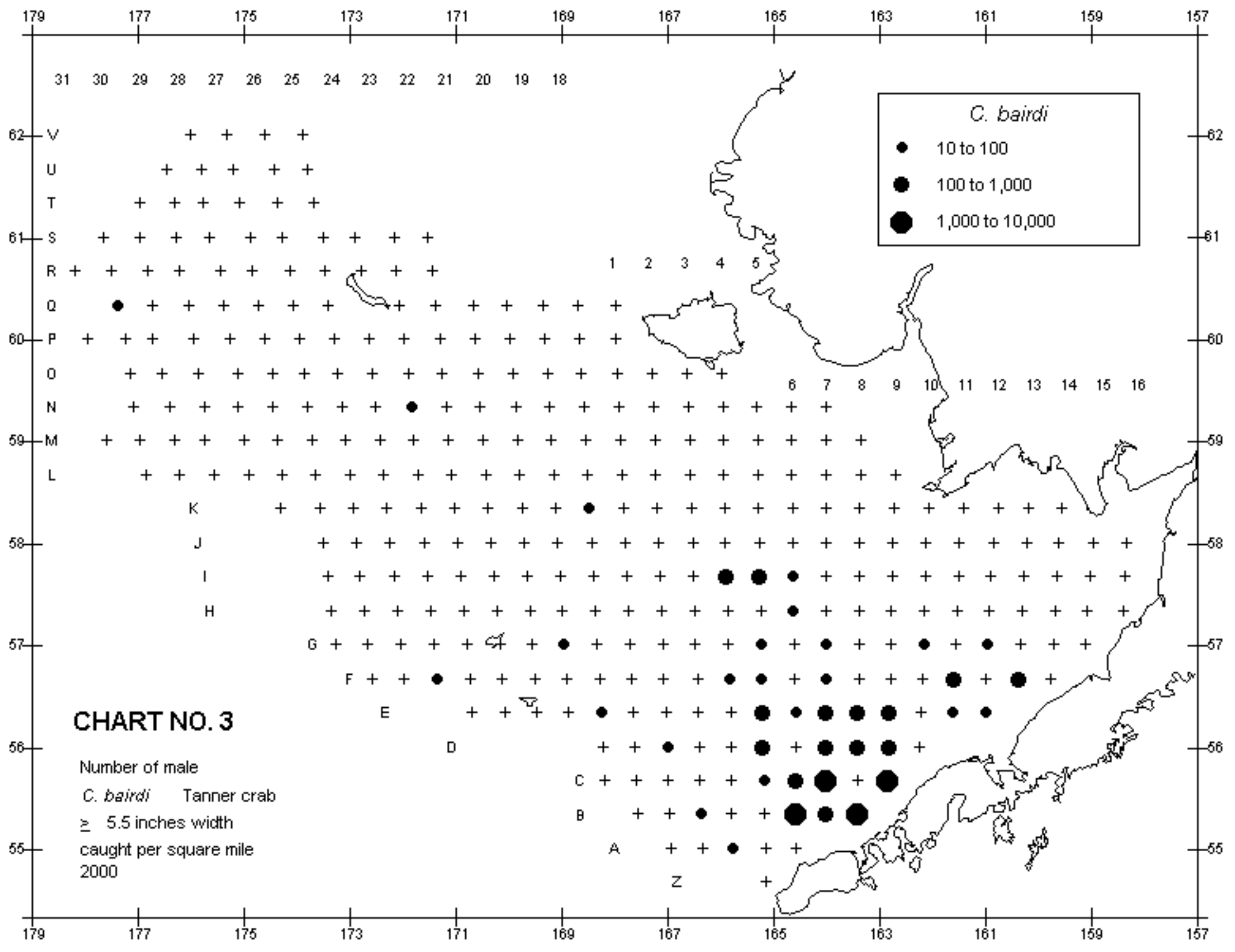
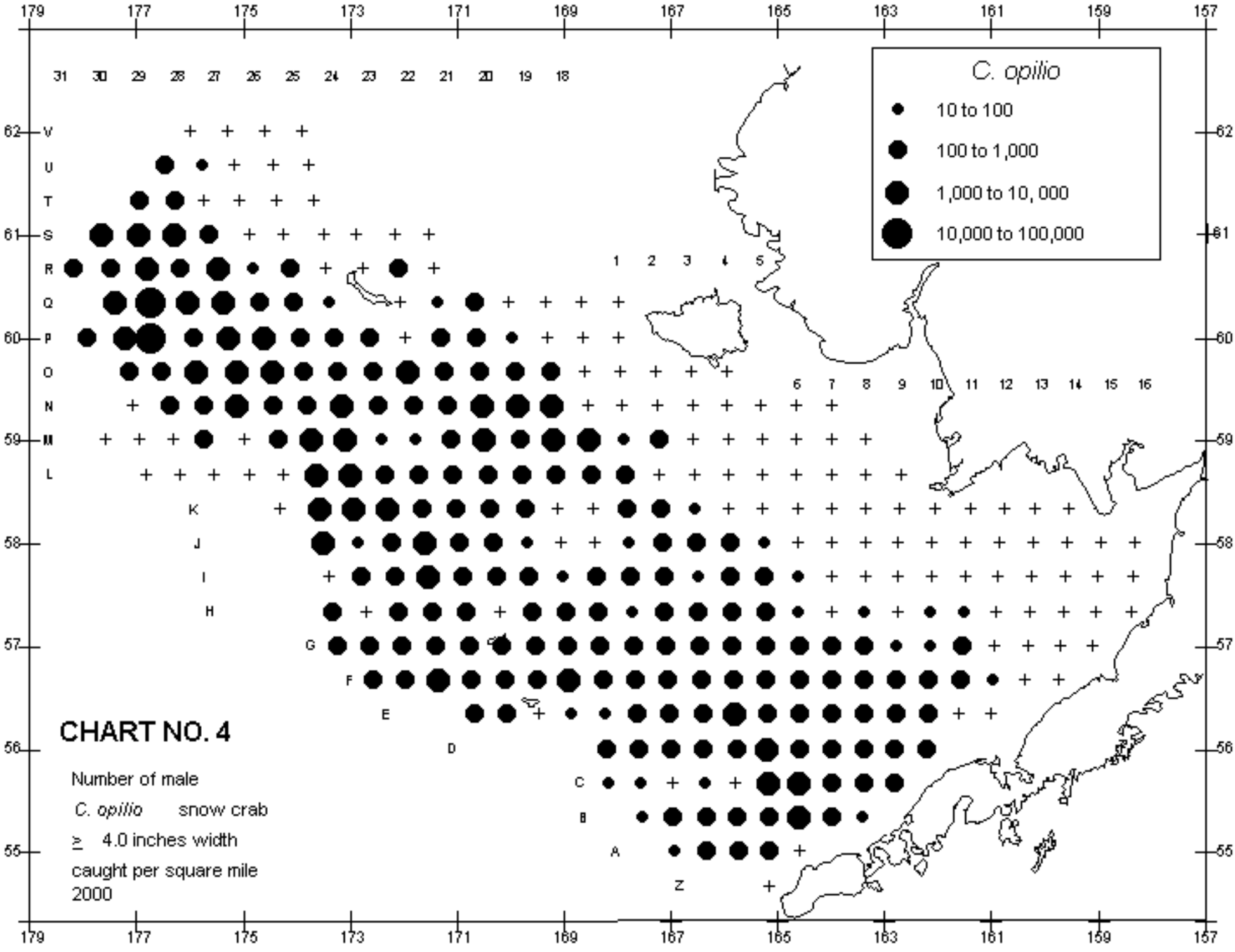


Figure C-3. History of eastern Bering Sea Tanner and snow crab fisheries relative to overfishing under the Magnuson-Stevens Fishery Conservation and Management Act. Both stocks are considered overfished because mature biomass is below 50% MSY.


Red King Crab
10 to 100
100 to 1,000
1,000 to 10,000
CHART NO. 1
Number of Male
Red King Crab
≥ 6.5 inches width
Caught per Square Mile
2000
179
177
175
173
171
169
167
165
163
161
159
157
62
61
60
59
58
57
56
55
31 30 29 28 27 26 25 24 23 22 21 20 19 18
1 2 3 4 5
6 7 8 9 10 11 12 13 14 15 16
V U T S R Q P O N M L K J I H G F E D C B A Z


Blue King Crab
10 to 100
100 to 1,000
CHART NO. 2
Number of male
blue king crab
≥ 6.5 inches width-Pribilof District
≥ 5.5 inches width-Northern District
caught per square mile
2000


C. bairdi
10 to 100
100 to 1,000
1,000 to 10,000
CHART NO. 3
Number of male
C. bairdi Tanner crab
≥ 5.5 inches width
caught per square mile
2000
179
177
175
173
171
169
167
165
163
161
159
157
62
61
60
59
58
57
56
55
31 30 29 28 27 26 25 24 23 22 21 20 19 18
1 2 3 4 5
6 7 8 9 10 11 12 13 14 15 16
V U T S R Q P O N M L K J I H G F E D C B A Z


C. opilio
10 to 100
100 to 1,000
1,000 to 10, 000
10,000 to 100,000
CHART NO. 4
Number of male
C. opilio snow crab
≥ 4.0 inches width
caught per square mile
2000
179
177
175
173
171
169
167
165
163
161
159
157
62
61
60
59
58
57
56
55

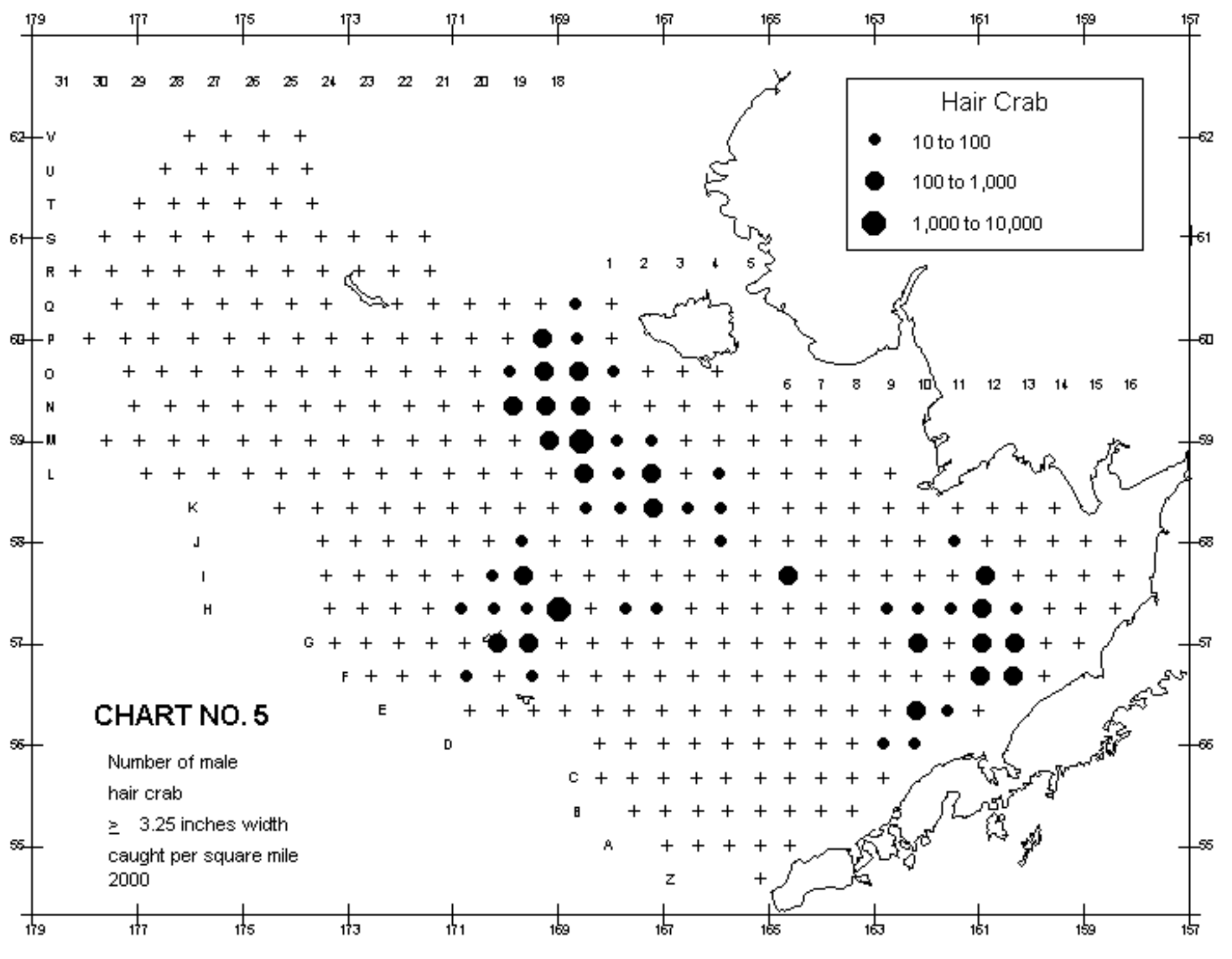

Hair Crab
10 to 100
100 to 1,000
1,000 to 10,000
CHART NO. 5
Number of male
hair crab
≥ 3.25 inches width
caught per square mile
2000

