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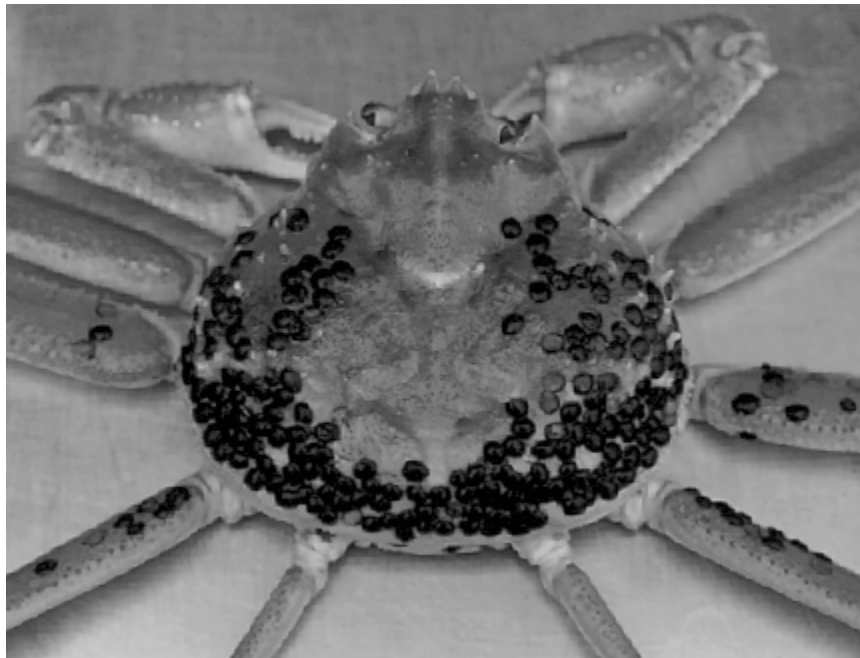
National Marine
Fisheries Service

U.S. DEPARTMENT OF COMMERCE

AFSC PROCESSED REPORT 98-02

Report to Industry on the 1997 Eastern Bering Sea Crab Survey

February 1998



This report does not constitute a publication and is for information only.
All data herein are to be considered provisional.



Cover Photo: Bering Sea crabs commonly carry the egg capsules of the marine leech *Notostomum cyclostomum*, on their shells. The 127 capsules carried by this Bristol Bay Tanner crab is an especially heavy load. *Notostomum* is a fish blood parasite known to feed on skates, yellowfin sole, and Pacific halibut.

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**Alaska Fisheries Science Center
Processed Report 98-02**

**REPORT TO INDUSTRY ON THE
1997
EASTERN BERING SEA
CRAB SURVEY**

**by
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February 1998

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RESULTS OF THE 1997 NMFS BERING SEA CRAB SURVEY EXECUTIVE SUMMARY

This section summarizes data presented in the Report to Industry on the 1997 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. Robert S. Otto or Dr. Bradley G. Stevens, NMFS, P.O. Box 1638, Kodiak, AK 99615. Phone (907) 487-5961. (GHL = Guideline Harvest Level.)

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

Legal males: 9.3 million crabs; 66% increase.

Pre-recruits: 8.9 million crabs; 154% increase.

Large Females: 24.9 million crabs; 109% increase.

Outlook: Increased abundance of legal males is within the error of the survey and is probably not due to recruitment. The Alaska Department of Fish and Game estimated abundance at 5.9 million legal males; for this reason the GHL was set at an intermediate level, with an exploitation rate of 10 %. However, abundance of prerecruits has increased due to growth of a strong year class which should start to reach legal size in 1998 and result in a significantly increased fishery in 1999.

GHL: 7.0 million lbs (3,180 metric tons, mt). Fishery opened November 1.

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

Legal males: 1.1 million crabs; 149% increase.

Pre-recruits: 0.6 million crabs.

Large Females: 1.0 million crabs; 11 % increase

Outlook: Legal and pre-recruit male crab are concentrated at few stations, and index has very low precision. Females and small males are poorly estimated. The series of both survey and fishery data indicate a long-term population decline. Historically, red king crab are relatively rare in the Pribilof Islands and are usually harvested as incidental catch in the blue king crab fishery.

GHL: Fishery combined with blue king crab in 1997.

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

Legal males: 0.8 million crabs; 32% decrease

Pre-recruits: 0.4 million crabs; 52% decrease.

Large Females: 2.5 million crabs; 46% decrease.

Outlook: Population is low and trends are not easily detectable.

GHL: 1.5 million lbs (681 mt) of red and blue king crabs (see above).

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

Legal males: 3.9 million crabs; 16% increase.

Pre-recruits: 2.3 million crabs; 15% increase.

Large Females: Not well estimated.

Outlook: Population is above average levels. Rocky grounds preclude surveying important portions of the habitat, and abundance estimates may be affected by annual changes in the portion of the stock available to the survey.

GHL: 5.0 million lbs (2,270 mt).

Tanner crab (*Chionoecetes bairdi*) Eastern District.

Legal males: 3.4 million crabs; 63% decrease.

Pre-recruits: 9.1 million crabs; 61% decrease.

Large Females: 10.0 million crab ; 64% decrease.

Outlook: Population still declining, and little sign of recruitment is apparent. This year's estimate of legal males is the second lowest, and large females is the lowest, in the history of the survey.

GHL: Fishery did not open in 1997.

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

Large males: 306 million crabs; 78% increase.

Small males: 1491 million crab; 45% decrease.

Large Females: 1383 million crab; no change.

Outlook: Abundance of large males is increasing due to growth of a large cohort of small crabs, as expected. This population should remain stable or increase next year. Decline of small crab may indicate poor long-term recruitment.

GHL: 234 million lbs (106,142 mt) including the new 8.2 million lbs (3,719 mt) community development quota. Fishery opened January 15, 1998.

Hair crab (*Erimacrus isenbeckii*)

Total males: 5.9 million crabs; 30% decrease.

Large Females: Not well estimated.

Outlook: Population is declining from a recently high level. Recruitment trends are not apparent.

GHL: 0.8 million lbs (364 mt) Pribilof District only. Fishery opened November 1, 1997.

THE 1997 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, BIN C15700, Seattle, Washington 98115.

Landing statistics for 1997 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 1997 EBS crab survey consisted of 376 successful bottom trawl tows and covered an area of approximately 139,200 square nautical miles (nmi). This year's survey area (Fig. 1) was nearly identical to that of 1996. The survey was conducted aboard two chartered vessels, the *F/V Aldebaran* and *F/V Arcturus*, between June 7 and July 26. 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 (37 km) grid. Near St. Matthew Island and the Pribilofs, 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 1.49 nmi (2.76 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 and snow crabs, and carapace length (cl) for all others. Procedures for estimating abundance were similar to previous years (Appendix A). Note that population estimates are indexes and are most precise for large crabs; however, they may not represent absolute abundance and are least precise for females and small crab due to variance in crab behavior and net performance.

Because of differences in the length of each tow, 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 each species was caught, without averaging. It is advisable to cross-reference charts and tables.

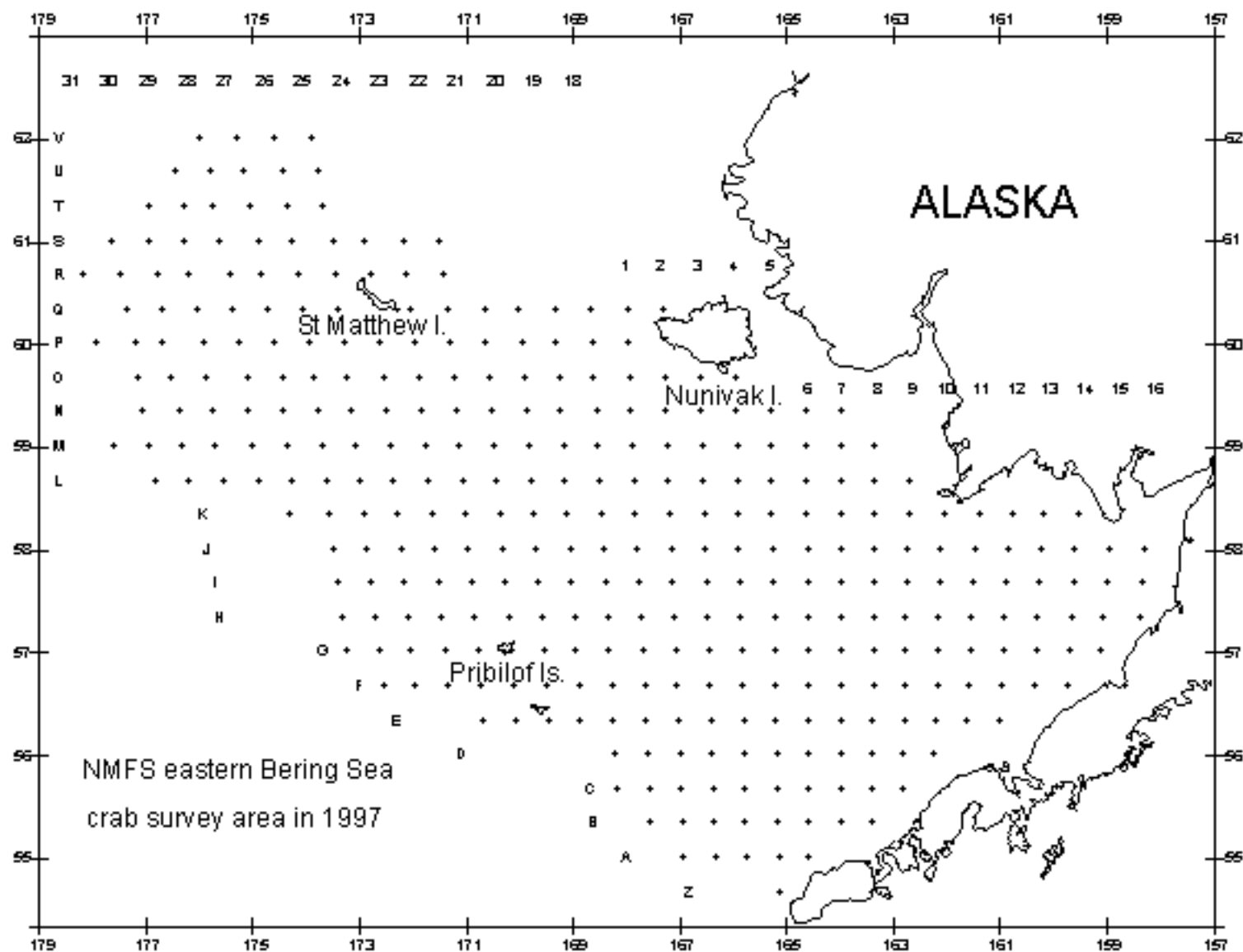
The following abbreviations are used in the text: (in) inches, (m) meters, (km) kilometers, (mm) millimeters, (fm) fathoms, (lbs) pounds, (°C) degrees Celsius, (nmi) nautical miles, (cl) carapace length, and (cw) carapace width. Terminology for shell condition categories is explained in Appendix B.

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 central Bristol Bay (Chart 1 and Table 7). The abundance index



Red King Crab Bristol Bay Statistical Area

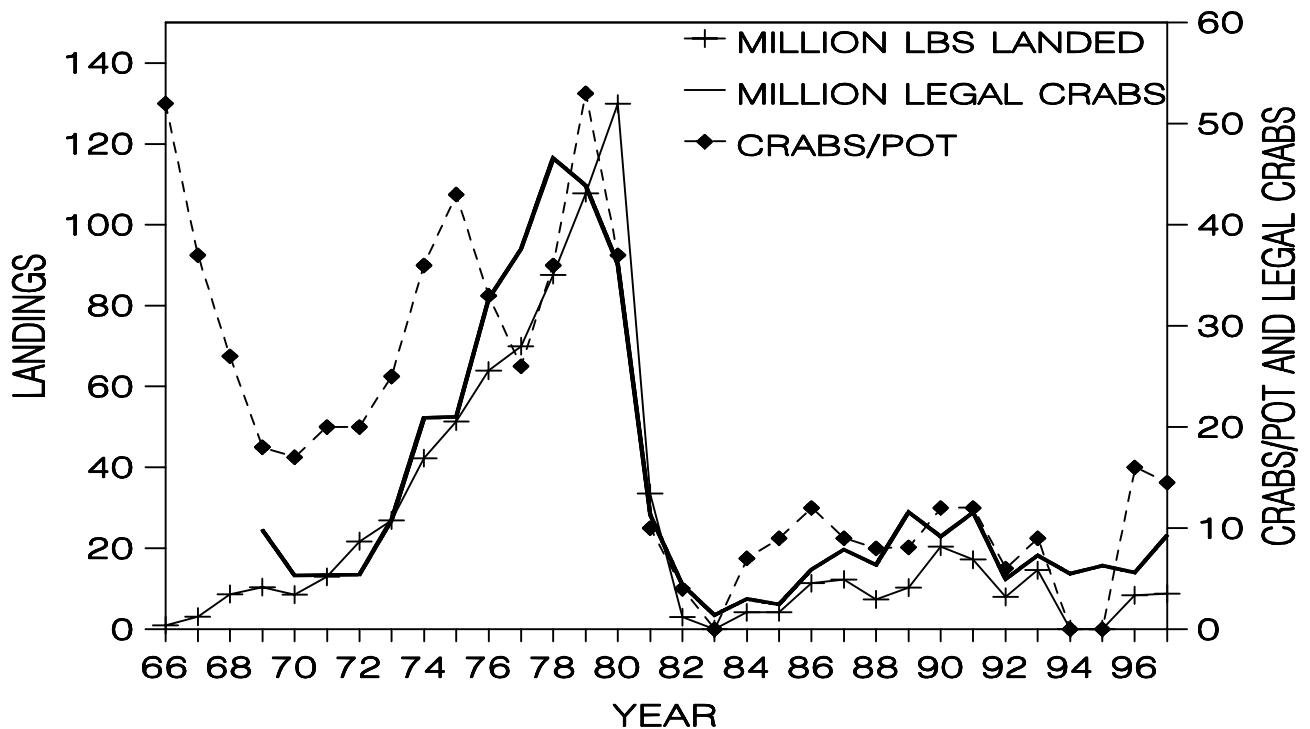


FIGURE 2. U.S. landings in millions of pounds, CPUE as crabs/pot, and abundance of legal red king crab (*P. camtschaticus*) in millions in Bristol Bay, estimated from NMFS trawl surveys (abundance data include the Pribilof District prior to 1983).

of legal male red king crabs in the Bristol Bay District (south of 58°39'N and east of 168°W) was 9.3 million crabs (Table 1 and Fig. 2). The estimate represents a 66% increase from last year but is still below the 27-year average (14.2 million). Most of this increase consisted of large crabs so it probably represents estimation error in this year or last rather than recruitment. Pre-recruit crab (110-134 mm cl) showed an increase of 156% to 8.9 million. Abundance of small males increased by 57%. A mode observed at a mean size of 75 mm in 1995 (Fig. 3) and 88 mm in 1996 grew to about 102 mm in 1997. The fishable stock is still low, but will probably increase in 1998 as pre-recruits grow and recruit to the fishery. Less than 1% of legal male crabs were in molting or soft-shell condition, and 67% were newshell crabs (Appendix B).

The abundance index for large (≥ 90 mm cl) females in Bristol Bay was 24.9 million crabs. This was an increase of 109% relative

to 1996. The size-frequency of females showed a recruitment pattern similar to males but almost all are now mature. In June, 14% of sampled mature females were molting or soft-shell (vs. 21% last year). Among sampled mature females, the proportion which had molted and extruded new, uneyed eggs was 91% compared with 98% last year. Fluctuations in the timing of molting, mating, and embryo extrusion may be related to annual variations in water temperature.

The length-based assessment (LBA) model, developed by ADF&G, was fitted to the survey time series in order to evaluate the abundance of mature females relative to the threshold and to establish a GH (ADF&G Regional Information Report 5596-12). ADF&G evaluations using the LBA model gave values of 23.7 million mature (≥ 90 mm cl) females and 10.5 million mature males (≥ 120 mm cl). The new Alaska Board of Fisheries policy requires a harvest rate of 10% of mature males (> 119

Red King Crab Length Frequency Bristol Bay

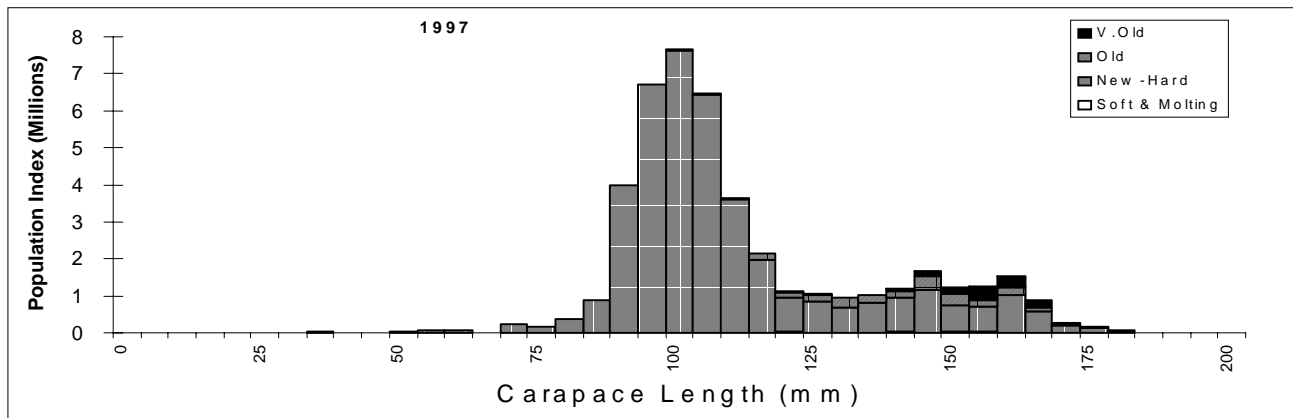
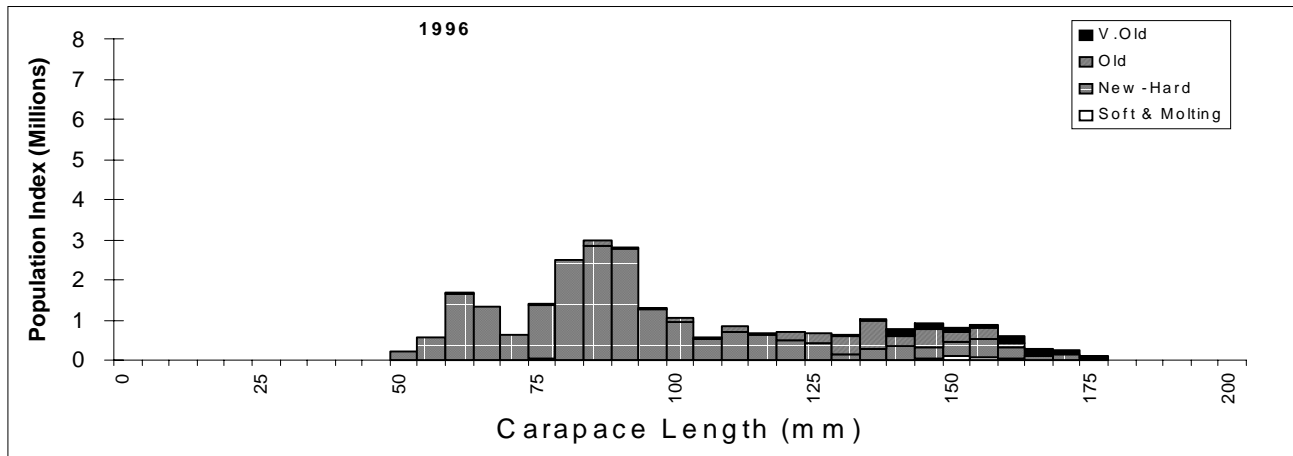
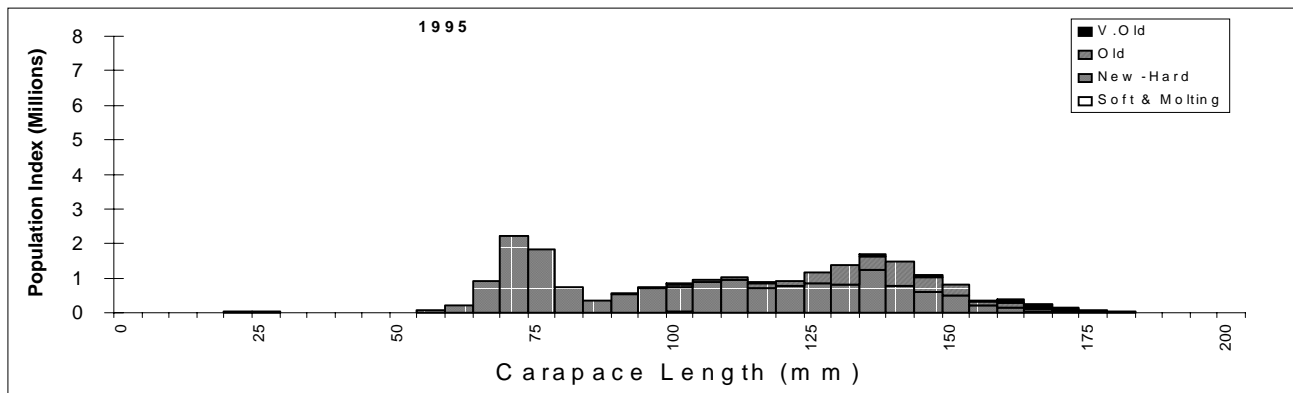


FIGURE 3. Size-frequency of male red king crab (*P. camtschaticus*) by 5 mm length classes, 1995-1997.

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.

Size ¹ (mm) Width(in)	Males				Females			Grand Total
	Small	Pre-rec	Legal	Total	Small	Large	Total	
	<110 <5.2	110-134 5.2-6.5	≥135 ≥6.5		<90 <4.3	≥90 ≥4.3		
1975	84.9	31.7	21.0	137.6	70.8	58.9	129.7	267.3
1976	70.2	49.3	32.7	152.2	35.9	71.8	107.7	259.9
1977	80.2	63.9	37.6	181.7	33.5	150.1	183.6	365.3
1978	62.9	47.9	46.6	157.4	38.2	128.4	166.6	324.0
1979	48.1	37.2	43.9	129.2	45.1	110.9	156.0	285.2
1980	56.8	23.9	36.1	116.8	44.8	67.6	112.5	229.3
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 (B) ²	26.7	8.9	9.3	44.9	1.7	24.9	26.6	71.5
(P)	0.8	0.6	1.1	2.6	0.0	1.0	1.1	3.6
<u>Limits³</u>								
Lower	2.4	4.1	5.1	15.7	0.1	4.5	4.5	20.2
Upper	51.0	13.8	13.4	74.1	3.4	45.3	48.7	122.8
±%	91	54	45	65	97	82	83	72

¹ Carapace length (mm).

