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The 2007 Eastern Bering Sea Continental Shelf Bottom Trawl Survey: Results for Commercial Crab Species

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E. A. Chilton, L. Rugolo, C. E. Armistead, and R. J. Foy

U.S. DEPARTMENT OF COMMERCE

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ABSTRACT

The eastern Bering Sea bottom trawl survey has been conducted by the National Marine Fisheries Service Resource Assessment and Conservation Engineering group on an annual basis since 1971. The purpose of this survey is to collect data on the distribution and abundance of crab and groundfish resources in the eastern Bering Sea. These data will be used to estimate population abundances for the management of commercially important species in the region. In 2007, 376 standard stations were surveyed and an additional 32 stations were resampled in Bristol Bay at the end of the standard survey due to the offset in timing of the survey and the reproductive maturity of the female red king crab. The point estimate of Bristol Bay red king crab (*Paralithodes camtschaticus*) legal-sized male abundance was 6% greater in 2007 than 2006, and exceeded the average of 9.6 million crab for the previous 20 years. The point estimate of Pribilof District blue king crab (*P. platypus*) legal-sized male abundance was 0.1 million crab, which was well below the average of 0.6 million for the previous 20 years. The point estimate of Tanner crab (*Chionoecetes bairdi*) legal-sized male abundance was 12.1 million crab which is a decrease of 6% from 2006. The point estimate of the large male snow crab (*C. opilio*) abundance was 495.2 ± 134.8 million crab.

CONTENTS

Abstract.....	iii
Introduction	
Survey History and Purpose.....	1
Eastern Bering Sea Crab Stock Assessment Process.....	1
2007 Survey Overview.....	2
Methods	
Survey Area and Sampling Logistics.....	3
Hot Spots.....	4
Biological Data Collection.....	4
Crab Abundance Estimates.....	5
Results and Discussion	
Summary of Stations.....	6
Bristol Bay District Red King Crab.....	6
Pribilof District Red King Crab.....	7
Pribilof District Blue King Crab.....	8
St. Matthew Island Section Blue King Crab.....	9
Tanner Crab.....	9
Snow Crab.....	10
Hair Crab.....	11
Acknowledgments.....	12
Citations.....	13
Appendix A	
Haul Data.....	47
Appendix B	
Crab Density Data.....	58

INTRODUCTION

Survey History and Purpose

The eastern Bering Sea (EBS) trawl survey has been conducted by the National Marine Fisheries Service (NMFS) Resource Assessment and Conservation Engineering (RACE) Division of the Alaska Fisheries Science Center on an annual basis since 1971. In 1975, the survey was expanded to include Bristol Bay and the majority of the Bering Sea continental shelf with the original purpose of assessing potential resource impacts of offshore oil development (Pereyra et al. 1976). The annual collection of data on the distribution and abundance of crab and groundfish resources provides fishery-independent estimates of population abundances and biological data for the management of commercially important species in the EBS. The crab species that have historically been assessed during the survey include: red king crab (*Paralithodes camtschaticus*), blue king crab (*P. platypus*), Tanner crab (*Chionoecetes bairdi*), snow crab (*C. opilio*), and hair crab (*Erimacrus isenbeckii*). Since 1988, 376 stations have been surveyed in a 150,776 square nautical mile (nmi²) area of the EBS with station depths ranging from 20 to 150 m (Fig. 1).

In 2001 and from 2004 to 2006, an additional 29 stations were sampled northeast of the standard survey area to assess the northern distributions of snow crab and walleye pollock (*Theragra chalcogramma*). These data were not incorporated into the standard survey assessment. These northeastern 29 stations were not sampled again in 2007.

In 1999, 2000, and 2006 a number of Bristol Bay stations were sampled at the beginning and the end of the survey due to delayed molting and mating cycles of red king crab. This delay, likely caused by colder than average bottom temperatures, was indicated during the first sampling event by high numbers of mature female red king crab that had not begun the molting and egg extrusion cycle or were carrying eyed eggs, fertilized from the previous season. The resampling of these stations at the end of the survey was necessary to accurately assess the percentage of ovigerous females subsequent to the mating period. As an example, in 2006, the percentage of mature female red king crab during the first leg of the survey that had not molted or extruded new eggs was as high as 40% resulting in the resampling of 30 Bristol Bay stations towards the end of the survey season. A subset of Bristol Bay stations were resampled in 2007.

Eastern Bering Sea Crab Stock Assessment Process

Bering Sea and Aleutian Islands (BSAI) king and Tanner crabs included in the federal fisheries management plan in the eastern Bering Sea are managed by the Alaska Department of Fish and Game (ADF&G) with federal oversight by NMFS (NPFMC 1998). The annual stock assessment and fishery evaluation report prepared by the North Pacific Fishery Management Council Crab Plan Team for the king and Tanner crab fisheries of the Bering Sea and Aleutian Islands region provides current biological and economic data associated with these species. The Crab Plan Team reviews the survey, biological, economic, and modeling data to recommend

biological reference points associated with the status of stocks. Finally, NMFS determines the procedure for setting overfishing levels (OFLs) and the ADF&G sets the annual total allowable catch or guideline harvest level for each crab stock. Crab stocks are defined by ADF&G management units for king crab and Tanner crab species (Bowers et al. 2008). Red king crab are split into Bristol Bay and Pribilof Islands stocks and blue king crab are split into Pribilof Islands and St. Matthew Island stocks for management purposes.

2007 Survey Overview

In 2007, all 376 standard stations were surveyed (Fig. 1). Four special projects were also made during the survey to collect specific biological data from particular crab species. Two of the projects originated from the NMFS Shellfish Assessment Program at the Kodiak Laboratory; updating the carapace size-weight relationship used in resource assessment models of commercially important crab species and investigating the reproductive potential of female red king crab and snow crab by evaluating egg loss and the presence of non-viable eggs during incubation period. Two other projects were conducted by non-NMFS personnel collaborating with NMFS scientists to: 1) evaluate sperm reserves and clutch fullness in female *Chionoecetes* spp. as indicators of reproductive potential and 2) conduct concurrent trawls with the Bering Sea Fisheries Research Foundation (BSFRF) chartered fishing vessel to provide comparisons between the EBS shelf survey trawl and a nephrops trawl used to sample Bristol Bay red king crab by the BSFRF (Table 1). This project was conducted prior to the start of the standard survey in Bristol Bay on 9-10 June 2007.

Due to low numbers of newly molted, ovigerous (egg bearing) female red king crab during the Bristol Bay sampling at the beginning of the survey, 32 Bristol Bay stations were resampled at the end of the standard survey. Those data are included in the estimation of population abundance for both male and female red king crab in the Bristol Bay management district by averaging the standard survey data collected at those stations in early June with the data collected from the 32 stations at the end of the standard survey 23-30 July 2007 (see Bristol Bay Red King Crab section).

This report summarizes the 2007 survey results for commercially important crab resources in the EBS. Numbers presented are trawl survey estimates of relative population abundance and do not represent absolute abundance. Groundfish resource assessments from the 2007 EBS survey are reported in Acuna and Lauth (2008) which also provides additional information and more detailed survey design and fishing gear specifications.

METHODS

Survey Area and Sampling Logistics

The survey was conducted onboard the FV *Arcturus* and FV *Aldebaran*, beginning 11 June in Bristol Bay and moving westward to end at the shelf break on 28 July. The vessels sampled alternate columns during the standard survey until the FV *Aldebaran* returned to Bristol Bay to conduct the resample of 32 stations between 23 and 30 July. The FV *Arcturus* completed the final northwestern section of the standard survey stations.

The survey stations are divided into multiple districts which are defined by ADF&G commercial crab management units (Fig. 2). Management units are defined by registration areas and districts which are further divided into sections which can have standard or high station densities. Standard-density sections have stations centered in 20×20 nmi (37.04×37.04 km) cells while high-density sections include additional stations at the corners of the 20×20 nmi cells. Total area calculations for each stock management unit use an area of 401 nmi^2 for each 20×20 nmi cell due to a spherical projection of the grid surface in an area as large as the EBS. The king crab Registration Area T in Bristol Bay (south of $58^\circ 39'N$ and east of $168^\circ W$) is $54,536 \text{ nmi}^2$ and consists of 136 stations. The king crab Registration Area Q in the Bering Sea is divided into the Northern District (north of $58^\circ 39'N$) and the Pribilof District (south of $58^\circ 39'N$ and west of $168^\circ W$). The St. Matthew Island Section of the Northern District is divided into two sampling areas: 1) a high-density $7,218 \text{ nmi}^2$ area with 28 stations and 2) the remainder of the section which has between 34 and 137 stations defined by the historical catch locations specific to crab species (see results by species). The stations in the Pribilof District are divided into two sampling areas: 1) a high-density $10,025 \text{ nmi}^2$ area with 41 total stations and 2) a standard-density $13,634 \text{ nmi}^2$ area with 34 stations defined by historical crab catch locations.

The fishing gear was identical to that of previous EBS annual bottom trawl surveys (Acuna and Lauth 2008) with both vessels fishing a standard 83-112 Eastern otter trawl with an 83 ft (25.3m) headrope and a 112 ft (34.1 m) footrope. This has been the standard trawl since 1982. Each tow was approximately one-half hour in duration and 1.5 nmi (2.8 km) in length when moving at a speed of 3 knots (1.54 m/sec) and conducted in strict compliance with NMFS groundfish bottom trawl protocols established by National Oceanic and Atmospheric Administration (Stauffer 2004). Because of variations in tow length, catches presented in accompanying figures and tables are standardized to the nearest whole number of crab caught per square nautical mile (nmi^2).

Net mensuration equipment was used to monitor fishing performance during each tow. A bottom contact sensor (inclinometer) was attached to the center of the footrope to measure bottom contact of the net at 1 second intervals. The net mensuration system also consisted of an acoustic sensor attached to the headrope and two sensors attached to the port and starboard dandyines to measure net behavior (net height and width) during trawling operations. The

bottom contact of the footrope and Global Positioning System (GPS) data were used to calculate distance fished. Fishing power is assumed to be equal between the two vessels (Acuna and Lauth 2008).

Surface and bottom water temperatures along with depth profiles were collected at 6 second intervals throughout the duration of each tow using a Seabird SBE-39 bathythermograph continuous data recorder (Sea-Bird Electronics Inc., Bellevue, WA) attached to the headrope of the net. The temperature measurement range of the SBE-39 is -5 to 35 ± 0.002 °C with pressure sensors measuring to $1,000 \pm 1$ m and calibrated every year by Sea-Bird Electronics. Bottom depth was also derived from this data by adding the net height from the net mensuration system to the headrope depth recorded by the SBE-39.

Hot Spots

A station that produces ≥ 100 legal-sized male red king or Tanner crab (Table 2) is considered a “hot spot”. At each hot spot, four extra tows were made 5 nmi to the south, east, north, and west of the original hot spot tow. All crabs species caught in tows conducted at a hot spot location were counted and measured identically as the crab sample collection for a standard survey tow described below.

Biological Data Collection

All crab were removed from the catch, sorted by species and sex, and a total catch weight was obtained for each species. Subsampling the total catch of *Chionoecetes* spp. crab occurred when an exceptionally large number of those crab were caught in a tow. The weights of the sampled crab and non-sampled crab were recorded and a sampling factor was calculated to determine the final number of that species in the catch.

Individual crab carapaces were measured to the nearest millimeter to provide a size-frequency distribution. Crab sizes are reported as carapace width excluding spines (CW) for Tanner and snow crab, and carapace length (CL) for all king crab and hair crab (Donaldson and Byersdorfer 2005). Carapace shell condition was assessed for each crab sampled and assigned to one of six classes according to specific criteria (0 = premolt or molting, 1 = soft and pliable, 2 = new hardshell both firm and clean, 3 = oldshell slightly worn, 4 = oldshell worn, 5 = very oldshell). All female crab abdomens are evaluated based the size of the egg clutch (0 = immature, 1 = mature female no eggs, 2 = trace to 1/8, 3 = 1/4, 4 = 1/2, 5 = 3/4, 6 = full) and the condition (0 = no eggs, 1 = uneyed, 2 = eyed, 3 = dead, 4 = empty egg cases) and color of the eggs (0 = no eggs, 2 = purple, 3 = brown, 4 = orange, 5 = purple-brown, 6 = pink). Chela height measurements to the nearest millimeter were collected from a small sample of male *Chionoecetes* spp. crab caught at each station to determine morphometric molt to functional maturity based on the chela height to carapace width ratio (Tamone et al. 2007).

All crab carapaces were scanned for evidence of bitter crab syndrome or black mat fungus, which was recorded when present, and crabs with bitter crab syndrome were set aside for further testing by the pathology laboratory at the Alaska Fisheries Science Center in Seattle, WA.

Crab Abundance Estimates

Crab density (number/nmi²) was estimated at each station for legal, pre-recruit and small males as well as large and small females of each stock (Table 2). The area swept by the trawl (nmi²) was calculated as the product of the distance traveled while the net had bottom contact by an effective width of 50 ft (15.2 m; 0.008 nmi). While the effective width of the trawl typically ranges from 48-60 ft when towing at a speed of 3 knots (Weinberg 2003), this standard of 50 ft was used to maintain consistency with historical calculations and is believed to represent the average tow width (Rose and Walters 1990). Distance traveled by the trawl was determined from ship positions recorded at the beginning and end of each tow using GPS equipment.

Total crab abundance within a management unit was estimated by averaging crab densities from all stations and multiplied by the total area of the management unit specific to that stock. At stations with multiple tows (i.e., hot spots), a single estimate of crab density was used by averaging all tows within the station prior to calculating total crab abundance. Abundance estimates were reported as averages \pm 95% confidence interval (\pm 2 SE).

Note that population abundance estimates are indices and are most precise for large crabs; they may not represent absolute abundance and are least precise for small crabs due to gear selectivity, and for females of some stocks due to differential crab behavior. Catchability is assumed to be near or equal to one.

In this report, the 1997 to 2004 abundance estimates for all species have changed relative to those published prior to 2005. The changes are relatively minor, and comprise an approximate 1-5% increase in abundance compared to previous values. These differences are a result of a change in the total area specific to the district used in the calculation of crab abundance estimates as well as correcting the mathematical equation calculating distance fished for the years 2001 to 2004 from a curved path to a straight line.

Commercial landing statistics and number of crabs per pot lift (CPUE) used in the historical fishing effort figures were obtained from 2007 ADF&G fish tickets and previous year's commercial crab fish tickets and reported by ADF&G statistical management area. The total number of crab landed was summed for all statistical areas in each management district (F. Bowers, ADF&G, Dutch Harbor, AK, pers. comm.).

RESULTS AND DISCUSSION

Summary of Stations

The 2007 EBS bottom trawl standard survey consisted of 380 bottom trawls (376 standard survey tows, plus 4 tows associated with one hot spot location) conducted from 11 June to 28 July, 2007 over an area of approximately 150,776 nmi². All standard survey stations were sampled this year and an additional 32 stations were resampled in Bristol Bay near the end of the survey to assess the mature female red king crab stock (See Bristol Bay District Red King Crab section). The latitude and longitude for start and end position of each tow along with tow duration (min), distance fished (km), bottom depth (m) and bottom temperatures (°C) for each tow are listed in Appendix A. The average length of all tows was 1.48 nmi (2.74 km) with a range of 0.52 to 1.63 nmi (0.95-3.02 km) and the average fishing time was 29.9 minutes (see Appendix A for all station data).

The standard survey tow made at station G21 was designated as a hot spot due to the high number of legal-sized male Tanner crab (see Appendix B for crab densities at each station) in the catch, requiring four additional tows and resulting in a total of five tows within the station.

Bottom temperatures ranged from -1.8° to < 8.2°C and are shown in Figure 3 for each station, with an average bottom temperature reported when multiple tows were made at a station. These temperatures were collected at each station as the survey progressed from east to west, beginning on 11 June 2007 in Bristol Bay and moving westward towards the shelf edge to finish at station L29 on 28 July 2007. A cold pool (< 2°C) was prevalent between the 50 m and 100 m isobaths in the middle shelf and Bristol Bay area with warmer bottom temperatures in the nearshore stations and at the shelf break (Fig. 3).

Bristol Bay District Red King Crab

In 2007, we observed unusually cold bottom water temperatures at the start of the survey which persisted throughout sampling the Bristol Bay stations. The average bottom water temperature over all 103 stations sampled during the first survey leg (11-21 June 2007) was 2.5°C which was similar to the average bottom water temperature of 2.6°C during the first survey leg in 2006, when low numbers of female red king crab with newly extruded eggs were sampled. Female red king crab molting, mating and embryo extrusion is related to ambient water temperature (Shirley et al. 1990), and 49% of the 952 mature female red king crab sampled during the first leg of the survey had molted and extruded a new clutch of uneyed eggs. This percentage of mature females with new uneyed eggs was low compared to previous years (98% in 2005) and of concern in terms of assessing the number of mature females.

A select group of 32 Bristol Bay stations were resurveyed from 23 to 30 July 2007 to assess red king crab stock status (Fig. 1). These stations were chosen in part by the number of female red king crab caught at these stations during the first leg of the 2007 survey along with

location data based on our past bottom trawl surveys in the area. The average bottom water temperature was 3.3°C while resampling the 32 stations in Bristol Bay at the end of the standard survey compared to an average bottom temperature of 1.6°C at those same stations during the first leg of the standard survey. Among resurveyed female crab, 88% were found to be mature, and 99% of these had completed the molt-mate cycle and extruded new, uneyed eggs. Therefore, for the purpose of estimating stock abundance of male and female red king crab for the Bristol Bay District, and for characterizing the status of the female reproductive stock, red king crab densities from the standard survey at these 32 stations were averaged with the crab density data collected during the resampling.

Red king crab were caught at a total of 65 stations in the Bristol Bay management district in 2007. The density (number/nmi²) of legal-sized male crab caught at a station ranged from 75 to 5,972 (Appendix B1). Legal-sized male Bristol Bay red king crab were caught at 56 stations, resulting in a total of 13.3 ± 5.3 million crab estimated in Bristol Bay District (Appendix B1 and Table 3). The majority of these males were concentrated in the central Bristol Bay area (Fig. 4). This estimate represents a 6% increase from last year, and it exceeds the average of 9.6 million for the previous 20 years (Fig. 5).

Pre-recruit male crabs were encountered at 49 stations totaling 10.2 ± 3.3 million crabs which is a 37% increase in abundance compared to 2006. The abundance estimate of 15.0 ± 4.2 million crab for small male red king crab decreased by 23% from 19.5 million in 2006 (Table 3). Both size categories were centrally located in the Bristol Bay District (Fig. 6).

The 2005 cohort of male red king crab (modal size of 70 mm CL) appeared in 2006 at a modal size of 80-85 mm CL, which grew to 100 mm CL in 2007. The cohort with a modal size of 80 mm CL in 2000 that we've followed to a modal size of 160 mm CL in 2006 is disappearing and aging rapidly (Fig. 7). Less than 1% percent of legal-sized male crabs were in molting or softshell condition, 52% were evaluated as new hardshell crabs, with the remainder (47%) as oldshell and very old shell condition crabs.

The 2007 large female red king crab abundance estimate of 35.4 ± 8.8 million crab represents a 19% increase from last year, although that for small females declined by 72% with an abundance estimate of 3.8 ± 1.5 million crab (Table 3) Both large and small female red king crab were centrally located in the Bristol Bay District (Fig. 6).

Pribilof District Red King Crab

Historically, red king crab have not been abundant in the Pribilof District and landings were taken incidentally during the blue king crab fishery. From 1996 to 1998, a combined fishery for red and blue king crab in the Pribilof District opened on 15 September. However, due to low abundance of blue king crab, the combined fishery has not opened since 1998. Although this stock is not considered overfished under provisions of the NPFMC fishery management plan, the fishery remained closed due to the desire to avoid bycatch of blue king crab that occur in the same grounds.

Red king crab were caught at a total of seven stations in the Pribilof District high-density sampling area in 2007. Due to the Tanner crab hot spot protocol, a total of five tows occurred at station G21. The density (number/nmi²) of legal-sized males caught at a station ranged from 121 to 2,255 crab (Appendix B1). Legal-sized male red king crab were caught at five stations in the Pribilof District high-density sampling area resulting in 1.6 ± 1.3 million crab, up 25% from 2006 (Table 3).

The pre-recruit male abundance estimate decreased to 0.2 ± 0.4 million crab in 2007. The apparent dramatic increase of 0.2 ± 0.3 million of small male crab is in comparison only to the extremely low 2006 abundance estimate. Male abundance estimates in this district are highly influenced by the limited number of tows with positive crab catches (Table 3 and Fig. 6).

The abundance estimate for large red king crab females of 1.7 ± 1.8 million crab showed an 85% increase from 2006 while that for small females decreased by 22% to 0.01 ± 0.03 million crab in 2007 (Table 3). The majority of the increase seen in total female abundance occurred in the large size category primarily due to small females encountered at only one station in the Pribilof District high-density sampling area (Appendix B1). Only 8% of the total female red king crab caught were immature, with 5% newly molted mature females, and 88% mature females with uneyed eggs while 5% were barren or had empty egg cases.

Pribilof District Blue King Crab

Blue king crab were caught at a total of six stations in the Pribilof District high-density sampling area in 2007. The density (number/nmi²) of legal-sized males caught at a station ranged from 80 to 164 and were found at two stations east of St. Paul Island (Fig. 8 and Appendix B2). The abundance estimate of legal-sized males was 0.1 ± 0.08 million crab, and below the average of 0.6 million crab for the previous 20 years (Table 4 and Fig. 9).

Pre-recruit blue king crab males were caught at two stations with an abundance estimate of 0.1 ± 0.13 million crab. The majority of small male blue king crab were caught at four stations with an abundance of 0.2 ± 0.3 million crab in 2007 (Table 4 and Fig. 10). Size-frequency data for blue king crab males are very sparse, with only three Legal-sized males captured on the 2007 survey in the Pribilof District (Fig. 11).

Large female blue king crab were caught at four stations in the Pribilof District high-density sampling area resulting in an abundance estimate of 0.2 ± 0.3 million crab, a 49% decrease from last year. Small female blue king crab were caught at two stations resulting in an abundance estimate of 0.05 ± 0.08 million crab for 2007 (Fig. 10). However, estimates of female abundance are usually very imprecise due to the preference of these crab for rocky habitat which is not well sampled by trawls. Blue king crab females are predominantly biennial spawners. Only a portion of the female population spawns in a given year, while the remainder is in a non-embryo-bearing phase (Somerton and MacIntosh 1985). Nine mature females were caught out of

a total of 13 large female blue king crab. Among sampled mature females, 100% were oldshell, of which 56% carried eyed embryos and 44% were barren.