Table 7. Summary of crab density by tow (# per square nmi) for Red King Crab, *Paralithodes camtschaticus.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
B08	5/29/00	55 20.4	163 26.3	27	168	0	0	168	0	0	0	168
C07	5/29/00	55 41.3	163 59.5	51	77	0	0	77	0	0	0	77
C08	5/29/00	55 39.9	163 24.8	42	643	0	0	643	80	0	80	723
C09	5/28/00	55 40.0	162 50.8	27	0	165	0	165	0	0	0	165
D06	5/29/00	56 0.2	164 36.2	48	84	84	0	167	0	0	0	167
D07	5/29/00	55 58.5	163 56.7	47	0	80	0	80	0	0	0	80
D08	5/29/00	55 59.9	163 24.3	46	232	155	0	387	232	0	232	619
D09	7/23/00	55 58.9	162 49.4	41	810	81	0	891	2591	0	2591	3481
D09	5/28/00	56 0.0	162 50.3	41	1538	405	81	2024	2672	0	2672	4695
D10	7/22/00	55 58.9	162 14.2	34	641	481	160	1281	12975	0	12975	14256
D10	5/28/00	55 59.6	162 15.9	37	1700	2186	243	4129	5748	0	5748	9877
E06	6/12/00	56 20.2	164 35.8	48	0	87	0	87	0	0	0	87
E07	6/12/00	56 21.2	163 58.9	45	827	0	0	827	0	0	0	827
E08	6/1/00	56 20.0	163 24.3	45	158	158	0	316	79	0	79	395
E09	6/1/00	56 20.1	162 38.6	42	571	457	0	1028	114	0	114	1142
E09	7/23/00	56 19.3	162 48.3	41	477	159	80	716	0	0	0	716
E10	7/22/00	56 18.4	162 12.3	39	630	3777	6610	11017	8420	2676	11096	22112
E10	5/28/00	56 20.2	162 11.8	42	1397	2949	621	4967	1707	0	1707	6674
E11	5/28/00	56 20.6	161 37.8	33	164	246	329	739	1643	0	1643	2382
E11	7/21/00	56 20.0	161 37.2	33	979	815	2936	4730	9785	326	10111	14841
E12	7/21/00	56 20.0	161 0.0	27	330	247	247	824	2556	247	2803	3627
E12	5/25/00	56 20.2	160 59.6	27	842	481	120	1444	1204	0	1204	2648
F07	6/12/00	56 39.3	163 57.0	39	332	0	0	332	0	0	0	332
F08	6/1/00	56 40.2	163 23.0	39	703	860	78	1641	0	0	0	1641
F09	6/1/00	56 39.8	162 46.6	37	496	910	248	1655	0	0	0	1655
F10	7/22/00	56 39.9	162 11.0	38	0	245	0	245	163	0	163	408
F10	5/28/00	56 40.3	162 10.5	37	457	685	0	1142	343	0	343	1485
F11	5/28/00	56 41.1	161 32.9	47	1305	489	163	1957	1468	0	1468	3425
F11	7/22/00	56 39.0	161 35.5	47	863	471	78	1412	235	0	235	1647
F12	7/21/00	56 39.9	160 58.2	37	650	162	1137	1950	3494	244	3737	5687
F12	5/25/00	56 40.4	160 59.4	34	82	164	2053	2300	986	411	1396	3696
F13	5/25/00	56 40.8	160 22.6	32	567	324	324	1214	1214	81	1295	2510
F13	7/21/00	56 40.2	160 22.4	31	161	81	403	645	2581	323	2904	3549

Table 7. Summary of crab density by tow (# per square nmi) for Red King Crab, *Paralithodes camtschaticus.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
F14	7/20/00	56 40.3	159 44.3	18	0	0	0	0	83	0	83	83
F14	5/24/00	56 41.1	159 43.7	18	409	0	0	409	982	0	982	1391
G07	6/12/00	56 59.5	163 54.2	35	0	80	0	80	0	0	0	80
G08	6/1/00	56 60.0	163 23.4	33	318	80	0	398	0	0	0	398
G09	6/1/00	56 59.5	162 47.3	31	163	245	489	897	0	0	0	897
G10	7/19/00	57 1.0	162 10.1	31	1108	1108	597	2813	85	256	341	3154
G10	5/27/00	57 0.1	162 9.8	31	638	399	160	1197	0	0	0	1197
G11	5/27/00	56 59.6	161 34.2	36	330	824	2556	3710	247	495	742	4452
G11	7/22/00	56 59.8	161 33.8	36	1158	248	83	1489	1903	0	1903	3392
G12	7/21/00	56 58.7	160 57.0	36	872	238	79	1189	792	0	792	1981
G12	5/25/00	57 0.2	160 57.3	32	81	487	162	731	812	81	894	1625
G13	5/25/00	56 59.6	160 20.5	32	638	559	319	1516	638	239	878	2394
G13	7/21/00	57 0.2	160 20.2	33	563	402	161	1125	1125	0	1125	2251
G14	7/20/00	57 1.1	159 42.2	30	237	395	158	790	1106	632	1737	2527
G14	5/24/00	56 59.6	159 43.7	29	703	547	313	1563	625	78	703	2266
G15	5/24/00	57 0.0	159 7.2	16	81	0	0	81	0	0	0	81
G20	6/23/00	56 59.9	169 32.9	31	1516	718	0	2235	479	0	479	2713
G21	6/28/00	57 9.8	169 52.6	26	838	0	0	838	0	0	0	838
G21	6/28/00	56 59.7	170 10.4	37	330	0	0	330	0	0	0	330
G21	6/29/00	56 50.1	169 52.7	38	81	81	0	162	0	0	0	162
G22	6/28/00	56 59.8	170 46.8	50	0	79	0	79	0	0	0	79
H08	6/1/00	57 20.1	163 23.6	27	77	77	0	155	0	0	0	155
H09	6/1/00	57 21.1	162 46.6	23	484	161	4033	4679	161	2097	2259	6937
H10	7/19/00	57 21.2	162 8.9	27	500	667	1667	2834	500	917	1417	4251
H10	5/27/00	57 20.3	162 8.8	27	408	408	245	1060	245	245	489	1549
H11	5/27/00	57 19.3	161 32.3	28	161	241	965	1366	322	965	1286	2652
H11	7/19/00	57 20.2	161 32.1	29	641	1121	961	2723	160	240	400	3124
H12	7/19/00	57 20.3	160 55.8	32	1768	965	1608	4340	2170	241	2411	6752
H12	5/25/00	57 19.9	160 55.6	33	0	0	479	479	479	399	878	1357
H13	5/25/00	57 20.2	160 17.8	32	162	81	81	324	324	243	567	891
H13	7/19/00	57 20.4	160 18.0	31	415	415	581	1412	1080	249	1329	2741
H14	7/20/00	57 20.6	159 40.1	29	0	154	77	230	538	0	538	768
H14	5/24/00	57 19.7	159 40.6	28	757	95	378	1229	189	0	189	1418

Table 7. Summary of crab density by tow (# per square nmi) for Red King Crab, *Paralithodes camtschaticus.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
H15	5/24/00	57 20.3	159 4.7	25	481	400	240	1121	2002	0	2002	3124
H15	7/20/00	57 20.2	159 4.7	25	80	0	0	80	0	0	0	80
H16	5/23/00	57 21.3	158 23.9	16	0	82	0	82	82	0	82	163
H20	6/23/00	57 20.3	169 36.0	33	479	399	80	958	1596	80	1676	2634
H21	6/28/00	57 20.5	170 11.9	28	77	0	0	77	0	0	0	77
H22	6/28/00	57 30.0	170 35.0	38	78	0	0	78	0	0	0	78
H22	6/28/00	57 20.0	170 50.9	43	243	0	0	243	0	0	0	243
I09	6/1/00	57 40.1	162 45.4	20	317	238	713	1268	555	713	1268	2536
I10	5/27/00	57 39.7	162 9.5	24	80	80	1527	1688	482	1286	1768	3456
I11	5/27/00	57 39.0	161 30.3	27	164	246	4419	4829	1146	2864	4010	8839
I12	5/25/00	57 39.5	160 52.4	29	0	250	250	500	250	125	375	875
I13	5/25/00	57 39.8	160 15.8	28	0	0	82	82	245	82	326	408
I14	7/20/00	57 40.4	159 37.4	26	0	0	317	317	79	0	79	396
I14	5/24/00	57 39.9	159 38.3	25	310	466	155	931	233	233	466	1397
I15	5/24/00	57 40.7	159 0.9	24	324	243	324	891	81	648	729	1619
I20	6/24/00	57 30.1	169 22.0	38	79	0	0	79	0	0	0	79
I21	6/28/00	57 49.9	169 57.8	38	232	0	0	232	0	0	0	232
I21	6/28/00	57 40.3	170 15.5	38	385	77	0	462	0	0	0	462
I21	6/28/00	57 30.2	169 59.8	36	1038	319	0	1357	798	0	798	2155
J09	6/2/00	58 0.3	162 44.6	20	151	151	301	602	376	75	452	1054
J10	5/27/00	57 59.8	162 6.9	19	247	82	412	742	82	247	330	1072
J11	5/27/00	57 59.9	161 29.1	28	82	0	326	408	326	82	408	815
J12	5/26/00	57 59.9	160 50.4	22	80	0	481	561	160	400	561	1121
J13	5/26/00	57 59.9	160 13.2	26	625	625	313	1563	234	313	547	2110
J14	5/24/00	57 59.7	159 35.2	21	160	80	160	400	160	80	240	641
J15	5/24/00	58 0.7	158 55.3	22	80	0	0	80	0	0	0	80
J16	5/23/00	57 59.7	158 20.7	16	0	0	89	89	0	89	89	177
K07	6/13/00	58 19.9	164 1.0	21	79	0	0	79	79	0	79	158
K09	6/2/00	58 20.3	162 43.4	14	165	0	0	165	165	0	165	331
K10	5/27/00	58 19.4	162 3.0	24	398	80	80	557	159	80	239	795
K11	5/27/00	58 13.1	161 32.9	20	325	81	0	406	162	0	162	569
K13	5/26/00	58 17.0	159 58.1	21	464	116	116	696	0	116	116	812
K14	5/26/00	58 19.8	159 32.2	12	0	77	0	77	0	0	0	77

Table 7. Summary of crab density by tow (# per square nmi) for Red King Crab, *Paralithodes camtschaticus.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
L07	6/13/00	58 39.3	164 1.5	17	80	0	0	80	0	0	0	80
L08	6/2/00	58 40.0	163 21.1	15	80	80	0	160	80	0	80	240
M02	6/17/00	59 0.2	167 14.5	20	0	0	78	78	0	0	0	78
M03	6/17/00	59 0.3	166 35.4	17	80	0	0	80	80	0	80	159
M07	6/13/00	59 0.2	164 0.7	14	77	0	0	77	77	0	77	155
N02	6/17/00	59 20.1	167 16.8	16	0	0	0	0	232	0	232	232
N04	6/14/00	59 20.0	165 57.0	12	0	0	78	78	0	0	0	78
N05	6/14/00	59 19.9	165 19.7	10	0	158	0	158	0	0	0	158
N07	6/3/00	59 19.6	163 59.8	11	0	0	0	0	129	0	129	129
O01	6/18/00	59 39.2	167 56.9	18	80	0	0	80	0	0	0	80
O04	6/14/00	59 37.0	165 56.2	13	0	0	82	82	0	82	82	163
O18	6/18/00	59 39.9	168 37.0	20	77	0	0	77	0	0	0	77
Q18	6/18/00	60 20.0	168 41.2	18	158	0	0	158	158	0	158	317

NOTE: Minimum carapace sizes used are: Large Males > 6.5 in; Medium Males = 5.2 to 6.5 in; Large Females > 4.3 in.