² Separate estimates given for Bristol Bay (B) and Pribilofs (P) Districts.

³ Mean ± 2 standard errors for most recent year; Bristol Bay only.

Blue King Crab
Pribilof District

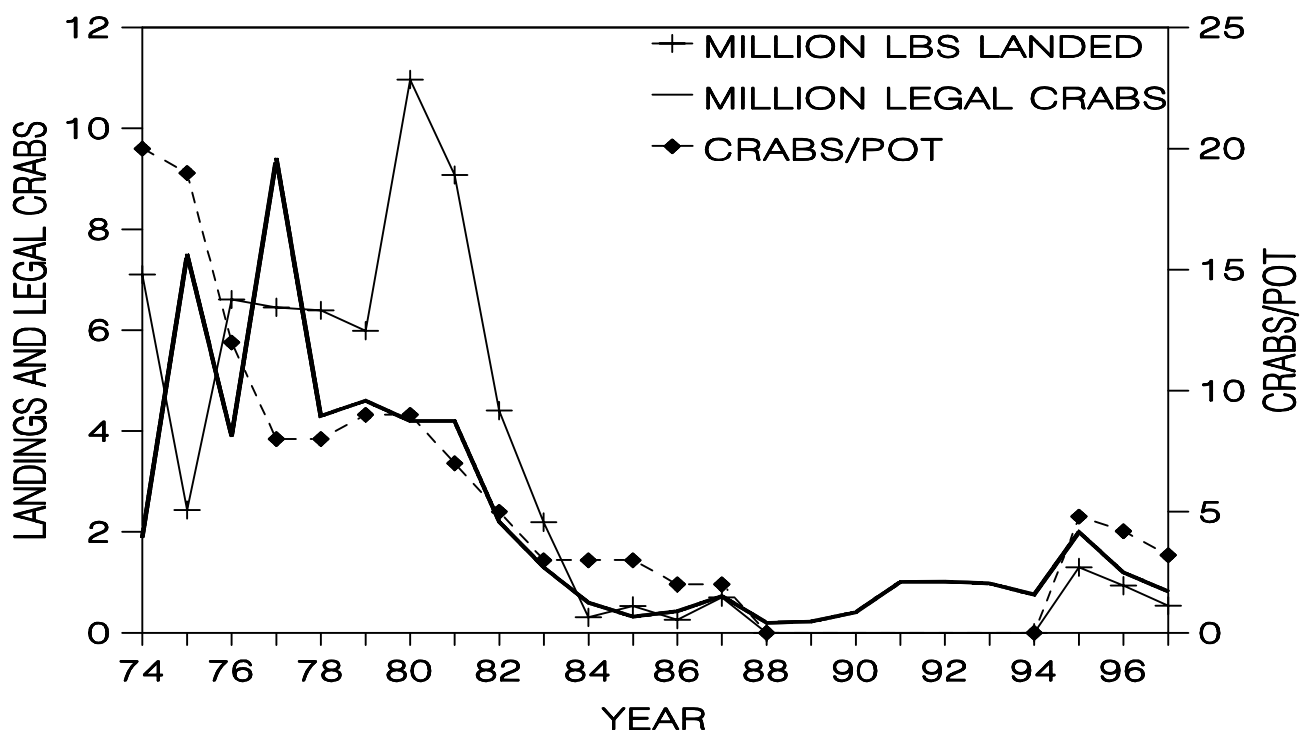


FIGURE 4. U.S. landings in millions of pounds, CPUE as crabs/pot, and abundance of legal blue king crab (*P. platypus*) in millions in the Pribilof District, estimated from NMFS trawl surveys.

mm cw) under current stock conditions, which resulted in a GHF of 7.0 million lbs (3,180 mt) based on 1.05 million crabs at an average weight of 6.67 lbs.

The 1997 fishery was opened on November 1 with a GHF of 7.0 million pounds. The 1997 fishery lasted 4 days and produced 8.8 million lbs landed by 256 vessels with a CPUE of 14.5 crab/pot-lift.

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 1.14 million crabs, an increase of 149% from last year's 0.45 million crabs. The index for large females increased 11%. In previous years male crab were highly concentrated at one station (G21), which resulted in additional sampling. In 1997, no such "hot spot" was found. A combined fishery for red and blue king crab in

the Pribilof District opened September 15 with a GHF of 1.5 million lbs of both species. Landings in 1997 were 0.8 million lbs of red king crab with a CPUE of 3.1 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. Red king crab were relatively abundant from 1992 to 1995 but are apparently returning to historical levels.

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 8). The abundance index for legal males was 0.8 million crabs (Table 2 and Fig. 4), a 32% decrease from 1996, and is well below the 23-year average (2.3 million). The index of pre-recruits (110-134 mm cl) also decreased 52% and the abun-

**Blue King Crab
Northern District**

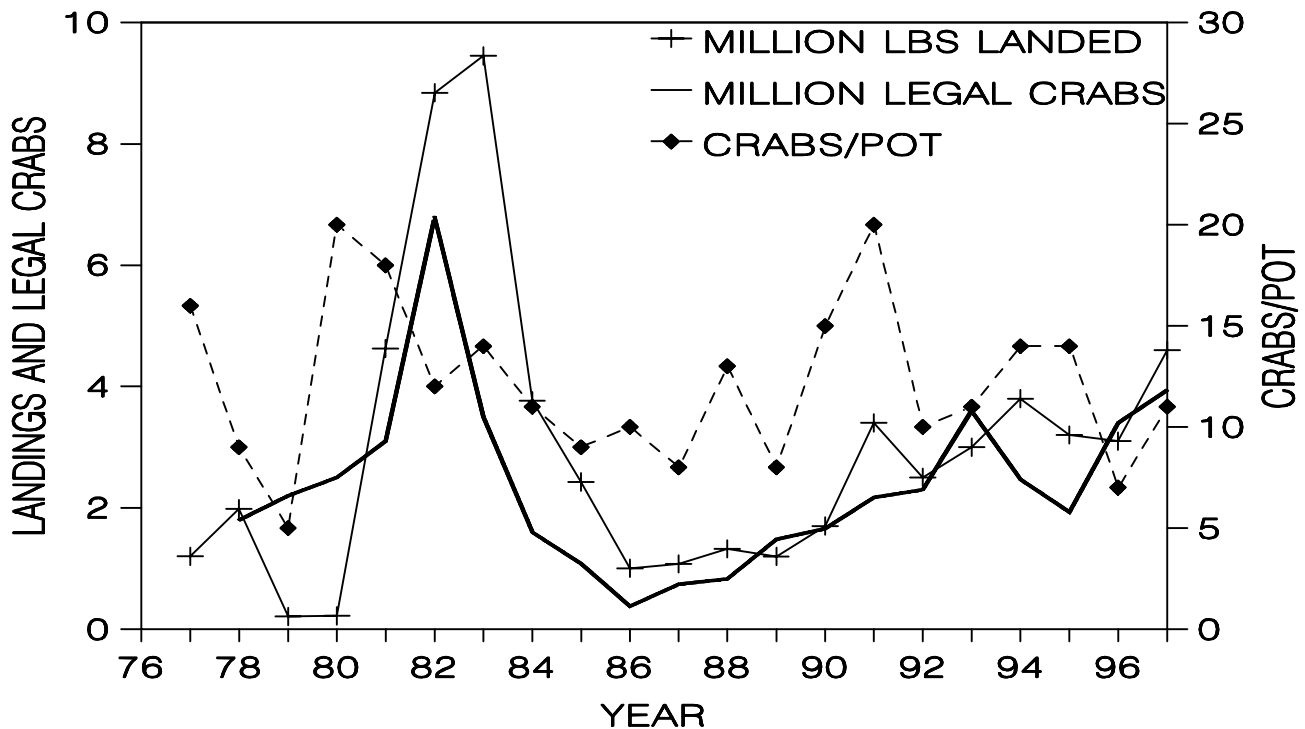


FIGURE 6. U.S. landings in millions of pounds, CPUE as crabs/pot, and the abundance of legal blue king crabs (*P. platypus*) in millions in the Northern District (St. Matthew Island), estimated from NMFS trawl surveys.

dance of small males (<110 mm cl), showed a 6% decrease. Size-frequency data (Fig. 5) show decreases in all sizes of crab. Shell conditions among legal males were 12% soft or molting, 41% new-hardshells, and 47% oldshells, indicating that crabs had molted recently.

The abundance index for large (≥ 90 mm cl) females showed a 46% decrease from last year. However, estimates of female abundance are usually very imprecise due to the preference of such crab for rocky habitat which is not sampled well by trawls. Among sampled mature females, 36% were new hardshells, of which 98% carried new eggs, and 53% were oldshells, of which all carried empty embryo cases. Only one female carried a clutch of eyed eggs. Five percent of mature females had soft shells. Blue king crab are predominantly biennial spawners. Only a portion of the female population spawns in a given year, while the remainder is in the non-

embryo-bearing phase.

This fishery was closed from 1987 through 1994 due to low stock abundance but was reopened in 1995 with a combined GHL for red and blue king crab. In 1997, the combined GHL was 1.5 million lbs and landings were 1.3 million lbs including 0.5 million lbs of blue king crab. CPUE was 2.4 blue king crab/pot-lift. Declining GHLs reflect declining trends in stock abundance for both species.

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 8). The abundance index for legal males was 3.9 million crabs (Table 3 and Fig. 6), representing a 16% increase from last year. The abundance of pre-recruits (105-119 mm cl) showed a 15% increase. The distribution of size-fre-

Blue King Crab Length Frequency Pribilof District

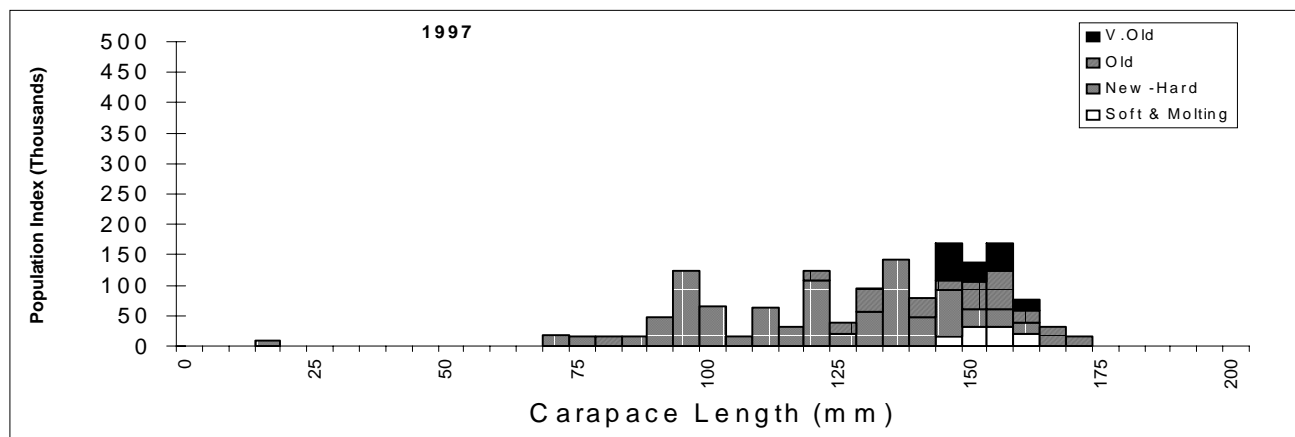
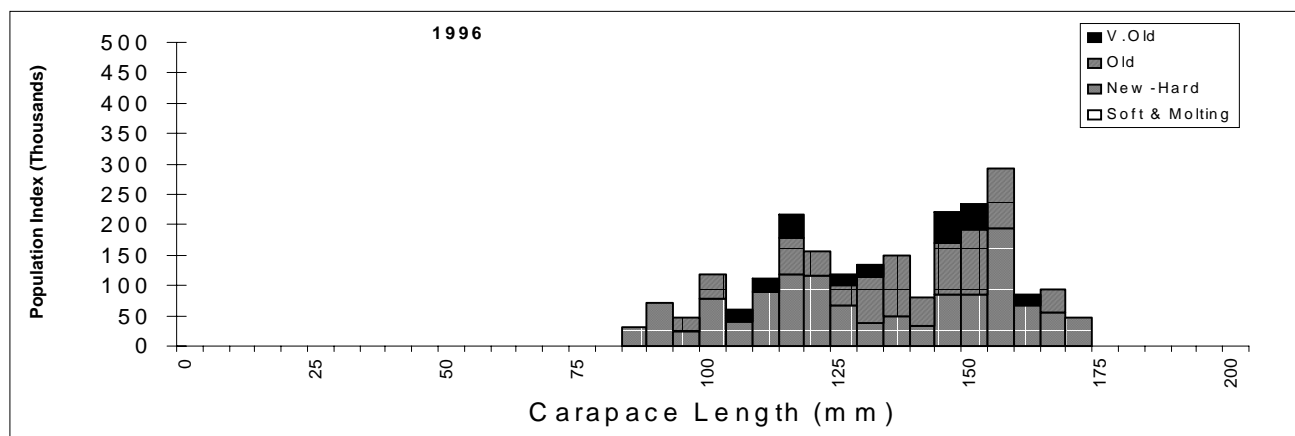
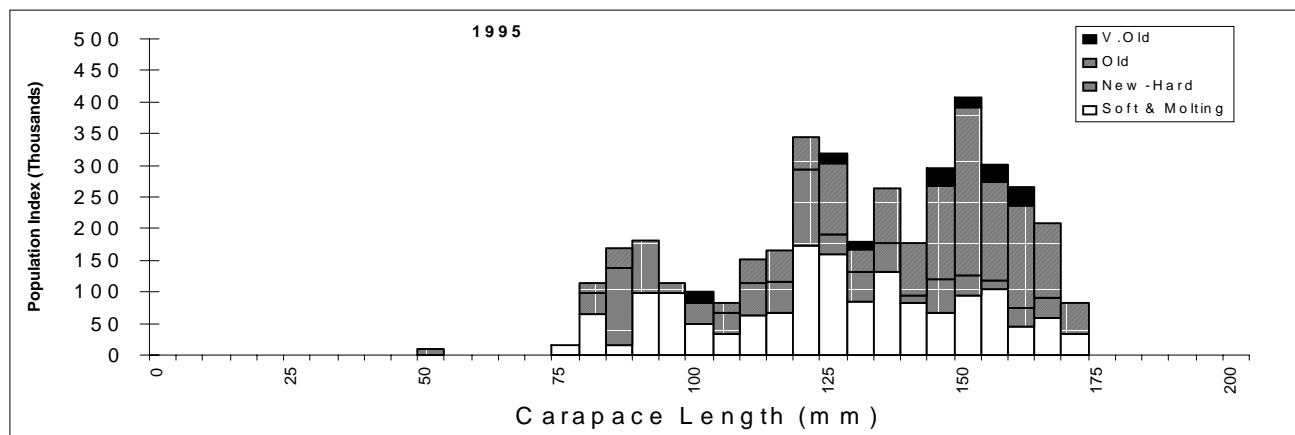


FIGURE 5. Size-frequency of Pribilof District male blue king crab (*P. platypus*), by 5 mm length classes, 1995-1997.

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

Size ¹ (mm) Width(in)	Pribilof District							Grand Total
	Males				Females			
	Small	Pre-rec	Legal	Total	Small	Large	Total	
	<110 <5.2	110-134 5.2-6.5	≥135 ≥6.5		<90 <4.3	≥90 ≥4.3		
1974	4.4	3.1	1.9	9.4	0.6	10.9	11.5	20.9
1975	4.1	8.0	7.5	19.6	0.0	8.8	8.8	28.4
1976	10.3	2.1	3.9	16.3	0.4	17.7	18.1	34.4
1977	3.2	2.2	9.4	14.8	2.2	17.5	19.7	34.5
1978	1.2	5.8	4.3	11.3	0.3	35.5	35.8	47.1
1979	6.4	1.5	4.6	12.5	5.2	2.9	8.1	20.6
1980	1.9	1.4	4.2	7.5	0.8	101.9	102.7 ²	110.2
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	0.06	0.16	0.32	0.54	0.18	0.52	0.70	1.24
1986	0.02	0.02	0.43	0.46	0.04	1.86	1.89	2.35
1987	0.57	0.08	0.73	1.38	0.39	0.58	0.97	2.35
1988	1.10	0.0	0.20	1.29	0.77	0.43	1.20	2.49
1989	3.22	0.10	0.22	3.54	2.29	1.28	3.57	7.11
1990	1.84	1.24	0.41	3.48	1.82	2.66	4.48	7.96
1991	1.32	1.03	1.01	3.36	0.56	2.81	3.37	6.73
1992	1.57	1.17	1.02	3.76	1.31	2.05	3.36	7.11
1993	0.97	0.83	0.98	2.78	0.33	2.17	2.50	5.28
1994	0.30	0.51	0.76	1.57	0.06	4.28	4.34	5.90
1995	0.79	1.16	2.00	3.95	0.44	4.02	4.47	8.42
1996	0.33	0.74	1.21	2.28	0.08	4.63	4.71	6.99
1997	0.33	0.35	0.82	1.50	0.08	2.48	2.55	4.05
<u>Limits³</u>								
Lower	0.0	0.0	0.4	0.5	0.0	0.5	0.6	1.1
Upper	0.6	0.7	1.3	2.5	0.2	4.4	4.5	7.0
±%	98	86	54	65	135	78	76	72

¹ Carapace length (mm).

² Female estimates considered unreliable in 1980.

³ Mean ± 2 standard errors for most recent year.

Blue King Crab Length Frequency Northern District

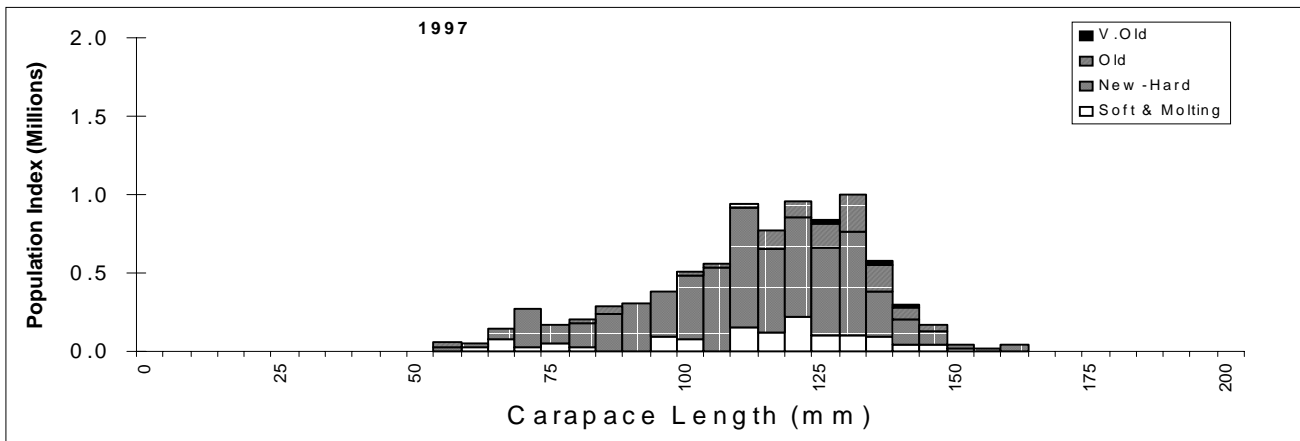
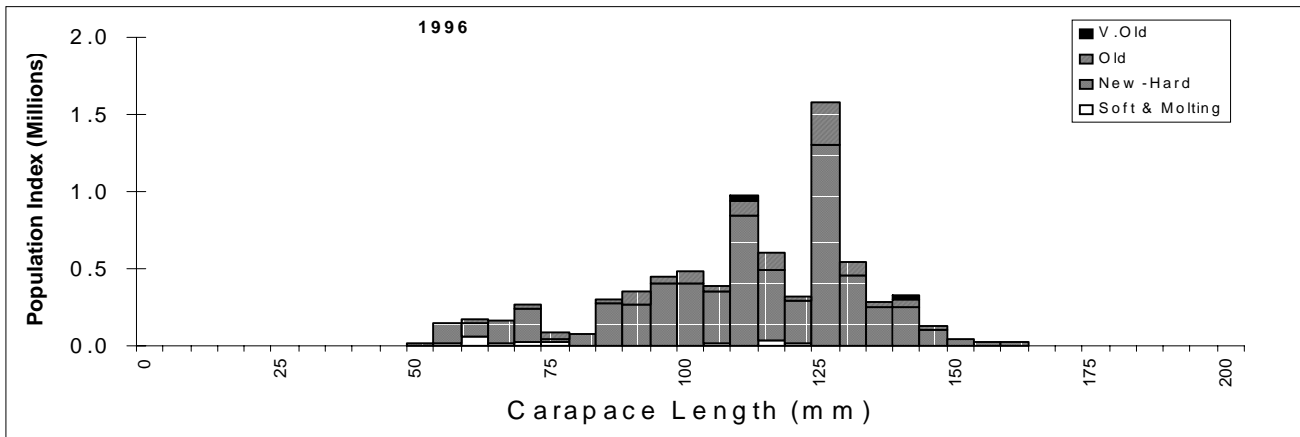
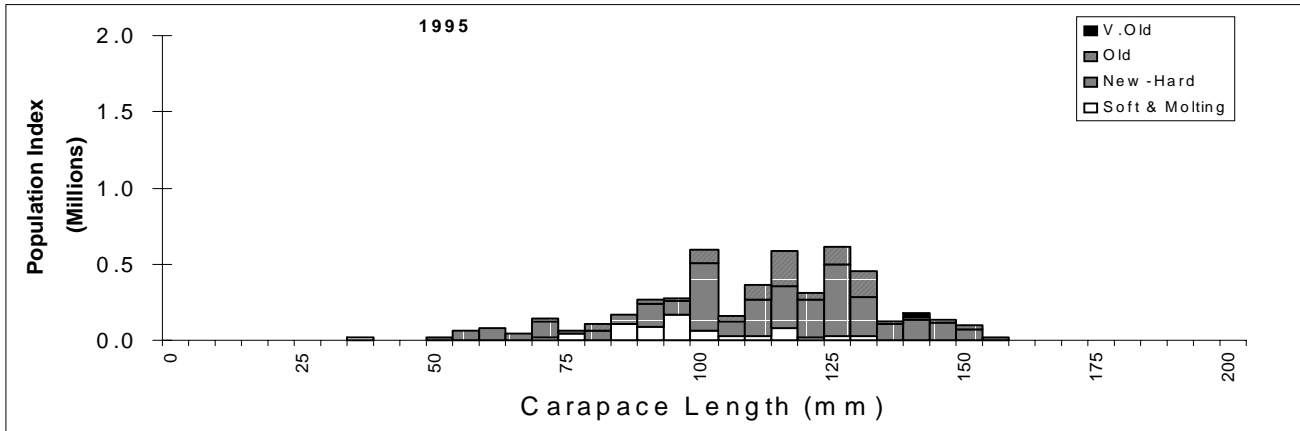


FIGURE 7. Size-frequency of Northern District (St. Matthew Island) male blue king crab (*P. platypus*), by 5 mm length classes, 1995-1997.