St. Matthew Island Section Blue King Crab

Blue king crab were caught at a total of 21 stations in the St. Matthew Island Section: 13 stations in the high-density sampling area and 8 stations in the standard-density sampling area (Appendix B3). Abundance estimates in the St. Matthew Island Section are affected by the portion of the stock occupying inshore rocky untrawlable grounds. Legal-sized males were captured primarily south and west of St. Matthew Island (Fig. 8). The abundance estimate for legal-sized male blue king crab was 1.4 ± 0.9 million crab (Table 5), increasing 1% from last year although 57 legal males were captured on the 2007 survey.

The abundance estimate of 2.3 ± 1.9 million crab for pre-recruit male crab increased 212% from last year. The 2007 small male abundance estimate increased 145%, from 2.0 million crab in 2006 to 5.0 ± 4.4 million crab (Table 5). The majority of the pre-recruit and small male blue king crab were distributed southwest of St. Matthew Island (Fig. 10). Legal-sized and pre-recruit male abundance estimates are still well below their averages for the previous 20 years (1.7 and 1.1 million, respectively) (Fig. 12). Size-frequency and shell conditions for male blue king crab in 2005 through 2007 are shown in Figure 13.

The 2007 large female blue king crab abundance estimate of 0.2 ± 0.2 million crab decreased 33% from 2006 while the small female blue king crab abundance estimate of 0.9 ± 0.9 million crab increased dramatically above the 2006 abundance estimate of 0.1 million crabs (Table 5). Five of the eight large females caught were mature. Keeping in mind that female blue king crab are biennial spawners; one female was a new hardshell with uneyed eggs and four were hardshell or slightly worn oldshell and barren.

The 2007 EBS trawl survey showed encouraging signs of a wider distribution of crabs than seen in recent past (Fig. 10). The current assessments for small and pre-recruit males, as well as small females are among the highest population estimates on record which may indicate future recruitment to the stock (Table 5).

Tanner Crab

The total number of stations with Tanner crab in combined areas of the Bristol Bay District, Pribilof District, and Northern District was 256. Tanner crab occurred at 41 stations in the Pribilof District high-density sampling area, including five tows at station G21 due to a hot spot, and 23 stations in the high-density sampling area of the St. Matthew Island Section in the Northern District. Legal-sized male Tanner crab were caught at 52 stations, ranging from 79 to 12,330 crabs per tow (Appendix B4). The 2007 abundance estimate for legal male Tanner crab was 12.1 ± 6.8 million crab which were distributed with regions of high abundance in southwest

Bristol Bay and south of the Pribilof Islands (Table 6 and Fig. 14). The abundance estimate for legal male Tanner crab decreased by 17% compared to the 2006 abundance estimate of 14.6 million crabs (Fig. 15).

Legal-sized male crabs represent only 2% of total male abundance in 2007. The legal male abundance estimate is characterized by low precision and legal-sized males continue to represent only a small portion of mature male stock abundance. The current estimates of pre-recruit and small males, 92.5 ± 40.9 and 416.3 ± 130.3 million crabs, respectively, are among the highest population estimates on record which suggest future recruitment to the stock (Table 6). Pre-recruit and small male Tanner crab were ubiquitously distributed throughout the eastern Bering Sea shelf (Fig. 16).

The 2004 male size-frequency revealed a prominent mode in the 30 mm CW range, which persisted to 2005 at 45-50 mm CW, 65-75 mm CW in 2006, and to the 90-95 mm CW range in 2007 (Fig. 17). Among legal males, only 21% were new-hardshell crab, and 45% were oldshell and older. Old and very oldshell crab remain a relatively large proportion in the male size distribution at 80 mm carapace width and greater; these males will not molt to legal-size in the future. Morphometrically mature oldshell male *Chionoecetes* spp. crab, based on the ratio of chela height measurement to carapace width, will not molt again during their lifespan (Tamone et al. 2007).

The 2007 large female Tanner crab abundance estimate of 40.8 ± 18.1 million crab showed a 6% decrease compared to the 2006 abundance estimate while the small female crab abundance of 205.4 ± 58.6 million crab decreased by 33%. The majority of the large females were distributed in the southwest Bristol Bay District while the small females were distributed throughout the 50 to 200 m shelf of the eastern Bering Sea (Fig. 16). Among sampled mature females, 6% were softshells; 44% were new-hardshells, of which 99% carried new eggs; and 51% were oldshell and very oldshell, of which 85% carried new eggs. The vast majority of mature females sampled had completed hatching by the time of the survey.

Snow Crab

The total number of stations with snow crab in the combined areas of the Bristol Bay District, Pribilof District, and Northern District was 236. Snow crab occurred at 39 stations in the Pribilof District high-density sampling area, which includes five tows at station G21 due to a hot spot, and 27 stations in the St. Matthew Island Section of the Northern District (Appendix B5).

Although the legal minimum size limit for male snow crab is 3.1 in. CW (78 mm), processors currently prefer a minimum size of 4.0 in. CW (102 mm). The abundance estimates reported in this document for legal-sized male snow crab combines both size groups (Table 7). The density (number/nmi²) of legal-sized male snow crab are listed by station in Appendix B5 and are separated into the large (> 4.0 in. CW) and medium (3.1-4.0 in. CW) size categories.

Legal-sized male snow crab were caught at 178 stations, throughout all Districts combined, resulting in an abundance estimate of 495.2 ± 134.8 million crab. Approximately 76% of these crab were east of 173°W in the ADF&G Eastern management district as compared to 42% in 2005 and 80% in 2006 (Table 8). These legal-sized male snow crab were discontinuously distributed from north of the Pribilof Islands to west of St. Matthew Island (Fig. 18).

The 2007 pre-recruit male snow crab abundance estimate of $1,158.6 \pm 437.9$ million crab increased 5% over the 2006 abundance estimate (Table 8). Sixty-four percent of these males were distributed east of 173°W in the ADF&G Eastern management district (Table 8 and Fig. 19).

The abundance estimates of all sex-specific size categories increased slightly in 2007 relative to 2006 with the exception of the small female category. The mode of male recruitment in 2006 was not replaced by new recruitment in 2007. Among legal-sized male crab, 15% were in molting or softshell condition, 68% were in new-hardshell condition indicating a recent molt, and 17% were oldshell and very oldshell condition (Fig. 20).

The large female snow crab abundance estimate of $1,244.4 \pm 581.2$ million crab showed a 19% increase compared to 2006 while the small female crab abundance estimate of 434.0 ± 284.7 million crab decreased 36%. Fifty-eight percent of the total abundance of small female crab and 61% of the total abundance of large female snow crab were caught east of 173°W in the ADF&G Eastern management district (Table 8 and Fig. 19). The female reproductive stock is evidenced by high frequencies of old shell and very old shell condition which is of concern in terms of expected reproductive output. Among sampled mature females, 46% were new-hardshells, of which virtually all carried new eggs, and 54% were oldshells and older, of which 82% carried new eggs. The remainder of the mature females had not produced a new clutch.

Hair Crab

In 2007, hair crab were caught at 59 total stations throughout all Districts combined, with hair crab occurring at six stations in the Pribilof District high-density section (Appendix B6). Historically, hair crab have been concentrated just north of the Alaska Peninsula and near the Pribilof Islands. In recent years, however, abundance of legal male hair crab north of 58°N latitude has been increasing (Fig. 21).

In this document, legal male hair crab are defined as > 3.25 in. CW (≥ 83 mm CL) which was specified in the previous Pribilof District fishery and female hair crab abundance estimate is presented for all sizes combined regardless of carapace width. In 2007, the density (number/nmi²) of large male hair crab caught at a station ranged from 78 to 467 resulting in an abundance estimate of 2.0 ± 0.8 million crab. Pre-recruit male hair crab abundance estimate increased 77% to 2.3 ± 1.4 million crab. The female hair crab abundance estimate of 1.3 ± 0.9 million crab decreased 66% compared to 2006 (Table 9). The majority of pre-recruit male and female hair crab > 2.6 in. CW were distributed north of 58°N (Fig. 22).

Since the early 1990s, this population has shown persistently declining trends in abundance. In 2007, the abundance estimates of all male size categories increased relative to 2006, while female abundance declined substantially. The abundance estimate for legal-sized male hair crab represents an 82% increase from last year and approximately 70% of the 20-year average of 3.3 million crab (Table 9 and Fig. 23). Size-frequencies of male hair crab indicate little recruitment to the stock, although the estimate of small male abundance increased by 77% relative to 2006 (Fig. 24). Seventy-one percent of males and 67% of females were new-hardshell crabs.

Changes in abundance estimates of hair crab are difficult to interpret due to patchy distribution, burying habits, in-shore distribution, and suspected variability in catchability between years. Further, changes in fishery practices and management over the time series decreases the usefulness of correlations between fishery and survey data (Fig. 23). Recruitment trends in this stock are unclear due to poor representation of small crabs in the survey and to the extremely poor precision of the abundance estimates.

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Table 1. -- Special projects conducted on the 2007 National Marine Fisheries Service eastern Bering Sea shelf survey.

Project Title	Principle Investigator	Agency
Weight-length data for commercial crab	Liz Chilton	AFSC-RACE-SAP ¹
Reproductive potential of snow and Tanner crabs in the eastern Bering Sea	Laura Slater and Joel Webb	ADFG ²
Developing biological reference points for crustacean fisheries: Reproductive potential of Bristol Bay red king crab and eastern Bering Sea snow crab	Kathy Swiney	AFSC-RACE-SAP ¹
Assessment of Bristol Bay red king crab resource for future management action	Steve Hughes and Scott Goodman	BSFRF ³

¹ Alaska Fisheries Science Center, Resource Assessment and Conservation Engineering Division, Shellfish Assessment Program, Kodiak, Alaska.

² State of Alaska, Department of Fish and Game.

³ Bering Sea Fisheries Research Foundation.

Table 2. --Definition of carapace size classes for crab species in the eastern Bering Sea. Carapace length (CL) is measured for *Paralithodes* species and *Erimacrus isenbeckii*, while carapace width (CW) is measured for *Chionoecetes* species.

	Small	Pre-recruit	Legal male or Large female
<i>Paralithodes camtschaticus</i>			
Bristol Bay District			
males	<110 mm	110-134 mm	≥135 mm CL or ≥6.5 in. CW
females	<90 mm		≥90 mm
Pribilof District			
males	<110 mm	110-134 mm	≥135 mm CL or ≥6.5 in. CW
females	<90 mm		≥90 mm
<i>P. platypus</i>			
Pribilof District			
males	<110 mm	110-134 mm	≥135 mm CL or ≥6.5 in. CW
females	<90 mm		≥90 mm
St Matthew Island			
males	<105 mm	105-119 mm	≥120 mm CL or ≥5.5 in. CW
females	< 80 mm		≥80 mm
<i>Chionoecetes bairdi</i>			
males	<110 mm	110-137 mm	≥138 mm or ≥5.5 in. CW
females	<85 mm		≥85 mm
<i>C. opilio</i>			
males	<78 mm		≥78 mm ¹ or ≥3.1 in. CW
females	<50 mm		≥50 mm
<i>Erimacrus isenbeckii</i>			
males	<83 mm		≥83 mm ² CL or >3.25 in. CW
females			>2.6 in. CW

¹ The legal minimum size limit for *C. opilio* is 3.1 in. CW (78 mm), although processors currently prefer a minimum size of 4.0 in. CW (102 mm).

² Legal-sized male crab for *E. isenbeckii* are defined as those larger than a minimum size of 3.25 inches (≥83 mm CW) that has been specified as a condition of Alaska Department of Fish and Game permits in past years.

Table 3. --Historic annual total abundance estimates (millions of crab) for red king crab (*Paralithodes camtschaticus*) from National Marine Fisheries Service eastern Bering Sea trawl surveys. Bristol Bay and Pribilof Districts are combined except where noted with a (B) or (P).

Carapace Length (mm) Width (in)	Males			Total	Females		Total	Grand Total
	Small	Pre-recruit	Legal		Small	Large		
	<110 <5.2	110-134 5.2-6.4	≥135 ≥6.5		<90 <4.3	≥90 ≥4.3		
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	3.7	12.9	26.6	53.3
1997	28.1	9.8	10.6	48.5	1.8	26.5	28.3	76.8
1998(B)	11.1	16.7	7.5	35.3	5.6	35.8	41.4	76.7
1999(B)	8.4	7.4	11.5	27.3	6.4	15.1	21.6	48.9
2000(B)	11.4	7.3	8.9	27.6	5.7	17.4	23.1	50.7
2001(B)	10.2	4.4	5.3	19.9	3.9	21.8	25.7	45.5
2002(B)	20.7	9.9	9.5	40.0	18.9	19.4	38.3	78.3
2003(B)	17.9	9.0	12.3	39.3	10.8	34.0	44.8	84.1
2004(B)	32.3	10.3	12.8	55.4	18.4	31.7	50.1	105.5
2005(B)	29.2	10.4	10.0	49.6	19.6	42.6	62.2	111.8
2006(B)	19.5	7.4	12.5	39.5	13.5	29.7	43.2	82.7
2007(B)	15.0	10.2	13.3	38.5	3.8	35.4	39.2	77.7
<u>Limits</u> *								
Lower	10.8	6.9	8.0	29.0	2.3	26.6	30.0	59.0
Upper	19.2	13.5	18.6	48.0	5.2	44.2	48.3	96.3
±%	28	33	40	25	25	23	24	
1998(P)	0.2	0.6	0.4	1.2	0.0	1.0	1.1	2.2
1999(P)	6.5	0.6	1.1	8.2	6.3	3.1	9.4	17.6
2000(P)	0.0	0.4	1.2	1.5	0.0	0.6	0.6	2.2
2001(P)	1.4	2.5	1.8	5.6	0.0	4.0	4.0	9.6
2002(P)	0.0	0.0	1.8	1.8	0.0	0.4	0.4	2.3
2003(P)	0.0	0.1	1.3	1.4	0.0	1.1	1.2	2.6
2004(P)	1.4	0.0	0.8	2.2	1.1	0.6	1.6	3.8
2005(P)	0.0	0.0	0.3	0.3	0.0	1.4	1.4	1.7
2006(P)	0.0	0.3	1.3	1.5	0.0	0.9	0.9	2.5
2007(P)	0.2	0.2	1.6	2.0	0.0	1.7	1.7	3.7

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

Table 4. --Historic annual total abundance estimates (millions of crab) for blue king crab (*Paralithodes platypus*) in the Pribilof District from National Marine Fisheries Service eastern Bering Sea trawl surveys.

Carapace Length (mm) Width (in)	<u>Pribilof District</u>							Grand Total
	<u>Males</u>			Total	<u>Females</u>		Total	
	<u>Small</u>	<u>Pre-recruit</u>	<u>Legal</u>		<u>Small</u>	<u>Large</u>		
<110 <5.2	110-134 5.2-6.4	≥135 ≥6.5		<90 <4.3	≥90 ≥4.3			
1987	0.6	0.1	0.7	1.4	0.4	0.6	1.0	2.4
1988	1.1	0.0	0.2	1.3	0.8	0.4	1.2	2.5
1989	3.2	0.1	0.2	3.5	2.3	1.3	3.6	7.1
1990	1.8	1.2	0.4	3.5	1.8	2.7	4.5	8.0
1991	1.3	1.0	1.0	3.4	0.6	2.8	3.4	6.7
1992	1.6	1.2	1.0	3.8	1.3	2.1	3.4	7.1
1993	1.0	0.8	1.0	2.8	0.3	2.2	2.5	5.3
1994	0.3	0.5	0.8	1.6	0.1	4.3	4.3	5.9
1995	0.8	1.2	2.0	3.9	0.4	4.0	4.5	8.4
1996	0.3	0.7	1.2	2.3	0.1	4.6	4.7	7.0
1997	0.3	0.4	0.8	1.5	0.1	2.5	2.6	4.1
1998	0.8	0.4	0.9	2.1	0.3	2.1	2.3	4.4
1999	0.1	0.2	0.5	0.8	0.0	2.5	2.5	3.3
2000	0.1	0.2	0.5	0.9	0.0	1.4	1.4	2.3
2001	0.0	0.1	0.4	0.6	0.0	1.6	1.6	2.2
2002	0.0	0.0	0.2	0.2	0.0	1.2	1.3	1.5
2003	0.0	0.0	0.2	0.3	0.0	1.1	1.2	1.4
2004	0.1	0.1	0.0	0.2	0.1	0.1	0.2	0.3
2005	2.1	0.0	0.1	2.1	2.3	0.3	2.6	4.8
2006	0.1	0.0	0.0	0.2	0.1	0.5	0.5	0.7
2007	0.2	0.1	0.1	0.4	0.1	0.2	0.3	0.7
<u>Limits</u> *								
Lower	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Upper	0.5	0.2	0.1	0.8	0.1	0.5	0.6	1.5
±%	137	143	148	129	147	132	118	124

* Mean ± 2 standard errors for most recent year.

Table 5. --Historic annual total abundance estimates (millions of crab) for blue king crab (*Paralithodes platypus*) in the St. Matthew Island Section of the Northern District from National Marine Fisheries Service eastern Bering Sea trawl surveys.

Carapace Length (mm) Width (in)	<u>Northern District</u>							Grand Total
	<u>Males</u>			<u>Females</u>				
	<u>Small</u>	<u>Pre-recruit</u>	<u>Legal</u>	<u>Small</u>	<u>Large</u>	<u>Total</u>		
<105 <4.3	105-119 4.3-5.4	≥120 ≥5.5	Total	<80 <3.8	≥80 ≥3.8	Total		
1987	1.1	0.7	0.7	2.5	0.5	0.2	0.7	3.2
1988	1.4	0.7	0.8	2.9	0.9	0.8	1.7	4.6
1989	4.8	1.0	1.5	7.3	1.6	1.7	3.3	10.5
1990	1.4	0.8	1.7	3.9	0.4	0.2	0.6	4.5
1991	2.9	1.5	2.2	6.6	0.8	0.7	1.5	8.1
1992	2.3	1.5	2.3	6.0	0.9	0.4	1.3	7.4
1993	4.6	2.0	3.6	10.2	1.4	3.0	4.4	14.6
1994	1.5	1.4	2.5	5.4	0.1	0.4	0.5	5.9
1995	1.9	1.1	1.9	4.9	0.6	0.1 ¹	0.7	5.6
1996	2.6	2.0	3.4	8.0	1.1	0.9	2.0	10.0
1997	2.5	2.3	4.1	8.8	0.6	0.9	1.5	10.3
1998	2.4	1.8	3.2	7.4	0.6	0.5	1.2	8.6
1999	0.6	0.2	0.7	1.5	0.3	0.0 ¹	0.3	1.8
2000	0.6	0.3	0.8	1.7	0.1	0.1	0.2	1.9
2001	0.8	0.6	1.1	2.5	0.3	0.2	0.5	2.9
2002	0.2	0.2	0.7	1.1	0.0	0.1 ¹	0.1	1.2
2003	1.4	0.3	0.6	2.3	0.3	0.8	1.0	3.3
2004	1.0	0.2	0.7	1.9	0.5	0.2	0.7	2.6
2005	0.9	0.3	0.6	1.8	0.2	0.2	0.4	2.2
2006	2.0	0.7 [^]	1.4	4.2	0.1	0.3	0.4	4.5
2007	5.0	2.3	1.4	8.7	0.9	0.2	1.0	9.7
<u>Limits</u> ²								
Lower	0.7	0.4	0.5	2.0	0.0	0.0	0.0	1.9
Upper	9.4	4.2	2.2	15.3	1.8	0.4	2.1	17.5
±%	87	82	61	77	107	106	105	80

¹ These estimates have low precision since few crabs were caught.

² Mean ± 2 standard errors for most recent year.

Table 6. --Historic annual total abundance estimates (millions of crab) for Tanner crab (*Chionoecetes bairdi*) from National Marine Fisheries Service eastern Bering Sea trawl surveys. Data prior to 1989 for Bristol Bay and Pribilof Districts, 1989 to 2004 for Alaska Department of Fish and Game Eastern management district (east of 173° W), and 2005 to present for all districts combined.

Carapace Width (mm) Width (in)	<u>Males</u>			Total	<u>Females</u>			Grand Total
	<u>Small</u>	<u>Pre-recruit</u>	<u>Legal</u>		<u>Small</u>	<u>Large</u>	Total	
1987	229.9	22.0	5.9	257.8	192.4	35.5	227.8	485.6
1988	287.3	62.8	14.3	364.4	184.8	81.0	265.8	630.2
1989	403.0	110.9	33.6	547.5	338.6	63.8	402.4	949.9
1990	286.1	87.4	45.1	418.6	266.5	97.4	363.9	782.5
1991	267.2	115.8	35.1	418.1	232.1	116.8	348.9	767.0
1992	121.0	112.7	41.8	275.5	98.9	63.9	162.8	438.3
1993	76.6	70.5	20.6	167.7	57.6	29.6	87.2	254.9
1994	47.9	43.2	15.4	106.6	57.9	27.5	85.4	192.0
1995	40.4	35.7	10.0	86.1	66.6	37.2	103.8	189.9
1996	52.6	26.7	9.2	88.5	59.3	27.7	87.1	175.6
1997	66.5	10.0	3.4	80.0	71.1	10.1	81.2	161.2
1998	75.3	12.3	2.2	89.7	62.4	6.6	69.0	158.7
1999	202.4	15.1	2.1	219.5	128.7	17.2	145.9	365.4
2000	104.1	18.2	5.0	127.3	80.6	13.7	94.3	221.6
2001	290.1	17.7	6.5	314.3	284.0	13.5	297.5	611.7
2002	204.6	15.2	7.0	226.8	200.4	10.5	210.9	437.6
2003	217.5	24.7	7.4	249.6	184.1	15.1	199.2	448.8
2004	208.0	31.7	5.4	245.0	172.1	10.9	183.0	428.0
2005	325.9	52.0	11.4	389.3	338.5	29.0	367.6	756.9
2006	427.3	73.3	14.6	515.2	307.7	43.4	351.1	866.3
2007	416.3	92.5	12.1	520.9	205.4	40.8	246.2	767.0
<u>Limits*</u>								
Lower	286.0	51.6	5.3	370.9	146.8	22.7	182.4	555.3
Upper	546.6	133.4	18.8	670.9	263.9	58.9	309.9	980.8
±%	31	44	56	29	29	44	26	28

* Mean ± 2 standard errors for most recent year.