Table 8A. Summary of crab density by tow (# per square nmi) for Pribilofs Blue Kings, *Paralithodes platypus.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
F20	6/23/00	56 41.0	169 29.9	42	0	80	0	80	958	0	958	1038
G19	6/23/00	57 9.6	168 37.8	40	0	0	0	0	78	0	78	78
G20	6/23/00	56 50.1	169 18.0	42	0	0	0	0	160	0	160	160
G20	6/23/00	56 59.9	169 32.9	31	239	0	0	239	1437	0	1437	1676
G21	6/28/00	57 9.8	169 52.6	26	0	0	0	0	120	0	120	120
G21	6/29/00	56 50.1	169 52.7	38	162	0	0	162	162	0	162	325
H19	6/23/00	57 19.7	168 59.1	38	302	151	76	529	2190	0	2190	2719
H19	6/24/00	57 29.5	168 44.7	38	0	0	0	0	77	0	77	77
H20	6/23/00	57 10.1	169 19.0	37	0	80	0	80	239	0	239	319
H20	6/23/00	57 20.3	169 36.0	33	80	0	80	160	0	0	0	160
H21	6/28/00	57 20.5	170 11.9	28	230	77	0	307	0	0	0	307
H22	6/28/00	57 30.0	170 35.0	38	0	78	0	78	0	0	0	78
I07	6/13/00	57 40.4	163 56.5	26	0	0	82	82	0	0	0	82
I19	6/24/00	57 39.4	169 1.3	37	0	0	0	0	163	0	163	163
I19	6/24/00	57 49.7	168 43.9	38	0	0	0	0	79	0	79	79
I20	6/24/00	57 30.1	169 22.0	38	79	0	237	316	79	0	79	395
I21	6/28/00	57 49.9	169 57.8	38	155	0	0	155	0	0	0	155
I21	6/28/00	57 40.3	170 15.5	38	231	231	0	462	0	0	0	462
I21	6/28/00	57 30.2	169 59.8	36	479	319	160	958	80	0	80	1038
J19	6/24/00	57 59.8	169 3.1	37	82	0	0	82	0	0	0	82
J20	6/24/00	57 50.3	169 22.1	34	80	0	0	80	0	0	0	80
J21	6/27/00	57 59.9	170 20.1	39	78	0	0	78	0	0	0	78
K02	6/17/00	58 19.9	167 10.9	27	79	0	0	79	0	0	0	79
K19	6/24/00	58 19.7	169 6.8	36	84	0	0	84	0	0	0	84

NOTE: Minimum carapace sizes used are: Large Males > 6.5 in; Medium Males = 5.2 to 6.5 in; Large Females > 4.3 in.

Table 8B. Summary of crab density by tow (# per square nmi) for St. Matt. Blue Kings, *Paralithodes platypus.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
N20	6/25/00	59 20.2	169 52.2	32	80	0	0	80	0	0	0	80
N26	7/13/00	59 29.9	173 30.3	54	86	0	86	171	0	0	0	171
O24	7/4/00	59 49.9	172 15.1	39	77	0	77	153	0	0	0	153
O24	7/4/00	59 39.9	172 34.0	44	80	0	0	80	0	0	0	80
O25	7/13/00	59 39.9	173 14.3	50	82	0	0	82	0	0	0	82
O26	7/13/00	59 40.1	173 52.1	55	82	0	0	82	0	0	0	82
P19	6/25/00	59 59.6	169 18.8	24	0	0	0	0	78	0	78	78
P23	7/4/00	59 59.4	171 59.2	34	294	0	147	441	0	147	147	588
P24	7/5/00	60 10.0	172 20.5	30	305	153	76	534	153	0	153	687
P24	7/4/00	59 50.2	172 54.6	41	0	84	0	84	0	0	0	84
P24	7/5/00	59 59.5	172 38.3	34	0	0	111	111	0	0	0	111
P25	7/12/00	60 0.6	173 18.8	38	0	0	195	195	0	0	0	195
P26	7/12/00	60 7.6	173 46.2	45	165	83	0	248	83	0	83	331
P26	7/12/00	59 50.0	173 34.9	50	239	0	0	239	0	0	0	239
P27	7/12/00	59 60.0	174 37.1	57	0	83	0	83	0	0	0	83
Q23	7/5/00	60 20.8	172 3.8	31	154	0	77	231	0	0	0	231
Q25	7/5/00	60 10.7	173 2.3	31	787	79	393	1259	79	157	236	1495
Q25	7/5/00	60 18.0	173 23.0	32	326	245	571	1142	0	0	0	1142
Q26	7/12/00	60 20.0	174 3.9	47	0	79	0	79	0	0	0	79
R23	7/5/00	60 39.8	172 6.3	32	0	0	82	82	0	0	0	82
R24	7/5/00	60 40.1	172 47.1	22	156	156	78	391	78	0	78	469
R25	7/5/00	60 40.4	173 26.4	33	82	82	82	246	82	0	82	327

NOTE: Minimum carapace sizes used are: Large Males > 5.5 in; Medium Males = 4.3 to 5.5 in; Large Females > 3.8 in.

Table 9. Summary of crab density by tow (# per square nmi) for Tanner Crab, *Chionoecetes bairdi.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
A02	6/10/00	55 0.0	166 57.9	83	0	0	2015	2015	0	6802	6802	8818
A03	6/10/00	55 0.0	166 20.7	77	0	232	4254	4486	1547	3558	5104	9590
A04	5/31/00	54 50.1	165 30.8	81	76	0	4244	4319	0	4471	4471	8790
A04	5/31/00	54 59.5	165 44.8	68	0	569	8694	9262	650	14056	14706	23968
A05	5/31/00	54 60.0	165 9.8	58	0	75	3151	3226	150	4426	4576	7802
B01	6/10/00	55 20.4	167 34.3	79	0	0	6554	6554	474	5528	6002	12556
B02	6/10/00	55 20.1	166 59.7	74	0	0	1015	1015	0	1100	1100	2115
B03	6/11/00	55 20.7	166 21.3	70	83	415	664	1163	1329	1412	2741	3903
B04	5/31/00	55 19.9	165 47.2	63	0	412	2968	3380	165	2226	2391	5771
B05	5/31/00	55 18.8	165 10.2	74	0	164	164	329	0	411	411	739
B06	5/29/00	55 20.6	164 32.6	53	2394	1676	958	5028	5986	3591	9577	14605
B07	5/29/00	55 19.6	164 1.8	40	240	1121	801	2162	80	240	320	2483
B08	5/29/00	55 20.4	163 26.3	27	1931	9405	9405	20742	2855	588	3443	24185
C01	6/22/00	55 39.8	167 35.8	72	0	0	391	391	0	78	78	469
C02	6/11/00	55 40.7	166 59.4	71	0	160	1442	1602	80	1362	1442	3044
C03	6/11/00	55 39.5	166 23.0	67	0	392	392	784	78	78	157	941
C04	5/31/00	55 40.6	165 48.0	62	0	491	4910	5401	246	1964	2210	7611
C05	5/31/00	55 40.6	165 11.2	56	79	79	238	396	79	475	555	951
C06	5/29/00	55 38.7	164 34.9	50	170	341	597	1108	256	426	682	1790
C07	5/29/00	55 41.3	163 59.5	51	1072	2909	2603	6583	6507	7808	14315	20898
C08	5/29/00	55 39.9	163 24.8	42	0	482	1608	2090	402	563	965	3054
C09	5/28/00	55 40.0	162 50.8	27	3392	3310	331	7033	83	0	83	7116
C18	6/22/00	55 39.9	168 11.3	71	0	0	1882	1882	0	982	982	2864
D01	6/22/00	55 59.0	167 37.5	72	0	0	154	154	0	384	384	538
D02	6/11/00	55 59.1	167 1.2	72	88	440	4396	4923	967	2374	3341	8264
D03	6/11/00	56 0.4	166 22.8	66	0	878	3512	4389	878	798	1676	6065
D04	5/31/00	56 0.0	165 47.0	56	0	632	1658	2290	158	1027	1185	3475
D05	5/31/00	56 0.6	165 10.8	50	162	325	650	1137	325	975	1300	2437
D06	5/29/00	56 0.2	164 36.2	48	0	502	251	753	335	837	1171	1924
D07	5/29/00	55 58.5	163 56.7	47	159	159	716	1034	239	398	636	1670
D08	5/29/00	55 59.9	163 24.3	46	232	619	2784	3635	619	2320	2939	6574
D09	7/23/00	55 58.9	162 49.4	41	971	729	729	2429	243	0	243	2672
D09	5/28/00	56 0.0	162 50.3	41	0	1214	324	1538	324	81	405	1943