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

Size ¹ (mm) Width(in)	Northern District							Grand Total
	Males				Females			
	Small	Pre-rec	Legal	Total	Small	Large	Total	
	<105 <4.3	105-119 4.3-5.5	≥120 ≥5.5		<80 <3.8	≥80 ≥3.8		
1978	5.6	2.4	1.8	9.8	0.8	0.4	1.2	11.0
1979	4.9	2.3	2.2	9.4	1.7	0.9	2.6	12.0
1980	3.4	2.2	2.5	8.1	0.8	2.2	3.0	11.1
1981	1.2	1.8	3.1	6.3	0.0	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	0.46	0.35	1.08	1.90	0.08	0.13	0.21	2.11
1986	0.56	0.40	0.38	1.35	0.25	0.06	0.32	1.67
1987	1.08	0.73	0.74	2.54	0.47	0.22	0.68	3.22
1988	1.44	0.65	0.83	2.92	0.90	0.79	1.70	4.62
1989	4.80	0.97	1.48	7.25	1.58	1.68	3.27	10.52
1990	1.44	0.75	1.66	3.85	0.45	0.20	0.65	4.50
1991	2.92	1.52	2.17	6.61	0.84	0.69	1.53	8.14
1992	2.27	1.47	2.30	6.03	0.94	0.38	1.32	7.36
1993	4.62	1.99	3.60	10.22	1.35	3.03	4.38	14.60
1994	1.55	1.42	2.47	5.44	0.11	0.40	0.51	5.95
1995	1.88	1.11	1.93	4.92	0.57	0.13 ³	0.70	5.62
1996	2.59	1.97	3.40	7.96	1.13	0.86	1.99	9.96
1997	2.37	2.27	3.94	8.59	0.60	0.84	1.44	10.03
<u>Limits²</u>								
Lower	0.3	0.1	1.7	2.7	0.0	0.0	0.0	2.7
Upper	4.5	4.4	6.2	14.4	1.7	2.1	3.8	17.4
±%	88	96	56	68	184	154	166	73

¹ Carapace length (mm); categories reflect smaller average size in the Northern District; 80 mm is the median size at maturity for females.

² Mean ± 2 standard errors for most recent year.

³ This estimate considered unreliable because few crabs caught.

Tanner Crab Eastern District

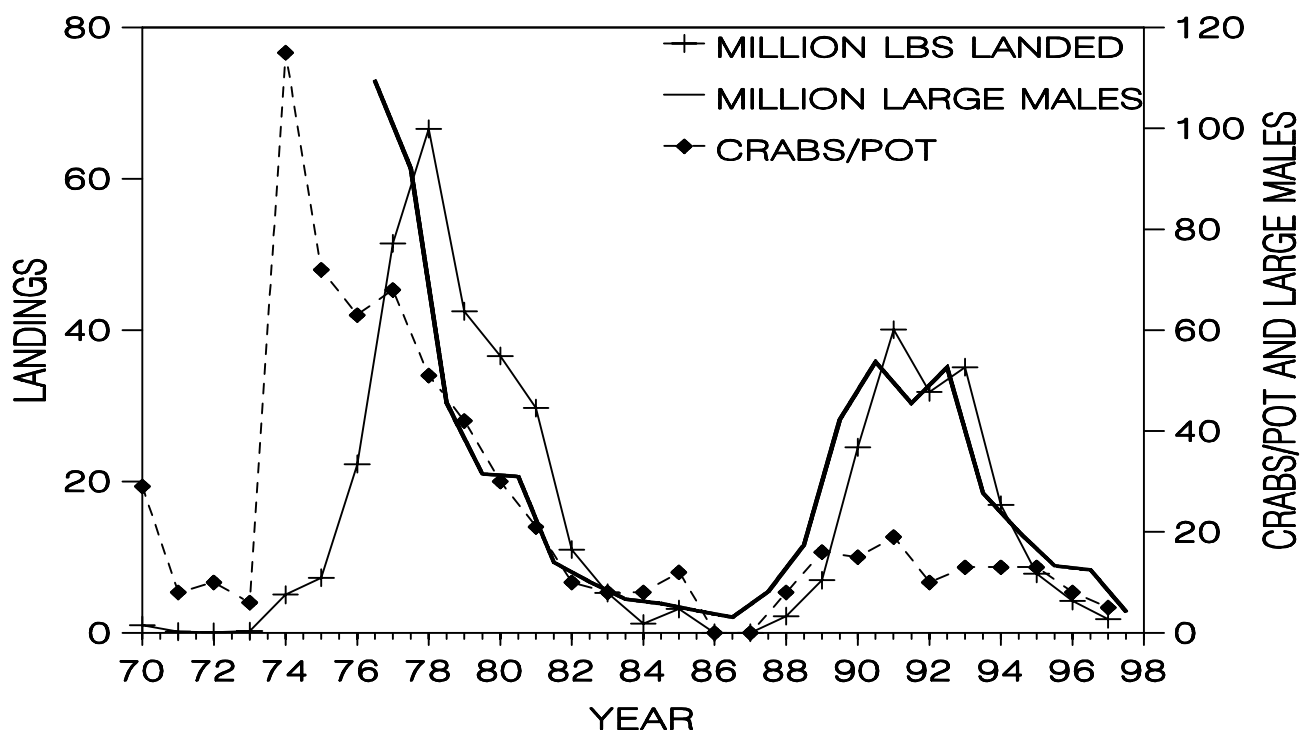


FIGURE 8. U.S. landings in millions of pounds, CPUE as crabs/pot, and the abundance of large male Tanner crab (*C. bairdi*) in millions in the Bristol Bay and Pribilof Districts (prior to 1989) or the Eastern District (since 1989), estimated from NMFS trawl surveys.

quencies does not indicate an increasing or decreasing trend in abundance.

The index of legal males (3.94 million) is considerably above the long-term average of 2.29 million. Among legal males, 18% were softshell, 53% were new-hardshells, and 29% oldshells. The index for large females (≥ 80 mm cl) is poorly determined due to a habitat preference for inshore, rocky and untrawlable grounds. Only 24 mature females were captured.

The 1997 fishery opened on September 15 with GHF of 5.0 million lbs, landings of 4.6 million lbs and a CPUE of 11 crab/pot-lift (Fig. 6). In 1996 3.1 million lbs were landed, with a CPUE of 7 crab/pot-lift.

Tanner Crab (*C. bairdi*)

The legal minimum size of 5.5 in cw (spine tip to spine tip) is equivalent to 138 mm cw measured between the spines (scientific measure). The data included in Table 4, however,

define "large" crabs as males ≥ 135 mm, because this size has been used for a long-term index since 1976.

Legal males were sparsely distributed with regions of highest abundance in central Bristol Bay (Chart 3 and Table 9). The abundance index for large (≥ 135 mm cw) male *C. bairdi* in the Eastern District (east of 173°W) is 4.2 million crabs (Table 4), of which 3.4 million are legal size (≥ 138 mm cw). Legal crab abundance decreased by 63% relative to 1996. The abundance index for large crabs showed a decrease of 66% from last year (Table 4 and Fig. 8) and is well below the 1976-1996 average (30.8 million). This is the second lowest abundance of large Tanner crabs in the history of the survey. About 51% of the legal crab were located east of 163°W, and virtually all the legal males occurred in the Eastern District. The abundance index for pre-recruits (110-134 mm cw) showed a 61% decrease and the index for small male (<110

Tanner Crab Width Frequency Eastern District

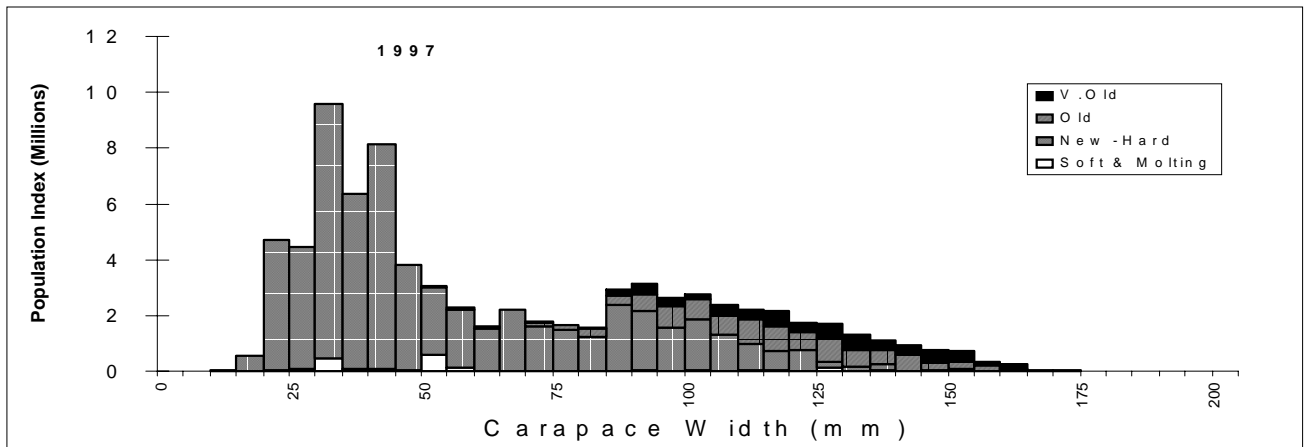
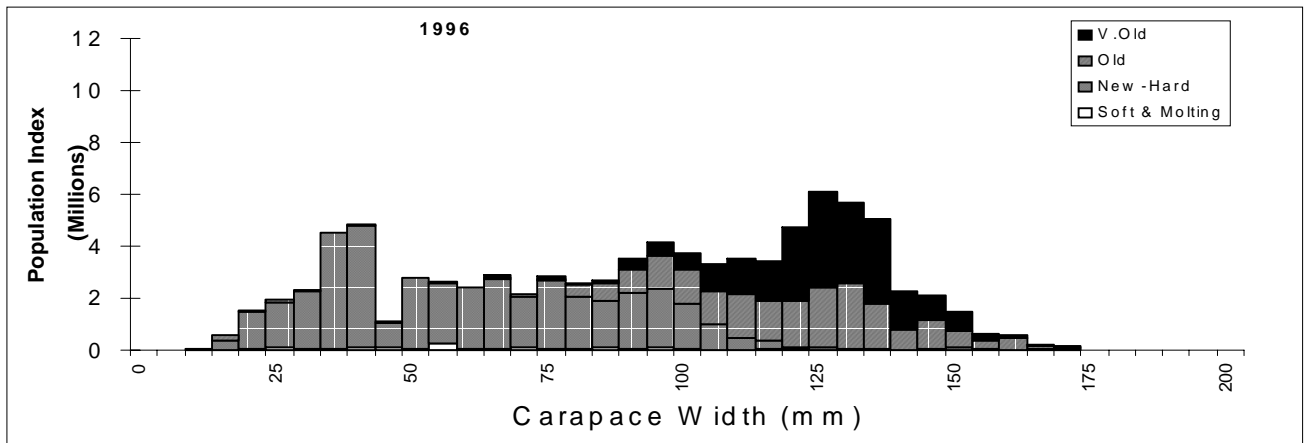
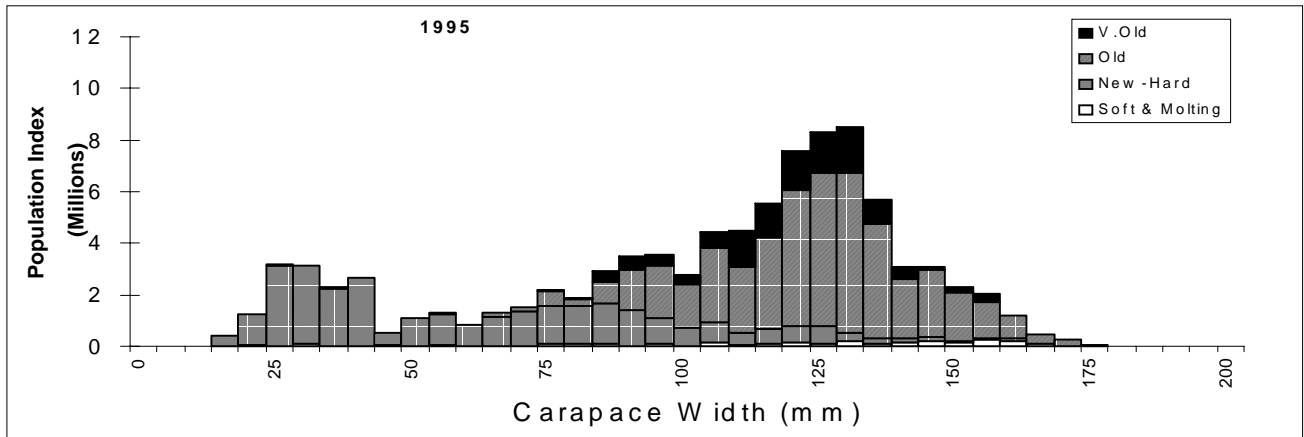


FIGURE 9. Size-frequency of male Tanner crab (*C. bairdi*) in the Bristol Bay and Pribilof Districts, by 5 mm width classes, 1995-1997.

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 Disticts; both areas contain virtually all legal males.

	Males				Females			Grand Total
	Small	Pre-rec	Large	Total	Small	Large	Total	
Size ¹ (mm)	<110	110-134	≥135		<85	≥85		
Width(in)	<4.3	4.3-5.3	≥5.3		<3.4	≥3.4		
1976	180.2	136.6	109.5	426.3	174.7	220.4	395.1	821.4
1977	255.0	116.3	92.1	463.4	328.4	215.8	544.2	1,007.6
1978	124.2	81.2	45.6	251.0	116.1	73.3	189.4	440.4
1979	133.1	47.7	31.5	212.3	122.6	42.1	164.7	377.0
1980	453.3	65.0	31.0	549.3	326.9	106.8	433.7	983.0
1981	303.8	24.0	14.0	341.8	324.2	79.1	403.3	745.1
1982	88.8	46.9	10.1	145.8	126.4	83.6	210.0	355.8
1983	146.3	32.0	6.7	185.0	180.1	45.4	225.5	410.5
1984	85.1	21.2	5.8	112.1	107.0	33.4	140.4	252.5
1985	31.1	9.4	4.4	45.0	24.2	15.6	39.8	84.8
1986	110.4	12.9	3.1	126.4	68.2	13.7	81.9	208.3
1987	229.9	19.6	8.2	257.8	192.4	35.5	227.8	485.6
1988	287.3	59.7	17.4	364.4	184.8	81.0	265.8	630.2
1989	403.0	102.2	42.3	547.5	338.6	63.8	402.4	949.9
1990	286.1	78.8	53.7	418.6	266.5	97.4	363.9	782.5
1991	267.2	105.4	45.5	418.1	232.1	116.8	348.9	767.0
1992	121.0	101.9	52.6	275.5	98.9	63.9	162.8	438.3
1993	76.6	63.4	27.7	167.7	57.6	29.6	87.2	254.9
1994	47.9	38.6	20.0	106.6	57.9	27.5	85.4	192.0
1995	40.4	32.4	13.3	86.1	66.6	37.2	103.8	189.9
1996	52.6	23.5	12.5	88.5	59.3	27.7	87.1	175.6
1997	65.6	9.1	4.2	78.9	70.1	10.0	80.1	159.0
<u>Limits²</u>								
Lower	34.8	6.6	2.6	47.4	30.1	6.3	39.2	86.6
Upper	96.5	11.6	5.8	110.5	110.0	13.7	120.9	231.4
±%	47	27	38	40	57	37	51	46

¹ Carapace width (mm).

² Mean ± 2 standard errors for most recent year.

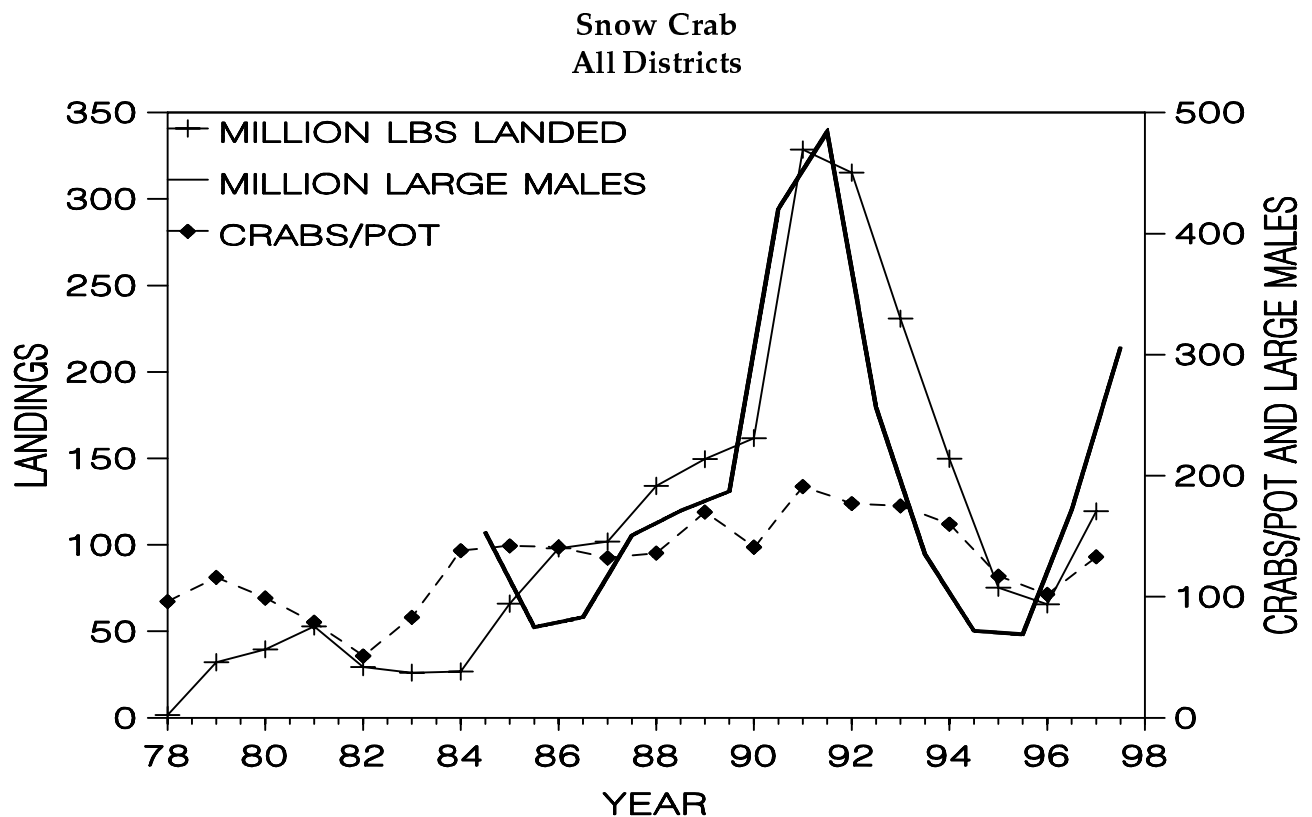


FIGURE 10. U.S. landings in million of pounds, CPUE as crabs/pot, and the abundance of large male snow crab (*C. opilio*) in millions (all districts combined), estimated from NMFS trawl surveys.

mm cw) showed a 25% increase. A strong cohort of crabs which recruited to the fishery in 1988-1992 has declined due to natural mortality and fishery removals. Low abundance of males in the 50-115 mm cw range (Fig. 9) suggests that this population will continue to decline for several years.

As this population ages, the proportion of oldshell and very oldshell crabs has increased and that of newshell crabs decreased. Among legal males, <1% were molting or softshell, 5% were new-hardshells, and 95% were oldshells. Old shelled crab are not expected to molt again in their life spans. Abundance of legal males will continue to decline over the next few years for this reason as well.

The abundance index of large (≥ 85 mm cw) females (all districts) showed a 64% decrease and the abundance of small (<85 mm) females showed a 20% increase from last year. Large females are at their lowest abundance in the history of the survey. Among sampled

mature females, 3% were softshells; 24% were new-hardshells, of which 78% carried new eggs, and 73% were older shells, of which 54% carried new eggs. About 8% of mature females sampled had not completed hatching by the time of the survey.

In 1996, despite a GHF of 6.2 million lbs, only 0.9 million lbs of Tanner crab were caught during the Bristol Bay red king crab fishery and 0.9 million lbs were taken in the directed fishery west of 163°W. The 1996 CPUE was 5 crab/pot-lift (Fig. 8). The fishery was not opened in 1997 due to low abundance and poor performance of the 1996 fishery.