Table 7. --Historic annual total abundance estimates (millions of crab) for eastern Bering Sea snow crab (*Chionoecetes opilio*) from National Marine Fisheries Service trawl surveys, all districts combined. The Northern stations were not sampled in 2007.

Carapace Width (mm) Width (in)	<u>Males</u>		Total	<u>Females</u>		Total	Grand Total
	<u>Pre-recruit</u>	<u>Legal</u>		<u>Small</u>	<u>Large</u>		
	<78 <3.1	≥78 ≥3.1		<50 <2.0	≥50 ≥2.0		
1987	4070.5	419.6	4620.0	2903.0	2795.0	5698.0	10318.0
1988	2996.3	641.9	3638.2	1235.3	2322.7	3558.0	7196.2
1989	2823.7	1009.5	3833.1	1922.8	3790.7	5713.5	9546.6
1990	1834.5	1446.2	3280.7	1463.3	2798.1	4261.4	7542.1
1991	3277.4	1177.9	4455.3	3289.0	3575.0	6863.9	11319.2
1992	2827.0	587.8	3414.8	2433.9	1914.3	4348.2	7763.0
1993	5345.9	385.6	5731.5	3989.8	1982.6	5972.4	11703.9
1994	4027.6	326.5	4354.0	3417.6	1674.3	5091.8	9445.8
1995	3607.7	574.8	4155.5	2090.3	2409.4	4499.7	8655.2
1996	1815.2	1056.5	2871.7	1189.0	1364.2	2553.2	5424.9
1997	800.5	1031.4	1831.9	955.6	1428.3	2383.9	4215.8
1998	666.3	417.0	1283.3	813.5	1174.4	1988.0	3271.3
1999	396.8	134.0	620.8	320.7	484.3	805.0	1425.7
2000	916.5	210.3	1126.9	657.1	1511.7	2168.8	3295.7
2001	1550.2	367.0	1917.2	480.9	1564.6	2045.5	3962.7
2002	496.1	330.6	826.7	180.5	510.5	691.0	1517.7
2003	1145.2	231.7	1376.9	640.0	614.0	1253.9	2630.8
2004	1648.4	175.1	1823.5	1869.2	806.4	2675.5	4499.0
2005	1911.2	356.2	2267.4	1381.5	1630.8	3012.3	5279.7
2006	1106.9	432.3	1539.2	669.8	1045.5	1715.3	3254.5
2007	1158.6	495.2	1653.8	434.0	1244.4	1678.4	3332.0
East(%) ¹	63.7	76.4	67.4	57.9	61.2	60.4	61.9
<u>Limits</u> ²							
Lower	720.7	360.4	1167.6	149.3	663.2	835.8	2003.4
Upper	1596.6	629.9	2140.0	718.8	1825.5	2521.0	4661.0
±%	38	27	29	66	47	50	40
<u>Northern stations</u>							
2001	432.4	3.1	435.5	165.5	64.2	229.8	665.3
2004	2922.4	9.1	2931.5	896.2	152.5	1048.8	3980.3
2005	1771.7	12.6	1784.2	760.5	268.1	1028.6	2812.8
2006	950.6	4.0	954.5	676.6	137.5	814.2	1768.7

¹ Percentage of size group in Eastern District (east of 173° W).

² Mean ± 2 standard errors for most recent year.

Table 8. -- Historic annual total abundance estimates (millions of crab) for hair crab (*Erimacrus isenbeckii*) from National Marine Fisheries Service trawl surveys, all districts combined.

Carapace Length (mm) Width (in)	<u>Males</u>			<u>Females</u>	Grand Total
	<u>Pre-recruit</u>	<u>Legal</u>	Total	Total	
	<83	≥83			
	<3.25	≥3.25			
1987	1.6	1.3	2.9	0.9	3.8
1988	3.0	0.9	3.9	0.9	4.7
1989	11.4	1.5	12.8	0.7	13.5
1990	13.0	1.1	14.1	0.9	15.0
1991	4.5	1.3	5.7	1.2	6.9
1992	2.5	1.2	3.6	0.5	4.2
1993	9.1	2.6	11.8	1.5	13.3
1994	4.7	3.6	8.2	1.3	9.5
1995	4.6	6.5	11.1	0.7	11.8
1996	3.6	4.9	8.4	1.1	9.5
1997	1.6	4.4	6.0	0.3	6.3
1998	0.5	3.0	3.5	1.4	4.9
1999	1.5	2.4	3.9	2.0	5.8
2000	0.5	4.2	4.7	1.3	6.0
2001	0.5	1.8	2.3	2.2	4.5
2002	0.4	2.1	2.5	0.6	3.1
2003	1.3	1.0	2.3	0.5	2.8
2004	0.7	0.8	1.5	0.4	1.8
2005	1.1	0.3	1.3	0.9	2.2
2006	1.3	1.1	2.3	3.8	6.1
2007	2.3	2.0	4.4	1.3	5.7
<u>Limits</u> *					
Lower	0.9	1.2	2.6	0.4	3.0
Upper	3.8	2.8	6.1	2.2	8.3
±%	61	40	39	72	47

* Mean ± 2 standard errors for most recent year.

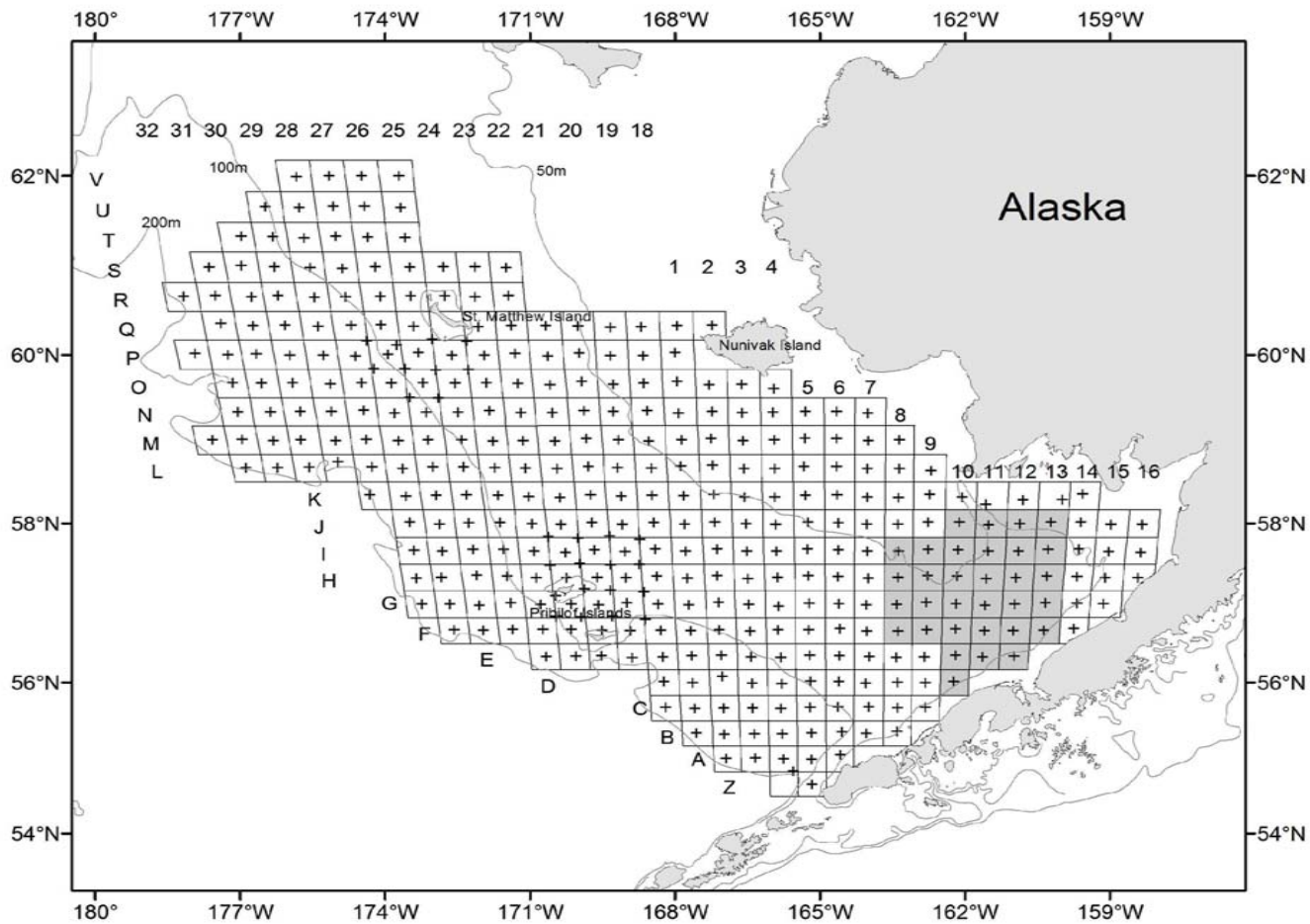


Figure 1. --National Marine Fisheries Service eastern Bering Sea crab survey area in 2007. Shaded area depicts Bristol Bay stations resurveyed by FV *Aldebaran* on 23-30 July 2007.

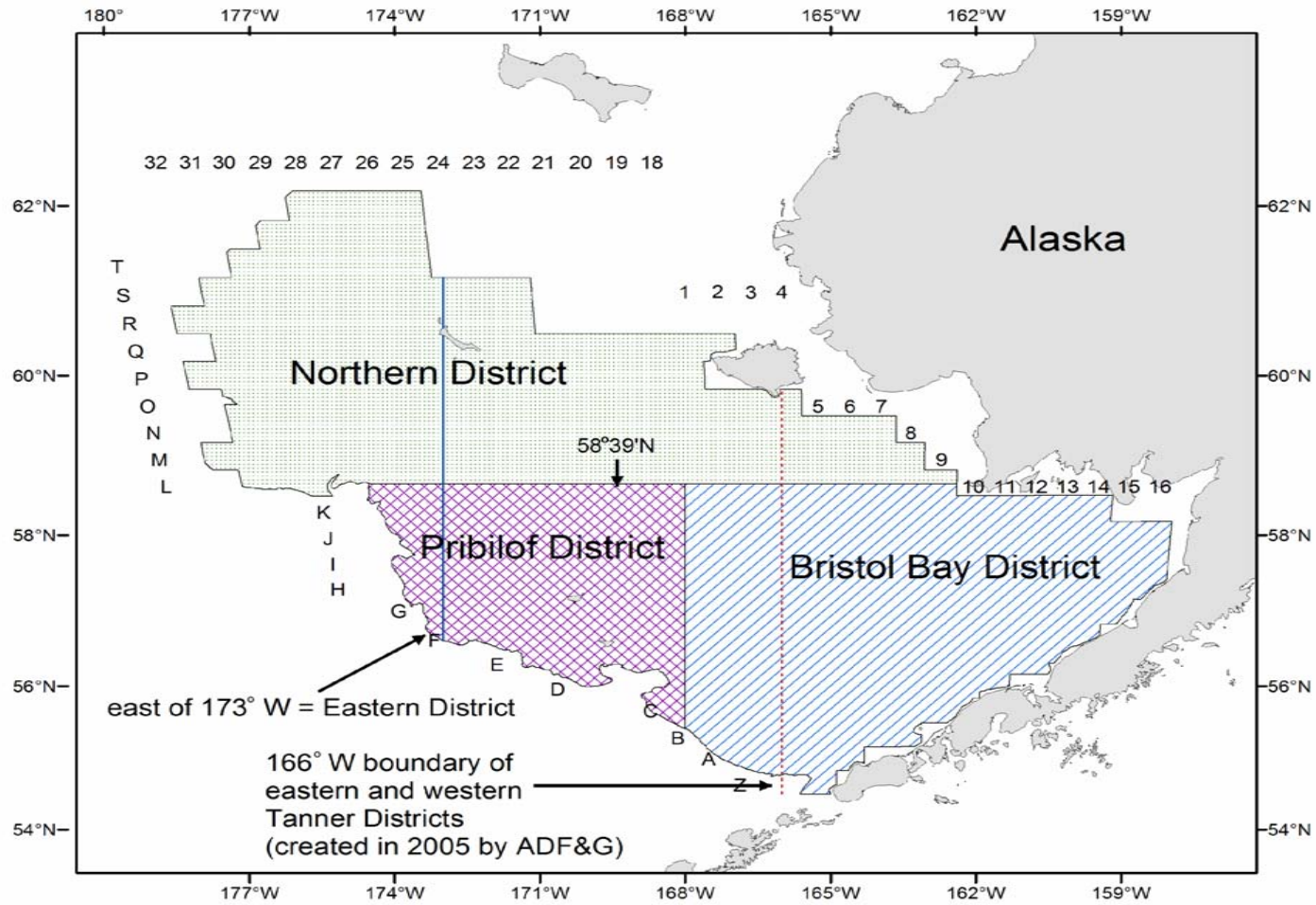


Figure 2. --Alaska Department of Fish and Game commercial crab management units.

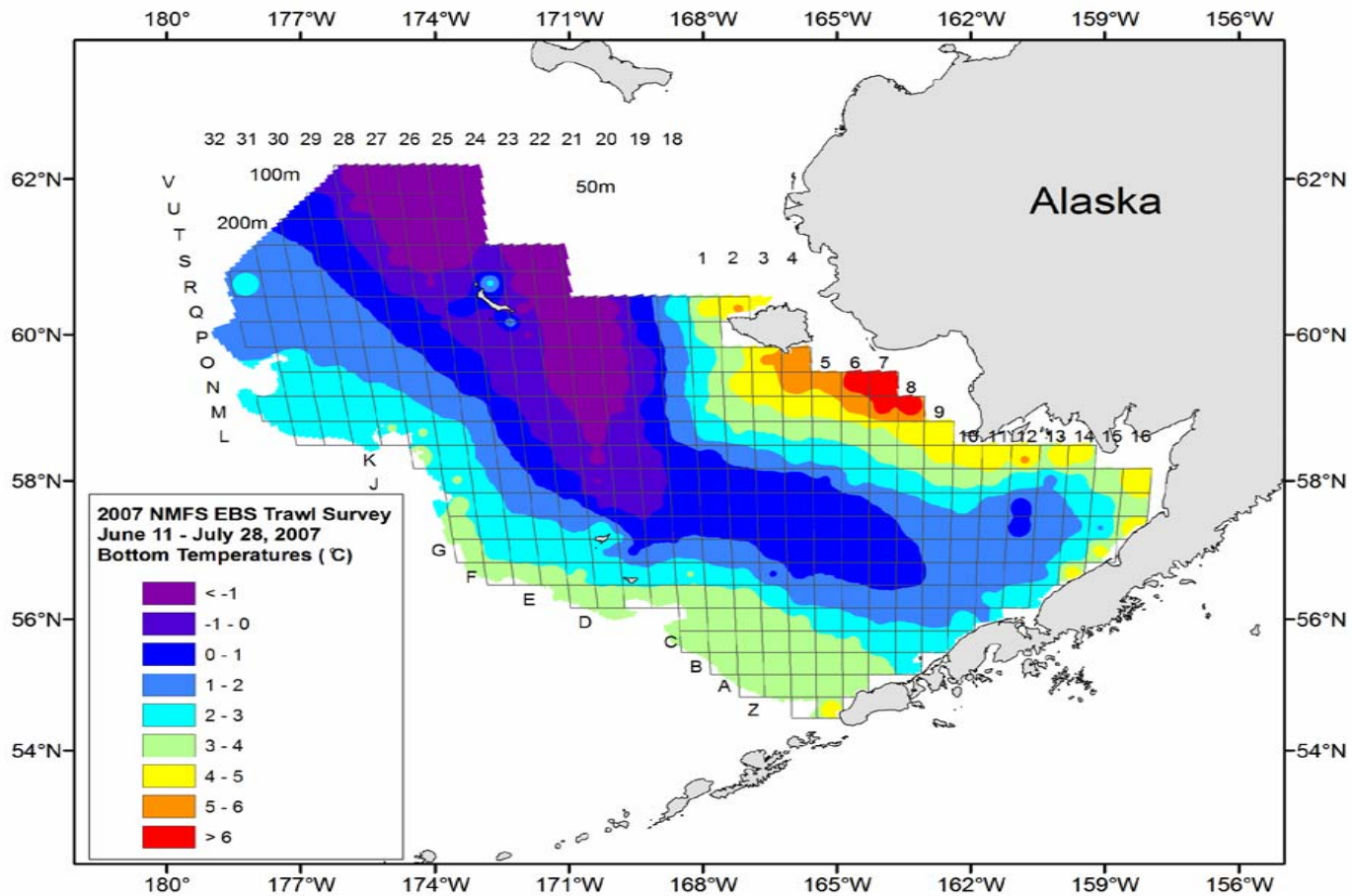


Figure 3. --Bottom temperatures (°C) collected at stations from the National Marine Fisheries Service eastern Bering Sea trawl survey, beginning 11 June 2007 in Bristol Bay. Vessels alternated columns while moving west to end on 28 July 2007 at L29.

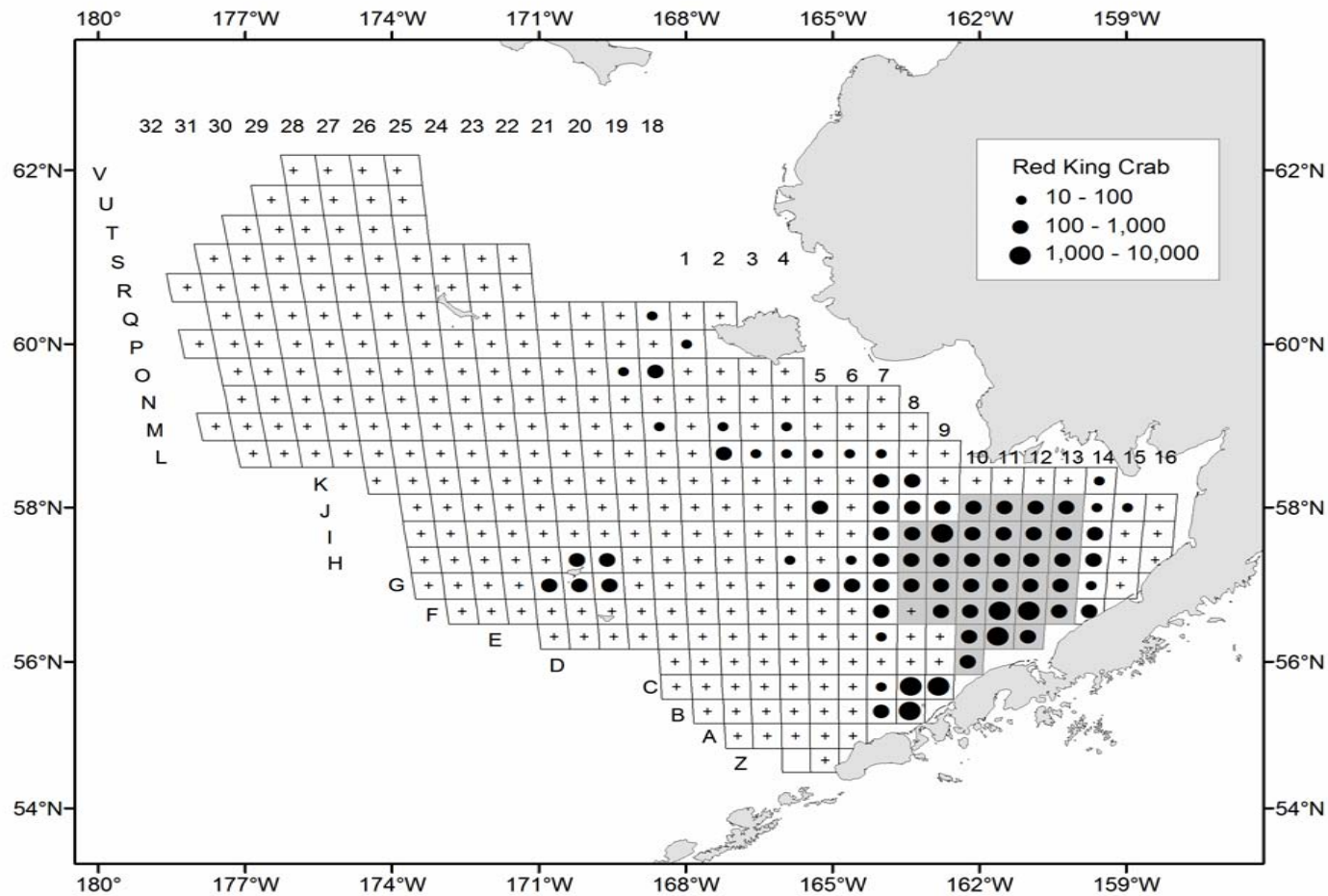


Figure 4. --Number of legal-sized male red king crab (*Paralithodes camtschaticus*) (> 6.5 in. carapace width) caught per square nautical mile in 2007. Shaded area depicts resurveyed stations which were included in abundance estimates by averaging the original data collected in June with data collected in 23-30 July at the 32 resampled stations.