Table 9. Summary of crab density by tow (# per square nmi) for Tanner Crab, *Chionoecetes bairdi.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
D10	7/22/00	55 58.9	162 14.2	34	0	0	80	80	0	80	80	160
D10	5/28/00	55 59.6	162 15.9	37	0	162	243	405	81	0	81	486
D18	6/22/00	56 0.1	168 13.2	79	0	243	7772	8015	0	10039	10039	18053
E01	6/22/00	56 20.8	167 39.4	68	0	0	1804	1804	0	1725	1725	3529
E02	6/16/00	56 20.3	167 2.1	60	0	623	5296	5919	467	2804	3271	9189
E03	6/16/00	56 20.6	166 25.2	55	0	329	3286	3614	246	5668	5914	9528
E04	6/15/00	56 20.0	165 48.2	48	0	469	2891	3360	156	1563	1719	5079
E05	6/15/00	56 19.2	165 11.8	45	164	493	2136	2793	246	1725	1971	4764
E06	6/12/00	56 20.2	164 35.8	48	87	1039	6232	7358	866	5194	6059	13417
E07	6/12/00	56 21.2	163 58.9	45	331	993	1076	2400	662	993	1655	4054
E08	6/1/00	56 20.0	163 24.3	45	158	474	474	1106	158	0	158	1263
E09	6/1/00	56 20.1	162 38.6	42	228	228	685	1142	457	0	457	1599
E09	7/23/00	56 19.3	162 48.3	41	239	636	1034	1909	80	239	318	2227
E10	7/22/00	56 18.4	162 12.3	39	0	157	1338	1495	0	0	0	1495
E10	5/28/00	56 20.2	162 11.8	42	0	310	310	621	0	0	0	621
E11	7/21/00	56 20.0	161 37.2	33	82	326	489	897	82	0	82	979
E12	7/21/00	56 20.0	161 0.0	27	0	82	0	82	0	0	0	82
E12	5/25/00	56 20.2	160 59.6	27	120	602	120	842	0	0	0	842
E18	6/22/00	56 19.7	168 15.0	81	83	331	10343	10757	0	9350	9350	20106
E19	6/23/00	56 20.0	168 52.2	66	0	0	2484	2484	73	3946	4019	6503
E20	6/23/00	56 20.6	169 28.3	75	0	0	2200	2200	0	2623	2623	4823
E21	6/29/00	56 20.0	170 4.0	57	0	152	912	1064	0	76	76	1141
E22	6/29/00	56 20.1	170 41.3	63	0	86	86	172	0	172	172	344
F01	6/22/00	56 38.9	167 40.2	56	0	162	1462	1625	0	1300	1300	2925
F02	6/16/00	56 40.2	167 3.9	50	0	239	5507	5746	559	5427	5986	11732
F03	6/16/00	56 40.6	166 26.0	44	0	326	2936	3262	82	2691	2772	6034
F04	6/15/00	56 39.8	165 50.8	40	77	309	6419	6806	387	6574	6961	13767
F05	6/15/00	56 39.2	165 13.3	39	80	804	3135	4019	402	1608	2009	6028
F06	6/12/00	56 40.0	164 35.9	39	0	341	2557	2898	85	511	597	3495
F07	6/12/00	56 39.3	163 57.0	39	83	747	1329	2159	83	166	249	2408
F08	6/1/00	56 40.2	163 23.0	39	0	391	469	860	234	78	313	1172
F09	6/1/00	56 39.8	162 46.6	37	0	331	414	745	0	0	0	745
F10	7/22/00	56 39.9	162 11.0	38	0	245	979	1223	82	0	82	1305

Table 9. Summary of crab density by tow (# per square nmi) for Tanner Crab, *Chionoecetes bairdi.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
F10	5/28/00	56 40.3	162 10.5	37	0	114	457	571	0	0	0	571
F11	5/28/00	56 41.1	161 32.9	47	0	489	326	815	163	0	163	979
F11	7/22/00	56 39.0	161 35.5	47	157	314	235	706	0	0	0	706
F12	7/21/00	56 39.9	160 58.2	37	0	487	81	569	0	0	0	569
F12	5/25/00	56 40.4	160 59.4	34	0	246	82	329	0	0	0	329
F13	5/25/00	56 40.8	160 22.6	32	162	0	243	405	162	324	486	891
F13	7/21/00	56 40.2	160 22.4	31	81	81	323	484	161	81	242	726
F18	6/22/00	56 40.1	168 17.4	56	0	0	1260	1260	0	588	588	1848
F19	6/23/00	56 41.8	168 54.5	53	0	160	481	641	0	160	160	801
F20	6/23/00	56 41.0	169 29.9	42	0	0	1437	1437	0	1437	1437	2873
F21	6/29/00	56 40.1	170 6.9	51	0	78	5626	5705	2484	5589	8074	13778
F22	6/29/00	56 49.9	170 27.9	53	0	491	13258	13749	573	7202	7775	21524
F22	6/29/00	56 39.9	170 43.8	59	0	469	3438	3907	0	1719	1719	5626
F23	7/16/00	56 39.8	171 22.4	144	84	0	84	167	0	84	84	251
F24	7/16/00	56 40.5	171 57.7	66	0	0	420	420	84	0	84	504
F25	7/20/00	56 39.7	172 34.2	72	0	0	239	239	0	0	0	239
G01	6/22/00	56 59.5	167 42.4	41	0	155	8770	8925	78	5743	5820	14745
G02	6/16/00	57 0.0	167 5.0	38	0	0	1902	1902	79	713	792	2694
G03	6/16/00	57 0.5	166 28.2	39	0	79	713	792	0	0	0	792
G04	6/15/00	56 59.8	165 51.4	37	0	158	1421	1579	0	869	869	2448
G05	6/15/00	56 59.0	165 13.6	37	80	80	1045	1206	0	161	161	1366
G06	6/12/00	57 0.1	164 36.0	34	0	167	251	418	84	0	84	502
G07	6/12/00	56 59.5	163 54.2	35	80	159	398	636	80	159	239	875
G08	6/1/00	56 60.0	163 23.4	33	0	159	159	318	80	0	80	398
G09	6/1/00	56 59.5	162 47.3	31	0	0	245	245	0	0	0	245
G10	7/19/00	57 1.0	162 10.1	31	85	170	170	426	0	0	0	426
G10	5/27/00	57 0.1	162 9.8	31	0	80	0	80	0	0	0	80
G11	5/27/00	56 59.6	161 34.2	36	0	247	82	330	0	0	0	330
G12	7/21/00	56 58.7	160 57.0	36	79	0	79	158	0	0	0	158
G12	5/25/00	57 0.2	160 57.3	32	0	81	0	81	0	81	81	162
G18	6/22/00	57 0.1	168 20.2	42	0	89	22971	23060	89	16509	16599	39659
G19	6/23/00	56 50.3	168 36.6	51	80	0	241	322	0	402	402	723
G19	6/23/00	56 59.8	168 56.8	42	0	0	0	0	0	159	159	159

Table 9. Summary of crab density by tow (# per square nmi) for Tanner Crab, *Chionoecetes bairdi.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
G19	6/23/00	57 9.6	168 37.8	40	0	0	78	78	0	156	156	234
G20	6/23/00	56 50.1	169 18.0	42	0	80	0	80	0	0	0	80
G20	6/23/00	56 59.9	169 32.9	31	0	0	1836	1836	80	798	878	2713
G21	6/28/00	57 9.8	169 52.6	26	0	0	599	599	120	0	120	718
G21	6/28/00	56 59.7	170 10.4	37	0	495	1401	1896	82	330	412	2308
G21	6/29/00	56 50.1	169 52.7	38	0	81	2681	2762	325	1706	2031	4794
G22	6/28/00	56 59.8	170 46.8	50	0	475	4121	4596	555	2219	2774	7370
G23	7/16/00	56 59.6	171 23.9	57	0	77	1079	1156	0	1002	1002	2158
G24	7/16/00	57 0.3	172 1.9	62	0	0	87	87	0	87	87	173
G25	7/20/00	56 59.7	172 38.6	65	0	0	391	391	78	703	781	1172
G26	7/20/00	56 59.9	173 15.1	75	0	0	161	161	0	81	81	242
H01	6/19/00	57 19.5	167 44.3	38	0	0	153	153	0	230	230	383
H02	6/16/00	57 20.0	167 7.4	36	0	0	721	721	160	481	641	1362
H03	6/16/00	57 20.5	166 29.7	36	0	81	567	648	0	729	729	1376
H04	6/15/00	57 19.9	165 51.9	36	0	239	1829	2068	80	80	159	2227
H05	6/15/00	57 18.8	165 13.7	35	0	0	160	160	0	0	0	160
H06	6/12/00	57 20.1	164 37.1	34	81	81	486	648	0	81	81	729
H07	6/12/00	57 20.2	164 0.5	32	0	0	252	252	0	0	0	252
H08	6/1/00	57 20.1	163 23.6	27	0	0	232	232	77	0	77	309
H09	6/1/00	57 21.1	162 46.6	23	0	81	161	242	0	0	0	242
H10	5/27/00	57 20.3	162 8.8	27	0	0	163	163	0	0	0	163
H11	5/27/00	57 19.3	161 32.3	28	0	80	0	80	0	0	0	80
H12	5/25/00	57 19.9	160 55.6	33	0	0	0	0	80	0	80	80
H13	5/25/00	57 20.2	160 17.8	32	0	0	81	81	0	0	0	81
H18	6/19/00	57 20.2	168 22.0	38	0	0	99	99	0	297	297	397
H19	6/24/00	57 29.5	168 44.7	38	0	0	77	77	0	0	0	77
H20	6/23/00	57 10.1	169 19.0	37	0	80	160	239	0	80	80	319
H20	6/23/00	57 20.3	169 36.0	33	0	0	80	80	0	0	0	80
H22	6/28/00	57 30.0	170 35.0	38	0	0	706	706	0	392	392	1098
H22	6/28/00	57 20.0	170 50.9	43	0	324	0	324	243	162	405	729
H23	7/16/00	57 19.4	171 27.6	54	0	81	8662	8743	0	6525	6525	15269
H24	7/17/00	57 20.5	172 5.6	57	0	0	21148	21148	75	12003	12078	33226
H25	7/20/00	57 20.7	172 49.0	62	0	82	2365	2446	82	2691	2772	5219

Table 9. Summary of crab density by tow (# per square nmi) for Tanner Crab, *Chionoecetes bairdi.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
H26	7/20/00	57 19.0	173 19.9	65	0	0	403	403	0	81	81	484
I01	6/19/00	57 39.3	167 46.1	36	0	0	86	86	0	0	0	86
I02	6/16/00	57 40.2	167 8.3	35	0	0	398	398	0	0	0	398
I03	6/16/00	57 40.4	166 30.5	34	0	320	881	1201	0	80	80	1281
I04	6/15/00	57 39.8	165 53.1	33	160	559	1277	1995	0	160	160	2155
I05	6/15/00	57 39.5	165 14.9	32	160	479	718	1357	0	0	0	1357
I06	6/13/00	57 40.3	164 36.7	27	81	1625	2112	3819	0	0	0	3819
I07	6/13/00	57 40.4	163 56.5	26	0	245	82	326	0	82	82	408
I08	6/1/00	57 40.1	163 22.6	23	0	0	75	75	0	0	0	75
I12	5/25/00	57 39.5	160 52.4	29	0	0	0	0	125	0	125	125
I18	6/19/00	57 40.1	168 24.0	36	0	0	160	160	0	80	80	239
I19	6/24/00	57 39.4	169 1.3	37	0	0	163	163	0	408	408	571
I19	6/24/00	57 49.7	168 43.9	38	0	0	0	0	0	317	317	317
I20	6/24/00	57 40.1	169 39.1	37	0	0	82	82	0	0	0	82
I21	6/28/00	57 49.9	169 57.8	38	0	0	309	309	0	309	309	619
I21	6/28/00	57 40.3	170 15.5	38	0	154	1002	1156	0	462	462	1619
I21	6/28/00	57 30.2	169 59.8	36	0	0	319	319	0	239	239	559
I22	6/28/00	57 40.0	170 54.1	44	0	0	721	721	80	80	160	881
I23	7/14/00	57 39.9	171 31.5	52	0	0	322	322	0	402	402	723
I24	7/17/00	57 40.8	172 10.9	60	0	0	790	790	0	263	263	1053
I25	7/19/00	57 40.2	172 48.1	63	0	0	331	331	0	496	496	827
I26	7/19/00	57 40.0	173 24.7	78	0	0	76	76	0	76	76	153
J01	6/19/00	57 59.0	167 48.5	36	0	0	84	84	0	0	0	84
J03	6/16/00	58 0.6	166 31.7	32	0	80	638	718	80	0	80	798
J04	6/14/00	57 59.9	165 54.1	28	0	78	234	312	0	0	0	312
J05	6/14/00	58 0.2	165 15.0	26	0	80	0	80	0	0	0	80
J06	6/13/00	58 0.1	164 36.8	23	0	78	78	157	0	0	0	157
J08	6/2/00	58 0.6	163 22.8	22	0	0	77	77	0	0	0	77
J19	6/24/00	57 59.8	169 3.1	37	0	0	326	326	0	0	0	326
J20	6/24/00	57 50.3	169 22.1	34	0	0	80	80	0	0	0	80
J20	6/24/00	58 0.1	169 41.8	37	0	0	399	399	0	479	479	878
J21	6/27/00	57 59.9	170 20.1	39	0	0	392	392	0	157	157	549
J22	6/27/00	58 0.2	170 58.1	45	0	0	80	80	0	80	80	160