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) and the mean size taken in the fishery is slightly above 110 mm cw. Therefore, the size ranges for male *C. opilio* used in this

**Hair Crab
All Districts**

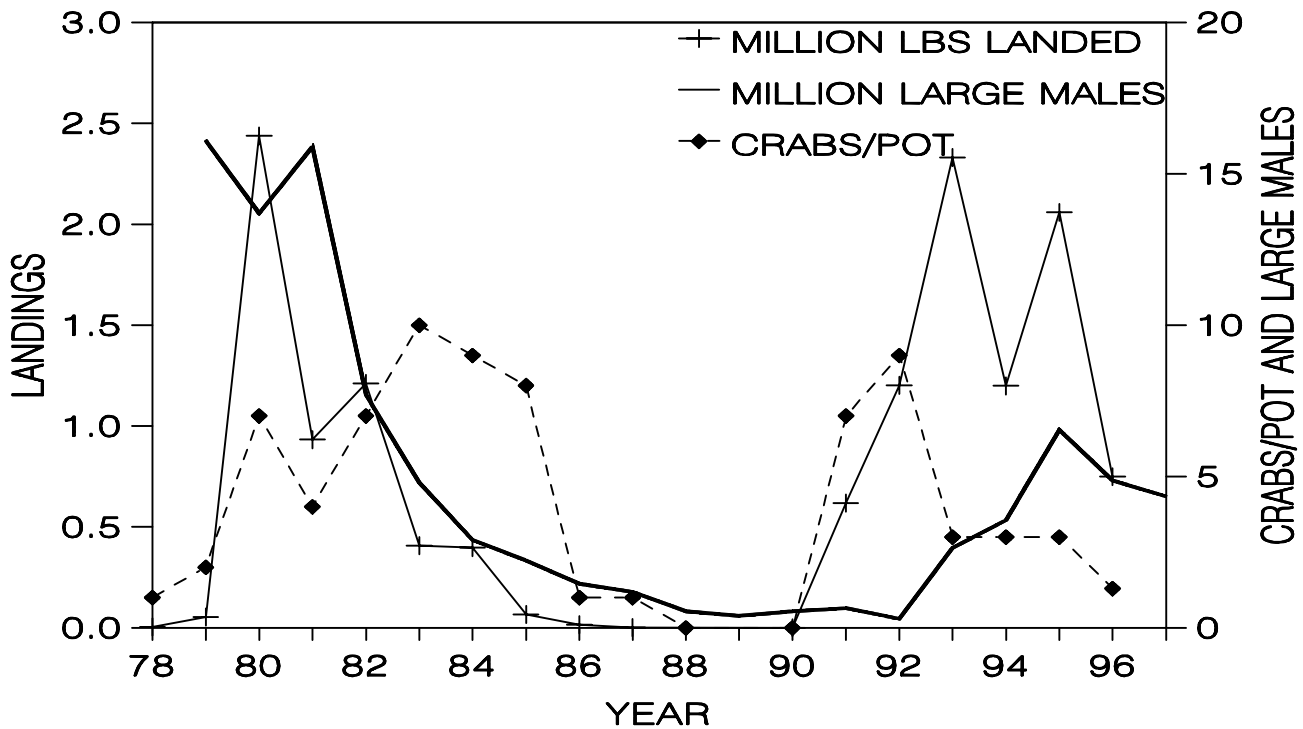


FIGURE 12. U.S. landings in millions of pounds, CPUE as crabs/pot, and the abundance of legal male hair crab (*E. isenbeckii*) in millions (all districts combined), estimated from NMFS trawl surveys.

report are defined as follows: small, <4 in (102 mm); large, ≥ 4.0 in cw (102 mm); and very large ≥ 4.3 in cw (110 mm). Estimates of abundance of large males (≥ 4.0 in) are not shown prior to 1984 (Table 5 and Fig. 10) due to differences in area surveyed and minimum size landed.

The distribution of large males showed an area of high concentration extending north and east from the Pribilof Islands (Chart 4 and Table 10). The abundance index for large (≥ 102 mm cw) males (Eastern and Western Districts combined) is 306 million crabs (Table 5), and represents a 78% increase from last year. This is well above the 1984-1996 average of 186.8 million. Approximately 91% of these were in the Eastern District as compared to 87% in 1996. Small males (<102 mm cw) showed a 45% decrease due to growth into the large size category and apparent lack of recruitment into the smallest size groups. The abundance index for large females (≥ 50 mm

cw) showed no change.

The abundance of large males decreased from 1991-1995 due to natural mortality and fishery removals. However, good recruitment has occurred in the last few years and a large mode in the size-distribution entered the fishery in 1996 (Fig. 11), the result of a strong year class that probably hatched in the period 1988-1990. Continued recruitment to the large size category should offset losses due to fishing and mortality in 1998. This growth should lead to a stable or increased abundance of large males next year but the lack of very small crabs may indicate declining abundance over a longer term.

Among large male crabs, 38% were in molting or softshell condition, 52% were new-hardshells indicating a recent molt, and 10% were oldshells. Among sampled mature females, 19% were new-hardshells, of which 99% carried new eggs, and 80% were oldshells, of which 89% carried new eggs. These

Snow Crab Width Frequency All Districts

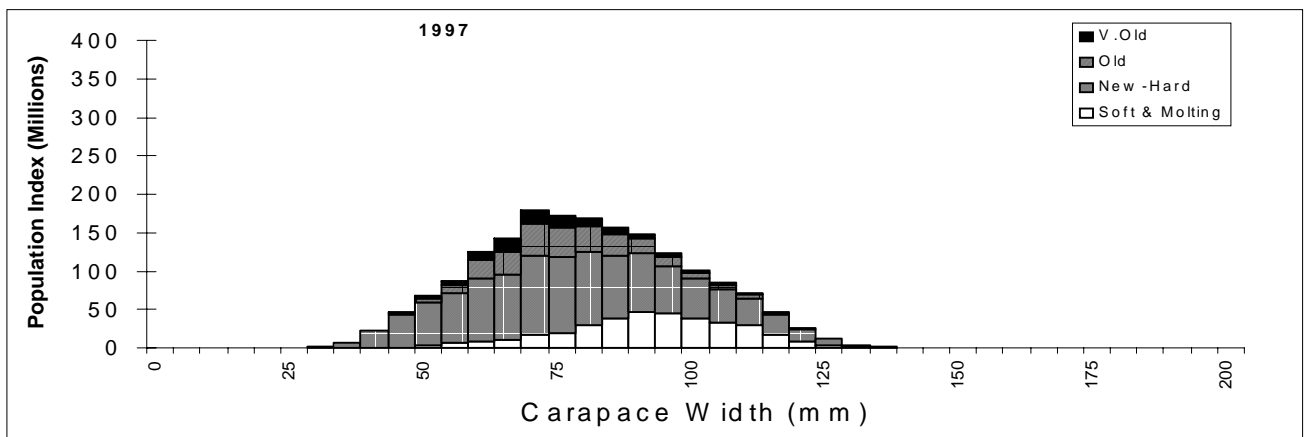
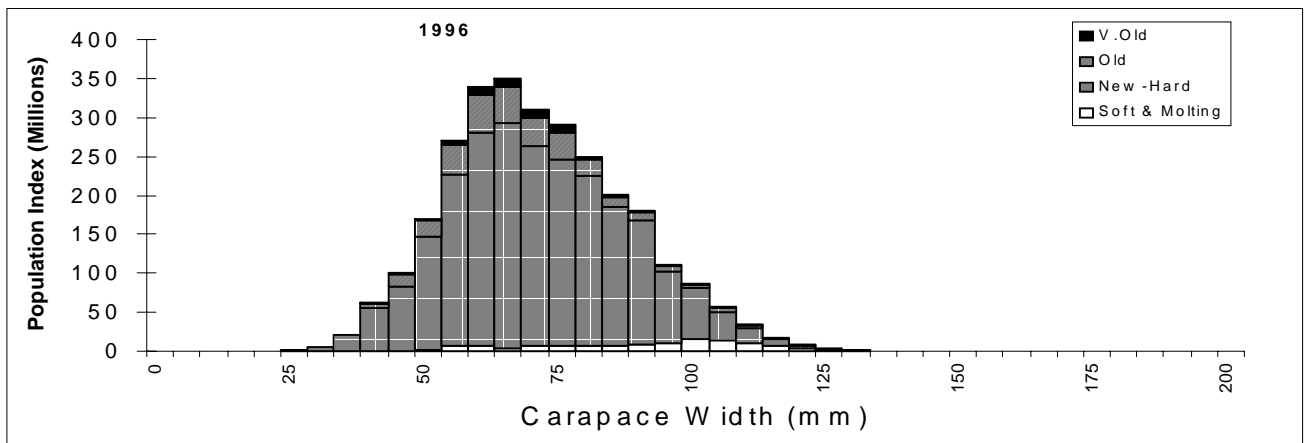
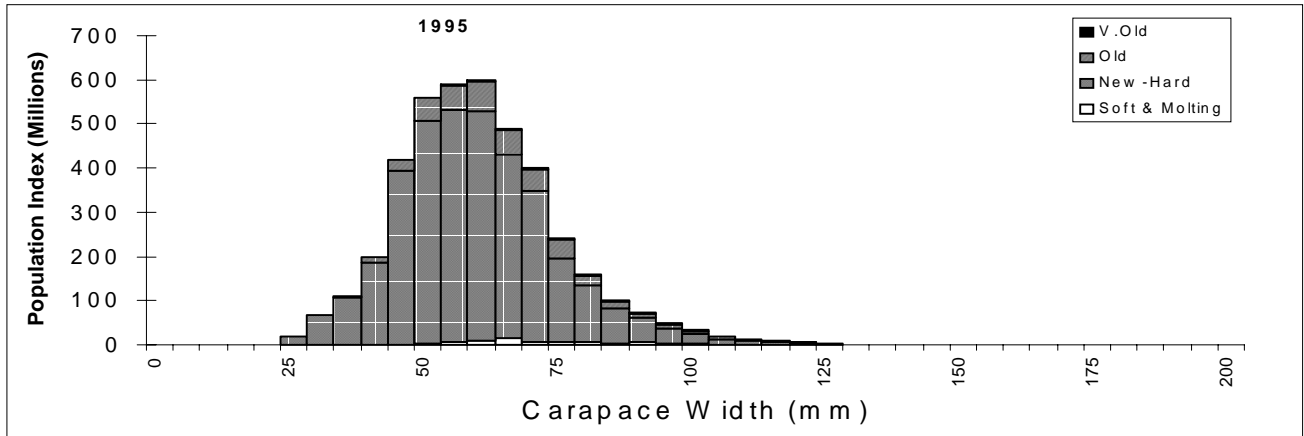


FIGURE 11. Size-frequency of male snow crab (*C. opilio*), all districts combined, by 5 mm width classes, 1995-1997.

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

	Males				Females			Grand Total
	Small	Large	V. Large	Total	Small	Large	Total	
Size ¹ (mm)	<102	≥102	≥110		<50	≥50		
Width(in)	<4.0	≥4.0	≥4.3	Total	<2.0	≥2.0	Total	Total
1982	*	*	21.7	2073	403	2256	2658	4732
1983	*	*	22.1	1858	673	1228	1913	3771
1984	1237	153	73.9	1391	611	582	1192	2583
1985	548	75	40.7	623	258	123	382	1004
1986	1179	83	45.9	1262	791	422	1213	2475
1987	4439	151	70.0	4590	2919	2929	5849	10439
1988	3467	171	90.1	3638	1235	2323	3558	7194
1989	3646	187	81.2	3833	1923	3791	5713	9547
1990	2860	420	188.7	3281	1463	2798	4261	7542
1991	3971	484	323.0	4455	3289	3575	6864	11319
1992	3158	256	163.8	3415	2434	1914	4348	7763
1993	5597	135	77.9	5732	3990	1983	5972	11704
1994	4282	72	39.9	4354	3418	1674	5092	9446
1995	4087	69	30.9	4156	2090	2409	4500	8655
1996	2700	172	64.8	2872	1189	1364	2553	5425
1997	1491	306	160.9	1797	928	1383	2311	4108
East(%) ²	55	91	93	61	20	22	21	39
<u>Limits³</u>								
Lower	1193	220	101.3	1473	427	844	1410	2883
Upper	1789	391	220.4	2120	1429	1922	3212	5332
±%	20	28	37	18	54	39	39	30

¹ Carapace width (mm).

² Proportion of size group in Eastern District.

³ Mean ± 2 standard errors for most recent year.

* Estimates not available at present time.

numbers indicate that hatching and extrusion were nearly completed by the time of the survey.

The GHL for 1998 has been set at 234 million lbs of large crab (≥ 4.0 in cw) of which 8.2 million lbs has been set aside for the new Community Development Quota. The fishery will open at noon on January 15. In 1997 the GHL was 117 million lbs, landings were 119 million lbs and the average CPUE was 133 crab/pot-lift (Fig. 10).

Hair Crab (*Erimacrus isenbeckii*)

Hair crab are widely scattered across the EBS (Chart 5 and Table 11). Historically, areas of concentration have existed just north of the Alaska Peninsula and near the Pribilof Islands. We have never found many female or small male crab during the survey and hence, have little understanding of their distribution.

The abundance index for large male hair crabs declined from 1981-1992 but increased from 1992 to 1996 (Fig. 12). The current index of 5.91 million total males (Table 6) represents a 30% decrease during the past year and is below the 1980-1996 average (8.2 million). The abundance index of 4.3 million large (≥ 3.25 in cw) males is 11% lower than last year. The abundance index of total females shows a decrease of 68% from last year, but is unreliable and based on capture of only 17 crabs.

Size-frequency data (Fig. 13) indicate that the large cohort first seen in 1989-90 has matured and is now decreasing. Changes in abundance indexes of hair crab are difficult to interpret due to patchy distribution, burying habits, inshore 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 (Fig. 12). Forty-six percent of males and 88% of females were new-hardshell crabs.

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 cw that has been specified as a condition of permits during recent years. Currently, there are an estimated 4.1 million lbs of large male crab in the Pribilof District. A GHL of 0.8 million lbs was set for the Pribilof District in 1997. In 1996, 0.7 million lbs were taken by 21 vessels with CPUE of 1.3 crab/pot-lift. Preliminary information indicates that the 1997 fishery will produce slightly less than the GHL.

Acknowledgements

Successful completion of the annual EBS crab and groundfish survey is crucially dependent on the skipper and crews of the participating vessels. We wish to extend a special thanks to Glenn Sullivan and Kurt Vedoy of the *F/V Arcturus* and Kenneth Disrude and Norman Bakken of the *F/V Aldebaran* and their crews.

Hair Crab Length Frequency All Districts

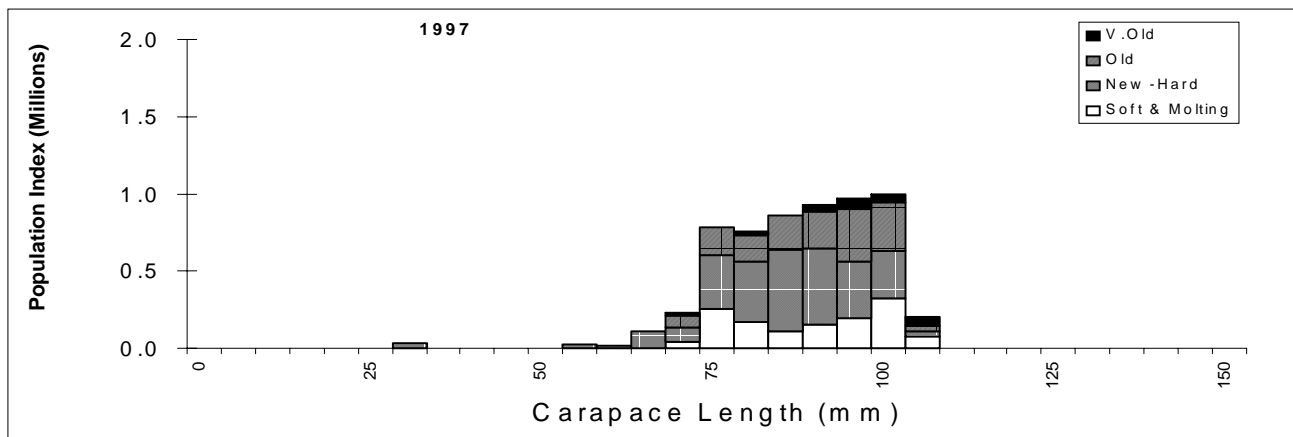
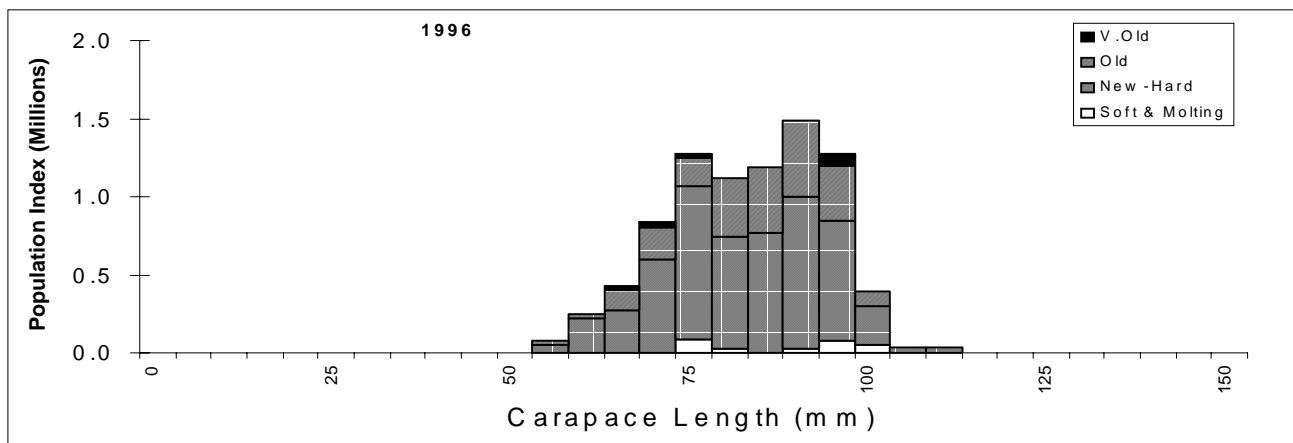
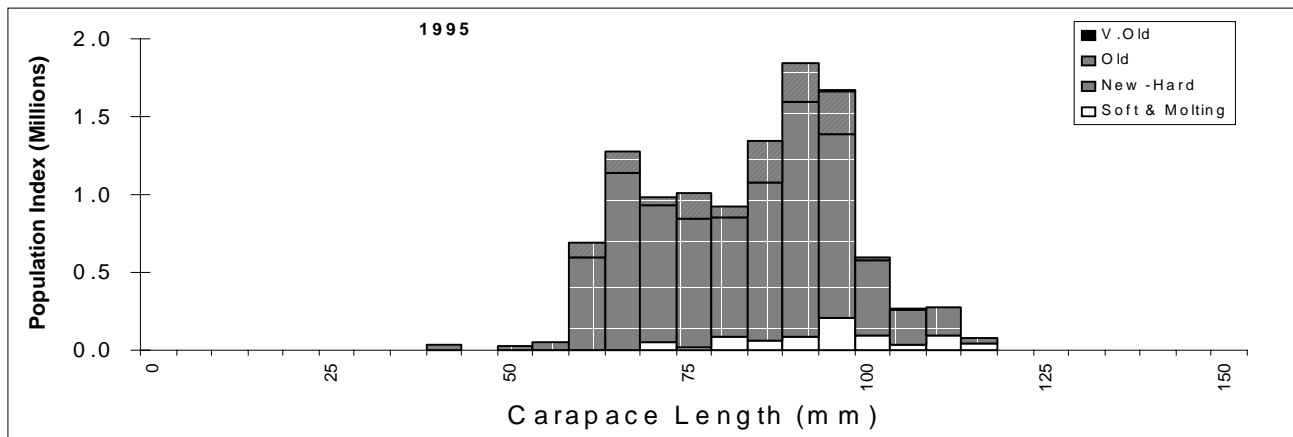


FIGURE 13. Size-frequency of male hair crab (*E. isenbeckii*), by 5 mm length classes, 1995-1997.

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

	Males		Total	Females	Grand Total
	Small	Large		Total	
Size ¹ (mm)	<83	≥83			
Width (in)	<3.25	≥3.25			
1980	2.03	14.86	16.89	2.62	19.52
1981	2.84	14.32	17.16	0.87	18.03
1982	0.54	8.07	8.61	0.42	9.03
1983	0.24	4.39	4.63	0.83	5.46
1984	0.73	3.32	4.06	0.51	4.56
1985	0.30	2.56	2.86	0.26	3.12
1986	0.68	1.82	2.49	0.38	2.87
1987	1.59	1.35	2.93	0.89	3.83
1988	3.01	0.87	3.88	0.86	4.74
1989	11.38	1.46	12.84	0.67	13.51
1990	12.99	1.09	14.08	0.92	15.00
1991	4.45	1.27	5.72	1.18	6.90
1992	2.48	1.17	3.65	0.55	4.20
1993	9.14	2.64	11.77	1.50	13.28
1994	4.65	3.56	8.21	1.26	9.46
1995	4.56	6.54	11.10	0.69	11.79
1996	3.56	4.87	8.43	1.05	9.48
1997	1.57	4.34	5.91	0.34	6.25
<u>Limits²</u>					
Lower	0.80	2.65	3.84	0.12	3.96
Upper	2.34	6.04	7.98	0.56	8.54
±%	49	39	35	65	37

¹ Carapace length (mm).

² Mean ± 2 standard errors for most recent year.

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 the trawl. Area fished (= area swept by the trawl) was calculated by multiplying the distance 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 indi-

ces 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 categorizes 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:

Molting¹: Joints swollen and/or well developed second exoskeleton present. Crab will molt within days or is actively molting.