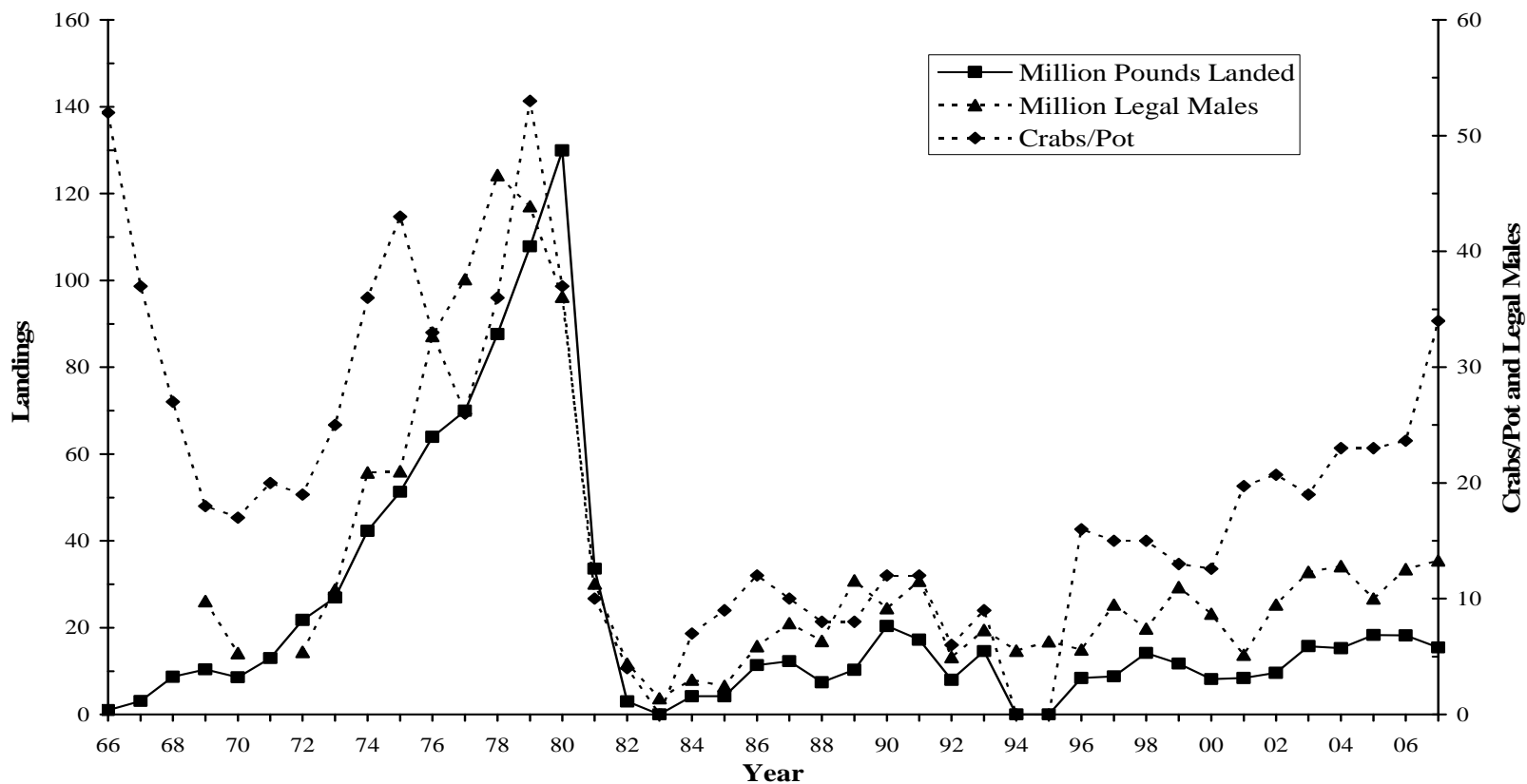


Figure 5. --U.S. landings in millions of pounds, CPUE as crabs/pot-lift, and abundance of legal-sized red king crab (*Paralithodes camtschaticus*) in millions in Bristol Bay estimated from National Marine Fisheries Service eastern Bering Sea trawl surveys(abundance data includes the Pribilof District prior to 1983) (F. Bowers, ADF&G Dutch Harbor, Alaska, pers. comm.).

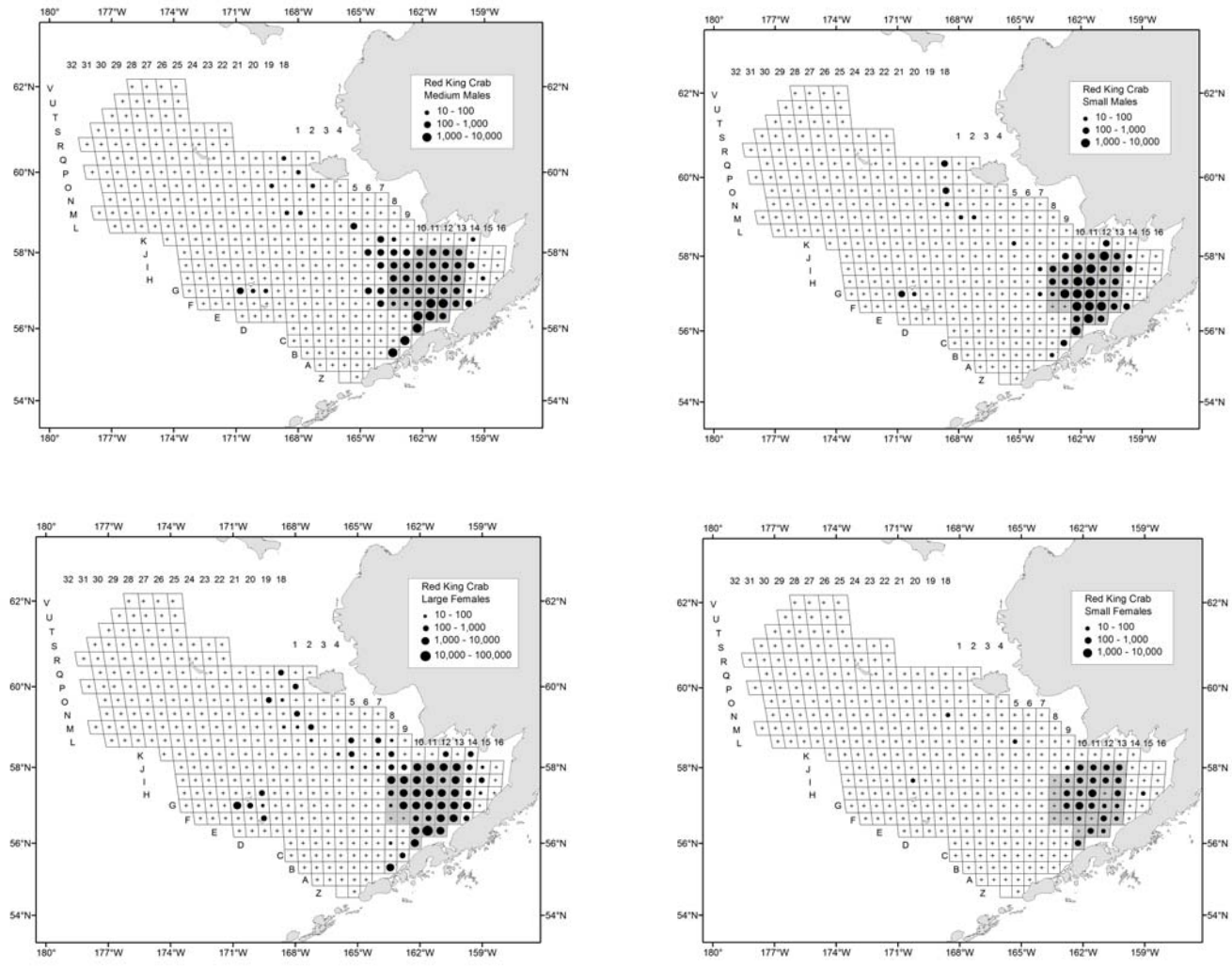


Figure 6. --Number of small and pre-recruit (medium) male red king crab (*Paralithodes camtschaticus*) (< 5.2 and 5.2-6.4 in. carapace width) and small and large female red king crab (*P. camtschaticus*) (<4.3 or > 4.3 in. CW) caught per square nautical mile in 2007. Shaded area depicts resurveyed stations which were included in abundance estimates by averaging the original data collected in June with data collected in 23-30 July at the 32 resampled stations.

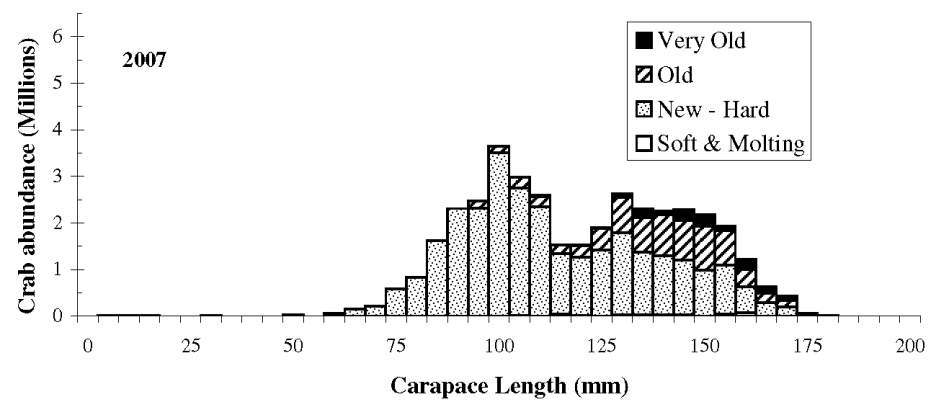
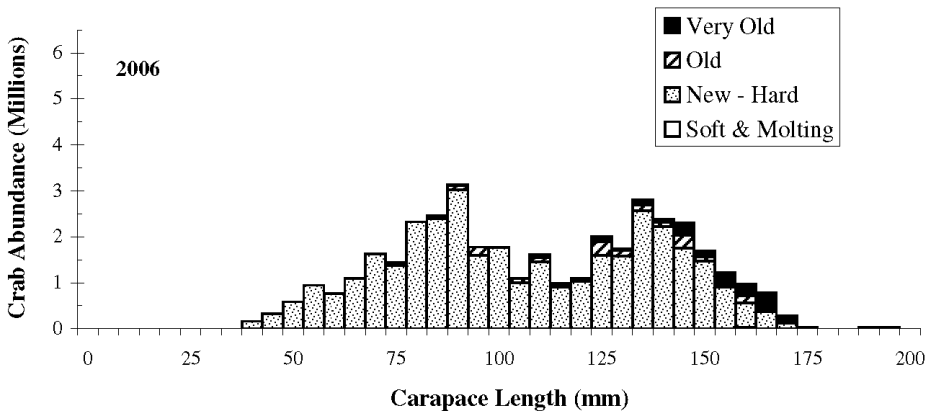
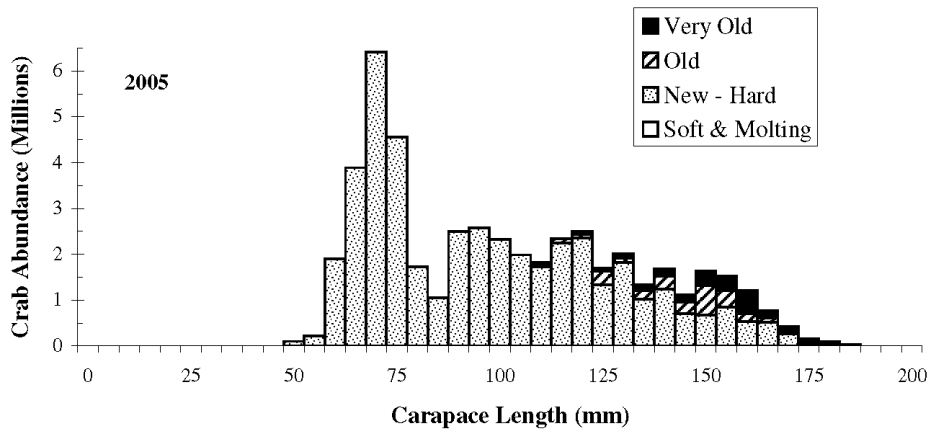


Figure 7. --Size-frequency of Bristol Bay District male red king crab (*Paralithodes camtschaticus*) by 5 mm length classes, 2005-2007.

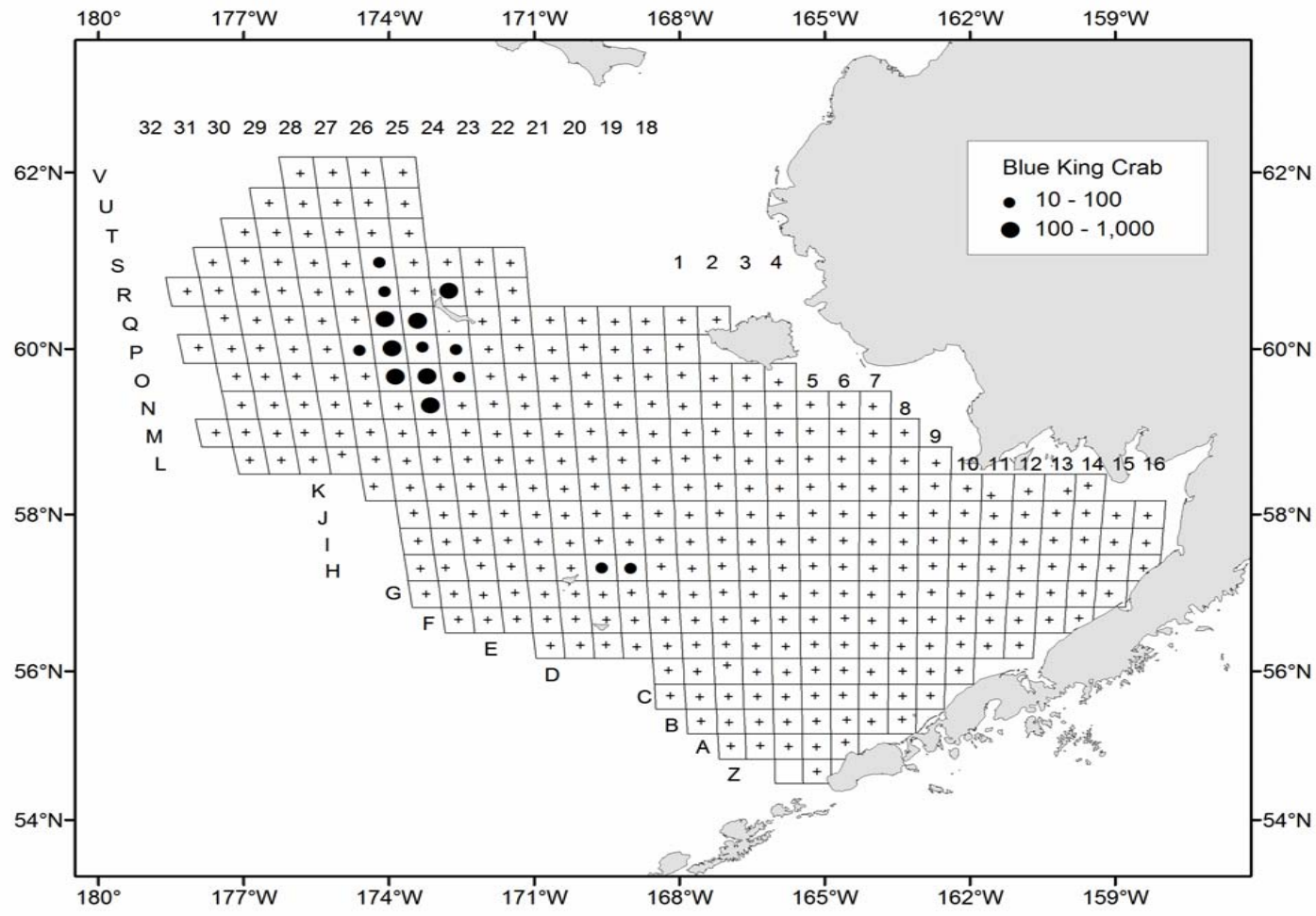


Figure 8. --Number of legal-sized male blue king crab (*Paralithodes platypus*) (> 6.5 in. carapace width in Pribilof District and > 5.5 in. carapace width in the Northern District), caught per square nautical mile in 2007.

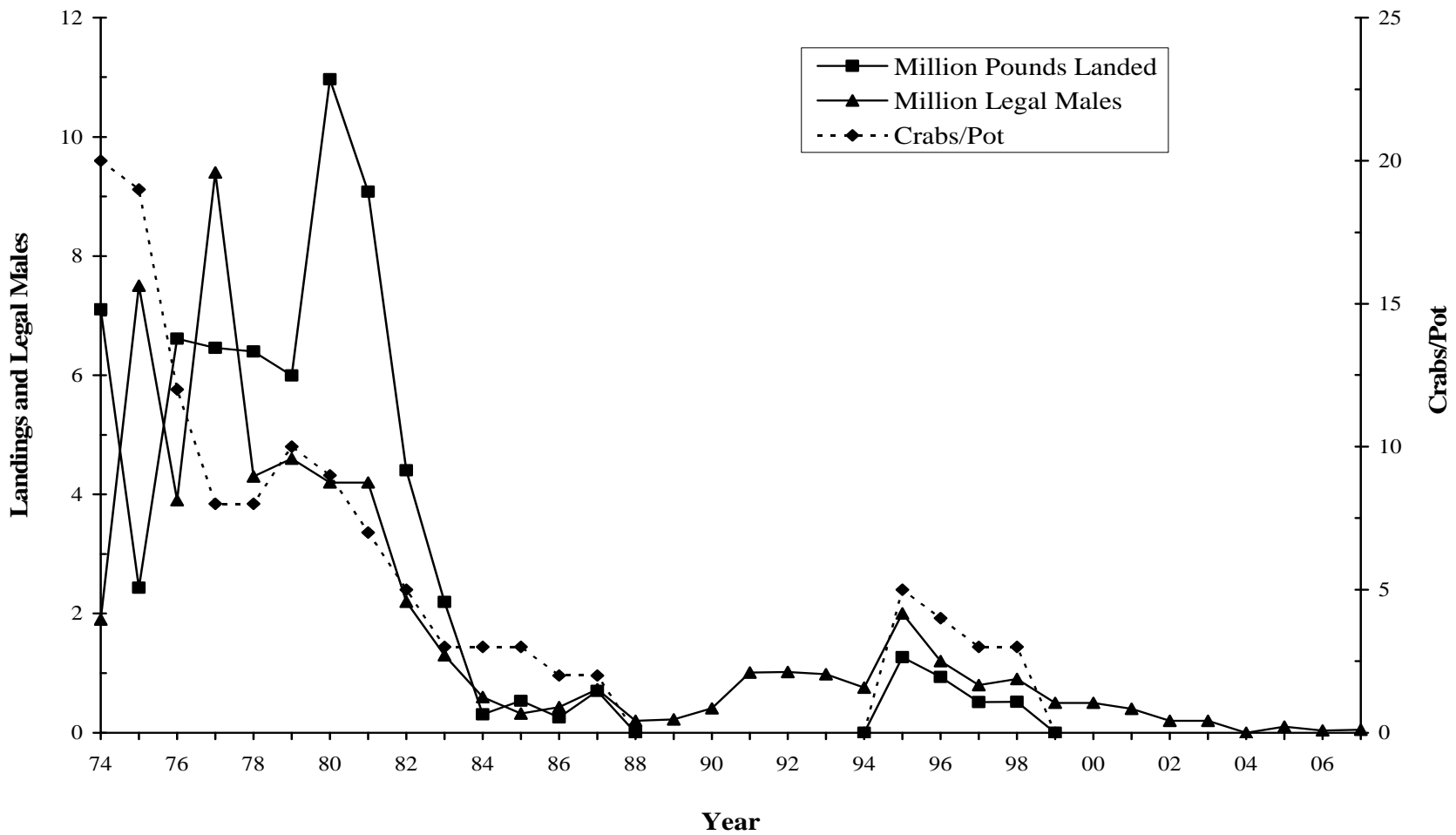


Figure 9. --U.S. landings in millions of pounds, CPUE as crabs/pot-lift, and abundance of legal-sized blue king crab (*Paralithodes platypus*) in millions in the Pribilof District estimated from National Marine Fisheries Service eastern Bering Sea trawl surveys (F. Bowers, ADF&G Dutch Harbor, Alaska, pers. comm.).

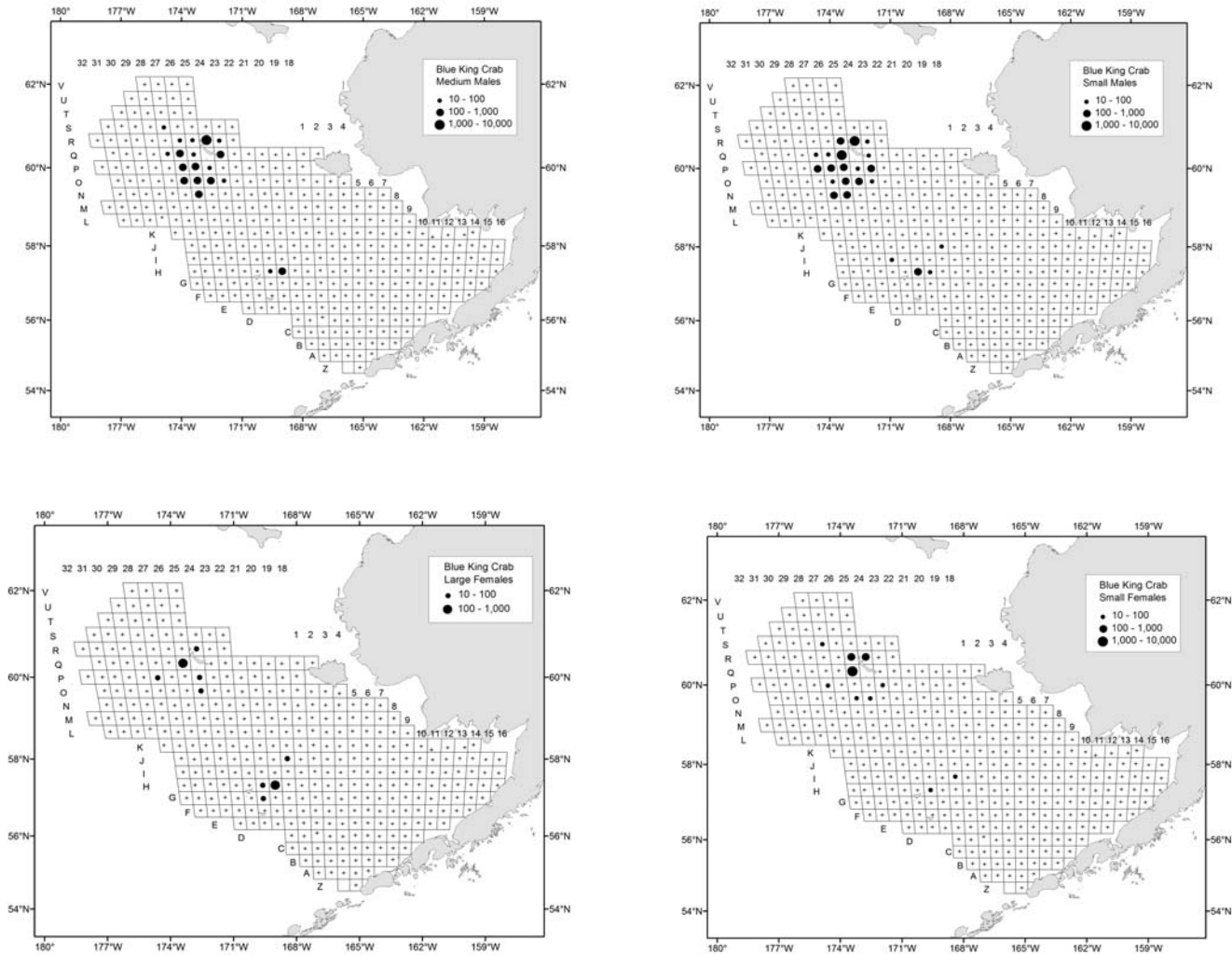


Figure 10. --Number of small and pre-recruit (medium) male blue king crab (*Paralithodes platypus*) (< 5.2 and 5.2-6.4 in. carapace width for Pribilof District and < 4.3 and 4.3-5.4 in. CW for Northern District) and small and large female red king crab (*P. platypus*) (< 4.3 or \geq 4.3 in. CW in Pribilof District and < 3.8 or \geq 3.8 in. CW Northern District) caught per square nautical mile in 2007.