Table 9. Summary of crab density by tow (# per square nmi) for Tanner Crab, *Chionoecetes bairdi.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
J22	6/28/00	57 50.0	170 37.0	40	0	0	557	557	0	239	239	795
J23	7/14/00	57 60.0	171 35.9	51	0	0	0	0	0	161	161	161
J24	7/17/00	57 59.6	172 13.5	61	0	0	160	160	0	319	319	479
J25	7/19/00	57 59.9	172 51.9	58	0	0	79	79	0	158	158	238
J26	7/19/00	57 59.8	173 27.0	62	0	0	81	81	0	81	81	161
K01	6/19/00	58 19.6	167 50.4	31	0	80	160	240	0	0	0	240
K02	6/17/00	58 19.9	167 10.9	27	0	0	237	237	0	0	0	237
K18	6/19/00	58 20.0	168 28.1	34	78	0	0	78	0	0	0	78
K21	6/27/00	58 20.2	170 23.5	39	0	0	481	481	0	160	160	641
K23	7/14/00	58 20.1	171 39.2	50	0	0	331	331	0	0	0	331
K24	7/17/00	58 19.6	172 18.1	56	0	0	262	262	0	0	0	262
K25	7/17/00	58 20.1	172 52.8	64	0	0	612	612	0	842	842	1454
K26	7/19/00	58 19.9	173 34.1	61	0	0	810	810	81	891	971	1781
K27	7/18/00	58 21.8	174 18.8	93	0	0	5072	5072	0	8479	8479	13551
L01	6/19/00	58 40.0	167 52.1	24	0	0	80	80	0	0	0	80
L20	6/24/00	58 40.1	169 47.0	34	0	0	745	745	0	414	414	1158
L24	7/14/00	58 40.2	172 21.9	53	0	0	366	366	0	366	366	732
L25	7/14/00	58 40.1	172 59.7	59	0	0	553	553	0	0	0	553
L26	7/18/00	58 40.3	173 37.7	67	0	161	1125	1286	0	482	482	1768
L27	7/18/00	58 40.1	174 16.0	83	0	0	2120	2120	0	3017	3017	5137
L28	7/10/00	58 45.2	174 54.7	79	0	0	389	389	0	0	0	389
L29	7/10/00	58 40.0	175 33.1	71	0	87	606	692	0	866	866	1558
L30	7/10/00	58 40.0	176 11.1	74	0	0	256	256	0	85	85	341
L31	7/9/00	58 39.9	176 50.4	72	0	0	80	80	0	322	322	402
M24	7/4/00	59 0.2	172 26.2	51	0	0	318	318	0	0	0	318
M25	7/13/00	58 59.9	173 5.0	56	0	241	161	402	0	0	0	402
M26	7/18/00	58 59.8	173 42.9	62	0	80	15599	15679	320	12932	13252	28932
M27	7/18/00	58 59.3	174 22.1	67	0	0	3360	3360	0	2423	2423	5783
M28	7/10/00	59 0.3	175 1.5	68	0	155	2320	2475	0	2398	2398	4872
M29	7/9/00	59 0.8	175 44.3	71	0	0	1943	1943	0	1133	1133	3076
M30	7/9/00	58 59.9	176 18.2	71	0	0	1950	1950	81	1462	1544	3494
M31	7/9/00	59 0.3	176 56.9	72	0	0	241	241	0	241	241	482
M32	7/9/00	58 60.0	177 35.6	71	0	84	252	336	0	588	588	924

Table 9. Summary of crab density by tow (# per square nmi) for Tanner Crab, *Chionoecetes bairdi.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
N23	7/4/00	59 19.8	171 49.7	42	81	0	0	81	0	0	0	81
N25	7/13/00	59 20.0	173 9.4	53	0	0	254	254	0	0	0	254
N26	7/13/00	59 29.9	173 30.3	54	0	0	685	685	0	257	257	941
N26	7/13/00	59 20.1	173 48.1	57	0	0	238	238	0	79	79	317
N27	7/13/00	59 19.8	174 26.7	64	0	0	487	487	244	244	487	975
N28	7/10/00	59 19.8	175 6.7	71	0	83	3314	3398	0	3148	3148	6545
N29	7/9/00	59 20.6	175 45.0	72	0	78	157	235	0	0	0	235
N30	7/8/00	59 19.6	176 23.0	72	0	0	543	543	0	155	155	698
N31	7/9/00	59 19.8	177 4.5	79	0	0	477	477	80	159	239	716
O25	7/4/00	59 30.1	172 52.9	49	0	0	0	0	0	80	80	80
O25	7/13/00	59 39.9	173 14.3	50	0	0	246	246	0	82	82	327
O26	7/13/00	59 40.1	173 52.1	55	0	82	900	982	0	246	246	1228
O28	7/11/00	59 40.7	175 7.2	66	0	0	239	239	0	0	0	239
O29	7/9/00	59 40.6	175 51.7	72	0	82	245	326	0	163	163	489
O30	7/8/00	59 39.3	176 32.1	72	0	387	928	1315	0	309	309	1624
O31	7/9/00	59 40.0	177 7.6	90	0	80	1197	1277	239	1357	1596	2873
P19	6/25/00	59 59.6	169 18.8	24	0	78	0	78	0	0	0	78
P24	7/4/00	59 50.2	172 54.6	41	0	0	0	0	0	268	268	268
P25	7/12/00	60 0.6	173 18.8	38	0	0	97	97	0	708	708	805
P28	7/11/00	59 59.6	175 16.2	62	0	0	114	114	0	0	0	114
P31	7/8/00	60 0.0	177 12.8	72	0	414	414	827	0	0	0	827
Q29	7/10/00	60 20.0	176 2.8	65	0	78	0	78	0	0	0	78
Q30	7/8/00	60 19.9	176 43.3	73	0	370	0	370	0	0	0	370
Q31	7/8/00	60 19.8	177 23.1	78	80	0	0	80	0	80	80	159
R28	7/11/00	60 40.3	175 27.3	56	0	0	78	78	0	78	78	156
R32	7/8/00	60 39.5	178 11.2	85	0	0	784	784	235	1176	1412	2196
S28	7/10/00	61 0.1	175 33.3	54	0	0	82	82	0	82	82	163
Z05	5/31/00	54 41.0	165 9.1	43	0	162	405	567	81	648	729	1295

NOTE: Minimum carapace sizes used are: Large Males > 5.5 in; Medium Males = 4.3 to 5.5 in; Large Females > 3.4 in.

Table 10. Summary of crab density by tow (# per square nmi) for Snow Crab, *Chionoecetes opilio.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
A02	6/10/00	55 0.0	166 57.9	83	84	168	84	336	0	0	0	336
A03	6/10/00	55 0.0	166 20.7	77	464	464	0	928	0	0	0	928
A04	5/31/00	54 50.1	165 30.8	81	303	152	0	455	0	0	0	455
A04	5/31/00	54 59.5	165 44.8	68	81	81	325	487	0	0	0	487
A05	5/31/00	54 60.0	165 9.8	58	225	150	375	750	0	0	0	750
B01	6/10/00	55 20.4	167 34.3	79	79	79	158	316	0	0	0	316
B02	6/10/00	55 20.1	166 59.7	74	169	0	169	338	0	0	0	338
B03	6/11/00	55 20.7	166 21.3	70	166	166	498	830	0	83	83	914
B04	5/31/00	55 19.9	165 47.2	63	165	165	0	330	0	0	0	330
B05	5/31/00	55 18.8	165 10.2	74	821	246	329	1396	0	0	0	1396
B06	5/29/00	55 20.6	164 32.6	53	2634	718	479	3831	0	0	0	3831
B07	5/29/00	55 19.6	164 1.8	40	561	240	80	881	0	0	0	881
B08	5/29/00	55 20.4	163 26.3	27	84	252	168	504	0	0	0	504
C01	6/22/00	55 39.8	167 35.8	72	78	78	78	234	0	0	0	234
C02	6/11/00	55 40.7	166 59.4	71	0	80	0	80	0	0	0	80
C03	6/11/00	55 39.5	166 23.0	67	78	78	0	157	0	78	78	235
C04	5/31/00	55 40.6	165 48.0	62	0	164	82	246	0	0	0	246
C05	5/31/00	55 40.6	165 11.2	56	1030	238	158	1426	0	0	0	1426
C06	5/29/00	55 38.7	164 34.9	50	1193	341	426	1961	0	0	0	1961
C07	5/29/00	55 41.3	163 59.5	51	612	766	1301	2679	0	0	0	2679
C08	5/29/00	55 39.9	163 24.8	42	965	161	402	1527	0	0	0	1527
C09	5/28/00	55 40.0	162 50.8	27	414	165	0	579	0	0	0	579
C18	6/22/00	55 39.9	168 11.3	71	82	0	82	164	0	0	0	164
D01	6/22/00	55 59.0	167 37.5	72	538	77	77	691	0	77	77	768
D02	6/11/00	55 59.1	167 1.2	72	440	352	176	967	0	176	176	1143
D03	6/11/00	56 0.4	166 22.8	66	239	80	239	559	0	319	319	878
D04	5/31/00	56 0.0	165 47.0	56	316	237	79	632	0	0	0	632
D05	5/31/00	56 0.6	165 10.8	50	1787	406	325	2519	81	0	81	2600
D06	5/29/00	56 0.2	164 36.2	48	669	418	418	1506	0	0	0	1506
D07	5/29/00	55 58.5	163 56.7	47	716	239	398	1352	0	0	0	1352
D08	5/29/00	55 59.9	163 24.3	46	928	155	696	1779	0	0	0	1779
D09	7/23/00	55 58.9	162 49.4	41	162	162	0	324	0	0	0	324
D09	5/28/00	56 0.0	162 50.3	41	810	162	162	1133	0	0	0	1133

Table 10. Summary of crab density by tow (# per square nmi) for Snow Crab, *Chionoecetes opilio.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
D10	5/28/00	55 59.6	162 15.9	37	729	324	0	1052	0	0	0	1052
D18	6/22/00	56 0.1	168 13.2	79	243	0	0	243	0	0	0	243
E01	6/22/00	56 20.8	167 39.4	68	157	235	157	549	0	78	78	627
E02	6/16/00	56 20.3	167 2.1	60	312	156	312	779	78	234	312	1090
E03	6/16/00	56 20.6	166 25.2	55	657	329	246	1232	164	0	164	1396
E04	6/15/00	56 20.0	165 48.2	48	1407	391	234	2032	0	0	0	2032
E05	6/15/00	56 19.2	165 11.8	45	493	329	575	1396	0	0	0	1396
E06	6/12/00	56 20.2	164 35.8	48	346	260	519	1125	0	87	87	1212
E07	6/12/00	56 21.2	163 58.9	45	331	496	579	1407	0	0	0	1407
E08	6/1/00	56 20.0	163 24.3	45	158	237	237	632	0	0	0	632
E09	6/1/00	56 20.1	162 38.6	42	571	228	457	1257	0	0	0	1257
E09	7/23/00	56 19.3	162 48.3	41	557	239	80	875	0	0	0	875
E10	7/22/00	56 18.4	162 12.3	39	79	79	0	157	0	0	0	157
E10	5/28/00	56 20.2	162 11.8	42	155	466	155	776	0	0	0	776
E11	5/28/00	56 20.6	161 37.8	33	0	82	0	82	0	0	0	82
E18	6/22/00	56 19.7	168 15.0	81	83	0	0	83	0	83	83	165
E19	6/23/00	56 20.0	168 52.2	66	73	0	0	73	73	0	73	146
E21	6/29/00	56 20.0	170 4.0	57	228	380	456	1064	0	76	76	1141
E22	6/29/00	56 20.1	170 41.3	63	258	0	0	258	0	0	0	258
F01	6/22/00	56 38.9	167 40.2	56	731	325	650	1706	0	162	162	1869
F02	6/16/00	56 40.2	167 3.9	50	878	319	399	1596	0	319	319	1915
F03	6/16/00	56 40.6	166 26.0	44	489	163	245	897	0	0	0	897
F04	6/15/00	56 39.8	165 50.8	40	309	464	541	1315	0	0	0	1315
F05	6/15/00	56 39.2	165 13.3	39	241	80	563	884	0	0	0	884
F06	6/12/00	56 40.0	164 35.9	39	852	341	341	1534	0	0	0	1534
F07	6/12/00	56 39.3	163 57.0	39	249	415	1163	1827	0	0	0	1827
F08	6/1/00	56 40.2	163 23.0	39	156	391	156	703	0	0	0	703
F09	6/1/00	56 39.8	162 46.6	37	414	414	331	1158	0	0	0	1158
F10	7/22/00	56 39.9	162 11.0	38	245	0	163	408	0	0	0	408
F11	5/28/00	56 41.1	161 32.9	47	163	326	0	489	0	0	0	489
F11	7/22/00	56 39.0	161 35.5	47	784	471	0	1255	0	0	0	1255
F12	7/21/00	56 39.9	160 58.2	37	0	81	0	81	0	0	0	81
F12	5/25/00	56 40.4	160 59.4	34	82	0	0	82	0	0	0	82