Softshell¹: 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 en-

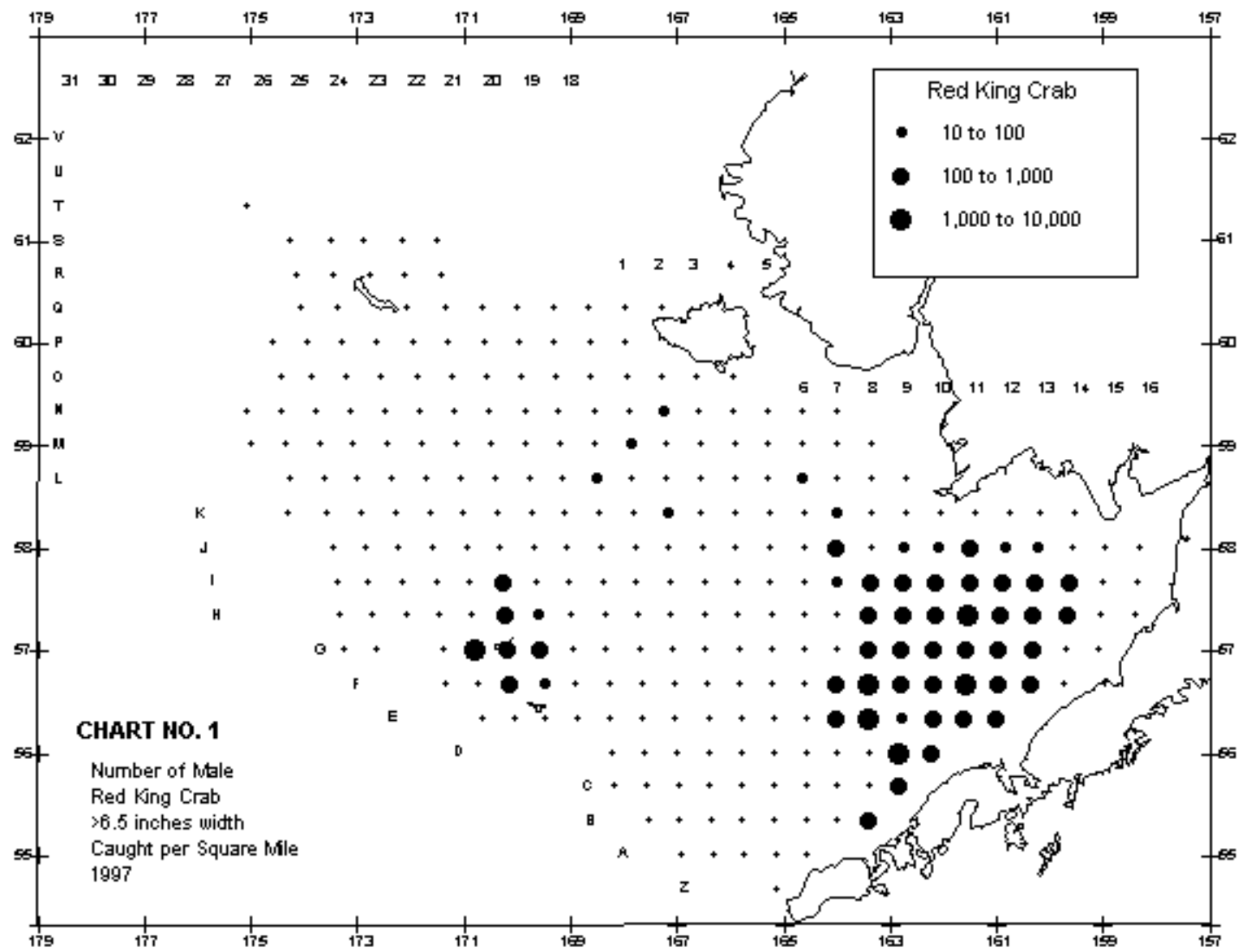
crusting organisms. Crab has probably molted within the last year.

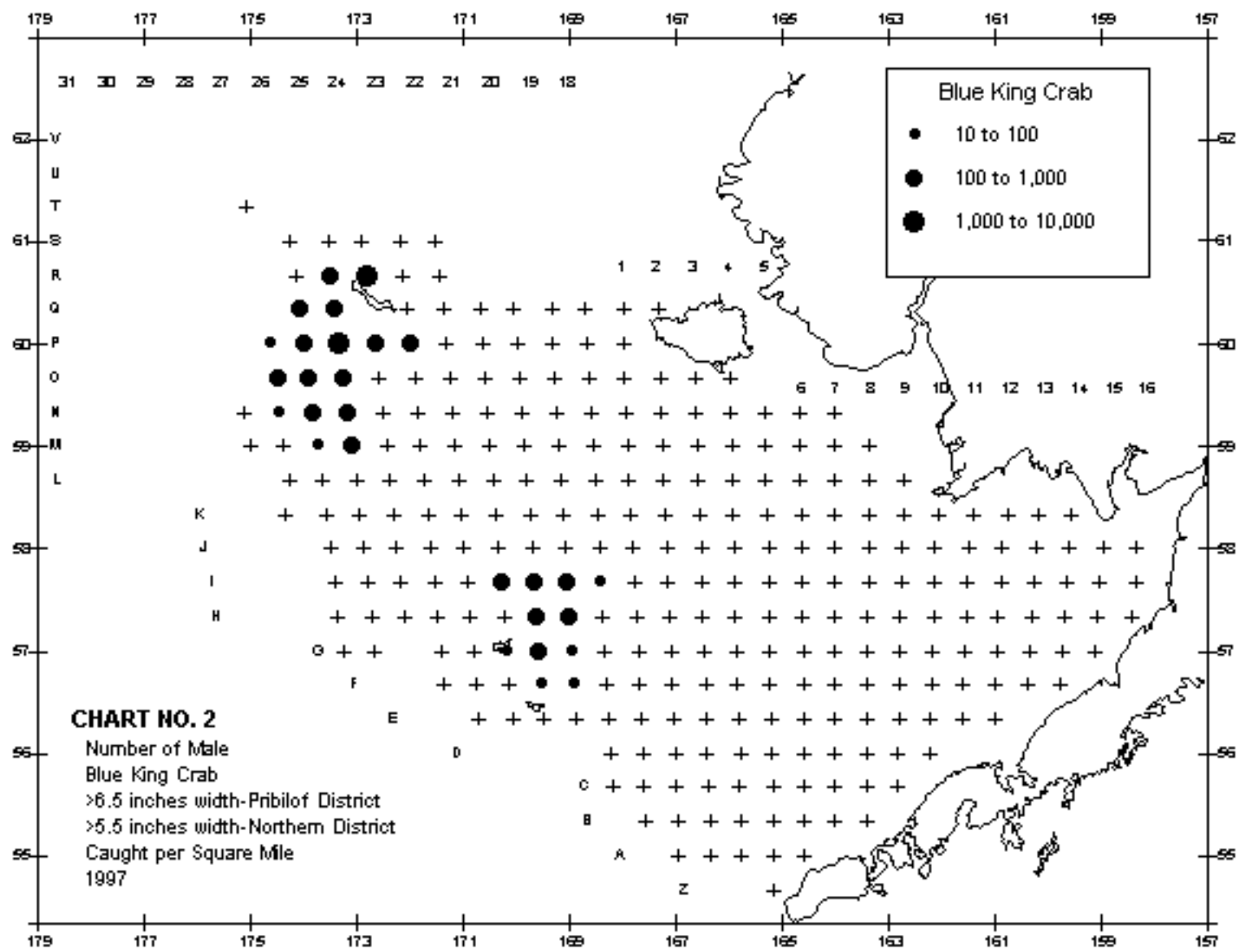
Oldshell: Usually has at least some scratching, spine wear. Crab may have darker coloration, and encrusting organisms are frequently present. Crab has probably not molted within the last year.

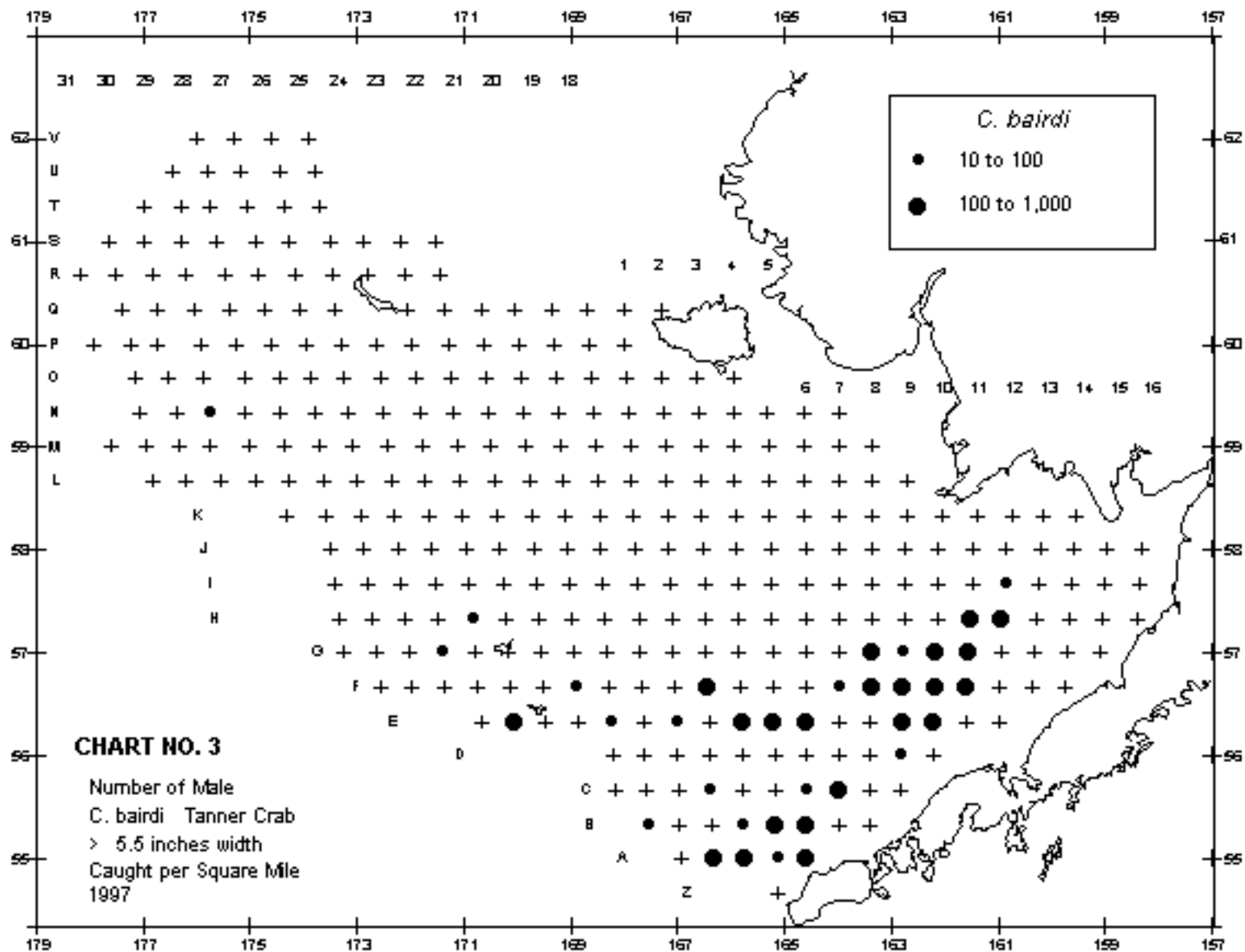
Very oldshell: Undersides of legs yellowed; abundant scratches and stains; spines and claws very worn; encrusting organisms almost always present and often abundant. Time since the last molting is almost certainly greater than one year but not definitely known.

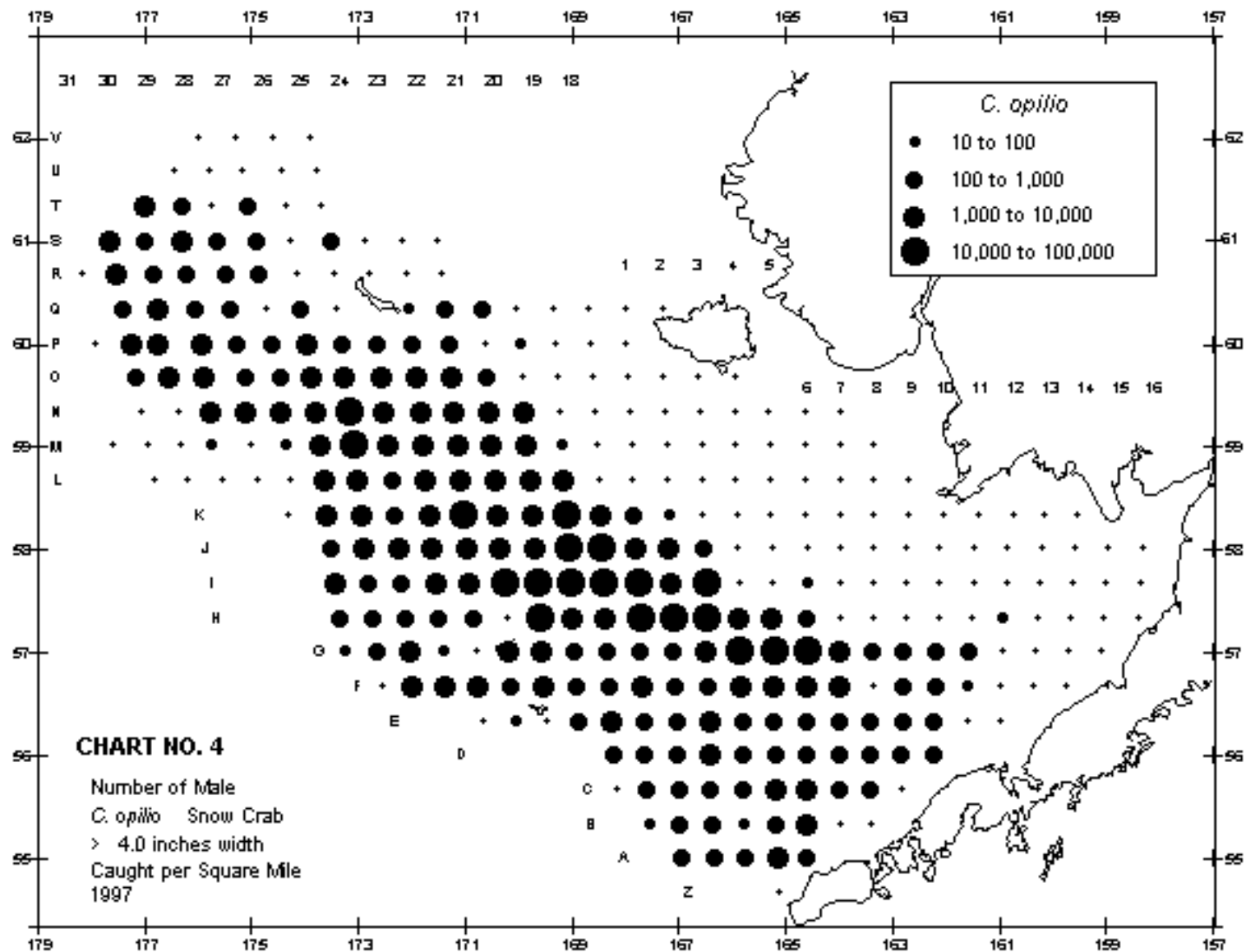
Very, very oldshell: Shells extensively stained and usually with extensive cover of encrusting organisms. Time since the last molting not definitely known.

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.









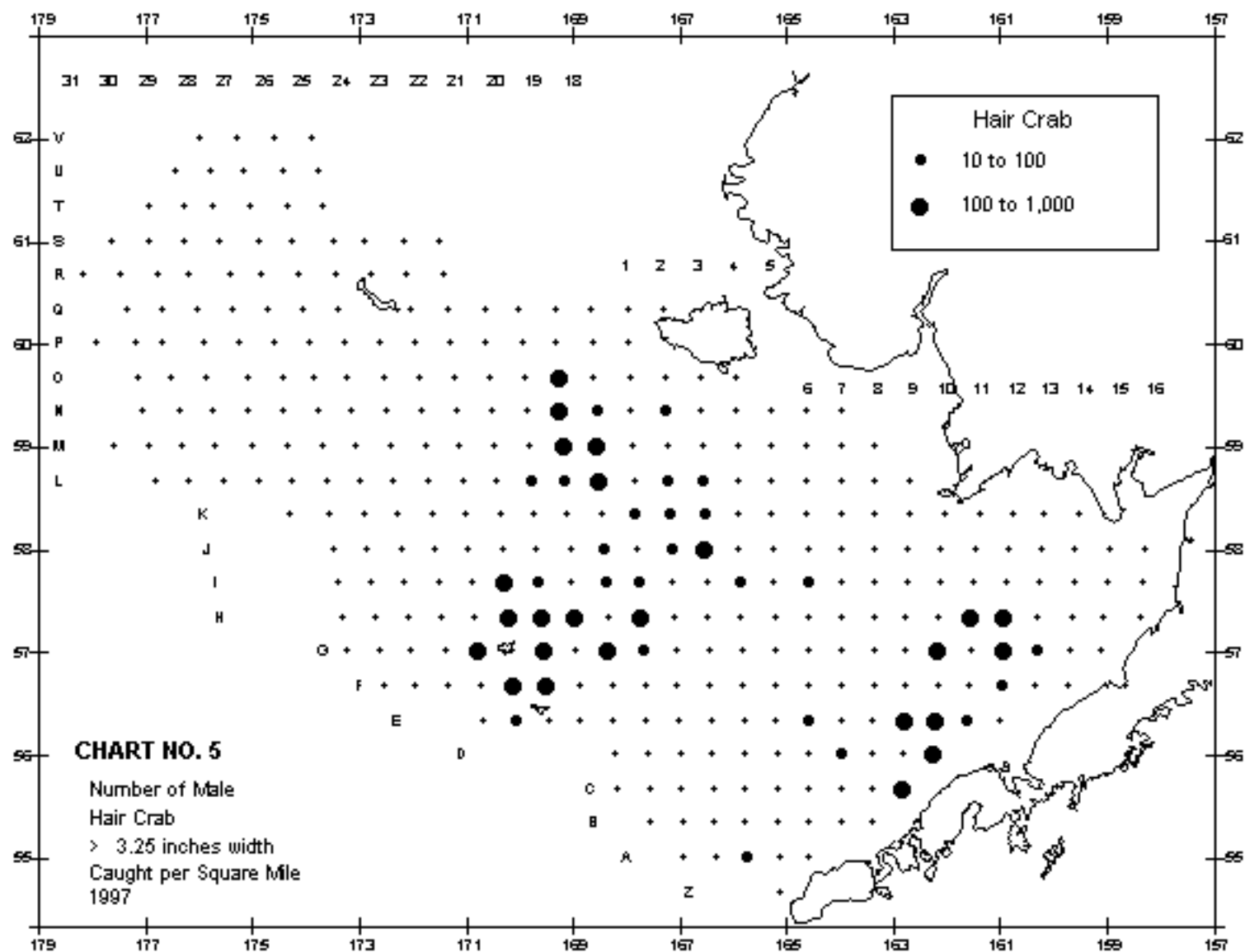


TABLE 7. Summary of crab density by tow (# per square nmi) for Red King, *Paralithodes camtschaticus*.

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
B08	6/12/97	55 20.1	163 26.2	28	716	159	0	875	0	0	0	875
C09	6/12/97	55 40.5	162 52.0	28	563	1125	161	1849	0	0	0	1849
D09	6/12/97	55 59.6	162 48.8	42	1632	1020	272	2924	408	0	408	3332
D10	6/12/97	55 59.9	162 14.9	37	310	388	233	931	233	0	233	1164
E07	6/13/97	56 19.7	163 59.7	45	308	0	0	308	0	0	0	308
E08	6/13/97	56 21.5	163 24.1	45	1431	80	0	1511	0	0	0	1511
E09	6/12/97	56 19.8	162 48.4	41	74	74	74	221	0	0	0	221
E10	6/12/97	56 20.0	162 12.5	43	384	0	0	384	384	0	384	767
E11	6/9/97	56 20.8	161 36.2	33	345	345	414	1105	3107	138	3245	4349
E12	6/9/97	56 20.2	161 3.1	27	414	83	165	662	993	83	1076	1738
F07	6/13/97	56 39.9	164 0.4	44	170	0	0	170	0	0	0	170
F08	6/13/97	56 40.3	163 23.3	40	4301	77	0	4378	0	0	0	4378
F09	6/12/97	56 39.7	162 46.5	38	915	1678	11367	13961	2975	76	3052	17013
F10	6/11/97	56 39.9	162 11.1	38	387	77	387	851	541	0	541	1392
F11	6/9/97	56 39.7	161 34.6	48	1164	2018	4191	7373	2328	0	2328	9701
F12	6/9/97	56 40.1	160 59.6	34	650	1056	1544	3250	2356	0	2356	5606
F13	6/9/97	56 39.8	160 23.1	30	155	543	310	1009	388	0	388	1397
F14	6/9/97	56 40.3	159 46.6	19	0	0	81	81	0	0	0	81
F20	6/28/97	56 49.4	169 18.2	42	0	0	0	0	83	0	83	83
F20	7/7/97	56 40.3	169 30.4	41	91	0	91	181	91	0	91	272
F21	7/7/97	56 49.7	169 54.4	37	641	2483	3524	6648	2323	80	2403	9050
G08	6/13/97	57 0.0	163 22.5	35	330	82	0	412	0	0	0	412
G09	6/11/97	56 57.7	162 45.9	32	157	78	0	235	235	0	235	471
G10	6/11/97	56 60.0	162 10.3	32	230	306	1378	1914	919	77	995	2909
G11	6/9/97	57 0.3	161 33.4	37	577	505	938	2020	938	0	938	2958
G12	6/9/97	57 0.1	160 57.0	32	807	484	161	1452	1049	0	1049	2501
G13	6/8/97	56 59.1	160 19.6	33	583	583	1238	2404	1894	0	1894	4297
G14	6/8/97	56 59.8	159 43.3	28	0	76	153	229	229	153	381	610
G20	7/4/97	57 0.0	169 32.6	31	388	78	0	466	310	0	310	776

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
G21	7/4/97	57	0.1	170	10.4	36	164	82	164	409	0	0	0	409
G21	7/4/97	57	9.1	169	52.6	26	493	164	0	657	2053	0	2053	2711
G22	7/4/97	57	7.0	170	28.0	25	3408	79	0	3487	79	0	79	3566
H08	6/14/97	57	19.9	163	22.6	28	162	0	0	162	0	0	0	162
H09	6/11/97	57	19.7	162	45.8	26	434	362	145	941	289	0	289	1230
H10	6/11/97	57	19.9	162	10.0	27	822	4860	6430	12113	6131	150	6281	18394
H11	6/9/97	57	19.9	161	31.7	29	1359	1868	28026	31254	24629	2038	26667	57921
H12	6/9/97	57	20.1	160	55.8	32	555	396	2694	3645	4200	0	4200	7845
H13	6/8/97	57	19.1	160	18.0	32	513	513	953	1979	1906	0	1906	3885
H14	6/8/97	57	19.7	159	40.0	28	318	159	80	557	239	0	239	795
H15	6/7/97	57	20.2	159	4.8	25	0	0	80	80	0	0	0	80
H20	6/28/97	57	10.4	169	20.0	38	0	0	0	0	75	0	75	75
H20	6/28/97	57	29.8	169	21.9	37	79	0	0	79	0	0	0	79
H20	7/6/97	57	19.8	169	36.2	31	0	0	185	185	93	0	93	278
H21	7/6/97	57	19.5	170	15.2	28	212	212	71	494	282	0	282	776
I07	6/14/97	57	40.0	163	59.4	26	81	0	0	81	0	0	0	81
I08	6/14/97	57	40.0	163	22.1	25	160	0	0	160	80	0	80	239
I09	6/11/97	57	38.6	162	46.7	23	142	71	0	214	142	0	142	356
I10	6/11/97	57	39.9	162	8.9	25	449	75	150	673	224	0	224	897
I11	6/10/97	57	41.5	161	31.4	27	450	375	1350	2176	2326	375	2701	4876
I12	6/10/97	57	40.3	160	52.5	30	606	909	1819	3334	2652	76	2728	6062
I13	6/8/97	57	39.8	160	15.9	28	241	563	1206	2009	322	80	402	2411
I14	6/8/97	57	39.8	159	38.4	25	148	148	518	814	444	370	814	1629
I15	6/7/97	57	40.8	159	1.0	24	0	0	197	197	0	66	66	262
I21	7/6/97	57	39.8	170	17.7	38	79	0	0	79	0	0	0	79
I21	7/6/97	57	30.2	169	58.8	35	315	157	0	472	0	0	0	472
J05	6/17/97	57	59.7	165	16.5	26	0	0	80	80	0	0	0	80
J07	6/14/97	58	0.0	164	3.1	24	114	0	114	227	0	0	0	227
J08	6/14/97	58	0.0	163	22.4	22	0	78	0	78	0	0	0	78
J09	6/11/97	57	59.9	162	45.7	21	80	0	0	80	161	0	161	241