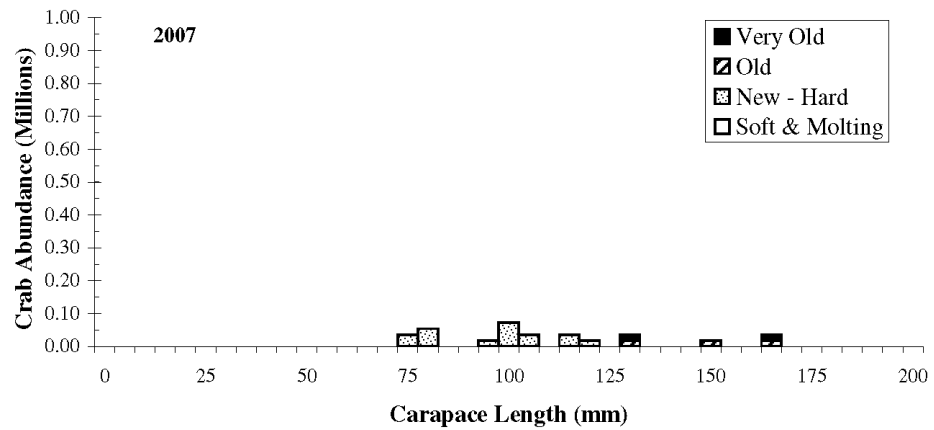
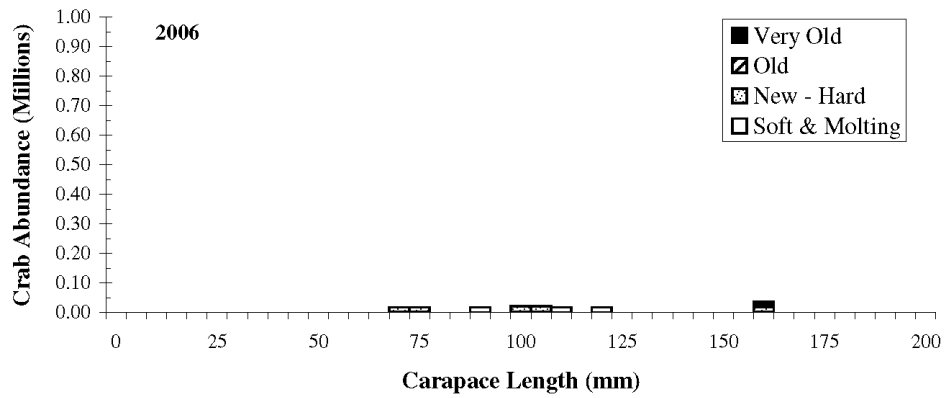
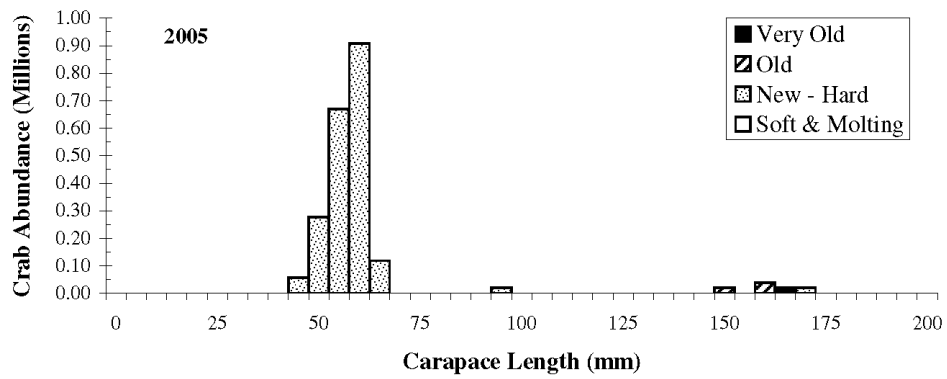


Figure 11. --Size-frequency of Pribilof District male blue king crab (*Paralithodes platypus*) by 5 mm length classes, 2005-2007.

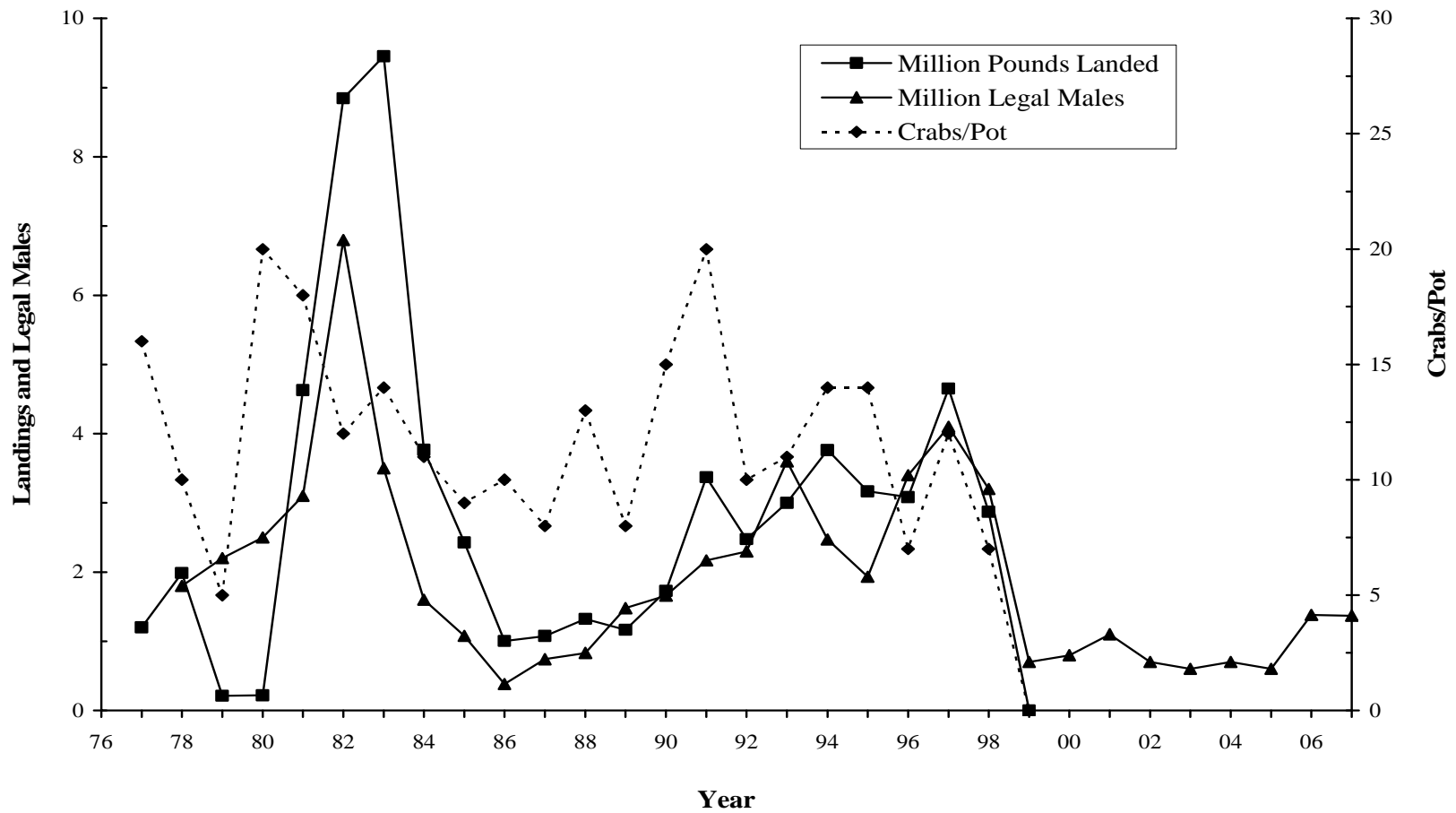


Figure 12. --U.S. landings in millions of pounds, CPUE as crabs/pot-lift, and abundance of legal-sized male blue king crab (*Paralithodes platypus*) in the St. Matthew Island Section of the Northern District estimated from National Marine Fisheries Service eastern Bering Sea trawl surveys (F. Bowers, ADF&G Dutch Harbor, Alaska, pers. comm.).

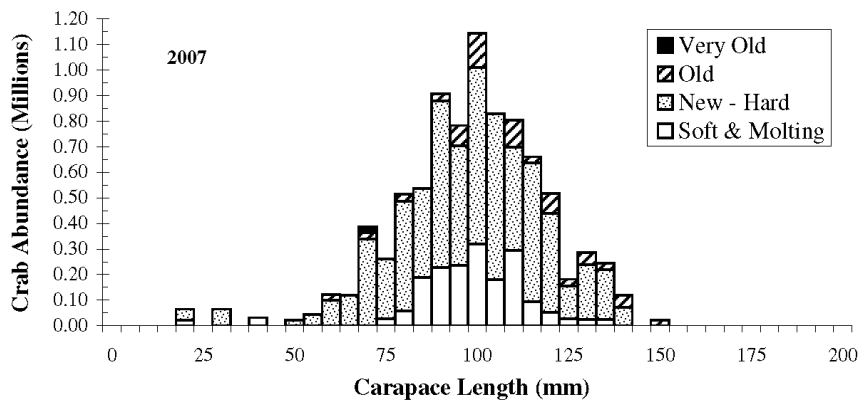
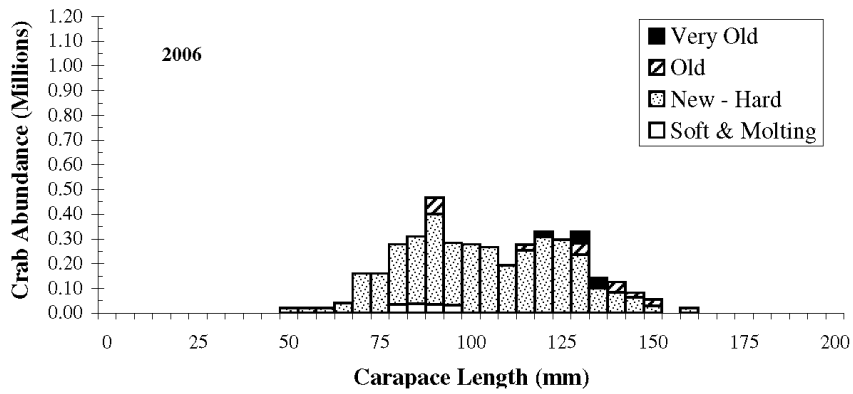
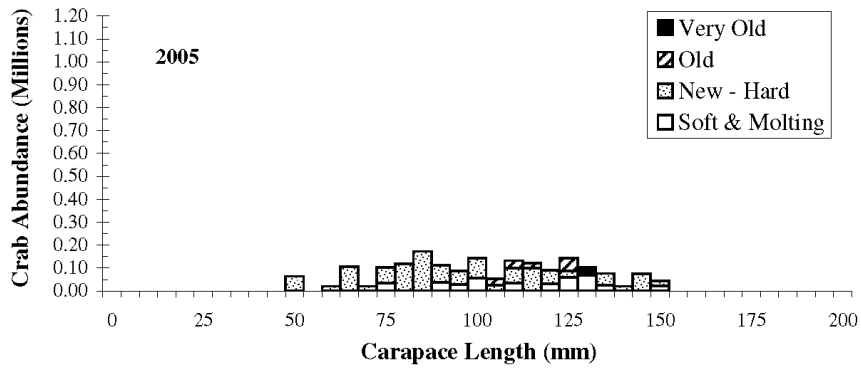


Figure 13. --Size-frequency of the St. Matthew Island Section in the Northern District male blue king crab (*Paralithodes platypus*) by 5 mm length classes, 2005-2007.

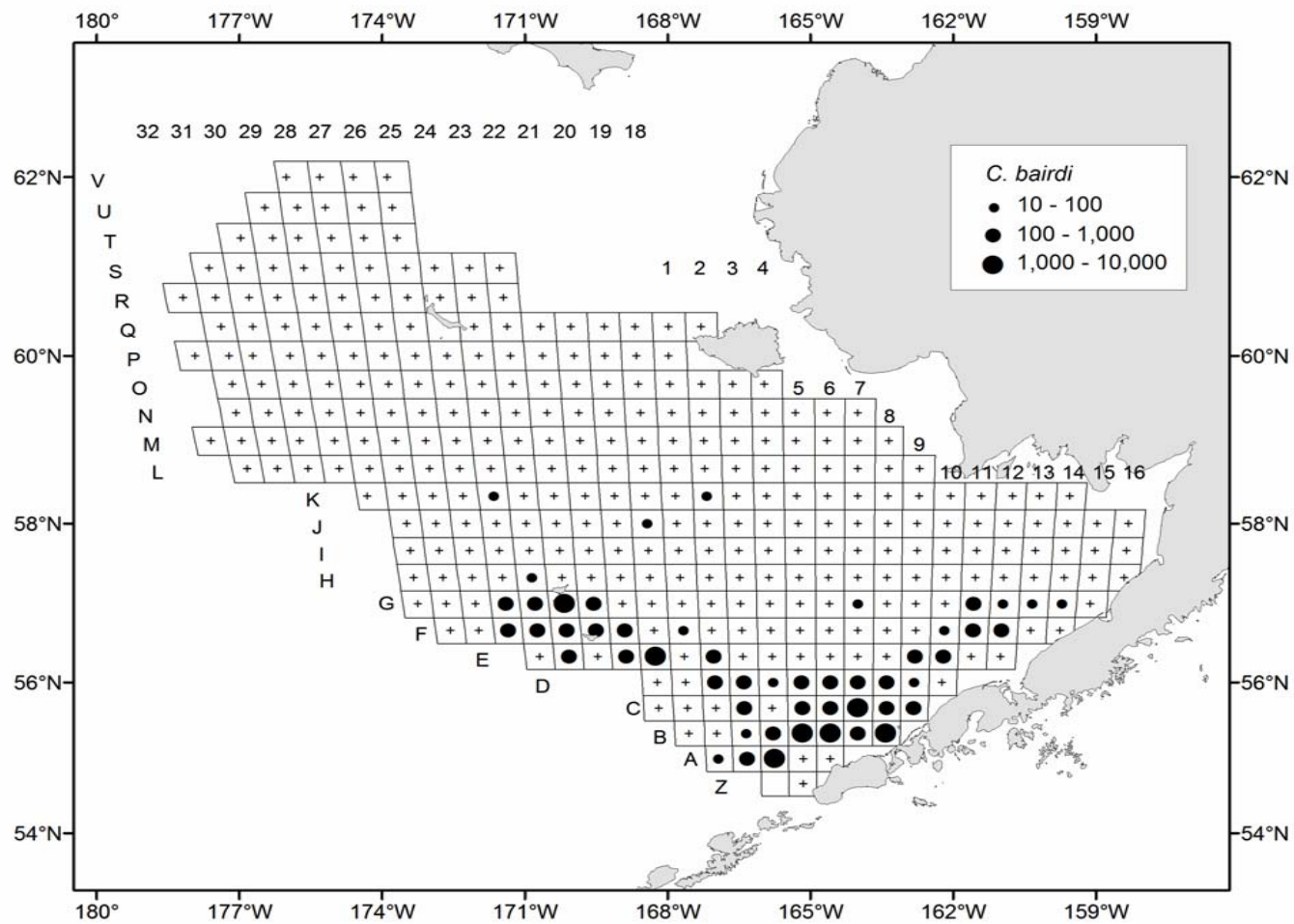


Figure 14. --Number of legal-sized male Tanner crab (*Chionoecetes bairdi*) ≥ 5.5 inches carapace width caught per square nautical mile in 2007.

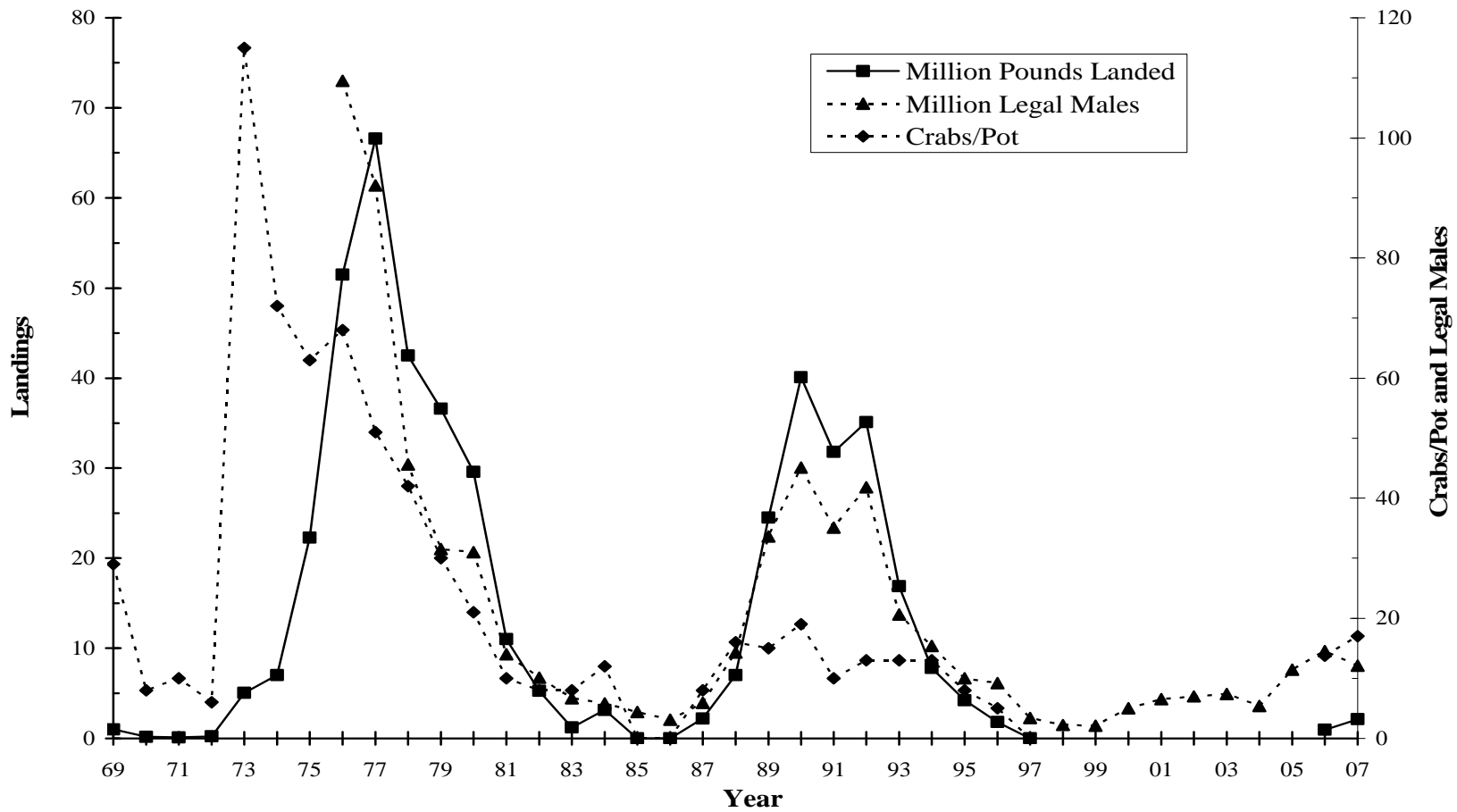


Figure 15. --U.S. landings in millions of pounds, CPUE as crabs/pot-lift, and the abundance of legal-sized male Tanner crab (*Chionoecetes bairdi*) in millions in the Bristol Bay and Pribilof Districts prior to 1989, and since 1989 the Eastern District (east of 173°W) estimated from National Marine Fisheries Service eastern Bering Sea trawl surveys (F. Bowers, ADF&G Dutch Harbor, Alaska, pers. comm.).