Table 10. Summary of crab density by tow (# per square nmi) for Snow Crab, *Chionoecetes opilio.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
F18	6/22/00	56 40.1	168 17.4	56	672	336	84	1092	0	0	0	1092
F19	6/23/00	56 41.8	168 54.5	53	1281	240	240	1762	0	80	80	1842
F20	6/23/00	56 41.0	169 29.9	42	319	239	160	718	0	80	80	798
F21	6/29/00	56 40.1	170 6.9	51	625	938	547	2110	78	0	78	2188
F22	6/29/00	56 49.9	170 27.9	53	818	900	982	2701	82	82	164	2864
F22	6/29/00	56 39.9	170 43.8	59	938	0	469	1407	0	0	0	1407
F23	7/16/00	56 39.8	171 22.4	144	1422	837	251	2510	753	0	753	3263
F24	7/16/00	56 40.5	171 57.7	66	252	168	0	420	0	0	0	420
F25	7/20/00	56 39.7	172 34.2	72	398	80	0	477	0	0	0	477
G01	6/22/00	56 59.5	167 42.4	41	776	854	3182	4812	0	1086	1086	5898
G02	6/16/00	57 0.0	167 5.0	38	713	792	475	1981	0	0	0	1981
G03	6/16/00	57 0.5	166 28.2	39	396	634	238	1268	0	79	79	1347
G04	6/15/00	56 59.8	165 51.4	37	474	869	1185	2527	158	0	158	2685
G05	6/15/00	56 59.0	165 13.6	37	482	402	402	1286	0	0	0	1286
G06	6/12/00	57 0.1	164 36.0	34	586	669	586	1841	0	0	0	1841
G07	6/12/00	56 59.5	163 54.2	35	636	477	795	1909	159	159	318	2227
G08	6/1/00	56 60.0	163 23.4	33	159	159	80	398	0	0	0	398
G09	6/1/00	56 59.5	162 47.3	31	82	163	0	245	0	0	0	245
G10	5/27/00	57 0.1	162 9.8	31	80	80	80	239	0	0	0	239
G11	5/27/00	56 59.6	161 34.2	36	0	330	0	330	0	0	0	330
G11	7/22/00	56 59.8	161 33.8	36	331	0	0	331	0	0	0	331
G12	5/25/00	57 0.2	160 57.3	32	0	81	0	81	0	0	0	81
G13	7/21/00	57 0.2	160 20.2	33	0	80	0	80	0	0	0	80
G14	5/24/00	56 59.6	159 43.7	29	0	78	0	78	0	0	0	78
G18	6/22/00	57 0.1	168 20.2	42	447	536	3662	4644	89	1965	2054	6698
G19	6/23/00	56 50.3	168 36.6	51	1045	80	241	1366	0	0	0	1366
G19	6/23/00	56 59.8	168 56.8	42	954	398	716	2068	80	80	159	2227
G19	6/23/00	57 9.6	168 37.8	40	389	312	779	1480	78	78	156	1635
G20	6/23/00	56 50.1	169 18.0	42	240	160	80	481	0	80	80	561
G20	6/23/00	56 59.9	169 32.9	31	718	80	239	1038	0	80	80	1117
G21	6/28/00	57 9.8	169 52.6	26	0	0	120	120	0	0	0	120
G21	6/28/00	56 59.7	170 10.4	37	165	0	0	165	0	0	0	165
G21	6/29/00	56 50.1	169 52.7	38	325	162	325	812	0	0	0	812

Table 10. Summary of crab density by tow (# per square nmi) for Snow Crab, *Chionoecetes opilio.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
G22	6/28/00	56 59.8	170 46.8	50	951	555	634	2140	79	79	158	2298
G23	7/16/00	56 59.6	171 23.9	57	617	308	0	925	1927	0	1927	2852
G24	7/16/00	57 0.3	172 1.9	62	260	87	0	346	0	0	0	346
G25	7/20/00	56 59.7	172 38.6	65	625	78	78	781	0	0	0	781
G26	7/20/00	56 59.9	173 15.1	75	887	323	0	1210	0	0	0	1210
H01	6/19/00	57 19.5	167 44.3	38	77	0	153	230	0	77	77	306
H02	6/16/00	57 20.0	167 7.4	36	481	240	1201	1922	240	0	240	2162
H03	6/16/00	57 20.5	166 29.7	36	162	1052	810	2024	0	0	0	2024
H04	6/15/00	57 19.9	165 51.9	36	557	795	3102	4453	1750	0	1750	6203
H05	6/15/00	57 18.8	165 13.7	35	319	638	1357	2314	160	0	160	2474
H06	6/12/00	57 20.1	164 37.1	34	81	891	1457	2429	324	0	324	2753
H07	6/12/00	57 20.2	164 0.5	32	0	252	420	672	0	0	0	672
H08	6/1/00	57 20.1	163 23.6	27	77	0	155	232	0	0	0	232
H10	5/27/00	57 20.3	162 8.8	27	82	0	0	82	0	0	0	82
H11	7/19/00	57 20.2	161 32.1	29	80	0	0	80	0	0	0	80
H18	6/19/00	57 20.2	168 22.0	38	397	198	297	892	0	0	0	892
H19	6/23/00	57 19.7	168 59.1	38	0	151	151	302	0	0	0	302
H19	6/24/00	57 29.5	168 44.7	38	232	77	155	464	0	0	0	464
H20	6/23/00	57 10.1	169 19.0	37	239	559	958	1756	0	80	80	1836
H20	6/23/00	57 20.3	169 36.0	33	80	80	80	239	160	0	160	399
H21	6/28/00	57 20.5	170 11.9	28	0	0	77	77	77	0	77	154
H22	6/28/00	57 30.0	170 35.0	38	235	78	0	314	78	0	78	392
H22	6/28/00	57 20.0	170 50.9	43	324	81	0	405	0	162	162	567
H23	7/16/00	57 19.4	171 27.6	54	567	324	0	891	567	324	891	1781
H24	7/17/00	57 20.5	172 5.6	57	675	675	533	1884	0	0	0	1884
H26	7/20/00	57 19.0	173 19.9	65	242	0	0	242	0	0	0	242
I01	6/19/00	57 39.3	167 46.1	36	171	257	171	599	86	0	86	685
I02	6/16/00	57 40.2	167 8.3	35	398	557	1591	2545	1909	477	2386	4931
I03	6/16/00	57 40.4	166 30.5	34	80	1281	1842	3204	1121	80	1201	4405
I04	6/15/00	57 39.8	165 53.1	33	399	3772	12077	16248	5188	958	6145	22394
I05	6/15/00	57 39.5	165 14.9	32	559	878	3512	4948	1277	319	1596	6544
I06	6/13/00	57 40.3	164 36.7	27	81	650	2275	3006	487	81	569	3575
I08	6/1/00	57 40.1	163 22.6	23	0	75	0	75	0	0	0	75

Table 10. Summary of crab density by tow (# per square nmi) for Snow Crab, *Chionoecetes opilio.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
I18	6/19/00	57 40.1	168 24.0	36	160	80	319	559	0	0	0	559
I19	6/24/00	57 39.4	169 1.3	37	0	163	1060	1223	0	1142	1142	2365
I19	6/24/00	57 49.7	168 43.9	38	158	158	3645	3962	475	4438	4913	8876
I20	6/24/00	57 30.1	169 22.0	38	316	395	316	1027	79	316	395	1421
I20	6/24/00	57 40.1	169 39.1	37	0	163	652	815	0	652	652	1468
I21	6/28/00	57 49.9	169 57.8	38	77	464	1237	1779	0	541	541	2320
I21	6/28/00	57 40.3	170 15.5	38	462	462	694	1619	77	694	771	2389
I21	6/28/00	57 30.2	169 59.8	36	239	80	319	638	80	160	239	878
I22	6/28/00	57 40.0	170 54.1	44	481	320	240	1041	240	400	641	1682
I23	7/14/00	57 39.9	171 31.5	52	1447	402	161	2009	322	0	322	2331
I24	7/17/00	57 40.8	172 10.9	60	658	132	0	790	0	0	0	790
I25	7/19/00	57 40.2	172 48.1	63	496	165	0	662	0	0	0	662
J01	6/19/00	57 59.0	167 48.5	36	84	0	168	252	0	0	0	252
J02	6/17/00	57 59.8	167 10.5	33	158	395	474	1027	158	79	237	1263
J03	6/16/00	58 0.6	166 31.7	32	718	2793	3432	6943	1038	958	1995	8939
J04	6/14/00	57 59.9	165 54.1	28	234	1869	2492	4595	857	156	1012	5607
J05	6/14/00	58 0.2	165 15.0	26	80	0	80	161	0	0	0	161
J06	6/13/00	58 0.1	164 36.8	23	0	235	157	392	78	0	78	471
J18	6/19/00	58 0.1	168 26.0	36	0	191	286	477	0	95	95	572
J19	6/24/00	57 59.8	169 3.1	37	0	489	2691	3180	0	3506	3506	6687
J20	6/24/00	57 50.3	169 22.1	34	0	0	80	80	0	0	0	80
J20	6/24/00	58 0.1	169 41.8	37	160	160	2634	2953	160	3911	4070	7023
J21	6/27/00	57 59.9	170 20.1	39	235	471	157	863	78	314	392	1255
J22	6/27/00	58 0.2	170 58.1	45	399	798	319	1516	80	0	80	1596
J22	6/28/00	57 50.0	170 37.0	40	795	1272	716	2783	159	159	318	3102
J23	7/14/00	57 60.0	171 35.9	51	1049	887	242	2178	807	81	887	3065
J24	7/17/00	57 59.6	172 13.5	61	319	0	160	479	0	0	0	479
J25	7/19/00	57 59.9	172 51.9	58	79	0	0	79	0	0	0	79
J26	7/19/00	57 59.8	173 27.0	62	1210	81	0	1291	0	0	0	1291
K01	6/19/00	58 19.6	167 50.4	31	240	400	721	1362	160	80	240	1602
K02	6/17/00	58 19.9	167 10.9	27	474	7875	14087	22436	2290	158	2448	24884
K03	6/17/00	58 20.3	166 32.9	24	79	79	79	237	0	79	79	316
K04	6/14/00	58 19.9	165 55.4	22	0	0	471	471	0	157	157	627