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
J10	6/11/97	58	0.1	162	7.2	19	81	81	0	161	161	0	161	323
J11	6/10/97	57	59.9	161	29.3	29	146	438	877	1461	731	365	1096	2557
J12	6/10/97	58	0.1	160	51.8	24	75	673	150	897	75	0	75	972
J13	6/8/97	57	59.4	160	16.6	26	80	398	239	716	0	80	80	795
J14	6/8/97	57	59.9	159	37.2	20	0	0	70	70	0	0	0	70
J15	6/7/97	58	0.7	158	57.1	21	0	0	133	133	0	266	266	398
J16	6/7/97	58	0.3	158	18.3	17	0	0	0	0	0	67	67	67
K02	6/22/97	58	20.3	167	11.2	27	78	0	0	78	0	0	0	78
K04	6/22/97	58	19.0	165	55.7	23	0	0	0	0	77	0	77	77
K07	6/14/97	58	20.2	164	0.9	21	83	0	0	83	83	0	83	166
K11	6/10/97	58	13.0	161	33.6	21	0	132	132	265	0	0	0	265
L03	6/30/97	58	40.0	166	34.3	20	0	79	0	79	79	0	79	158
L04	6/30/97	58	40.3	165	56.6	18	0	80	0	80	0	0	0	80
L05	6/17/97	58	38.9	165	18.1	21	0	0	0	0	75	0	75	75
L06	6/17/97	58	40.5	164	39.5	19	80	0	0	80	0	0	0	80
L18	6/29/97	58	40.2	168	29.7	27	78	0	0	78	78	0	78	156
M01	6/30/97	59	0.1	167	54.1	21	87	0	0	87	0	0	0	87
M18	6/30/97	58	59.9	168	32.8	24	0	0	0	0	0	81	81	81
N02	7/1/97	59	19.7	167	16.2	16	75	0	150	224	0	0	0	224
N18	7/1/97	59	20.4	168	33.4	21	0	0	0	0	76	76	152	152
Q18	7/2/97	60	20.2	168	40.5	18	0	0	0	0	81	0	81	81

NOTE: Minimum carapace sizes used are: Large Males > 5.3 in; Medium Males > 4.3 in; Large Females > 3.5 in.

TABLE 8. Summary of crab density by tow (# per square n. mi.) for Blue King Crab, *Paralithodes platypus*.

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
F19	6/28/97	56	49.9	168	37.4	50	77	0	0	77	0	0	0	77
F20	6/28/97	56	49.4	169	18.2	42	0	0	0	0	664	0	664	664
F20	7/7/97	56	40.3	169	30.4	41	91	0	0	91	3267	0	3267	3358
F21	7/7/97	56	49.7	169	54.4	37	0	0	0	0	240	0	240	240
G19	6/28/97	56	59.8	168	57.9	42	79	0	0	79	0	0	0	79
G20	7/4/97	57	0.0	169	32.6	31	155	0	0	155	2251	0	2251	2406
G21	7/4/97	57	0.1	170	10.4	36	0	0	0	0	82	0	82	82
G21	7/4/97	57	9.1	169	52.6	26	82	0	0	82	1150	0	1150	1232
H19	6/28/97	57	20.2	168	58.7	37	379	379	303	1061	2955	0	2955	4016
H19	6/28/97	57	29.6	168	44.6	37	236	118	0	353	236	0	236	589
H20	6/28/97	57	10.4	169	20.0	38	225	0	0	225	450	0	450	675
H20	6/28/97	57	29.8	169	21.9	37	792	555	713	2060	634	238	872	2932
H20	7/6/97	57	19.8	169	36.2	31	0	0	185	185	185	93	278	463
I18	6/29/97	57	40.0	168	24.3	36	81	162	0	243	0	0	0	243
I19	6/29/97	57	39.3	169	1.4	36	244	0	81	325	0	0	0	325
I19	6/29/97	57	49.9	168	43.9	36	0	162	0	162	0	0	0	162
I20	6/29/97	57	50.0	169	22.9	34	458	76	0	534	0	0	0	534
I20	7/6/97	57	39.4	169	39.4	36	338	0	0	338	0	0	0	338
I21	7/6/97	57	39.8	170	17.7	38	157	0	0	157	0	0	0	157
I21	7/6/97	57	49.8	169	58.7	37	69	0	0	69	0	0	0	69
I21	7/6/97	57	30.2	169	58.8	35	551	157	157	866	79	0	79	944
J18	6/29/97	57	59.8	168	26.3	35	0	0	0	0	79	0	79	79
J19	6/29/97	58	0.8	169	4.7	37	0	0	77	77	0	0	0	77
M25	7/13/97	59	0.6	173	4.4	55	116	232	0	348	0	0	0	348
M26	7/13/97	58	59.9	173	43.5	61	78	0	0	78	0	0	0	78
N25	7/13/97	59	20.0	173	9.8	54	81	569	162	812	0	0	0	812
N26	7/12/97	59	29.5	173	29.7	55	569	812	81	1462	0	0	0	1462
N27	7/13/97	59	20.2	174	27.3	65	82	0	0	82	0	0	0	82

TABLE 8. Summary of crab density by tow (# per square n. mi.) for Blue King Crab, *Paralithodes platypus*.

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
O22	7/9/97	59 40.1	171 15.7	37	0	0	0	0	76	0	76	76
O24	7/12/97	59 40.5	172 34.6	44	0	79	0	79	0	0	0	79
O25	7/12/97	59 50.0	172 55.3	41	153	689	612	1454	0	0	0	1454
O25	7/12/97	59 40.7	173 13.9	49	146	146	146	438	0	0	0	438
O25	7/12/97	59 30.4	172 53.9	49	0	212	0	212	0	0	0	212
O26	7/12/97	59 39.7	173 51.8	56	489	408	163	1060	0	0	0	1060
O27	7/12/97	59 49.4	174 15.2	57	161	81	0	242	0	0	0	242
O27	7/21/97	59 40.3	174 27.2	61	0	82	0	82	0	0	0	82
P23	7/10/97	59 59.5	171 57.6	33	0	83	0	83	0	0	0	83
P24	7/9/97	59 60.0	172 39.0	33	82	330	412	824	0	0	0	824
P24	7/10/97	60 10.0	172 19.0	28	164	739	821	1725	82	164	246	1971
P25	7/11/97	60 9.9	173 1.2	30	649	1298	3571	5518	1407	3246	4653	10171
P25	7/11/97	59 59.9	173 16.6	38	304	684	228	1217	76	76	152	1369
P26	7/12/97	60 7.1	173 45.2	46	0	1201	400	1602	0	0	0	1602
P26	7/12/97	60 0.1	173 57.5	51	162	729	81	971	0	0	0	971
P26	7/12/97	59 50.4	173 35.4	49	184	643	276	1102	0	0	0	1102
P27	7/21/97	60 0.4	174 36.2	57	0	77	0	77	0	0	0	77
P27	7/21/97	60 9.8	174 21.3	53	85	85	0	169	0	0	0	169
Q23	7/10/97	60 20.2	172 4.3	31	0	0	233	233	0	78	78	310
Q25	7/11/97	60 26.9	173 27.8	31	0	554	887	1441	0	111	111	1552
Q26	7/11/97	60 19.9	174 3.8	48	324	891	81	1295	0	0	0	1295
R24	7/11/97	60 39.8	172 47.0	21	387	3867	2088	6342	0	0	0	6342
R25	7/11/97	60 40.0	173 27.5	33	0	634	0	634	0	158	158	792
T27	7/22/97	61 20.2	175 1.7	46	0	0	80	80	0	0	0	80

NOTE: Minimum carapace sizes used are: Large Males > 5.3 in; Medium Males > 4.3 in; Large Females > 3.5 in.

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
A02	6/24/97	55	0.0	166	55.7	84	0	79	2132	2211	632	3159	3790	6002
A03	6/20/97	55	0.9	166	20.7	77	173	779	2857	3809	1558	4501	6059	9868
A04	6/19/97	54	51.0	165	31.3	78	238	158	19574	19970	0	17910	17910	37880
A04	6/20/97	54	59.7	165	44.3	70	0	82	1391	1473	82	3192	3274	4747
A05	6/19/97	54	59.0	165	10.0	59	73	220	147	440	73	73	147	586
A06	6/19/97	55	0.4	164	35.8	33	150	224	0	374	0	75	75	449
B01	6/24/97	55	19.5	167	32.6	79	80	161	1447	1688	0	1608	1608	3296
B02	6/24/97	55	19.9	166	57.8	75	0	167	333	500	83	0	83	583
B03	6/20/97	55	20.9	166	21.3	67	0	491	737	1228	327	1473	1800	3028
B04	6/20/97	55	20.2	165	46.3	65	85	0	5605	5690	255	6539	6794	12484
B05	6/19/97	55	19.5	165	10.6	59	156	78	156	389	78	234	312	701
B06	6/19/97	55	21.1	164	34.8	55	498	830	332	1661	1246	1163	2408	4069
B08	6/12/97	55	20.1	163	26.2	28	0	159	2227	2386	0	159	159	2545
C01	6/24/97	55	38.9	167	34.8	72	0	314	1098	1412	235	1960	2196	3607
C02	6/24/97	55	40.3	166	59.9	73	0	0	0	0	79	0	79	79
C03	6/20/97	55	40.6	166	23.4	67	80	159	239	477	0	318	318	795
C04	6/20/97	55	40.1	165	48.3	63	0	0	2813	2813	414	3061	3475	6288
C05	6/19/97	55	38.5	165	9.4	58	0	150	225	375	0	75	75	450
C06	6/18/97	55	41.1	164	36.8	51	84	337	2360	2782	506	3456	3962	6743
C07	6/13/97	55	40.3	163	60.0	50	312	623	29491	30426	1168	40131	41299	71725
C08	6/13/97	55	40.0	163	23.6	43	0	234	1246	1480	0	156	156	1635
C09	6/12/97	55	40.5	162	52.0	28	0	482	804	1286	0	80	80	1366
C18	6/24/97	55	40.0	168	11.4	73	0	0	2949	2949	0	3182	3182	6131
D01	6/23/97	55	59.5	167	38.4	70	0	0	1231	1231	0	967	967	2198
D02	6/23/97	55	59.8	167	0.9	72	0	0	246	246	0	493	493	739
D03	6/20/97	55	59.9	166	25.1	66	0	77	0	77	0	155	155	232
D04	6/20/97	56	0.1	165	47.1	57	0	239	477	716	159	398	557	1272
D05	6/18/97	55	59.3	165	10.6	51	0	83	2069	2151	496	1903	2400	4551

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
D06	6/18/97	55	59.6	164	34.9	49	0	149	12043	12192	224	13457	13681	25872
D07	6/13/97	56	0.7	163	57.5	48	0	0	9377	9377	158	19622	19781	29158
D08	6/13/97	56	0.4	163	23.2	47	0	81	975	1056	244	325	569	1625
D09	6/12/97	55	59.6	162	48.8	42	68	204	136	408	136	68	204	612
D10	6/12/97	55	59.9	162	14.9	37	0	0	78	78	155	0	155	233
D18	6/27/97	56	0.3	168	13.7	81	0	0	230	230	0	307	307	538
E01	6/23/97	56	20.1	167	39.5	68	0	0	484	484	0	887	887	1371
E02	6/23/97	56	19.8	167	2.5	61	75	150	523	748	75	523	598	1346
E03	6/20/97	56	21.9	166	25.4	54	0	82	739	821	82	821	904	1725
E04	6/20/97	56	20.0	165	48.3	49	312	389	545	1246	545	623	1168	2414
E05	6/18/97	56	20.0	165	12.4	45	246	900	327	1473	1146	2128	3274	4747
E06	6/18/97	56	18.0	164	35.5	46	625	1250	1172	3048	2423	3517	5939	8987
E07	6/13/97	56	19.7	163	59.7	45	0	617	77	694	694	308	1002	1696
E08	6/13/97	56	21.5	163	24.1	45	0	159	239	398	159	80	239	636
E09	6/12/97	56	19.8	162	48.4	41	588	368	441	1397	74	294	368	1765
E10	6/12/97	56	20.0	162	12.5	43	895	384	384	1662	128	128	256	1918
E11	6/9/97	56	20.8	161	36.2	33	0	0	0	0	69	0	69	69
E12	6/9/97	56	20.2	161	3.1	27	0	165	414	579	0	83	83	662
E18	6/27/97	56	20.5	168	16.0	81	75	0	300	375	0	525	525	900
E19	6/27/97	56	20.6	168	52.6	68	0	212	71	282	0	212	212	494
E20	7/7/97	56	20.1	169	29.4	77	0	0	1392	1392	0	1779	1779	3171
E21	7/7/97	56	20.0	170	5.5	57	154	461	538	1152	0	768	768	1920
E22	7/7/97	56	20.0	170	40.1	63	0	92	646	738	0	922	922	1660
F02	6/23/97	56	40.0	167	4.1	51	0	608	1369	1977	988	2357	3345	5322
F03	6/21/97	56	40.5	166	26.3	45	156	1713	1090	2959	2648	3894	6542	9501
F04	6/21/97	56	39.3	165	49.9	42	0	459	995	1454	689	3828	4516	5971
F05	6/18/97	56	39.6	165	14.3	40	0	830	6810	7640	83	914	997	8637
F06	6/18/97	56	39.9	164	36.2	40	0	151	831	982	227	529	755	1737

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
F07	6/13/97	56	39.9	164	0.4	44	85	849	510	1444	594	340	934	2378
F08	6/13/97	56	40.3	163	23.3	40	154	307	154	614	154	0	154	768
F09	6/12/97	56	39.7	162	46.5	38	305	534	610	1450	534	0	534	1984
F10	6/11/97	56	39.9	162	11.1	38	387	0	77	464	0	0	0	464
F11	6/9/97	56	39.7	161	34.6	48	776	0	78	854	0	0	0	854
F12	6/9/97	56	40.1	160	59.6	34	0	81	0	81	0	0	0	81
F13	6/9/97	56	39.8	160	23.1	30	0	78	78	155	0	78	78	233
F18	6/28/97	56	40.2	168	16.6	55	0	83	0	83	0	167	167	250
F19	6/27/97	56	39.7	168	53.6	54	0	240	0	240	0	0	0	240
F19	6/28/97	56	49.9	168	37.4	50	77	0	0	77	0	462	462	540
F20	6/28/97	56	49.4	169	18.2	42	0	83	249	332	0	83	83	415
F20	7/7/97	56	40.3	169	30.4	41	0	363	181	544	0	0	0	544
F21	7/7/97	56	40.1	170	8.6	52	0	655	1800	2455	1064	1064	2128	4583
F21	7/7/97	56	49.7	169	54.4	37	0	881	481	1362	80	240	320	1682
F22	7/7/97	56	49.6	170	27.7	54	0	169	10031	10199	253	14330	14582	24782
F22	7/7/97	56	39.8	170	45.7	60	0	573	3274	3846	82	5074	5156	9002
F23	7/7/97	56	39.9	171	21.8	63	0	0	1079	1079	0	771	771	1850
F24	7/20/97	56	38.4	171	54.0	67	0	0	399	399	0	638	638	1038
F25	7/20/97	56	40.1	172	34.4	73	0	0	314	314	0	627	627	941
G01	6/23/97	57	0.5	167	42.2	40	0	78	466	543	78	310	388	931
G02	6/23/97	57	0.1	167	8.2	39	0	153	536	689	0	306	306	995
G03	6/21/97	56	59.8	166	28.1	39	0	78	1882	1960	235	863	1098	3058
G04	6/21/97	56	60.0	165	51.2	39	0	238	1506	1743	0	713	713	2457
G05	6/18/97	56	59.7	165	13.4	37	0	447	3577	4024	0	1043	1043	5068
G06	6/18/97	57	0.2	164	35.6	37	0	336	1175	1510	168	336	505	2015
G07	6/13/97	57	2.1	163	58.4	36	0	412	1154	1566	824	495	1319	2885
G08	6/13/97	57	0.0	163	22.5	35	165	577	2226	2968	660	0	660	3627
G09	6/11/97	56	57.7	162	45.9	32	78	235	78	392	157	78	235	627

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
G10	6/11/97	56	60.0	162	10.3	32	459	0	153	612	77	0	77	689
G11	6/9/97	57	0.3	161	33.4	37	289	0	0	289	216	0	216	505
G12	6/9/97	57	0.1	160	57.0	32	0	0	0	0	81	0	81	81
G14	6/8/97	56	59.8	159	43.3	28	0	153	0	153	0	0	0	153
G18	6/28/97	57	0.2	168	21.0	41	0	0	464	464	0	0	0	464
G19	6/28/97	56	59.8	168	57.9	42	0	393	157	551	0	0	0	551
G20	7/4/97	57	0.0	169	32.6	31	0	155	466	621	0	78	78	698
G21	7/4/97	57	0.1	170	10.4	36	0	655	1391	2046	82	82	164	2210
G21	7/4/97	57	9.1	169	52.6	26	0	82	329	411	0	411	411	821
G22	7/4/97	57	7.0	170	28.0	25	0	0	79	79	0	0	0	79
G22	7/8/97	57	0.5	170	47.2	49	0	530	2425	2955	455	1516	1970	4926
G23	7/8/97	56	60.0	171	24.6	57	81	161	726	968	81	323	403	1371
G24	7/20/97	56	58.8	172	2.3	61	0	89	89	177	0	89	89	266
G25	7/15/97	57	0.1	172	40.6	65	0	0	971	971	81	891	971	1943
G26	7/15/97	57	0.2	173	14.8	75	0	244	487	731	81	325	406	1137
H01	6/23/97	57	19.2	167	44.1	40	0	0	78	78	0	78	78	156
H02	6/23/97	57	19.9	167	7.0	38	0	0	331	331	0	248	248	579
H03	6/21/97	57	20.4	166	29.5	37	0	77	464	541	77	77	155	696
H04	6/21/97	57	20.0	165	52.2	36	0	163	326	489	82	82	163	652
H05	6/18/97	57	19.5	165	13.7	36	0	0	779	779	78	234	312	1090
H06	6/17/97	57	20.0	164	37.0	35	0	78	1016	1094	156	156	313	1407
H07	6/14/97	57	20.8	163	59.3	32	0	0	176	176	0	0	0	176
H09	6/11/97	57	19.7	162	45.8	26	0	145	289	434	217	0	217	651
H11	6/9/97	57	19.9	161	31.7	29	340	85	0	425	170	0	170	594
H12	6/9/97	57	20.1	160	55.8	32	158	79	0	238	79	0	79	317
H19	6/28/97	57	20.2	168	58.7	37	0	0	76	76	0	0	0	76
H19	6/28/97	57	10.3	168	38.0	39	0	0	72	72	0	72	72	145
H19	6/28/97	57	29.6	168	44.6	37	0	0	118	118	0	0	0	118

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
H20	6/28/97	57	10.4	169	20.0	38	0	0	225	225	0	0	0	225
H20	6/28/97	57	29.8	169	21.9	37	0	0	1668	1668	0	0	0	1668
H20	7/6/97	57	19.8	169	36.2	31	0	0	93	93	0	0	0	93
H21	7/6/97	57	19.5	170	15.2	28	0	71	141	212	0	71	71	282
H22	7/6/97	57	29.4	170	34.3	39	0	156	234	389	78	156	234	623
H22	7/8/97	57	20.3	170	50.8	43	113	226	905	1244	113	679	792	2036
H23	7/8/97	57	20.7	171	27.6	53	0	0	0	0	0	165	165	165
H24	7/15/97	57	20.4	172	6.5	56	0	0	75	75	0	151	151	226
H25	7/15/97	57	20.1	172	37.9	60	0	0	909	909	0	114	114	1023
H26	7/15/97	57	19.8	173	20.2	63	0	179	1435	1614	90	807	897	2511
I02	6/22/97	57	40.1	167	8.8	36	0	78	156	234	0	0	0	234
I03	6/21/97	57	39.8	166	30.7	34	0	0	77	77	0	0	0	77
I04	6/21/97	57	40.1	165	53.9	34	0	160	80	239	0	160	160	399
I05	6/17/97	57	39.9	165	16.0	32	0	85	170	255	255	255	510	764
I06	6/17/97	57	39.9	164	37.8	27	0	0	0	0	78	0	78	78
I12	6/10/97	57	40.3	160	52.5	30	76	0	0	76	0	0	0	76
I15	6/7/97	57	40.8	159	1.0	24	0	66	0	66	0	0	0	66
I19	6/29/97	57	39.3	169	1.4	36	0	0	162	162	81	81	162	325
I20	6/29/97	57	50.0	169	22.9	34	0	0	2238	2238	0	0	0	2238
I20	7/6/97	57	39.4	169	39.4	36	0	68	1149	1217	0	203	203	1419
I21	7/6/97	57	39.8	170	17.7	38	0	0	551	551	0	0	0	551
I21	7/6/97	57	49.8	169	58.7	37	0	69	415	485	0	138	138	623
I21	7/6/97	57	30.2	169	58.8	35	0	315	315	630	0	79	79	708
I22	7/6/97	57	49.2	170	36.2	41	0	0	76	76	0	0	0	76
I22	7/8/97	57	39.9	170	53.7	44	0	78	78	155	0	78	78	233
I23	7/8/97	57	40.5	171	31.7	51	0	0	161	161	0	0	0	161
I24	7/15/97	57	40.1	172	12.0	56	0	0	271	271	0	0	0	271
I25	7/15/97	57	40.8	172	48.2	62	0	77	154	231	0	231	231	462