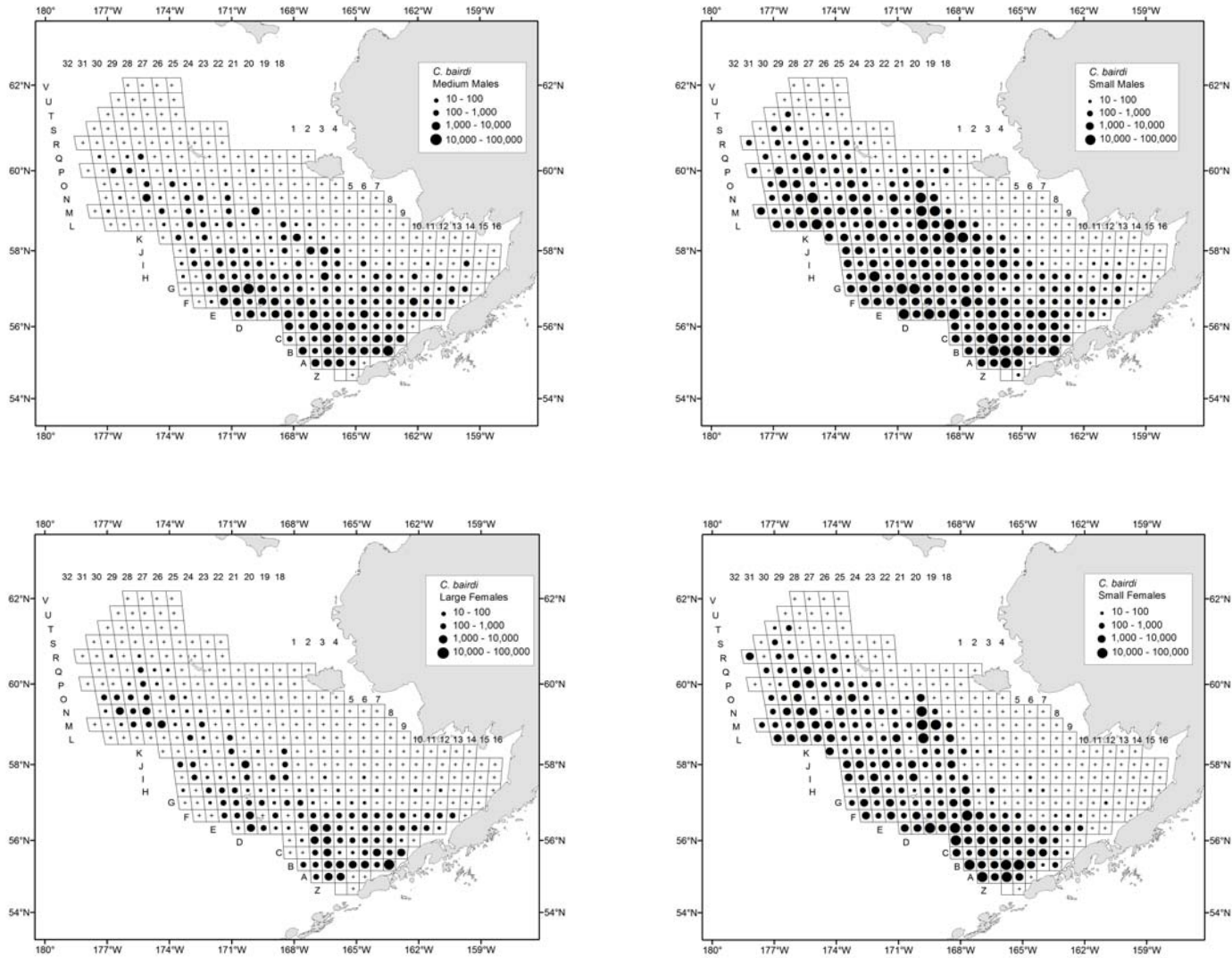


Figure 16. --Number of small and pre-recruit (medium) male Tanner crab (*Chionoecetes bairdi*) (< 4.3 and 4.3-5.4 in. carapace width) and small and large female Tanner crab (*C. bairdi*) (< 3.4 or \geq 3.4 in. CW) caught per square nautical mile in 2007.

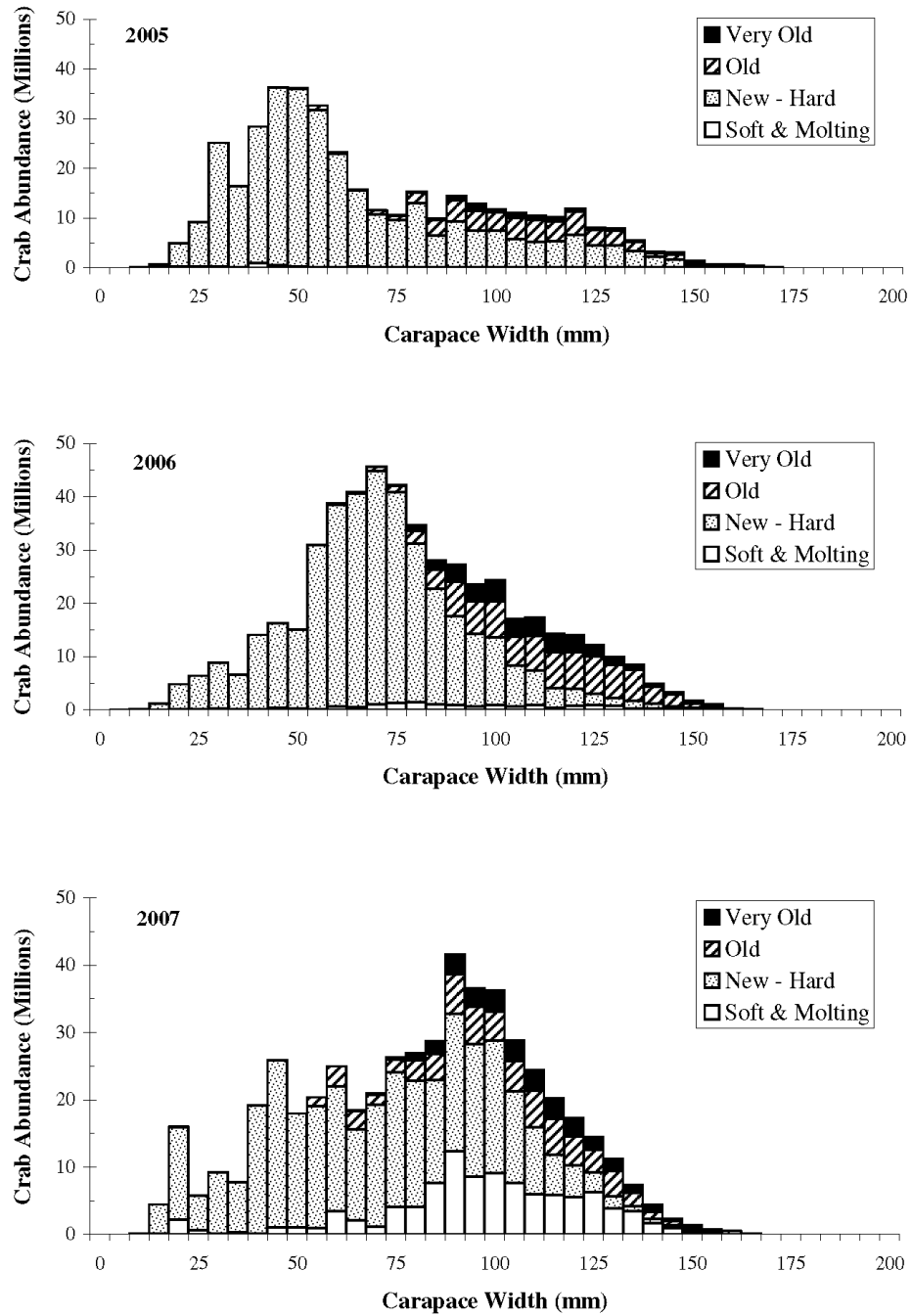


Figure 17. --Size-frequency of male Tanner crab (*Chionoecetes bairdi*) by 5 mm width classes of all districts combined, 2005-2007.

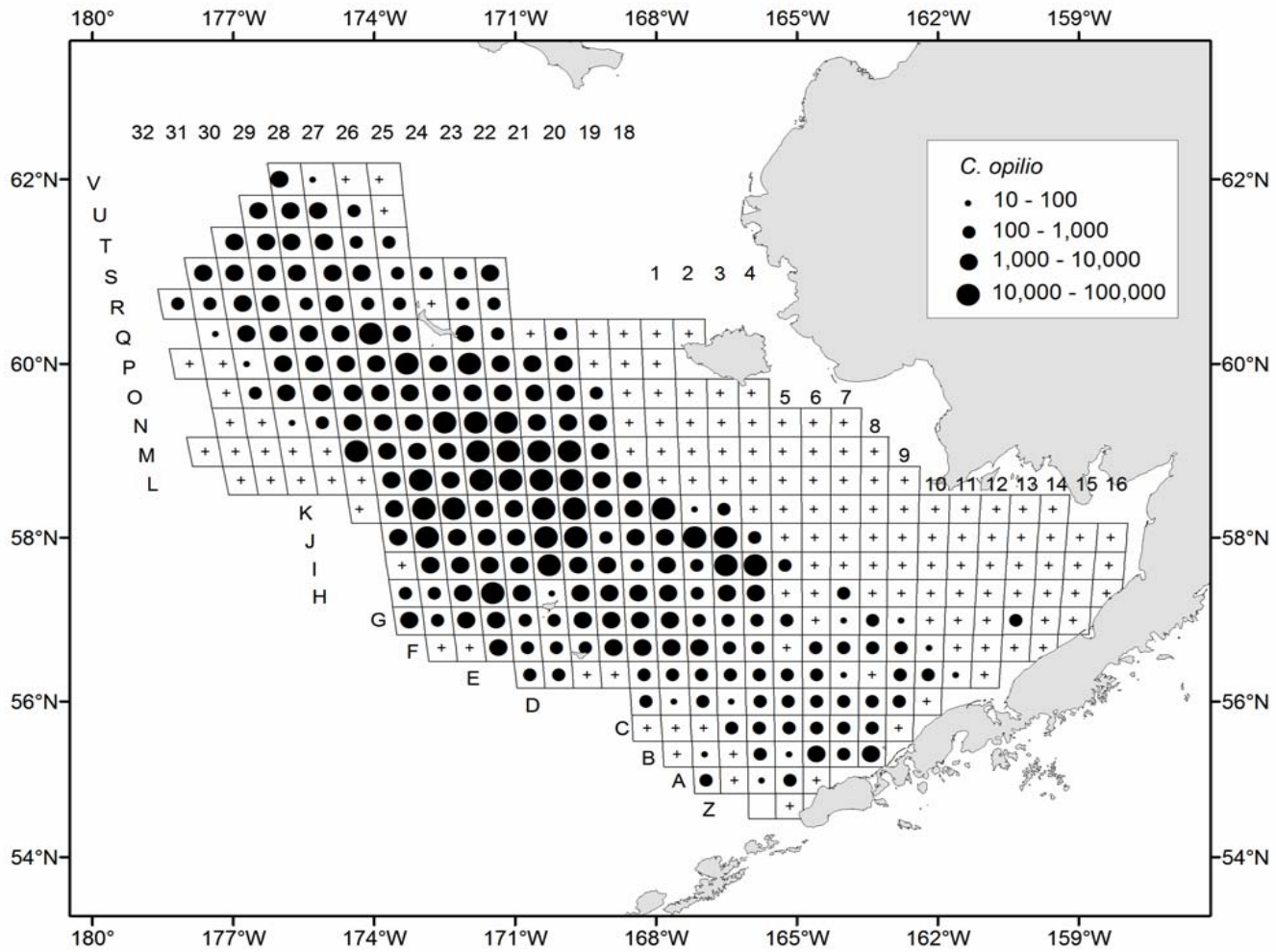


Figure 18. --Number of legal-sized male snow crab (*Chionoecetes opilio*) ≥ 3.1 inches width caught per square nautical mile in 2007.

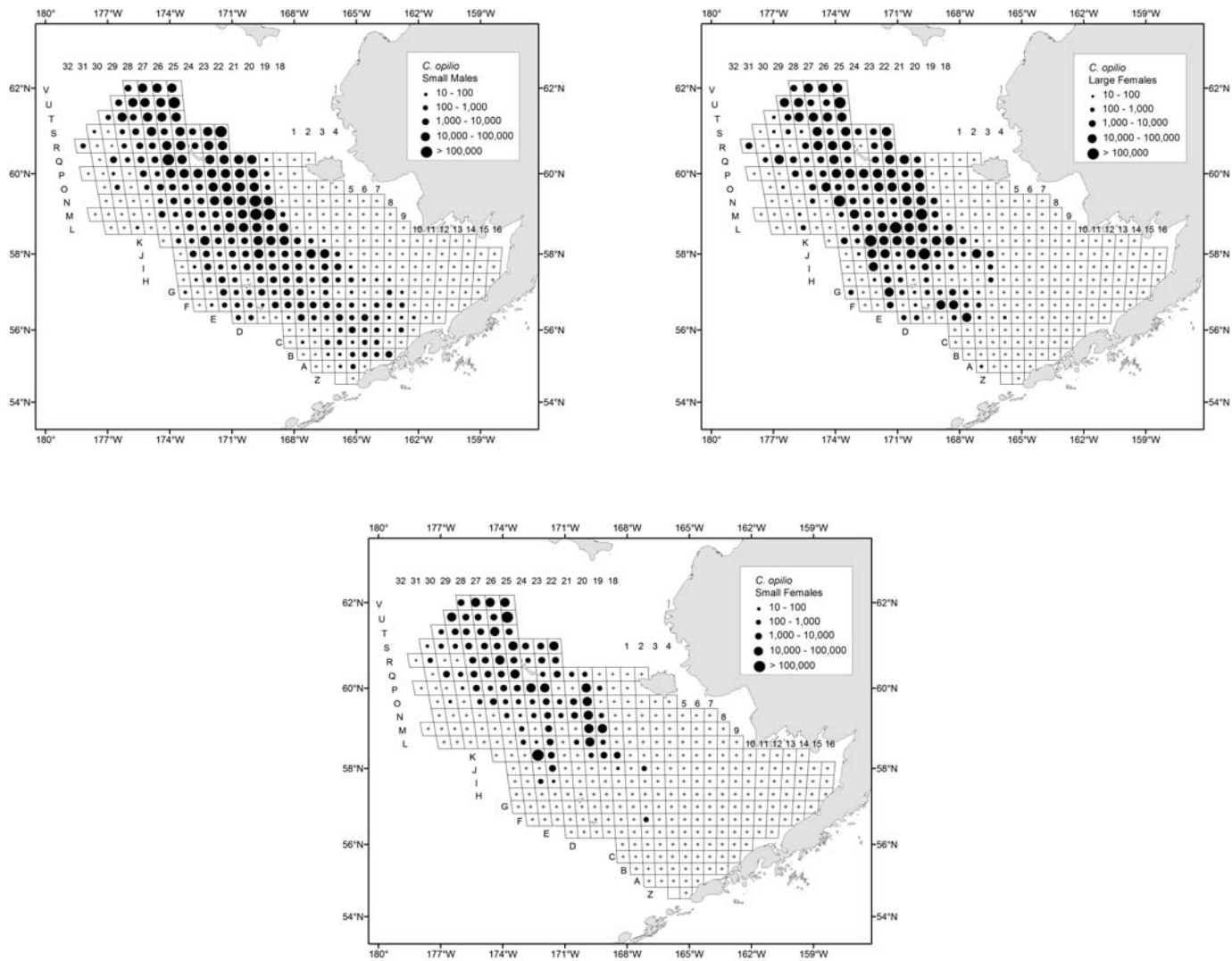


Figure 19. --Number of pre-recruit (small) male snow crab (*Chionoecetes opilio*) (< 3.1 in. carapace width) and small and large female snow crab (*C. opilio*) (< 2.0 or ≥ 2.0 in. CW) caught per square nautical mile in 2007.

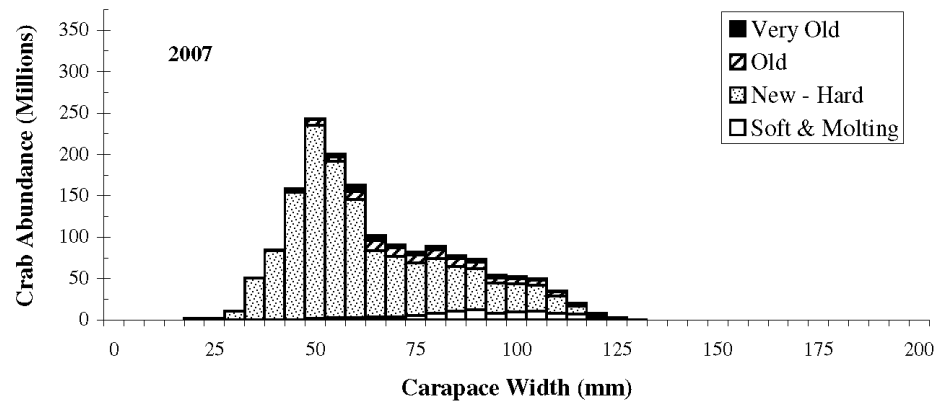
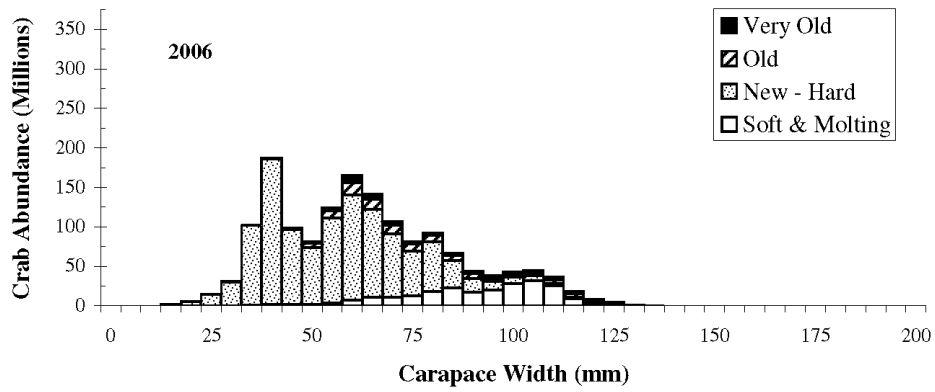
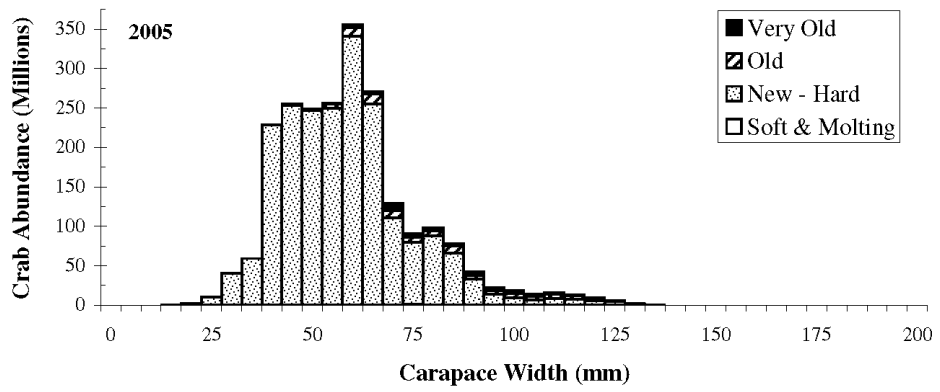


Figure 20. --Size-frequency of male snow crab (*Chionoecetes opilio*) by 5 mm width classes of all districts combined, 2005-2007.

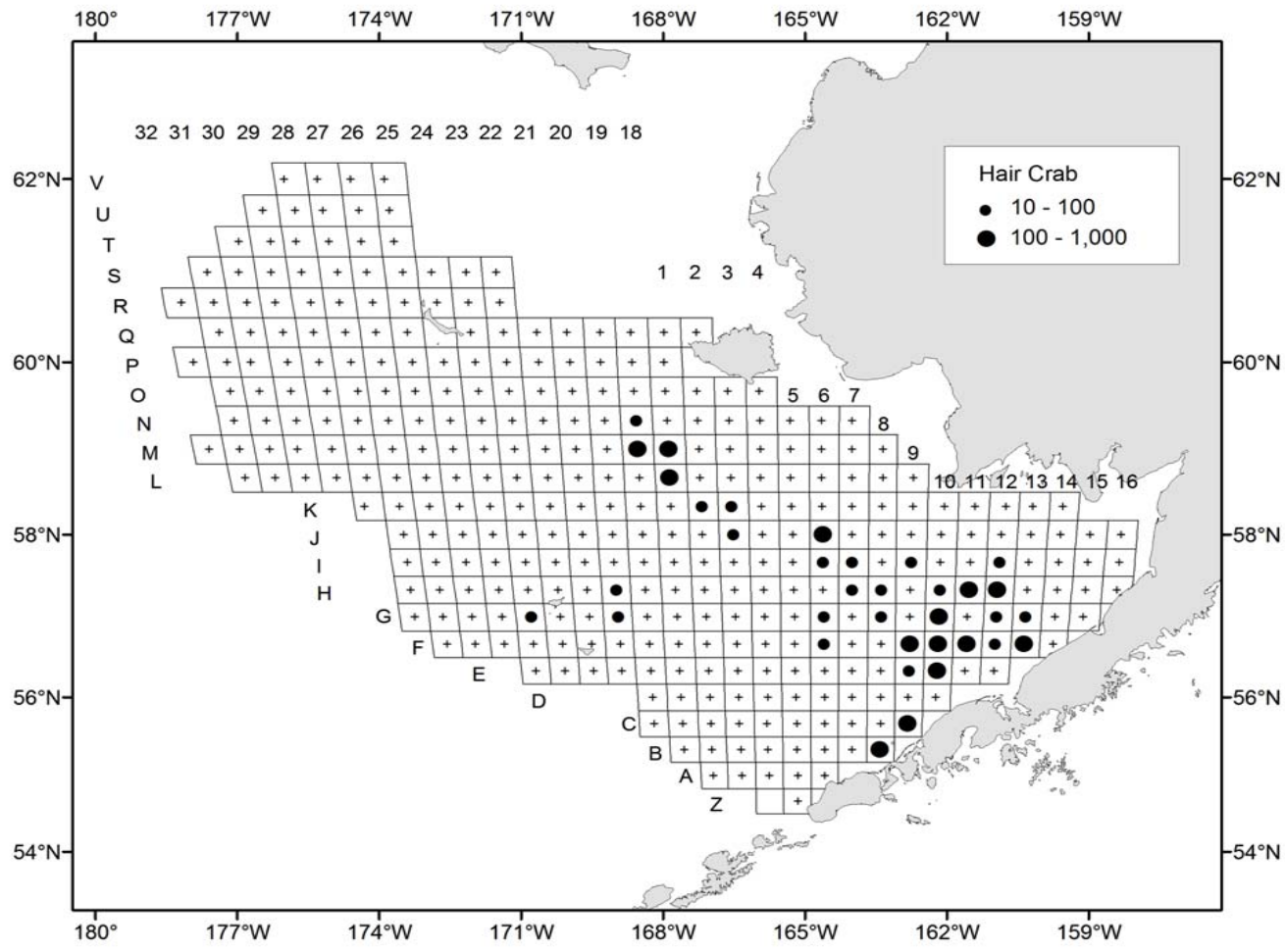


Figure 21. --Number of legal male hair crab (*Erimacrus isenbeckii*) > 3.25 inches carapace width caught per square nautical mile in 2007.