Table 10. Summary of crab density by tow (# per square nmi) for Snow Crab, *Chionoecetes opilio.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
K18	6/19/00	58 20.0	168 28.1	34	0	78	863	941	314	157	471	1412
K19	6/24/00	58 19.7	169 6.8	36	0	84	167	251	0	335	335	586
K20	6/24/00	58 20.3	169 44.0	37	163	163	734	1060	0	1875	1875	2936
K21	6/27/00	58 20.2	170 23.5	39	240	641	1522	2403	160	1922	2082	4485
K22	6/27/00	58 20.0	171 1.5	44	475	713	396	1585	317	158	475	2060
K23	7/14/00	58 20.1	171 39.2	50	496	414	248	1158	579	496	1076	2234
K24	7/17/00	58 19.6	172 18.1	56	4448	18579	63811	86838	2080400	462311	2542711	2629549
K25	7/17/00	58 20.1	172 52.8	64	2832	1684	1301	5818	6354	536	6890	12707
K26	7/19/00	58 19.9	173 34.1	61	1457	567	81	2105	81	81	162	2267
L01	6/19/00	58 40.0	167 52.1	24	402	322	1125	1849	241	80	322	2170
L02	6/17/00	58 39.8	167 13.1	22	0	158	238	396	0	79	79	475
L18	6/19/00	58 39.6	168 29.9	27	747	997	4152	5896	997	332	1329	7225
L19	6/24/00	58 40.0	169 8.6	32	571	163	1223	1957	163	489	652	2609
L20	6/24/00	58 40.1	169 47.0	34	165	910	6288	7364	83	2069	2151	9515
L21	6/27/00	58 40.2	170 26.1	38	891	9672	6109	16671	8051	3294	11345	28016
L22	6/26/00	58 40.0	171 5.0	44	561	2403	1201	4165	1442	160	1602	5767
L23	7/14/00	58 40.1	171 43.5	49	243	4866	1581	6691	21121	16281	37402	44093
L24	7/14/00	58 40.2	172 21.9	53	915	915	732	2562	3477	2653	6130	8691
L25	7/14/00	58 40.1	172 59.7	59	1027	2132	790	3948	50111	23128	73240	77188
L26	7/18/00	58 40.3	173 37.7	67	2411	1125	965	4501	0	0	0	4501
L28	7/10/00	58 45.2	174 54.7	79	0	0	0	0	0	312	312	312
M01	6/18/00	58 59.6	167 53.7	21	79	0	79	157	0	0	0	157
M02	6/17/00	59 0.2	167 14.5	20	156	0	0	156	0	0	0	156
M18	6/18/00	58 59.8	168 32.2	24	1106	158	1263	2527	79	395	474	3001
M19	6/25/00	58 59.3	169 10.4	28	1533	726	968	3227	0	242	242	3469
M20	6/25/00	59 0.1	169 50.6	33	162	0	1052	1214	81	1376	1457	2672
M21	6/26/00	59 0.1	170 29.0	37	1680	6634	4367	12681	756	84	840	13520
M22	6/26/00	59 0.0	171 7.9	42	316	2290	1185	3790	474	237	711	4501
M23	7/4/00	59 2.6	171 47.6	45	82	8491	7667	16241	577	330	907	17147
M24	7/4/00	59 0.2	172 26.2	51	80	477	1113	1670	239	636	875	2545
M25	7/13/00	58 59.9	173 5.0	56	2974	4421	2170	9565	9187	2996	12183	21748
M26	7/18/00	58 59.8	173 42.9	62	1842	1922	561	4325	961	0	961	5286
M27	7/18/00	58 59.3	174 22.1	67	156	78	0	234	0	0	0	234

Table 10. Summary of crab density by tow (# per square nmi) for Snow Crab, *Chionoecetes opilio.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
M29	7/9/00	59 0.8	175 44.3	71	162	81	243	486	0	0	0	486
M31	7/9/00	59 0.3	176 56.9	72	0	0	0	0	0	161	161	161
N18	6/18/00	59 19.8	168 34.1	21	0	0	863	863	0	314	314	1176
N19	6/25/00	59 19.4	169 14.2	26	1241	165	7199	8605	331	827	1158	9764
N20	6/25/00	59 20.2	169 52.2	32	3831	4494	172725	181049	58792	15172	73964	255013
N21	6/26/00	59 19.3	170 32.0	35	7855	6546	10474	24875	3286	1068	4353	29228
N22	6/26/00	59 20.0	171 11.2	39	721	3925	3764	8410	3684	400	4085	12494
N23	7/4/00	59 19.8	171 49.7	42	161	4033	7825	12019	37097	657	37754	49773
N24	7/4/00	59 20.2	172 29.9	46	157	1731	1259	3148	0	630	630	3777
N25	7/13/00	59 20.0	173 9.4	53	1526	4323	1399	7248	11698	3942	15640	22887
N26	7/13/00	59 29.9	173 30.3	54	171	428	3081	3680	86	6332	6418	10098
N26	7/13/00	59 20.1	173 48.1	57	79	396	238	713	0	475	475	1189
N27	7/13/00	59 19.8	174 26.7	64	162	569	325	1056	0	812	812	1869
N28	7/10/00	59 19.8	175 6.7	71	3834	500	4579	8914	83	4795	4878	13792
N29	7/9/00	59 20.6	175 45.0	72	314	157	0	471	78	0	78	549
N30	7/8/00	59 19.6	176 23.0	72	310	388	78	776	0	155	155	931
N31	7/9/00	59 19.8	177 4.5	79	0	239	80	318	0	80	80	398
O18	6/18/00	59 39.9	168 37.0	20	0	0	387	387	0	0	0	387
O19	6/25/00	59 39.7	169 16.3	25	310	0	1863	2173	0	388	388	2561
O20	6/25/00	59 40.3	169 55.1	29	701	857	5062	6619	1012	1012	2025	8644
O21	6/26/00	59 40.3	170 35.5	34	431	2442	13932	16804	5512	6647	12159	28963
O22	6/26/00	59 39.8	171 15.2	37	579	4977	36231	41787	82528	10765	93293	135080
O23	7/4/00	59 38.2	171 53.4	40	2039	4313	8234	14586	3294	314	3607	18193
O24	7/4/00	59 49.9	172 15.1	39	536	842	3215	4593	27627	982	28609	33202
O24	7/4/00	59 39.9	172 34.0	44	481	3684	8570	12735	2883	1281	4165	16899
O25	7/4/00	59 30.1	172 52.9	49	482	3054	2572	6109	402	1849	2251	8359
O25	7/13/00	59 39.9	173 14.3	50	327	82	1228	1637	82	818	900	2537
O26	7/13/00	59 40.1	173 52.1	55	818	1719	900	3437	655	1719	2373	5811
O27	7/13/00	59 40.3	174 27.0	61	2716	3182	2794	8692	4656	854	5510	14202
O28	7/11/00	59 40.7	175 7.2	66	3879	9135	8134	21149	193050	144067	337118	358266
O29	7/9/00	59 40.6	175 51.7	72	3506	1875	979	6360	163	82	245	6605
O30	7/8/00	59 39.3	176 32.1	72	155	464	232	851	0	0	0	851
O31	7/9/00	59 40.0	177 7.6	90	160	239	160	559	0	0	0	559

Table 10. Summary of crab density by tow (# per square nmi) for Snow Crab, *Chionoecetes opilio.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
P18	6/18/00	60 0.3	168 39.1	19	0	0	2639	2639	155	78	233	2871
P19	6/25/00	59 59.6	169 18.8	24	0	0	118438	118438	48910	23993	72903	191341
P20	6/25/00	60 0.2	169 57.9	28	82	411	39492	39985	40709	14063	54772	94758
P21	6/26/00	60 0.2	170 38.1	33	398	1034	42503	43935	62910	15362	78272	122207
P22	6/26/00	59 59.9	171 18.3	36	481	1025	15610	17115	44298	4259	48557	65672
P23	7/4/00	59 59.4	171 59.2	34	0	147	588	735	2059	147	2206	2942
P24	7/5/00	60 10.0	172 20.5	30	0	0	1602	1602	229	305	534	2136
P24	7/4/00	59 50.2	172 54.6	41	588	756	5040	6384	620	12318	12937	19321
P24	7/5/00	59 59.5	172 38.3	34	2106	333	21917	24356	4571	12570	17142	41498
P25	7/12/00	60 0.6	173 18.8	38	974	2046	27938	30959	53784	108277	162061	193019
P26	7/12/00	59 50.4	174 13.7	56	739	1396	657	2793	164	82	246	3039
P26	7/12/00	60 7.6	173 46.2	45	2210	9879	7669	19758	745	496	1241	20999
P26	7/12/00	60 0.1	173 56.9	51	555	2853	2219	5626	396	951	1347	6974
P26	7/12/00	59 50.0	173 34.9	50	239	2942	3102	6283	0	239	239	6521
P27	7/12/00	59 60.0	174 37.1	57	2317	4634	3144	10095	5047	2400	7447	17541
P28	7/11/00	59 59.6	175 16.2	62	7338	10313	7536	25187	26276	7357	33633	58821
P29	7/9/00	60 0.6	175 55.7	68	906	604	0	1510	378	0	378	1888
P30	7/8/00	60 0.4	176 42.9	75	21763	19098	8439	49299	207801	73146	280946	330245
P31	7/8/00	60 0.0	177 12.8	72	3061	5213	1655	9929	20886	15972	36858	46787
P32	7/8/00	60 0.2	177 56.4	75	255	255	255	764	849	85	934	1699
Q18	6/18/00	60 20.0	168 41.2	18	0	0	396	396	79	0	79	475
Q19	6/25/00	60 19.8	169 18.9	22	0	996	162347	163343	16931	48801	65732	229075
Q20	6/25/00	60 20.2	170 1.9	27	0	327	41741	42069	99380	44819	144199	186268
Q21	6/26/00	60 19.7	170 39.9	32	143	713	17110	17966	96376	4819	101195	119160
Q22	6/26/00	60 19.5	171 22.2	34	78	1558	16354	17989	17181	2227	19409	37398
Q23	7/5/00	60 20.8	172 3.8	31	0	0	77	77	0	0	0	77
Q25	7/5/00	60 10.7	173 2.3	31	0	79	551	630	157	551	708	1338
Q25	7/5/00	60 18.0	173 23.0	32	82	0	4159	4240	815	4566	5382	9622
Q26	7/12/00	60 20.0	174 3.9	47	451	4959	24046	29456	3384	1023	4407	33863
Q27	7/12/00	60 19.4	174 43.2	54	329	1725	5750	7803	2546	1314	3861	11664
Q27	7/12/00	60 10.2	174 21.1	53	87	2770	9435	12292	6492	433	6925	19217
Q28	7/11/00	60 19.8	175 23.3	59	3194	13068	7405	23668	8131	1888	10019	33686
Q29	7/10/00	60 20.0	176 2.8	65	1568	1490	1255	4313	2901	2039	4940	9253