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
I26	7/15/97	57	39.8	173	24.7	79	0	324	4291	4615	0	6800	6800	11415
J01	6/22/97	57	59.8	167	48.6	35	0	0	345	345	0	0	0	345
J02	6/22/97	57	59.9	167	10.4	34	0	0	0	0	78	0	78	78
J03	6/21/97	58	0.1	166	31.4	32	0	0	77	77	154	0	154	230
J04	6/21/97	58	0.1	165	55.0	30	0	0	370	370	74	74	148	518
J05	6/17/97	57	59.7	165	16.5	26	0	0	161	161	0	0	0	161
J18	6/29/97	57	59.8	168	26.3	35	0	79	0	79	0	0	0	79
J19	6/29/97	58	0.8	169	4.7	37	0	0	77	77	0	0	0	77
J20	7/3/97	58	0.3	169	41.9	36	0	0	83	83	0	83	83	165
J23	7/8/97	58	0.5	171	36.1	52	0	0	84	84	0	0	0	84
J24	7/14/97	58	0.8	172	14.1	54	0	0	324	324	0	0	0	324
J25	7/15/97	57	59.7	172	52.3	56	0	0	0	0	0	145	145	145
K01	6/22/97	58	19.8	167	49.9	31	0	77	155	232	0	0	0	232
K02	6/22/97	58	20.3	167	11.2	27	0	156	234	389	312	0	312	701
K04	6/22/97	58	19.0	165	55.7	23	0	0	77	77	0	0	0	77
K10	6/10/97	58	19.9	162	2.2	24	0	0	75	75	0	0	0	75
K19	6/29/97	58	19.3	169	6.7	36	0	0	80	80	0	0	0	80
K23	7/8/97	58	20.4	171	39.1	51	0	0	81	81	0	0	0	81
K24	7/14/97	58	20.1	172	18.4	54	0	80	80	160	0	0	0	160
K25	7/14/97	58	21.0	172	56.0	57	0	0	75	75	0	0	0	75
K26	7/14/97	58	20.3	173	33.9	62	0	621	621	1242	310	1009	1319	2561
K27	7/14/97	58	19.7	174	19.2	97	0	0	82	82	0	330	330	412
L01	6/30/97	58	40.2	167	51.8	23	0	76	153	229	76	0	76	305
L02	6/30/97	58	39.8	167	13.4	21	0	0	0	0	77	0	77	77
L18	6/29/97	58	40.2	168	29.7	27	0	78	0	78	0	0	0	78
L25	7/14/97	58	40.1	173	0.3	59	0	0	376	376	0	376	376	753
L26	7/13/97	58	40.7	173	38.1	66	0	376	151	527	75	301	376	903
L27	7/14/97	58	39.6	174	15.9	84	0	0	1578	1578	0	6062	6062	7640

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
L28	7/26/97	58	43.6	175	2.2	79	0	0	1819	1819	0	2880	2880	4698
L29	7/26/97	58	39.2	175	33.5	72	0	0	2008	2008	0	1757	1757	3765
L30	7/26/97	58	41.2	176	12.5	71	0	0	1407	1407	0	1875	1875	3282
L31	7/26/97	58	40.2	176	48.3	71	0	0	568	568	0	852	852	1420
M01	6/30/97	59	0.1	167	54.1	21	0	0	87	87	0	0	0	87
M02	6/30/97	59	1.7	167	14.5	20	0	0	76	76	0	0	0	76
M22	7/9/97	58	59.1	171	8.1	40	0	0	76	76	0	0	0	76
M24	7/13/97	59	0.5	172	25.9	51	0	0	81	81	0	0	0	81
M25	7/13/97	59	0.6	173	4.4	55	0	116	464	580	0	348	348	928
M26	7/13/97	58	59.9	173	43.5	61	0	235	314	549	0	235	235	784
M27	7/14/97	59	0.2	174	22.6	68	0	0	1172	1172	0	1016	1016	2188
M28	7/13/97	58	59.7	174	59.9	69	0	0	0	0	0	241	241	241
M29	7/25/97	59	0.0	175	44.8	70	0	80	1527	1608	0	1447	1447	3054
M30	7/26/97	58	60.0	176	18.7	71	0	156	779	935	0	234	234	1168
M31	7/25/97	59	1.0	176	57.1	73	0	78	234	312	0	234	234	545
M32	7/25/97	58	60.0	177	35.1	71	0	0	648	648	0	567	567	1214
N18	7/1/97	59	20.4	168	33.4	21	0	0	76	76	0	0	0	76
N19	7/2/97	59	20.4	169	14.3	26	0	0	170	170	0	0	0	170
N24	7/13/97	59	20.3	172	30.0	46	0	0	136	136	0	0	0	136
N25	7/13/97	59	20.0	173	9.8	54	0	0	81	81	0	81	81	162
N26	7/13/97	59	20.2	173	48.8	59	0	78	0	78	0	0	0	78
N28	7/13/97	59	20.2	175	6.6	71	0	0	158	158	0	0	0	158
N29	7/25/97	59	19.7	175	45.5	72	80	0	80	160	0	0	0	160
N30	7/25/97	59	19.9	176	22.6	72	0	159	2227	2386	239	1272	1511	3897
N31	7/25/97	59	20.5	177	3.1	79	0	0	76	76	0	76	76	152
O24	7/12/97	59	40.5	172	34.6	44	0	0	158	158	0	0	0	158
O25	7/12/97	59	50.0	172	55.3	41	0	0	306	306	0	0	0	306
O26	7/12/97	59	39.7	173	51.8	56	0	0	0	0	0	82	82	82

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
O27	7/21/97	59	40.3	174	27.2	61	0	0	0	0	0	165	165	165
O29	7/25/97	59	40.3	175	52.5	72	0	356	356	712	0	0	0	712
O30	7/25/97	59	40.0	176	32.4	72	0	241	965	1206	161	322	482	1688
O31	7/25/97	59	40.3	177	9.0	90	0	0	246	246	82	1068	1150	1396
P18	7/2/97	59	60.0	168	37.9	20	0	0	83	83	0	0	0	83
P26	7/12/97	60	7.1	173	45.2	46	0	0	80	80	0	0	0	80
P30	7/25/97	60	0.3	176	44.9	74	0	81	81	162	0	0	0	162
P31	7/24/97	60	0.0	177	14.1	72	0	0	158	158	0	0	0	158
P32	7/24/97	60	0.1	177	57.0	74	0	0	164	164	0	0	0	164
Q31	7/24/97	60	19.5	177	23.4	77	0	79	0	79	79	0	79	158
R31	7/23/97	60	40.3	177	30.2	77	0	0	0	0	87	0	87	87
R32	7/24/97	60	39.8	178	11.6	85	0	0	792	792	0	0	0	792
Z05	6/19/97	54	41.1	165	10.0	45	0	156	78	234	0	0	0	234

NOTE: Minimum carapace sizes used are: Large Males > 5.4 in; Medium Males > 4.3 in; Large Females > 3.3 in.

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
A02	6/24/97	55	0.0	166	55.7	84	237	237	0	474	0	0	0	474
A03	6/20/97	55	0.9	166	20.7	77	346	519	346	1212	87	692	779	1991
A04	6/19/97	54	51.0	165	31.3	78	79	475	792	1347	0	0	0	1347
A04	6/20/97	54	59.7	165	44.3	70	164	0	82	246	0	0	0	246
A05	6/19/97	54	59.0	165	10.0	59	1539	880	733	3152	0	0	0	3152
A06	6/19/97	55	0.4	164	35.8	33	224	299	523	1047	0	0	0	1047
B01	6/24/97	55	19.5	167	32.6	79	80	0	0	80	0	80	80	161
B02	6/24/97	55	19.9	166	57.8	75	167	0	0	167	0	0	0	167
B03	6/20/97	55	20.9	166	21.3	67	246	82	246	573	0	0	0	573
B04	6/20/97	55	20.2	165	46.3	65	85	170	0	255	0	0	0	255
B05	6/19/97	55	19.5	165	10.6	59	779	234	312	1324	0	0	0	1324
B06	6/19/97	55	21.1	164	34.8	55	4651	1827	3156	9634	249	0	249	9883
B07	6/12/97	55	20.5	163	58.5	38	0	0	250	250	0	0	0	250
B08	6/12/97	55	20.1	163	26.2	28	0	318	1034	1352	0	0	0	1352
C01	6/24/97	55	38.9	167	34.8	72	157	157	0	314	314	78	392	706
C02	6/24/97	55	40.3	166	59.9	73	237	0	79	316	0	0	0	316
C03	6/20/97	55	40.6	166	23.4	67	398	318	318	1034	0	159	159	1193
C04	6/20/97	55	40.1	165	48.3	63	331	165	414	910	0	0	0	910
C05	6/19/97	55	38.5	165	9.4	58	1800	450	750	3001	75	0	75	3076
C06	6/18/97	55	41.1	164	36.8	51	4832	4371	15415	24618	1686	0	1686	26304
C07	6/13/97	55	40.3	163	60.0	50	623	1246	5373	7242	0	0	0	7242
C08	6/13/97	55	40.0	163	23.6	43	467	857	1324	2648	0	0	0	2648
C09	6/12/97	55	40.5	162	52.0	28	0	80	241	322	0	0	0	322
C18	6/24/97	55	40.0	168	11.4	73	0	0	0	0	78	0	78	78
D01	6/23/97	55	59.5	167	38.4	70	967	1407	440	2813	5539	88	5626	8440
D02	6/23/97	55	59.8	167	0.9	72	575	493	411	1478	82	246	329	1807
D03	6/20/97	55	59.9	166	25.1	66	1856	851	464	3171	464	77	541	3712
D04	6/20/97	56	0.1	165	47.1	57	557	477	318	1352	80	159	239	1591

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

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
D05	6/18/97	55 59.3	165 10.6	51	827	745	2648	4220	1489	993	2482	6702
D06	6/18/97	55 59.6	164 34.9	49	671	2981	4173	7825	0	0	0	7825
D07	6/13/97	56 0.7	163 57.5	48	317	1347	2615	4279	0	313	313	4592
D08	6/13/97	56 0.4	163 23.2	47	406	1706	4225	6337	0	0	0	6337
D09	6/12/97	55 59.6	162 48.8	42	476	1496	1836	3808	0	0	0	3808
D10	6/12/97	55 59.9	162 14.9	37	155	233	155	543	0	0	0	543
D18	6/27/97	56 0.3	168 13.7	81	538	845	0	1383	154	77	230	1613
E01	6/23/97	56 20.1	167 39.5	68	887	4759	887	6534	645	0	645	7179
E02	6/23/97	56 19.8	167 2.5	61	150	523	449	1122	75	449	523	1645
E03	6/20/97	56 21.9	166 25.4	54	1971	1889	2464	6325	821	739	1561	7885
E04	6/20/97	56 20.0	165 48.3	49	545	312	857	1713	234	0	234	1947
E05	6/18/97	56 20.0	165 12.4	45	818	2292	6793	9903	82	327	409	10312
E06	6/18/97	56 18.0	164 35.5	46	781	1016	3360	5158	0	938	938	6095
E07	6/13/97	56 19.7	163 59.7	45	462	771	1850	3083	0	0	0	3083
E08	6/13/97	56 21.5	163 24.1	45	318	557	1670	2545	0	0	0	2545
E09	6/12/97	56 19.8	162 48.4	41	147	1030	662	1839	0	0	0	1839
E10	6/12/97	56 20.0	162 12.5	43	256	128	128	511	0	0	0	511
E18	6/27/97	56 20.5	168 16.0	81	1725	12153	2326	16204	825	0	825	17029
E19	6/27/97	56 20.6	168 52.6	68	564	2469	2822	5856	28095	0	28095	33951
E20	7/7/97	56 20.1	169 29.4	77	0	0	0	0	0	309	309	309
E21	7/7/97	56 20.0	170 5.5	57	77	0	154	230	0	0	0	230
F01	6/23/97	56 39.4	167 40.3	55	1694	4517	1291	7502	323	0	323	7825
F02	6/23/97	56 40.0	167 4.1	51	456	1901	1749	4106	152	228	380	4486
F03	6/21/97	56 40.5	166 26.3	45	389	2258	4517	7165	5919	0	5919	13083
F04	6/21/97	56 39.3	165 49.9	42	1378	1454	1837	4670	153	77	230	4899
F05	6/18/97	56 39.6	165 14.3	40	2491	249	1163	3903	0	249	249	4152
F06	6/18/97	56 39.9	164 36.2	40	9818	982	1737	12537	0	0	0	12537
F07	6/13/97	56 39.9	164 0.4	44	2972	1783	3992	8748	0	0	0	8748

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
F08	6/13/97	56	40.3	163	23.3	40	0	384	845	1229	0	0	0	1229
F09	6/12/97	56	39.7	162	46.5	38	381	839	839	2060	0	0	0	2060
F10	6/11/97	56	39.9	162	11.1	38	619	309	0	928	0	0	0	928
F11	6/9/97	56	39.7	161	34.6	48	78	388	0	466	0	0	0	466
F13	6/9/97	56	39.8	160	23.1	30	0	78	0	78	0	0	0	78
F18	6/28/97	56	40.2	168	16.6	55	750	5085	1584	7419	500	0	500	7919
F19	6/27/97	56	39.7	168	53.6	54	881	5366	6087	12334	102958	0	102958	115292
F19	6/28/97	56	49.9	168	37.4	50	462	8170	3006	11638	1233	0	1233	12872
F20	6/28/97	56	49.4	169	18.2	42	5398	1412	498	7308	1163	0	1163	8471
F20	7/7/97	56	40.3	169	30.4	41	91	0	0	91	0	0	0	91
F21	7/7/97	56	40.1	170	8.6	52	327	327	164	818	0	82	82	900
F21	7/7/97	56	49.7	169	54.4	37	1201	240	80	1522	0	0	0	1522
F22	7/7/97	56	49.6	170	27.7	54	337	843	590	1770	0	0	0	1770
F22	7/7/97	56	39.8	170	45.7	60	2373	327	164	2864	0	0	0	2864
F23	7/7/97	56	39.9	171	21.8	63	1233	6937	4008	12178	257228	5250	262478	274656
F24	7/20/97	56	38.4	171	54.0	67	1357	1197	0	2554	0	80	80	2634
G01	6/23/97	57	0.5	167	42.2	40	854	2173	1785	4812	0	0	0	4812
G02	6/23/97	57	0.1	167	8.2	39	383	2297	3368	6048	0	153	153	6201
G03	6/21/97	56	59.8	166	28.1	39	9724	2745	2745	15213	0	0	0	15213
G04	6/21/97	56	60.0	165	51.2	39	54335	1753	701	56788	0	79	79	56868
G05	6/18/97	56	59.7	165	13.4	37	18391	983	1825	21198	0	0	0	21198
G06	6/18/97	57	0.2	164	35.6	37	33555	932	2486	36973	0	0	0	36973
G07	6/13/97	57	2.1	163	58.4	36	5853	742	1979	8574	0	0	0	8574
G08	6/13/97	57	0.0	163	22.5	35	577	412	1649	2638	0	0	0	2638
G09	6/11/97	56	57.7	162	45.9	32	235	471	392	1098	0	0	0	1098
G10	6/11/97	56	60.0	162	10.3	32	306	306	536	1148	0	0	0	1148
G11	6/9/97	57	0.3	161	33.4	37	144	289	72	505	0	0	0	505
G12	6/9/97	57	0.1	160	57.0	32	0	81	0	81	0	0	0	81

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
G13	6/8/97	56	59.1	160	19.6	33	0	73	0	73	0	0	0	73
G18	6/28/97	57	0.2	168	21.0	41	232	3248	2088	5568	155	77	232	5800
G19	6/28/97	56	59.8	168	57.9	42	708	8420	7318	16447	2125	79	2203	18650
G20	7/4/97	57	0.0	169	32.6	31	8756	10573	1817	21146	0	0	0	21146
G21	7/4/97	57	0.1	170	10.4	36	5974	982	246	7202	0	0	0	7202
G21	7/4/97	57	9.1	169	52.6	26	329	246	82	657	0	0	0	657
G22	7/8/97	57	0.5	170	47.2	49	0	152	227	379	0	76	76	455
G23	7/8/97	56	60.0	171	24.6	57	81	403	161	645	81	0	81	726
G24	7/20/97	56	58.8	172	2.3	61	1240	4342	532	6114	1418	89	1506	7620
G25	7/15/97	57	0.1	172	40.6	65	324	405	81	810	0	0	0	810
G26	7/15/97	57	0.2	173	14.8	75	81	81	81	244	0	0	0	244
H01	6/23/97	57	19.2	167	44.1	40	14223	7565	1967	23755	0	0	0	23755
H02	6/23/97	57	19.9	167	7.0	38	19693	5426	3818	28937	0	83	83	29019
H03	6/21/97	57	20.4	166	29.5	37	41533	5192	916	47641	0	0	0	47641
H04	6/21/97	57	20.0	165	52.2	36	8399	2528	2283	13210	0	245	245	13455
H05	6/18/97	57	19.5	165	13.7	36	2414	1090	1947	5451	78	78	156	5607
H06	6/17/97	57	20.0	164	37.0	35	469	469	2110	3048	0	313	313	3360
H07	6/14/97	57	20.8	163	59.3	32	0	88	440	527	0	0	0	527
H11	6/9/97	57	19.9	161	31.7	29	0	0	85	85	0	0	0	85
H12	6/9/97	57	20.1	160	55.8	32	79	0	0	79	0	0	0	79
H18	6/28/97	57	19.9	168	22.1	38	8105	9352	3948	21405	75	0	75	21480
H19	6/28/97	57	10.3	168	38.0	39	217	724	1013	1954	0	72	72	2026
H19	6/28/97	57	29.6	168	44.6	37	18052	10768	317	29137	236	0	236	29373
H20	6/28/97	57	10.4	169	20.0	38	1275	5852	3676	10803	975	75	1050	11853
H20	6/28/97	57	29.8	169	21.9	37	50869	41696	2085	94650	0	0	0	94650
H20	7/6/97	57	19.8	169	36.2	31	18139	15637	625	34402	93	0	93	34495
H21	7/6/97	57	19.5	170	15.2	28	0	0	71	71	0	0	0	71
H22	7/6/97	57	29.4	170	34.3	39	78	389	0	467	0	0	0	467

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
H22	7/8/97	57	20.3	170	50.8	43	226	1244	339	1810	226	0	226	2036
H23	7/8/97	57	20.7	171	27.6	53	745	1903	248	2896	0	0	0	2896
H24	7/15/97	57	20.4	172	6.5	56	376	3011	1280	4667	4817	527	5344	10011
H25	7/15/97	57	20.1	172	37.9	60	796	455	227	1478	341	114	455	1932
H26	7/15/97	57	19.8	173	20.2	63	269	717	269	1255	0	90	90	1345
I01	6/22/97	57	38.9	167	46.4	36	33876	19320	1059	54255	0	0	0	54255
I02	6/22/97	57	40.1	167	8.8	36	7971	2266	1797	12034	0	0	0	12034
I03	6/21/97	57	39.8	166	30.7	34	11524	3016	1392	15932	0	0	0	15932
I04	6/21/97	57	40.1	165	53.9	34	0	798	3033	3831	80	80	160	3990
I05	6/17/97	57	39.9	165	16.0	32	0	0	679	679	0	0	0	679
I06	6/17/97	57	39.9	164	37.8	27	78	0	78	155	0	0	0	155
I18	6/29/97	57	40.0	168	24.3	36	26614	16809	2802	46225	0	0	0	46225
I19	6/29/97	57	39.3	169	1.4	36	25363	22713	1514	49591	81	0	81	49672
I19	6/29/97	57	49.9	168	43.9	36	21858	22883	1708	46449	0	0	0	46449
I20	6/29/97	57	50.0	169	22.9	34	22007	55203	7833	85043	0	0	0	85043
I20	7/6/97	57	39.4	169	39.4	36	18189	28342	2115	48646	68	0	68	48714
I21	7/6/97	57	39.8	170	17.7	38	14742	25376	2658	42777	472	79	551	43328
I21	7/6/97	57	49.8	169	58.7	37	7615	30459	2437	40511	138	0	138	40649
I21	7/6/97	57	30.2	169	58.8	35	9313	13271	1630	24213	472	79	551	24764
I22	7/6/97	57	49.2	170	36.2	41	4229	4456	680	9365	227	0	227	9591
I22	7/8/97	57	39.9	170	53.7	44	5687	9099	427	15213	233	155	388	15601
I23	7/8/97	57	40.5	171	31.7	51	4180	1849	0	6028	0	0	0	6028
I24	7/15/97	57	40.1	172	12.0	56	678	2983	542	4203	949	0	949	5152
I25	7/15/97	57	40.8	172	48.2	62	308	2929	462	3700	1002	77	1079	4779
I26	7/15/97	57	39.8	173	24.7	79	3562	2753	648	6962	3400	405	3805	10767
J01	6/22/97	57	59.8	167	48.6	35	5864	4743	2156	12762	0	0	0	12762
J02	6/22/97	57	59.9	167	10.4	34	7788	2336	1558	11681	0	0	0	11681
J03	6/21/97	58	0.1	166	31.4	32	307	384	1306	1997	0	0	0	1997