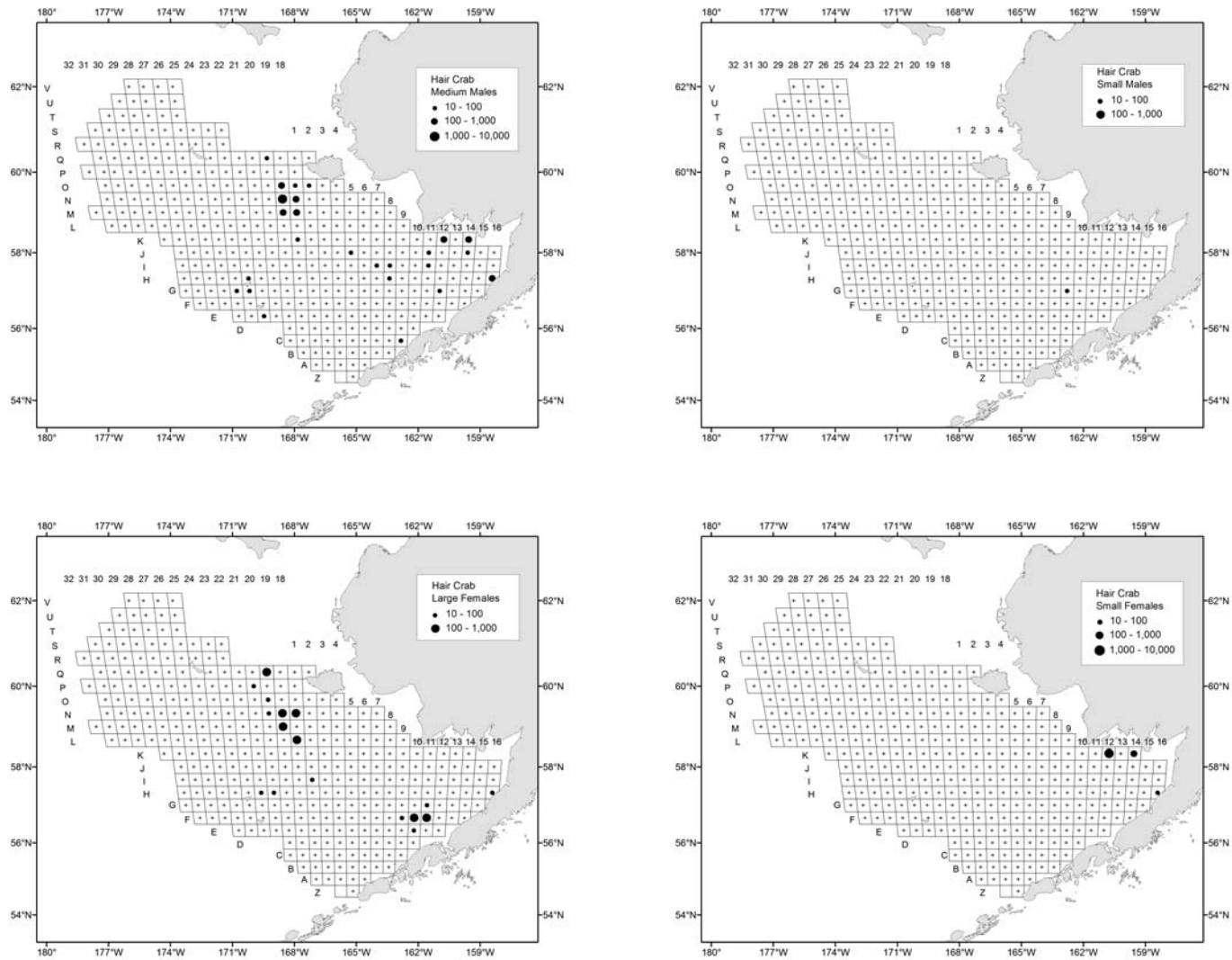


Figure 22. --Number of small and pre-recruit (medium) male hair crab (*Erimacrus isenbeckii*) (< 2.0 and 2.0-3.25 inches carapace width) and small and large female hair crab (*E. isenbeckii*) (< 2.0 or > 2.6 in. CW) caught per square nautical mile in 2007.

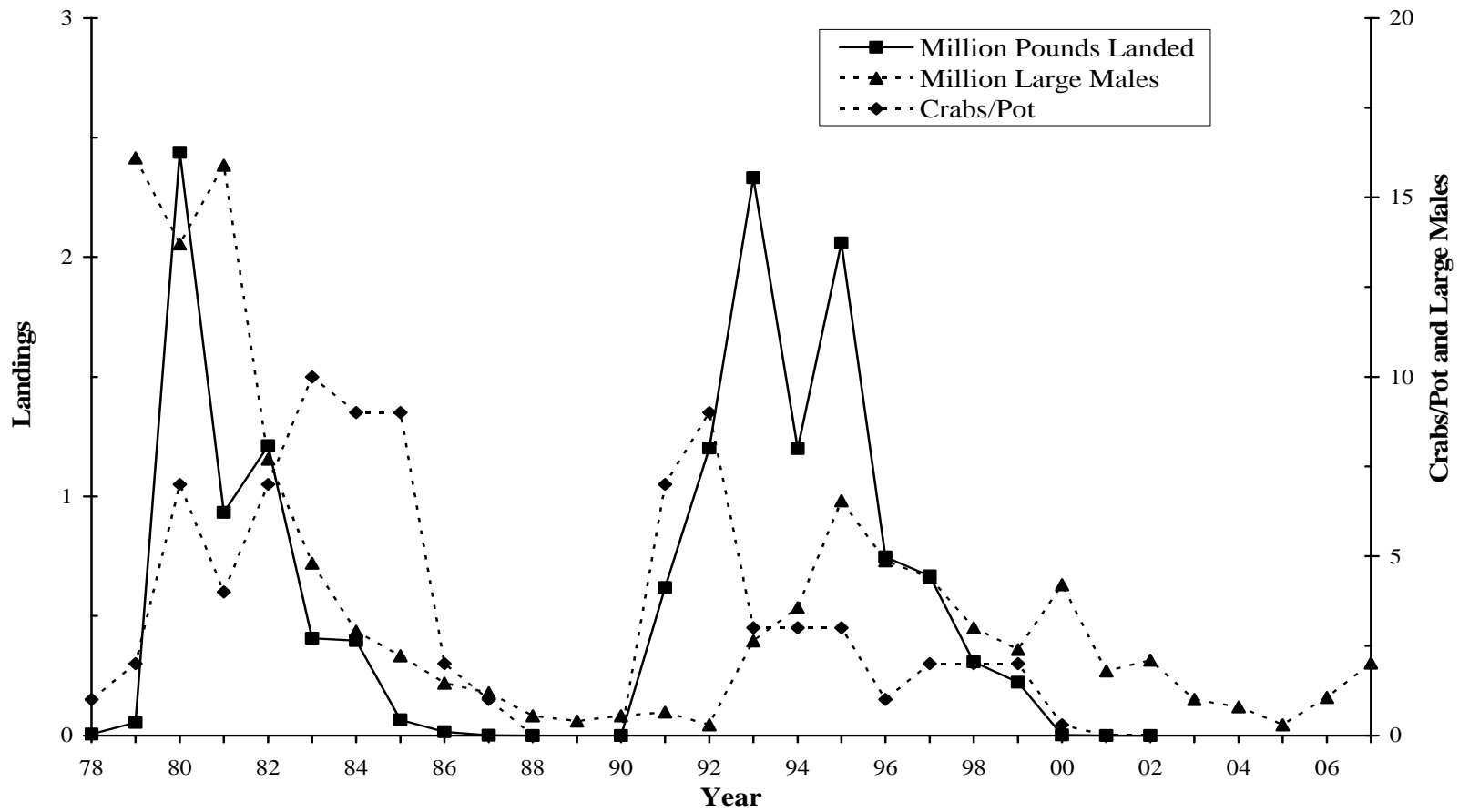


Figure 23. --U.S. landings in millions of pounds, CPUE as crabs/pot-lift, and abundance of legal-sized male hair crab (*Erimacrus isenbeckii*) in millions estimated from National Marine Fisheries Service eastern Bering Sea trawl surveys, all districts combined (F. Bowers, ADF&G Dutch Harbor, Alaska, pers. comm.).

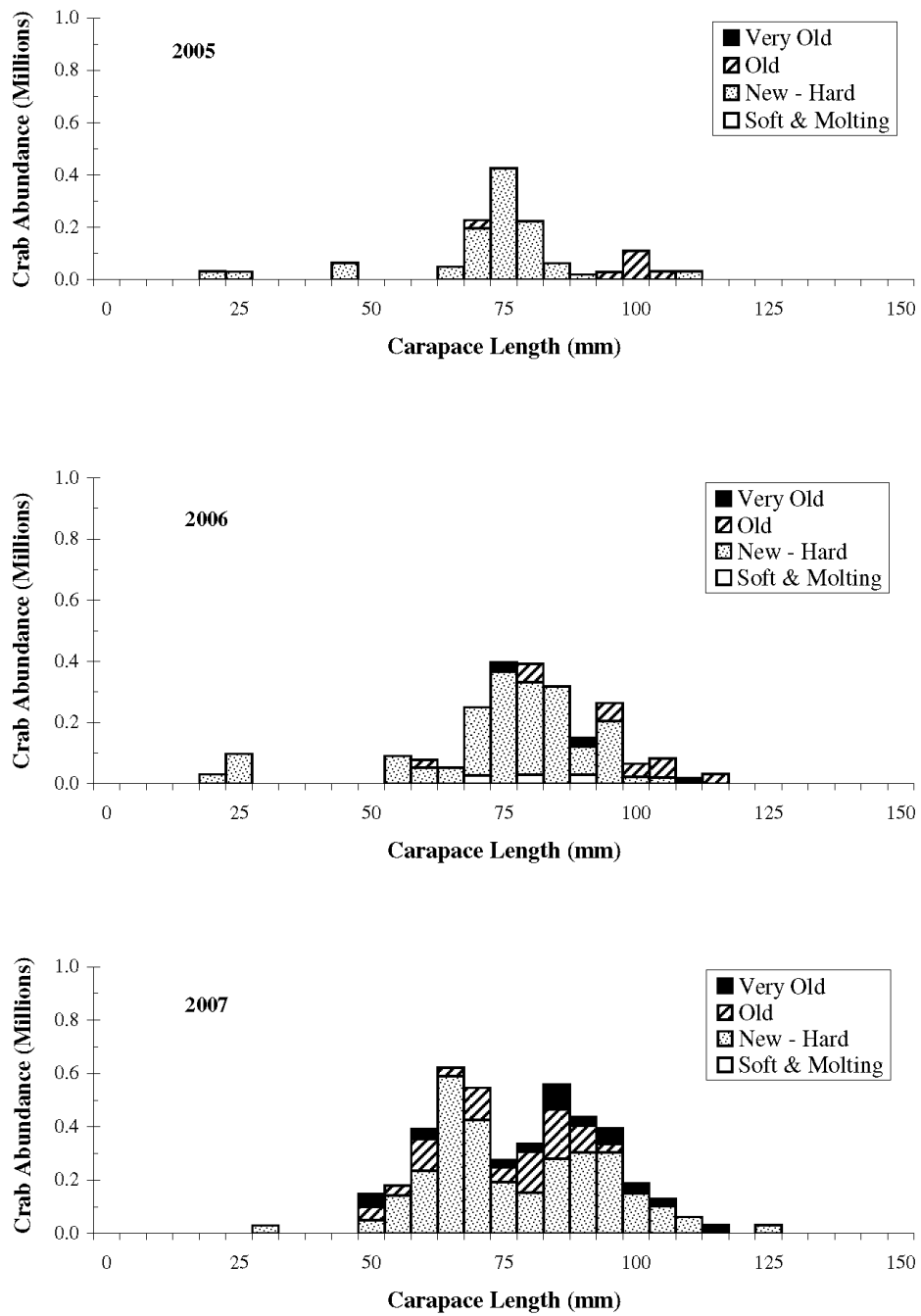


Figure 24. --Size-frequency of male hair crab (*Erimacrus isenbeckii*) by 5 mm length classes of all districts combined, 2005-2007.

Appendix A. Details of each successful tow at every station surveyed on the 2007 eastern Bering Sea bottom trawl survey.

Start Date	Station	Minutes fishing	Distance fished (km)	Start Latitude °N	Start Longitude °W	End Latitude °N	End Longitude °W	Bottom Depth (meters)	Bottom Temperature °C
6/11/2007	J16	30.6	2.89	57.98	158.32	58.01	158.32	34	5.0
6/11/2007	J15	31.2	2.98	57.99	158.97	58.00	158.93	39	3.9
6/11/2007	I16	30.6	2.82	57.64	158.35	57.66	158.39	34	4.0
6/11/2007	I15	31.8	2.92	57.65	159.02	57.68	159.01	45	2.4
6/11/2007	H16	31.2	2.83	57.33	158.41	57.35	158.38	33	4.8
6/11/2007	H15	31.8	2.73	57.33	159.08	57.35	159.07	46	1.9
6/11/2007	G15	31.2	2.67	57.00	159.13	57.03	159.14	33	4.5
6/12/2007	K14	31.8	2.96	58.35	159.56	58.33	159.54	25	4.4
6/12/2007	K13	32.4	2.94	58.29	159.97	58.26	159.96	41	4.9
6/12/2007	J14	31.2	2.94	58.02	159.60	57.99	159.59	44	2.8
6/12/2007	J13	31.8	2.92	58.02	160.21	57.99	160.23	51	1.6
6/12/2007	I14	21.0	1.97	57.68	159.64	57.67	159.65	51	2.1
6/12/2007	I13	31.2	2.88	57.68	160.27	57.65	160.27	53	1.3
6/12/2007	H14	30.0	2.87	57.34	159.67	57.32	159.69	56	1.8
6/12/2007	H13	31.8	2.95	57.35	160.30	57.32	160.31	58	1.0
6/12/2007	G14	30.0	2.75	57.01	159.67	56.98	159.68	56	2.1
6/12/2007	G13	31.8	2.88	57.01	160.33	56.99	160.34	62	1.5
6/13/2007	H12	30.6	2.89	57.32	160.93	57.35	160.92	65	0.7
6/13/2007	H11	30.6	2.87	57.32	161.55	57.34	161.53	54	1.3
6/13/2007	G12	30.6	2.84	56.99	160.97	57.01	161.00	64	1.3
6/13/2007	G11	31.2	2.84	56.98	161.58	57.01	161.58	67	1.2
6/13/2007	F14	30.0	2.74	56.69	159.75	56.68	159.79	41	4.7
6/13/2007	F13	30.6	2.89	56.67	160.36	56.66	160.41	63	1.9
6/13/2007	F12	30.0	2.78	56.66	160.99	56.69	160.99	69	1.5
6/13/2007	F11	16.2	1.42	56.66	161.59	56.67	161.59	86	1.3
6/13/2007	E12	30.6	2.77	56.34	160.97	56.33	161.02	54	3.0
6/13/2007	E11	31.8	2.85	56.33	161.63	56.35	161.62	63	2.1
6/14/2007	L09	32.4	3.02	58.63	162.70	58.64	162.75	26	4.4
6/14/2007	K12	16.2	1.53	58.28	160.79	58.29	160.82	32	5.3
6/14/2007	K11	18.0	1.65	58.23	161.55	58.22	161.55	41	4.9
6/14/2007	K10	31.2	2.86	58.32	162.04	58.29	162.06	47	4.8
6/14/2007	J12	30.6	2.87	58.00	160.86	58.02	160.88	47	2.0
6/14/2007	J11	31.2	2.84	57.98	161.50	58.01	161.50	55	3.1
6/14/2007	I12	31.2	2.87	57.66	160.89	57.68	160.90	59	0.4
6/14/2007	I11	31.2	2.83	57.66	161.51	57.68	161.52	53	1.4
6/15/2007	K09	31.2	2.84	58.35	162.72	58.32	162.72	32	4.4
6/15/2007	J10	31.8	2.94	58.02	162.11	57.99	162.11	40	3.3
6/15/2007	J09	30.6	2.84	58.02	162.75	57.99	162.75	41	3.2
6/15/2007	I10	30.6	2.85	57.67	162.13	57.65	162.13	50	2.2
6/15/2007	I09	31.8	2.95	57.68	162.75	57.65	162.75	43	2.0

Appendix A. Details of each successful tow at every station surveyed on the 2007 eastern Bering Sea bottom trawl survey.

Start Date	Station	Minutes fishing	Distance fished (km)	Start Latitude °N	Start Longitude °W	End Latitude °N	End Longitude °W	Bottom Depth (meters)	Bottom Temperature °C
6/15/2007	H10	30.6	2.80	57.35	162.15	57.32	162.15	53	1.8
6/15/2007	H09	31.8	2.91	57.35	162.76	57.32	162.77	47	1.6
6/15/2007	G10	30.6	2.90	57.00	162.17	56.98	162.18	62	1.6
6/15/2007	G09	32.4	2.95	57.02	162.79	56.99	162.80	58	1.4
6/15/2007	F10	30.0	2.77	56.68	162.19	56.65	162.19	71	1.5
6/16/2007	F09	31.2	2.92	56.67	162.78	56.65	162.77	76	1.1
6/16/2007	E10	30.6	2.84	56.35	162.18	56.32	162.20	79	1.7
6/16/2007	E09	30.0	2.82	56.33	162.83	56.32	162.79	82	1.1
6/16/2007	D10	30.6	2.79	56.01	162.23	55.99	162.24	71	2.2
6/16/2007	C09	31.2	2.83	55.67	162.81	55.67	162.86	50	2.8
6/16/2007	C08	31.8	2.88	55.67	163.38	55.67	163.43	81	2.4
6/16/2007	B08	31.2	2.86	55.36	163.40	55.34	163.42	51	3.0
6/16/2007	B07	31.8	2.91	55.33	164.03	55.35	164.00	76	3.1
6/17/2007	G08	30.6	2.83	56.99	163.41	57.01	163.44	68	0.8
6/17/2007	G07	30.0	2.75	56.99	164.03	57.01	164.03	66	0.1
6/17/2007	F08	31.2	2.84	56.66	163.38	56.68	163.38	77	0.4
6/17/2007	F07	30.6	2.78	56.66	164.02	56.68	164.02	73	0.6
6/17/2007	E08	30.0	2.75	56.32	163.42	56.35	163.41	89	1.2
6/17/2007	E07	30.6	2.75	56.33	163.98	56.36	163.98	84	1.0
6/17/2007	D09	30.0	2.77	55.99	162.81	55.98	162.84	83	1.6
6/17/2007	D08	31.2	2.92	56.00	163.39	56.03	163.38	93	2.0
6/17/2007	D07	31.2	2.83	55.99	164.04	56.01	164.04	90	1.9
6/17/2007	C07	31.8	2.89	55.68	163.99	55.70	164.01	94	2.7
6/18/2007	L08	30.6	2.85	58.66	163.35	58.68	163.37	32	4.2
6/18/2007	L07	30.6	2.78	58.66	164.02	58.68	164.01	33	3.6
6/18/2007	K08	30.0	2.72	58.32	163.37	58.34	163.39	38	3.7
6/18/2007	K07	30.0	2.74	58.32	164.02	58.34	164.01	41	3.1
6/18/2007	J08	31.2	2.84	57.99	163.38	58.01	163.39	45	2.5
6/18/2007	J07	30.6	2.77	57.99	164.02	58.01	164.02	47	2.1
6/18/2007	I08	30.6	2.84	57.66	163.37	57.68	163.40	49	1.7
6/18/2007	I07	30.6	2.80	57.66	164.01	57.68	164.01	51	1.0
6/18/2007	H08	30.6	2.78	57.33	163.38	57.35	163.40	55	1.1
6/18/2007	H07	31.2	2.83	57.32	164.00	57.34	164.03	61	0.4
6/19/2007	N07	32.4	2.95	59.32	164.01	59.34	164.04	20	8.2
6/19/2007	N06	31.8	2.95	59.34	164.65	59.34	164.70	21	6.5
6/19/2007	N05	31.8	2.92	59.34	165.29	59.33	165.34	20	5.1
6/19/2007	M08	31.8	3.00	59.00	163.35	58.99	163.40	21	6.6
6/19/2007	M07	31.2	2.90	58.99	163.99	59.00	164.04	29	6.4
6/19/2007	M06	31.2	2.86	59.01	164.65	58.99	164.64	30	5.2
6/19/2007	M05	31.2	2.92	59.02	165.30	59.00	165.30	27	4.3

Appendix A. Details of each successful tow at every station surveyed on the 2007 eastern Bering Sea bottom trawl survey.