Table 10. Summary of crab density by tow (# per square nmi) for Snow Crab, *Chionoecetes opilio.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
Q30	7/8/00	60 19.9	176 43.3	73	15891	24021	9239	49150	136783	57779	194562	243712
Q31	7/8/00	60 19.8	177 23.1	78	1750	1193	80	3022	239	477	716	3738
R22	7/5/00	60 39.8	171 26.2	33	0	0	11533	11533	18694	4411	23106	34639
R23	7/5/00	60 39.8	172 6.3	32	164	493	82593	83251	17752	74295	92047	175297
R24	7/5/00	60 40.1	172 47.1	22	0	0	1719	1719	313	78	391	2110
R25	7/5/00	60 40.4	173 26.4	33	0	0	93769	93769	39070	34382	73452	167221
R26	7/12/00	60 40.4	174 8.1	45	270	2695	206161	209126	137932	71725	209657	418784
R27	7/12/00	60 40.0	174 49.6	51	82	1896	14262	16241	20641	3105	23746	39986
R28	7/11/00	60 40.3	175 27.3	56	1635	5996	3115	10747	1480	2959	4439	15186
R29	7/10/00	60 40.3	176 12.4	62	986	1561	411	2957	246	82	329	3286
R30	7/8/00	60 40.5	176 48.3	68	3183	8942	3940	16065	3334	1667	5001	21066
R31	7/8/00	60 40.0	177 29.4	78	875	2386	636	3897	398	159	557	4453
R32	7/8/00	60 39.5	178 11.2	85	784	549	706	2039	392	784	1176	3215
S22	7/5/00	61 0.0	171 30.7	31	0	0	43185	43185	60459	15547	76006	119190
S23	7/6/00	60 60.0	172 10.6	33	0	407	48803	49209	36602	3254	39855	89065
S24	7/6/00	60 60.0	172 49.8	35	0	560	37257	37817	10365	11485	21850	59667
S25	7/6/00	61 0.1	173 28.6	39	0	0	33576	33576	10728	12337	23066	56641
S26	7/6/00	61 0.1	174 11.1	43	0	2718	80487	83205	29833	21697	51530	134734
S27	7/12/00	61 0.3	174 53.3	48	0	1463	45638	47101	29929	15480	45409	92510
S28	7/10/00	61 0.1	175 33.3	54	163	1223	6605	7991	571	408	979	8970
S29	7/10/00	61 0.6	176 17.2	59	1376	5343	14896	21615	2105	891	2995	24611
S30	7/7/00	61 0.3	176 58.3	64	2046	4092	4665	10803	982	327	1309	12112
S31	7/7/00	60 59.8	177 38.0	71	4028	8676	1394	14099	1060	326	1386	15485
T25	7/6/00	61 20.5	173 35.8	39	0	948	63063	64011	21811	17544	39355	103366
T26	7/6/00	61 20.0	174 20.0	41	0	239	24262	24501	10089	11531	21620	46121
T27	7/11/00	61 19.6	175 1.6	46	0	700	31318	32018	6693	5238	11931	43950
T28	7/10/00	61 20.4	175 40.3	51	0	706	17958	18663	21881	8931	30811	49475
T29	7/7/00	61 20.3	176 18.1	56	234	2804	12772	15809	7009	2258	9267	25076
T30	7/7/00	61 20.1	176 58.1	61	643	2492	9806	12941	4260	563	4823	17764
U25	7/6/00	61 40.5	173 39.6	37	0	0	62520	62520	20548	21423	41971	104491
U26	7/6/00	61 40.0	174 26.0	40	0	0	151672	151672	3333	121671	125004	276676
U27	7/11/00	61 40.4	175 5.5	45	0	393	10230	10623	3935	4958	8892	19516
U28	7/7/00	61 39.8	175 48.3	50	81	894	44511	45486	20356	29102	49458	94944

Table 10. Summary of crab density by tow (# per square nmi) for Snow Crab, *Chionoecetes opilio.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
U29	7/7/00	61 39.8	176 28.3	55	238	1901	26142	28281	12018	3472	15490	43771
V25	7/6/00	61 59.8	173 44.9	32	0	0	66452	66452	20795	25315	46110	112562
V26	7/6/00	62 0.0	174 30.0	38	0	0	82852	82852	3824	65007	68831	151682
V27	7/7/00	61 59.4	175 10.1	42	0	0	54388	54388	3307	29766	33074	87461
V28	7/7/00	61 59.7	175 50.2	51	0	333	67316	67650	16008	91245	107253	174903

NOTE: Minimum carapace sizes used are: Large Males > 4.0 in; Medium Males = 3.1 to 4.0 in; Large Females > 2.0 in.

Table 11. Summary of crab density by tow (# per square nmi) for Hair Crab, *Erimacrus isenbeckii.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
D09	7/23/00	55 58.9	162 49.4	41	81	0	0	81	0	0	0	81
D09	5/28/00	56 0.0	162 50.3	41	0	0	0	0	81	0	81	81
D10	7/22/00	55 58.9	162 14.2	34	80	80	0	160	0	0	0	160
E10	7/22/00	56 18.4	162 12.3	39	236	0	0	236	79	0	79	315
E10	5/28/00	56 20.2	162 11.8	42	310	0	0	310	0	0	0	310
E11	5/28/00	56 20.6	161 37.8	33	82	0	0	82	82	0	82	164
E11	7/21/00	56 20.0	161 37.2	33	0	0	0	0	82	0	82	82
F12	7/21/00	56 39.9	160 58.2	37	81	0	0	81	81	0	81	162
F12	5/25/00	56 40.4	160 59.4	34	411	0	0	411	164	0	164	575
F13	5/25/00	56 40.8	160 22.6	32	81	0	0	81	81	0	81	162
F13	7/21/00	56 40.2	160 22.4	31	161	0	0	161	81	0	81	242
F20	6/23/00	56 41.0	169 29.9	42	80	0	0	80	0	0	0	80
F22	6/29/00	56 49.9	170 27.9	53	82	0	0	82	0	0	0	82
G10	7/19/00	57 1.0	162 10.1	31	511	0	0	511	85	0	85	597
G12	7/21/00	56 58.7	160 57.0	36	317	0	0	317	158	0	158	475
G12	5/25/00	57 0.2	160 57.3	32	569	0	0	569	0	0	0	569
G13	5/25/00	56 59.6	160 20.5	32	160	0	0	160	80	0	80	239
G13	7/21/00	57 0.2	160 20.2	33	241	0	0	241	80	0	80	322
G14	5/24/00	56 59.6	159 43.7	29	0	0	0	0	78	0	78	78
G18	6/22/00	57 0.1	168 20.2	42	0	0	0	0	89	0	89	89
G19	6/23/00	57 9.6	168 37.8	40	0	0	78	78	0	78	78	156
G20	6/23/00	56 59.9	169 32.9	31	479	0	0	479	0	0	0	479
G21	6/28/00	57 9.8	169 52.6	26	120	0	0	120	0	0	0	120
G21	6/28/00	56 59.7	170 10.4	37	82	0	0	82	82	0	82	165
G21	6/29/00	56 50.1	169 52.7	38	569	81	0	650	325	81	406	1056
H01	6/19/00	57 19.5	167 44.3	38	77	0	0	77	0	0	0	77
H02	6/16/00	57 20.0	167 7.4	36	80	0	0	80	0	0	0	80
H09	6/1/00	57 21.1	162 46.6	23	81	0	0	81	0	0	0	81
H10	5/27/00	57 20.3	162 8.8	27	82	0	0	82	0	0	0	82
H11	7/19/00	57 20.2	161 32.1	29	80	0	0	80	0	0	0	80
H12	7/19/00	57 20.3	160 55.8	32	1206	0	0	1206	402	0	402	1608
H12	5/25/00	57 19.9	160 55.6	33	638	0	0	638	239	0	239	878
H13	5/25/00	57 20.2	160 17.8	32	81	0	0	81	0	0	0	81

Table 11. Summary of crab density by tow (# per square nmi) for Hair Crab, *Erimacrus isenbeckii.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
H13	7/19/00	57 20.4	160 18.0	31	83	0	0	83	83	0	83	166
H19	6/23/00	57 19.7	168 59.1	38	2492	76	0	2568	604	0	604	3172
H19	6/24/00	57 29.5	168 44.7	38	0	0	0	0	77	0	77	77
H20	6/23/00	57 20.3	169 36.0	33	160	0	0	160	80	0	80	239
H21	6/28/00	57 20.5	170 11.9	28	77	0	0	77	0	0	0	77
H22	6/28/00	57 30.0	170 35.0	38	78	0	0	78	78	0	78	157
I06	6/13/00	57 40.3	164 36.7	27	244	0	0	244	0	0	0	244
I12	5/25/00	57 39.5	160 52.4	29	125	0	0	125	0	0	0	125
I19	6/24/00	57 49.7	168 43.9	38	0	0	0	0	79	0	79	79
I20	6/24/00	57 30.1	169 22.0	38	395	0	0	395	158	0	158	553
I20	6/24/00	57 40.1	169 39.1	37	82	0	0	82	82	0	82	163
I21	6/28/00	57 49.9	169 57.8	38	77	0	0	77	0	0	0	77
I21	6/28/00	57 40.3	170 15.5	38	77	0	0	77	0	0	0	77
J04	6/14/00	57 59.9	165 54.1	28	78	0	0	78	78	0	78	156
J11	5/27/00	57 59.9	161 29.1	28	82	0	0	82	0	0	0	82
J20	6/24/00	57 50.3	169 22.1	34	80	0	0	80	0	0	0	80
J22	6/28/00	57 50.0	170 37.0	40	0	159	0	159	0	0	0	159
K01	6/19/00	58 19.6	167 50.4	31	80	0	0	80	0	0	0	80
K02	6/17/00	58 19.9	167 10.9	27	237	0	0	237	79	0	79	316
K03	6/17/00	58 20.3	166 32.9	24	79	0	0	79	0	0	0	79
K04	6/14/00	58 19.9	165 55.4	22	78	0	0	78	0	0	0	78
K18	6/19/00	58 20.0	168 28.1	34	78	0	0	78	0	0	0	78
L01	6/19/00	58 40.0	167 52.1	24	80	0	0	80	80	0	80	161
L02	6/17/00	58 39.8	167 13.1	22	238	0	0	238	0	0	0	238
L03	6/17/00	58 41.0	166 34.3	21	0	80	0	80	0	0	0	80
L04	6/14/00	58 39.9	165 56.7	18	78	0	0	78	0	0	0	78
L18	6/19/00	58 39.6	168 29.9	27	166	0	0	166	581	0	581	747
M01	6/18/00	58 59.6	167 53.7	21	79	0	0	79	0	0	0	79
M02	6/17/00	59 0.2	167 14.5	20	78	0	0	78	0	0	0	78
M18	6/18/00	58 59.8	168 32.2	24	1342	158	0	1500	79	79	158	1658
M19	6/25/00	58 59.3	169 10.4	28	161	0	0	161	0	0	0	161
N18	6/18/00	59 19.8	168 34.1	21	471	78	0	549	157	235	392	941
N19	6/25/00	59 19.4	169 14.2	26	248	83	0	331	0	0	0	331

Table 11. Summary of crab density by tow (# per square nmi) for Hair Crab, *Erimacrus isenbeckii.*

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
N20	6/25/00	59 20.2	169 52.2	32	160	0	0	160	0	0	0	160
O01	6/18/00	59 39.2	167 56.9	18	80	0	0	80	0	0	0	80
O18	6/18/00	59 39.9	168 37.0	20	309	387	0	696	77	0	77	773
O19	6/25/00	59 39.7	169 16.3	25	155	78	0	233	0	0	0	233
O20	6/25/00	59 40.3	169 55.1	29	78	0	0	78	0	0	0	78
P18	6/18/00	60 0.3	168 39.1	19	78	0	0	78	0	0	0	78
P19	6/25/00	59 59.6	169 18.8	24	156	78	0	234	0	0	0	234
P24	7/5/00	60 10.0	172 20.5	30	0	76	0	76	0	0	0	76
Q18	6/18/00	60 20.0	168 41.2	18	79	0	0	79	0	0	0	79
Q20	6/25/00	60 20.2	170 1.9	27	0	82	0	82	0	0	0	82

NOTE: Minimum carapace sizes used are: Large Males > 3.25 in; Medium Males = 2.0 to 3.25 in; Large Females > 2.6 in.