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
J04	6/21/97	58	0.1	165	55.0	30	0	0	518	518	0	148	148	666
J06	6/17/97	57	59.5	164	37.6	24	0	0	76	76	0	0	0	76
J07	6/14/97	58	0.0	164	3.1	24	0	114	0	114	0	0	0	114
J18	6/29/97	57	59.8	168	26.3	35	35414	11666	2083	49163	0	0	0	49163
J19	6/29/97	58	0.8	169	4.7	37	22651	36956	1192	60799	0	0	0	60799
J20	7/3/97	58	0.3	169	41.9	36	9893	36604	2638	49136	165	0	165	49301
J21	7/3/97	58	0.2	170	20.3	39	8513	54601	7045	70160	326	163	489	70649
J22	7/8/97	58	0.2	170	58.2	44	5841	5996	1168	13005	2336	857	3193	16198
J23	7/8/97	58	0.5	171	36.1	52	8450	7614	0	16064	1004	167	1171	17235
J24	7/14/97	58	0.8	172	14.1	54	1474	8979	4557	15010	3134	12535	15669	30678
J25	7/15/97	57	59.7	172	52.3	56	3340	10600	1452	15391	0	145	145	15536
J26	7/14/97	57	57.7	173	29.5	63	872	7132	3725	11728	23106	4876	27982	39710
K01	6/22/97	58	19.8	167	49.9	31	232	696	1237	2166	155	0	155	2320
K02	6/22/97	58	20.3	167	11.2	27	78	0	2025	2103	0	1246	1246	3349
K03	6/22/97	58	19.8	166	33.0	25	0	0	233	233	0	78	78	310
K18	6/29/97	58	20.1	168	28.5	33	3418	8502	2834	14754	0	0	0	14754
K19	6/29/97	58	19.3	169	6.7	36	13871	35396	4305	53572	0	0	0	53572
K20	7/3/97	58	20.2	169	44.5	35	2459	17354	3037	22850	153	0	153	23003
K21	7/3/97	58	20.3	170	24.0	39	8865	59573	3901	72339	355	0	355	72694
K22	7/8/97	58	19.5	171	1.2	43	10735	11531	1988	24254	161	161	323	24577
K23	7/8/97	58	20.4	171	39.1	51	5769	11700	1462	18931	81	0	81	19012
K24	7/14/97	58	20.1	172	18.4	54	921	8063	5644	14628	78400	365867	444267	458895
K25	7/14/97	58	21.0	172	56.0	57	1725	7802	1650	11178	1125	1650	2776	13954
K26	7/14/97	58	20.3	173	33.9	62	1009	7450	1009	9468	78	78	155	9623
L01	6/30/97	58	40.2	167	51.8	23	0	0	76	76	0	153	153	229
L02	6/30/97	58	39.8	167	13.4	21	0	77	0	77	0	0	0	77
L18	6/29/97	58	40.2	168	29.7	27	0	469	156	625	0	0	0	625
L19	6/29/97	58	39.3	169	7.8	33	8744	16213	3279	28236	0	0	0	28236

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
L20	7/3/97	58	40.2	169	47.2	34	3592	36522	4790	44904	78	0	78	44982
L21	7/3/97	58	39.7	170	29.0	39	5753	35312	5158	46224	0	0	0	46224
L22	7/9/97	58	39.3	171	5.3	43	6359	34655	5723	46737	94	0	94	46831
L23	7/9/97	58	40.9	171	45.1	49	1516	28047	16929	46493	0	0	0	46493
L24	7/14/97	58	40.1	172	21.9	53	650	4550	3087	8287	29900	16819	46718	55006
L25	7/14/97	58	40.1	173	0.3	59	4185	7229	2537	13951	62910	47183	110093	124044
L26	7/13/97	58	40.7	173	38.1	66	3579	9086	5094	17758	77291	19323	96614	114372
L28	7/26/97	58	43.6	175	2.2	79	0	0	76	76	0	152	152	227
L29	7/26/97	58	39.2	175	33.5	72	0	84	251	335	0	335	335	669
L30	7/26/97	58	41.2	176	12.5	71	0	0	234	234	0	234	234	469
L31	7/26/97	58	40.2	176	48.3	71	0	0	71	71	0	71	71	142
M01	6/30/97	59	0.1	167	54.1	21	0	0	174	174	0	0	0	174
M18	6/30/97	58	59.9	168	32.8	24	0	0	81	81	0	0	0	81
M19	6/30/97	58	59.7	169	10.4	28	78	784	1568	2431	0	157	157	2588
M20	7/3/97	58	59.9	169	50.2	32	2327	47321	6206	55854	0	0	0	55854
M21	7/3/97	59	0.6	170	26.8	37	2891	29755	9352	41997	0	170	170	42167
M22	7/9/97	58	59.1	171	8.1	40	1973	32154	6115	40241	532	76	608	40850
M23	7/9/97	59	0.5	171	47.2	45	2793	15196	5503	23492	6900	739	7639	31130
M24	7/13/97	59	0.5	172	25.9	51	1423	13437	2529	17389	162	0	162	17551
M25	7/13/97	59	0.6	173	4.4	55	12825	14396	3403	30624	2088	1740	3828	34452
M26	7/13/97	58	59.9	173	43.5	61	1647	3529	1882	7058	49874	5755	55629	62686
M27	7/14/97	59	0.2	174	22.6	68	78	78	156	313	0	234	234	547
M28	7/13/97	58	59.7	174	59.9	69	0	241	161	402	563	241	804	1206
M29	7/25/97	59	0.0	175	44.8	70	80	80	643	804	804	804	1608	2411
M30	7/26/97	58	60.0	176	18.7	71	0	0	156	156	0	156	156	312
M31	7/25/97	59	1.0	176	57.1	73	0	0	467	467	156	935	1090	1558
M32	7/25/97	58	60.0	177	35.1	71	0	0	81	81	0	0	0	81
N18	7/1/97	59	20.4	168	33.4	21	0	0	1521	1521	0	152	152	1673

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

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
N19	7/2/97	59 20.4	169 14.3	26	0	85	1019	1104	0	0	0	1104
N20	7/3/97	59 20.1	169 52.4	31	1016	8362	3595	12972	0	313	313	13285
N21	7/3/97	59 19.7	170 34.3	36	1593	26292	11354	39240	0	0	0	39240
N22	7/9/97	59 19.3	171 10.8	39	1440	32406	18724	52571	1221	0	1221	53791
N23	7/9/97	59 20.4	171 49.6	41	2208	26862	13247	42316	3846	164	4010	46326
N24	7/13/97	59 20.3	172 30.0	46	3525	10711	3389	17625	271	0	271	17896
N25	7/13/97	59 20.0	173 9.8	54	11282	15251	3134	29667	37722	16551	54273	83940
N26	7/12/97	59 29.5	173 29.7	55	3494	14300	3737	21531	6419	2844	9262	30793
N26	7/13/97	59 20.2	173 48.8	59	1568	4078	4235	9881	272212	71635	343847	353727
N27	7/13/97	59 20.2	174 27.3	65	1634	20918	28435	50987	304339	150460	454799	505786
N28	7/13/97	59 20.2	175 6.6	71	2853	8955	8955	20763	27195	1283	28478	49241
N29	7/25/97	59 19.7	175 45.5	72	2563	801	961	4325	14681	1874	16555	20880
N30	7/25/97	59 19.9	176 22.6	72	0	80	795	875	318	1591	1909	2783
N31	7/25/97	59 20.5	177 3.1	79	0	0	758	758	76	1667	1743	2501
O18	7/2/97	59 40.9	168 35.7	20	0	0	0	0	0	81	81	81
O19	7/2/97	59 39.9	169 16.3	24	0	0	164	164	0	0	0	164
O20	7/2/97	59 40.1	169 55.3	28	0	1259	3541	4800	0	0	0	4800
O21	7/10/97	59 40.4	170 35.0	34	768	14977	11137	26882	80	0	80	26963
O22	7/9/97	59 40.1	171 15.7	37	4253	49446	24457	78156	2060	76	2136	80292
O23	7/9/97	59 40.5	171 54.0	41	4558	41025	42735	88318	4560	446	5006	93325
O24	7/9/97	59 50.0	172 16.1	38	3388	27104	18504	48996	3658	636	4294	53290
O24	7/12/97	59 40.5	172 34.6	44	3270	18394	8993	30657	395	79	474	31130
O25	7/12/97	59 50.0	172 55.3	41	2430	23385	7289	33103	2909	383	3292	36395
O25	7/12/97	59 40.7	173 13.9	49	3800	12422	1461	17683	0	292	292	17976
O25	7/12/97	59 30.4	172 53.9	49	5945	10616	1911	18472	425	0	425	18896
O26	7/12/97	59 39.7	173 51.8	56	1072	15685	7105	23862	1223	571	1794	25656
O27	7/12/97	59 49.4	174 15.2	57	242	5485	7179	12907	26862	3630	30492	43399
O27	7/21/97	59 40.3	174 27.2	61	1080	13115	23915	38110	219920	119956	339876	377987

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
O28	7/21/97	59	39.0	175	4.6	66	461	8603	9217	18281	129877	119054	248930	267212
O29	7/25/97	59	40.3	175	52.5	72	3914	6405	8422	18741	24466	3384	27849	46590
O30	7/25/97	59	40.0	176	32.4	72	1045	1849	884	3778	4180	1045	5225	9002
O31	7/25/97	59	40.3	177	9.0	90	164	0	1068	1232	1314	1396	2711	3943
P19	7/2/97	59	59.8	169	17.3	23	0	655	2864	3519	82	0	82	3601
P20	7/2/97	60	0.2	169	58.2	27	80	3113	4948	8140	0	0	0	8140
P21	7/10/97	59	59.6	170	37.3	33	0	16849	26273	43123	1536	0	1536	44659
P22	7/9/97	59	59.3	171	18.2	35	190	8535	16881	25606	7861	202	8062	33669
P23	7/10/97	59	59.5	171	57.6	33	830	6561	2491	9883	166	0	166	10049
P24	7/9/97	59	60.0	172	39.0	33	907	11871	2803	15581	2638	495	3133	18714
P24	7/10/97	60	10.0	172	19.0	28	0	82	493	575	0	329	329	904
P25	7/11/97	60	9.9	173	1.2	30	108	866	433	1407	108	541	649	2056
P25	7/11/97	59	59.9	173	16.6	38	489	18570	9285	28344	1369	304	1673	30017
P26	7/12/97	60	7.1	173	45.2	46	1569	37652	38828	78049	641	801	1442	79490
P26	7/12/97	60	0.1	173	57.5	51	891	15948	5748	22587	243	0	243	22830
P26	7/12/97	59	50.4	173	35.4	49	1539	22160	4309	28007	459	0	459	28466
P27	7/21/97	60	0.4	174	36.2	57	233	10239	11519	21990	39925	11207	51132	73122
P27	7/21/97	60	9.8	174	21.3	53	254	9053	6599	15906	16901	4639	21540	37447
P28	7/21/97	60	0.6	175	16.0	61	163	6687	13699	20549	86037	77711	163747	184296
P29	7/24/97	60	0.3	175	54.3	68	3041	8407	12342	23790	308813	48760	357573	381364
P30	7/25/97	60	0.3	176	44.9	74	3087	2112	4794	9994	68642	46379	115021	125015
P31	7/24/97	60	0.0	177	14.1	72	1263	1027	2211	4501	18242	6219	24460	28962
P32	7/24/97	60	0.1	177	57.0	74	0	0	0	0	0	246	246	246
Q19	7/2/97	60	20.1	169	19.6	21	0	156	779	935	0	156	156	1090
Q20	7/2/97	60	20.1	170	1.9	26	0	3831	11333	15164	239	0	239	15403
Q21	7/10/97	60	19.6	170	39.6	31	270	9730	23244	33244	2509	148	2656	35901
Q22	7/10/97	60	20.1	171	19.8	34	358	10389	22212	32959	10578	492	11070	44030
Q23	7/10/97	60	20.2	172	4.3	31	78	0	1785	1863	0	233	233	2095

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
Q25	7/11/97	60	26.9	173	27.8	31	0	333	1774	2106	222	0	222	2328
Q26	7/11/97	60	19.9	174	3.8	48	276	16273	28684	45233	3400	1133	4534	49767
Q27	7/21/97	60	20.0	174	43.4	54	0	5085	4084	9169	13593	7710	21303	30472
Q28	7/21/97	60	19.1	175	23.2	58	148	5534	8929	14610	63157	126314	189471	204082
Q29	7/24/97	60	20.0	176	2.4	68	576	7492	9682	17750	15993	18174	34167	51917
Q30	7/24/97	60	20.1	176	42.5	68	1947	2804	7087	11837	160778	408129	568908	580745
Q31	7/24/97	60	19.5	177	23.4	77	632	395	237	1263	0	0	0	1263
R22	7/10/97	60	39.7	171	25.5	32	0	1638	20063	21700	16958	269	17227	38927
R23	7/10/97	60	40.4	172	7.1	32	0	4014	31776	35790	7474	997	8471	44261
R24	7/11/97	60	39.8	172	47.0	21	0	155	1392	1547	1083	0	1083	2630
R25	7/11/97	60	40.0	173	27.5	33	0	475	1189	1664	634	555	1189	2853
R26	7/11/97	60	39.9	174	7.8	46	0	9871	49355	59226	344730	22605	367335	426561
R27	7/21/97	60	39.7	174	49.8	51	161	3469	10729	14359	132225	222526	354751	369110
R28	7/21/97	60	40.7	175	27.7	55	156	9890	3816	13862	1402	4828	6230	20092
R29	7/24/97	60	40.3	176	11.5	63	549	19948	7503	28000	3203	3035	6238	34238
R30	7/24/97	60	40.4	176	48.4	68	922	11527	12756	25205	61636	42671	104307	129512
R31	7/23/97	60	40.3	177	30.2	77	7593	20112	5131	32835	4424	15996	20421	53256
R32	7/24/97	60	39.8	178	11.6	85	0	79	158	238	0	396	396	634
S22	7/10/97	60	59.7	171	28.9	32	0	1181	42820	44001	16331	1420	17751	61752
S23	7/10/97	60	59.7	172	9.4	34	0	1375	24363	25739	22210	2856	25066	50804
S24	7/11/97	61	0.1	172	49.4	34	0	4797	93205	98002	159268	48422	207689	305691
S25	7/11/97	60	59.8	173	29.3	39	314	7217	29808	37339	8491	2061	10552	47891
S26	7/11/97	61	0.4	174	11.5	44	0	12659	42195	54854	69061	6906	75967	130821
S27	7/22/97	61	0.2	174	54.7	48	350	21325	35309	56984	36744	11023	47767	104751
S28	7/21/97	60	59.1	175	33.3	53	157	20908	25643	46708	1102	1023	2125	48833
S29	7/23/97	60	59.8	176	17.4	45	1153	7576	5105	13834	2761	1924	4685	18519
S30	7/23/97	61	0.8	176	58.1	63	716	14899	10601	26216	163	82	245	26460
S31	7/23/97	60	57.7	177	38.1	71	2009	17278	3081	22367	0	0	0	22367

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
T25	7/22/97	61	19.9	173	34.7	39	0	10225	228363	238588	126111	105660	231771	470359
T26	7/22/97	61	19.9	174	20.1	42	0	5634	71359	76993	62164	30589	92753	169746
T27	7/22/97	61	20.2	175	1.7	46	439	19302	57905	77645	19832	2088	21919	99565
T28	7/22/97	61	20.1	175	40.4	50	0	2518	8392	10910	12904	5580	18484	29394
T29	7/23/97	61	20.3	176	18.2	56	533	5993	11453	17978	37155	18577	55732	73710
T30	7/23/97	61	19.4	176	58.4	61	2075	18106	3772	23952	0	0	0	23952
U25	7/22/97	61	40.0	173	40.3	37	0	596	90590	91186	19668	100127	119794	210981
U26	7/22/97	61	40.0	174	26.0	39	0	1751	44520	46271	29026	4838	33863	80134
U27	7/22/97	61	39.2	175	5.0	44	0	5131	31642	36773	20986	6063	27048	63821
U28	7/23/97	61	39.8	175	46.9	51	0	3965	13877	17841	4898	1749	6647	24488
U29	7/23/97	61	39.8	176	27.7	54	0	8761	18469	27229	8828	3395	12223	39452
V25	7/22/97	61	60.0	173	45.7	33	0	1199	133110	134309	67154	110325	177480	311789
V26	7/22/97	61	59.1	174	30.2	38	0	571	42840	43411	27621	13153	40774	84184
V27	7/23/97	62	0.6	175	10.0	43	0	727	13804	14530	3317	1421	4738	19268
V28	7/23/97	62	0.6	175	50.2	49	0	1889	12433	14322	4485	5430	9915	24237
Z05	6/19/97	54	41.1	165	10.0	45	0	156	703	860	0	0	0	860

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

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
A04	6/19/97	54	51.0	165	31.3	78	79	0	0	79	0	0	0	79
C09	6/12/97	55	40.5	162	52.0	28	161	0	0	161	0	0	0	161
D07	6/13/97	56	0.7	163	57.5	48	79	0	0	79	0	0	0	79
D10	6/12/97	55	59.9	162	14.9	37	155	0	0	155	0	0	0	155
E06	6/18/97	56	18.0	164	35.5	46	78	0	0	78	0	0	0	78
E09	6/12/97	56	19.8	162	48.4	41	221	0	0	221	0	0	0	221
E10	6/12/97	56	20.0	162	12.5	43	256	0	0	256	0	0	0	256
E11	6/9/97	56	20.8	161	36.2	33	69	0	0	69	0	0	0	69
E21	7/7/97	56	20.0	170	5.5	57	77	0	0	77	0	0	0	77
F12	6/9/97	56	40.1	160	59.6	34	81	0	0	81	0	0	0	81
F20	7/7/97	56	40.3	169	30.4	41	817	0	0	817	0	0	0	817
F21	7/7/97	56	49.7	169	54.4	37	881	0	0	881	0	0	0	881
G01	6/23/97	57	0.5	167	42.2	40	78	0	0	78	0	0	0	78
G10	6/11/97	56	60.0	162	10.3	32	153	0	0	153	0	0	0	153
G11	6/9/97	57	0.3	161	33.4	37	0	0	0	0	72	0	72	72
G12	6/9/97	57	0.1	160	57.0	32	161	0	0	161	0	0	0	161
G13	6/8/97	56	59.1	160	19.6	33	73	73	0	146	0	0	0	146
G18	6/28/97	57	0.2	168	21.0	41	155	0	77	232	0	0	0	232
G20	7/4/97	57	0.0	169	32.6	31	233	78	0	310	0	0	0	310
G21	7/4/97	57	0.1	170	10.4	36	2373	82	0	2455	0	0	0	2455
G21	7/4/97	57	9.1	169	52.6	26	1561	739	0	2300	0	0	0	2300
G22	7/4/97	57	7.0	170	28.0	25	951	475	0	1426	0	0	0	1426
H01	6/23/97	57	19.2	167	44.1	40	156	0	0	156	0	0	0	156
H09	6/11/97	57	19.7	162	45.8	26	0	0	0	0	72	0	72	72
H11	6/9/97	57	19.9	161	31.7	29	255	0	0	255	0	0	0	255
H12	6/9/97	57	20.1	160	55.8	32	238	0	0	238	79	0	79	317
H19	6/28/97	57	20.2	168	58.7	37	834	76	0	909	0	0	0	909
H19	6/28/97	57	10.3	168	38.0	39	217	0	0	217	0	0	0	217

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
H19	6/28/97	57	29.6	168	44.6	37	118	0	0	118	0	118	118	236
H20	6/28/97	57	29.8	169	21.9	37	2377	79	0	2457	79	0	79	2536
H20	7/6/97	57	19.8	169	36.2	31	556	0	0	556	0	0	0	556
H21	7/6/97	57	19.5	170	15.2	28	423	141	0	564	0	71	71	635
I101	6/22/97	57	38.9	167	46.4	36	82	0	0	82	0	0	0	82
I104	6/21/97	57	40.1	165	53.9	34	80	0	0	80	0	0	0	80
I06	6/17/97	57	39.9	164	37.8	27	78	0	0	78	0	0	0	78
I18	6/29/97	57	40.0	168	24.3	36	81	0	0	81	0	0	0	81
I20	6/29/97	57	50.0	169	22.9	34	76	0	0	76	0	0	0	76
I20	7/6/97	57	39.4	169	39.4	36	0	0	0	0	135	203	338	338
I21	7/6/97	57	49.8	169	58.7	37	0	69	0	69	0	0	0	69
I21	7/6/97	57	30.2	169	58.8	35	472	79	0	551	0	0	0	551
J02	6/22/97	57	59.9	167	10.4	34	78	0	0	78	0	0	0	78
J03	6/21/97	58	0.1	166	31.4	32	154	0	0	154	0	0	0	154
J05	6/17/97	57	59.7	165	16.5	26	0	80	0	80	0	0	0	80
J18	6/29/97	57	59.8	168	26.3	35	79	0	0	79	0	0	0	79
K01	6/22/97	58	19.8	167	49.9	31	77	0	0	77	0	0	0	77
K02	6/22/97	58	20.3	167	11.2	27	78	0	0	78	0	0	0	78
K03	6/22/97	58	19.8	166	33.0	25	78	78	0	155	0	0	0	155
L01	6/30/97	58	40.2	167	51.8	23	0	76	0	76	0	0	0	76
L02	6/30/97	58	39.8	167	13.4	21	77	0	0	77	0	0	0	77
L03	6/30/97	58	40.0	166	34.3	20	79	0	0	79	0	0	0	79
L18	6/29/97	58	40.2	168	29.7	27	156	156	0	313	0	0	0	313
L19	6/29/97	58	39.3	169	7.8	33	83	0	0	83	0	0	0	83
L20	7/3/97	58	40.2	169	47.2	34	78	0	0	78	0	0	0	78
M02	6/30/97	59	1.7	167	14.5	20	0	76	0	76	0	0	0	76
M18	6/30/97	58	59.9	168	32.8	24	243	405	0	648	0	0	0	648
M19	6/30/97	58	59.7	169	10.4	28	157	235	0	392	0	0	0	392

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

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
M20	7/3/97	58	59.9	169	50.2	32	0	77	0	77	0	0	0	77
N02	7/1/97	59	19.7	167	16.2	16	75	75	0	150	0	75	75	224
IN18	7/1/97	59	20.4	168	33.4	21	76	304	0	380	76	0	76	456
N19	7/2/97	59	20.4	169	14.3	26	255	170	0	425	0	0	0	425
N20	7/3/97	59	20.1	169	52.4	31	0	0	0	0	0	78	78	78
N24	7/13/97	59	20.3	172	30.0	46	0	0	0	0	0	136	136	136
O01	7/1/97	59	40.0	167	56.8	17	0	0	0	0	80	0	80	80
O18	7/2/97	59	40.9	168	35.7	20	0	650	0	650	0	0	0	650
O19	7/2/97	59	39.9	169	16.3	24	164	246	0	411	0	0	0	411
P18	7/2/97	59	60.0	168	37.9	20	0	83	0	83	83	0	83	166
P19	7/2/97	59	59.8	169	17.3	23	0	327	0	327	0	0	0	327
Q19	7/2/97	60	20.1	169	19.6	21	0	78	0	78	0	0	0	78

NOTE: Minimum carapace sizes used are: Large Males > 3.3 in; Medium Males > 2.0 in; Large Females > 2.6 in.