Start Date	Station	Minutes fishing	Distance fished (km)	Start Latitude °N	Start Longitude °W	End Latitude °N	End Longitude °W	Bottom Depth (meters)	Bottom Temperature °C
6/19/2007	L06	30.0	2.80	58.68	164.64	58.66	164.64	38	3.3
6/19/2007	L05	30.6	2.83	58.68	165.32	58.66	165.33	38	3.0
6/19/2007	K06	30.6	2.86	58.35	164.64	58.32	164.64	45	2.7
6/20/2007	K05	31.8	2.81	58.34	165.29	58.32	165.29	44	2.4
6/20/2007	J06	31.2	2.85	58.00	164.61	57.98	164.61	46	2.3
6/20/2007	J05	30.6	2.78	58.02	165.25	57.99	165.26	49	0.9
6/20/2007	I06	29.4	2.70	57.67	164.61	57.65	164.62	55	0.4
6/20/2007	I05	31.2	2.80	57.68	165.25	57.66	165.25	60	0.0
6/20/2007	H06	30.0	2.74	57.34	164.62	57.32	164.61	69	0.0
6/20/2007	H05	30.6	2.79	57.35	165.23	57.32	165.22	65	0.5
6/20/2007	G06	29.4	2.74	57.00	164.60	56.98	164.60	72	0.4
6/20/2007	G05	30.6	2.80	57.01	165.22	56.98	165.22	69	0.9
6/20/2007	F06	30.6	2.86	56.68	164.58	56.66	164.58	77	0.7
6/21/2007	F05	31.2	2.83	56.67	165.22	56.65	165.23	74	1.0
6/21/2007	E06	28.8	2.68	56.34	164.59	56.32	164.59	90	1.4
6/21/2007	E05	30.6	2.78	56.35	165.21	56.32	165.20	86	1.0
6/21/2007	D06	30.0	2.78	56.01	164.60	55.99	164.60	96	2.0
6/21/2007	D05	31.2	2.82	56.01	165.19	55.99	165.18	95	2.8
6/21/2007	C06	30.0	2.74	55.68	164.62	55.66	164.62	100	3.1
6/21/2007	C05	30.6	2.79	55.68	165.20	55.65	165.19	107	3.1
6/21/2007	B06	30.0	2.77	55.35	164.54	55.33	164.56	104	3.3
6/21/2007	B05	31.2	2.87	55.34	165.17	55.31	165.16	109	3.3
6/21/2007	A06	30.6	2.79	55.05	164.57	55.03	164.59	67	3.7
6/24/2007	Z05	30.6	2.82	54.66	165.15	54.69	165.15	81	4.3
6/24/2007	C04	31.2	2.86	55.66	165.80	55.68	165.79	117	3.3
6/24/2007	B04	31.2	2.78	55.33	165.77	55.35	165.79	119	3.5
6/24/2007	B03	30.0	2.81	55.33	166.35	55.35	166.35	137	3.5
6/24/2007	A05	31.2	2.86	54.99	165.16	55.02	165.16	110	3.8
6/24/2007	A04	30.0	2.73	55.00	165.74	55.00	165.79	134	3.6
6/24/2007	A04	29.4	2.70	54.84	165.54	54.83	165.50	159	3.5
6/24/2007	A03	20.4	1.90	55.01	166.33	55.01	166.36	148	3.5
6/25/2007	G04	30.0	2.72	56.97	165.85	57.00	165.84	75	0.9
6/25/2007	G03	31.8	2.86	56.99	166.46	57.02	166.45	73	0.8
6/25/2007	F04	30.0	2.77	56.67	165.86	56.69	165.85	82	0.8
6/25/2007	F03	31.2	2.81	56.65	166.44	56.68	166.44	83	0.9
6/25/2007	E04	30.0	2.76	56.32	165.80	56.35	165.80	95	1.4
6/25/2007	E03	31.2	2.79	56.33	166.42	56.35	166.42	102	2.9
6/25/2007	D04	30.6	2.78	55.98	165.78	56.01	165.78	112	3.2
6/25/2007	D03	30.6	2.76	55.99	166.39	56.02	166.39	123	3.6
6/25/2007	C03	30.6	2.78	55.66	166.39	55.69	166.40	125	3.4

Appendix A. Details of each successful tow at every station surveyed on the 2007 eastern Bering Sea bottom trawl survey.

Start Date	Station	Minutes fishing	Distance fished (km)	Start Latitude °N	Start Longitude °W	End Latitude °N	End Longitude °W	Bottom Depth (meters)	Bottom Temperature °C
6/26/2007	L04	30.0	2.79	58.66	165.93	58.68	165.93	39	3.3
6/26/2007	L03	30.6	2.78	58.66	166.56	58.68	166.57	41	3.0
6/26/2007	K04	30.6	2.83	58.32	165.93	58.35	165.94	46	2.4
6/26/2007	K03	31.2	2.85	58.32	166.55	58.35	166.56	46	1.8
6/26/2007	J04	15.6	1.49	57.99	165.91	58.00	165.91	58	0.1
6/26/2007	J03	31.8	2.86	57.99	166.52	58.02	166.53	60	0.3
6/26/2007	I04	29.4	2.74	57.65	165.89	57.68	165.89	67	0.1
6/26/2007	I03	30.6	2.78	57.66	166.51	57.68	166.51	65	0.3
6/26/2007	H04	30.0	2.76	57.33	165.87	57.35	165.87	71	0.5
6/26/2007	H03	30.6	2.78	57.32	166.49	57.34	166.48	69	0.7
6/27/2007	O04	31.8	3.02	59.60	165.94	59.62	165.98	28	5.7
6/27/2007	O03	29.4	2.75	59.65	166.61	59.67	166.64	29	5.1
6/27/2007	O02	31.2	2.96	59.65	167.29	59.67	167.32	31	3.6
6/27/2007	O01	30.6	2.79	59.69	167.96	59.66	167.94	34	2.5
6/27/2007	N04	21.6	2.07	59.33	165.96	59.34	165.98	26	5.6
6/27/2007	N03	31.2	2.86	59.32	166.60	59.35	166.61	27	4.9
6/27/2007	N02	31.2	2.94	59.34	167.22	59.34	167.27	31	4.4
6/27/2007	M04	29.4	2.77	59.00	165.94	59.02	165.95	32	4.4
6/27/2007	M03	31.2	2.85	58.99	166.58	59.01	166.59	33	3.9
6/28/2007	Q18	30.6	2.84	60.32	168.69	60.35	168.69	36	2.3
6/28/2007	Q02	31.2	2.87	60.34	167.22	60.33	167.27	29	5.1
6/28/2007	Q01	31.2	2.83	60.33	167.95	60.33	168.00	32	4.6
6/28/2007	P18	30.6	2.83	59.99	168.65	60.01	168.68	38	1.7
6/28/2007	P01	31.8	2.89	60.02	167.99	60.00	168.00	24	3.4
6/28/2007	L02	30.6	2.85	58.70	167.22	58.67	167.22	46	3.1
6/28/2007	K02	30.0	2.75	58.35	167.19	58.32	167.19	54	1.2
6/28/2007	J02	28.2	2.55	58.02	167.17	57.99	167.18	66	0.4
6/28/2007	I02	30.6	2.79	57.68	167.12	57.66	167.12	71	0.5
6/29/2007	Q20	30.6	2.76	60.33	170.00	60.33	170.05	51	-1.2
6/29/2007	Q19	31.8	2.85	60.31	169.33	60.34	169.33	43	0.8
6/29/2007	P20	32.4	2.92	60.02	169.97	59.99	169.97	55	-1.4
6/29/2007	P19	31.2	2.83	59.99	169.32	60.01	169.30	45	0.2
6/29/2007	O20	30.0	2.73	59.69	169.92	59.66	169.91	58	-1.4
6/29/2007	H02	29.4	2.72	57.35	167.12	57.33	167.12	74	0.4
6/29/2007	G02	30.6	2.88	57.02	167.09	56.99	167.10	77	1.2
6/29/2007	F02	30.6	2.77	56.67	167.08	56.65	167.05	99	2.1
6/29/2007	E02	29.4	2.71	56.35	167.04	56.32	167.02	117	3.5
6/29/2007	D02	30.0	2.73	56.08	167.01	56.06	166.99	137	3.8
6/30/2007	O19	30.6	2.79	59.65	169.27	59.68	169.26	49	-0.9
6/30/2007	O18	30.0	2.77	59.67	168.65	59.67	168.60	40	1.5

Appendix A. Details of each successful tow at every station surveyed on the 2007 eastern Bering Sea bottom trawl survey.

Start Date	Station	Minutes fishing	Distance fished (km)	Start Latitude °N	Start Longitude °W	End Latitude °N	End Longitude °W	Bottom Depth (meters)	Bottom Temperature °C
6/30/2007	N20	22.2	1.97	59.35	169.88	59.33	169.86	61	-1.5
6/30/2007	N19	30.6	2.84	59.34	169.27	59.34	169.23	51	-0.5
6/30/2007	N18	30.0	2.71	59.35	168.57	59.32	168.57	43	2.0
6/30/2007	J01	19.8	1.84	57.99	167.80	58.01	167.80	69	0.3
6/30/2007	I01	30.0	2.83	57.66	167.77	57.68	167.78	71	0.6
6/30/2007	H01	30.6	2.85	57.32	167.74	57.35	167.75	76	0.7
6/30/2007	G01	30.0	2.78	56.99	167.70	57.01	167.71	81	1.3
6/30/2007	F01	30.0	2.79	56.66	167.66	56.68	167.66	106	2.0
7/1/2007	N01	30.6	2.83	59.31	167.92	59.34	167.92	40	3.0
7/1/2007	M02	30.6	2.78	59.02	167.25	59.00	167.23	41	4.0
7/1/2007	M01	30.0	2.75	59.00	167.86	59.00	167.90	43	3.1
7/1/2007	L18	30.6	2.80	58.66	168.48	58.67	168.52	54	1.4
7/1/2007	L01	31.2	2.88	58.69	167.88	58.66	167.88	47	2.8
7/1/2007	K18	30.0	2.84	58.34	168.47	58.31	168.46	68	0.4
7/1/2007	K01	30.0	2.84	58.34	167.82	58.34	167.87	63	0.6
7/1/2007	J18	30.0	2.77	58.01	168.43	57.99	168.44	72	0.5
7/1/2007	I18	30.0	2.76	57.68	168.40	57.66	168.41	73	0.4
7/1/2007	H18	31.2	2.86	57.35	168.37	57.32	168.36	77	0.7
7/2/2007	M20	31.2	2.85	59.01	169.83	58.99	169.83	63	-1.1
7/2/2007	M19	30.0	2.79	59.00	169.16	59.00	169.21	55	0.5
7/2/2007	M18	31.2	2.83	58.98	168.54	59.01	168.55	47	1.5
7/2/2007	L20	30.6	2.83	58.68	169.79	58.65	169.80	67	-0.7
7/2/2007	L19	31.2	2.84	58.67	169.19	58.67	169.14	63	0.1
7/2/2007	G18	21.0	1.94	57.00	168.34	56.98	168.34	85	1.9
7/2/2007	F18	17.4	1.65	56.67	168.29	56.65	168.29	110	3.1
7/2/2007	E18	29.4	2.70	56.32	168.25	56.30	168.25	160	3.5
7/2/2007	D18	30.6	2.81	56.01	168.22	55.99	168.23	150	3.6
7/2/2007	C18	24.6	2.28	55.68	168.18	55.66	168.18	136	3.6
7/4/2007	G20	30.6	2.79	56.99	169.57	57.01	169.54	60	0.5
7/4/2007	G20	19.8	1.87	57.17	169.33	57.16	169.34	72	0.4
7/4/2007	G19	30.6	2.88	57.15	168.64	57.18	168.64	77	0.9
7/4/2007	G19	30.6	2.87	57.01	168.99	57.01	168.95	80	1.3
7/4/2007	F20	31.2	2.88	56.84	169.29	56.82	169.32	80	1.7
7/4/2007	F20	30.6	2.81	56.67	169.50	56.69	169.52	80	2.8
7/4/2007	F19	29.4	2.78	56.66	168.92	56.68	168.88	101	3.0
7/4/2007	F19	29.4	2.72	56.80	168.61	56.83	168.62	98	2.3
7/4/2007	E20	28.2	2.45	56.34	169.52	56.34	169.48	142	3.6
7/4/2007	E19	30.6	2.84	56.31	168.88	56.34	168.87	130	3.6
7/5/2007	J19	30.0	2.76	57.99	169.08	58.01	169.09	69	-0.3
7/5/2007	I19	29.4	2.71	57.50	168.74	57.52	168.75	72	0.4

Appendix A. Details of each successful tow at every station surveyed on the 2007 eastern Bering Sea bottom trawl survey.

Start Date	Station	Minutes fishing	Distance fished (km)	Start Latitude °N	Start Longitude °W	End Latitude °N	End Longitude °W	Bottom Depth (meters)	Bottom Temperature °C
7/5/2007	I19	29.4	2.71	57.80	168.72	57.82	168.75	71	0.1
7/5/2007	I19	19.8	1.86	57.65	169.02	57.67	169.02	69	-0.1
7/5/2007	H21	30.0	2.81	57.19	169.87	57.17	169.89	49	2.3
7/5/2007	H20	29.4	2.70	57.33	169.60	57.31	169.62	61	0.1
7/5/2007	H19	29.4	2.74	57.33	169.01	57.34	168.97	71	0.4
7/5/2007	G22	30.6	2.79	57.10	170.46	57.12	170.49	48	2.4
7/5/2007	G21	30.0	2.78	57.00	170.14	56.99	170.18	69	1.7
7/5/2007	G21	29.4	2.74	56.83	169.93	56.84	169.89	72	2.2
7/6/2007	K20	30.6	2.80	58.35	169.73	58.32	169.73	70	-0.7
7/6/2007	K19	30.6	2.87	58.33	169.10	58.33	169.15	68	-0.1
7/6/2007	J20	30.6	2.87	58.01	169.71	57.99	169.68	70	-0.9
7/6/2007	J20	30.6	2.85	57.84	169.35	57.83	169.39	67	-0.5
7/6/2007	I20	30.6	2.81	57.67	169.66	57.65	169.64	71	-0.7
7/6/2007	G22	30.0	2.84	56.84	170.46	56.83	170.50	101	2.7
7/6/2007	G21	30.0	2.79	56.92	170.17	56.93	170.21	82	2.0
7/6/2007	G21	28.8	2.69	56.98	170.32	57.00	170.33	66	2.0
7/6/2007	G21	27.0	2.48	57.09	170.14	57.09	170.10	43	3.0
7/6/2007	G21	26.4	2.39	57.02	170.01	57.00	170.01	66	1.4
7/6/2007	F21	30.0	2.75	56.67	170.14	56.66	170.10	97	2.9
7/7/2007	I21	31.8	2.91	57.82	170.01	57.84	169.98	73	-0.9
7/7/2007	I21	30.6	2.86	57.50	169.96	57.51	170.01	68	0.3
7/7/2007	H22	30.0	2.74	57.32	170.86	57.35	170.86	84	1.9
7/7/2007	H21	30.6	2.83	57.33	170.24	57.35	170.21	57	2.9
7/7/2007	H20	30.6	2.80	57.49	169.33	57.49	169.38	69	-0.1
7/7/2007	G22	31.2	2.82	56.99	170.77	57.02	170.78	95	2.3
7/7/2007	F22	31.2	2.90	56.68	170.73	56.70	170.73	113	3.2
7/7/2007	E22	30.6	2.86	56.33	170.66	56.33	170.71	121	3.5
7/7/2007	E21	28.8	2.70	56.34	170.04	56.34	170.09	109	3.5
7/8/2007	M21	31.8	2.97	58.99	170.48	59.01	170.48	72	-1.4
7/8/2007	L21	31.8	2.92	58.66	170.43	58.69	170.43	74	-1.3
7/8/2007	K22	30.0	2.82	58.32	171.02	58.35	171.01	84	-0.5
7/8/2007	K21	31.8	2.96	58.31	170.38	58.34	170.38	75	-1.2
7/8/2007	J22	30.6	2.87	57.83	170.62	57.85	170.58	78	-0.1
7/8/2007	J22	29.4	2.71	57.99	170.95	58.00	171.00	87	0.4
7/8/2007	J21	31.2	2.93	57.99	170.36	58.01	170.33	74	-1.1
7/8/2007	I22	29.4	2.72	57.66	170.91	57.68	170.90	85	1.3
7/8/2007	I21	31.8	2.93	57.64	170.26	57.67	170.26	73	-0.2
7/8/2007	H22	29.4	2.72	57.49	170.58	57.51	170.59	74	1.7
7/9/2007	M25	30.0	2.74	59.00	173.10	58.98	173.11	108	1.6
7/9/2007	M24	31.2	2.91	59.00	172.41	59.01	172.45	99	0.1

Appendix A. Details of each successful tow at every station surveyed on the 2007 eastern Bering Sea bottom trawl survey.

Start Date	Station	Minutes fishing	Distance fished (km)	Start Latitude °N	Start Longitude °W	End Latitude °N	End Longitude °W	Bottom Depth (meters)	Bottom Temperature °C
7/9/2007	M23	31.2	2.90	58.99	171.76	59.00	171.81	88	-0.2
7/9/2007	L25	30.6	2.88	58.68	173.00	58.65	172.99	112	1.9
7/9/2007	L24	30.6	2.71	58.68	172.37	58.65	172.38	101	0.6
7/9/2007	L23	30.6	2.89	58.67	171.73	58.68	171.77	93	-0.1
7/9/2007	L22	20.4	1.82	58.66	171.09	58.68	171.10	83	-0.7
7/9/2007	K25	31.8	2.90	58.34	172.93	58.32	172.93	110	1.9
7/9/2007	K24	30.0	2.79	58.34	172.31	58.32	172.29	103	1.0
7/9/2007	K23	30.6	2.85	58.34	171.66	58.32	171.65	96	0.5
7/10/2007	J24	30.0	2.80	58.01	172.27	57.98	172.25	105	1.4
7/10/2007	J23	30.0	2.78	58.01	171.62	58.00	171.58	98	0.9
7/10/2007	I24	30.0	2.72	57.68	172.18	57.65	172.19	108	1.6
7/10/2007	I23	30.0	2.84	57.68	171.53	57.65	171.54	99	1.6
7/10/2007	H24	30.0	2.75	57.36	172.10	57.33	172.09	109	2.3
7/10/2007	H23	30.0	2.73	57.34	171.47	57.32	171.47	101	2.2
7/10/2007	G24	29.4	2.69	56.98	172.04	56.96	172.04	119	2.6
7/10/2007	G23	28.8	2.67	57.01	171.39	56.99	171.38	109	2.5
7/10/2007	F24	29.4	2.72	56.66	171.96	56.64	171.96	128	3.4
7/10/2007	F23	29.4	2.73	56.68	171.35	56.65	171.35	120	3.3
7/13/2007	E01	29.4	2.80	56.34	167.65	56.36	167.65	128	3.6
7/13/2007	D01	30.0	2.81	55.99	167.62	56.02	167.62	132	3.8
7/13/2007	C02	30.6	2.78	55.66	166.98	55.69	166.99	135	3.5
7/13/2007	C01	29.4	2.72	55.66	167.58	55.68	167.59	134	3.8
7/13/2007	B02	30.0	2.75	55.32	166.97	55.35	166.97	139	3.5
7/13/2007	B01	28.8	2.61	55.34	167.55	55.36	167.57	147	3.6
7/13/2007	A02	29.4	2.69	55.00	166.94	55.02	166.94	155	3.6
7/14/2007	J25	31.2	2.90	57.99	172.86	58.02	172.86	109	2.0
7/14/2007	I26	28.2	2.66	57.67	173.39	57.69	173.40	148	3.2
7/14/2007	I25	30.6	2.83	57.66	172.81	57.68	172.81	119	2.6
7/14/2007	H26	28.8	2.63	57.32	173.34	57.34	173.33	121	3.3
7/14/2007	H25	30.0	2.78	57.33	172.83	57.36	172.83	116	2.8
7/14/2007	G26	29.4	2.80	57.00	173.23	57.00	173.28	140	3.5
7/14/2007	G25	25.2	2.31	57.00	172.65	57.02	172.65	122	2.8
7/14/2007	F25	30.0	2.77	56.67	172.57	56.70	172.56	135	3.5
7/15/2007	O21	30.6	2.82	59.65	170.58	59.68	170.58	67	-1.5
7/15/2007	N26	30.0	2.77	59.32	173.80	59.34	173.80	110	1.3
7/15/2007	N22	30.6	2.82	59.32	171.18	59.35	171.18	76	-1.2
7/15/2007	N21	31.2	2.90	59.32	170.53	59.35	170.53	68	-1.5
7/15/2007	M26	29.4	2.87	58.99	173.72	59.02	173.73	117	1.6
7/15/2007	M22	30.6	2.80	58.99	171.13	59.01	171.13	78	-1.0
7/15/2007	L26	28.2	2.66	58.66	173.63	58.68	173.64	125	2.8

Appendix A. Details of each successful tow at every station surveyed on the 2007 eastern Bering Sea bottom trawl survey.

Start Date	Station	Minutes fishing	Distance fished (km)	Start Latitude °N	Start Longitude °W	End Latitude °N	End Longitude °W	Bottom Depth (meters)	Bottom Temperature °C
7/15/2007	K26	29.4	2.70	58.33	173.56	58.35	173.56	115	2.6
7/15/2007	J26	29.4	2.76	58.01	173.48	57.99	173.48	117	3.1
7/16/2007	P25	29.4	2.71	59.83	173.58	59.85	173.55	94	0.2
7/16/2007	P25	25.2	2.29	60.02	173.31	60.00	173.32	75	-1.0
7/16/2007	P22	30.0	2.82	60.01	171.30	59.99	171.30	70	-1.2
7/16/2007	P21	30.6	2.83	59.98	170.63	60.01	170.63	65	-1.5
7/16/2007	O26	30.0	2.68	59.50	173.49	59.52	173.52	102	0.7
7/16/2007	O25	30.0	2.84	59.67	173.21	59.66	173.25	95	0.4
7/16/2007	O23	30.6	2.83	59.68	171.90	59.65	171.91	77	-0.7
7/16/2007	O22	31.2	2.90	59.67	171.24	59.67	171.29	73	-1.4
7/16/2007	N25	28.8	2.66	59.33	173.14	59.34	173.18	100	0.7
7/16/2007	N23	30.6	2.82	59.35	171.83	59.32	171.83	80	-0.9
7/17/2007	R26	29.4	2.78	60.67	174.09	60.65	174.13	86	-1.1
7/17/2007	R25	30.0	2.77	60.67	173.46	60.69	173.47	67	-0.4
7/17/2007	Q26	30.6	2.70	60.34	174.08	60.32	174.06	91	-0.2
7/17/2007	Q25	30.0	2.77	60.18	173.03	60.20	173.04	60	-0.2
7/17/2007	Q25	10.8	0.95	60.32	173.40	60.31	173.40	64	0.3
7/17/2007	P26	28.8	2.76	60.11	173.76	60.12	173.80	89	-0.2
7/17/2007	O25	30.6	2.84	59.82	172.95	59.84	172.91	80	-0.2
7/17/2007	O25	30.6	2.83	59.50	172.90	59.51	172.85	94	0.0
7/17/2007	O24	30.0	2.82	59.67	172.55	59.68	172.60	85	-0.2
7/17/2007	N24	30.0	2.78	59.33	172.49	59.34	172.53	88	-0.5
7/18/2007	Q23	31.2	2.84	60.32	172.07	60.34	172.06	60	-1.3
7/18/2007	P27	31.2	2.85	59.98	174.61	60.01	174.61	109	0.9
7/18/2007	P27	30.0	2.66	60.16	174.37	60.17	174.33	101	0.7
7/18/2007	P26	30.6	2.83	60.00	173.93	60.02	173.96	97	0.5
7/18/2007	P24	30.6	2.81	59.99	172.61	59.98	172.56	68	-0.7
7/18/2007	P23	31.2	2.88	59.83	172.27	59.84	172.23	76	-0.9
7/18/2007	P23	30.6	2.84	60.15	172.30	60.17	172.34	59	1.7
7/18/2007	P23	30.0	2.80	59.99	171.94	59.97	171.94	68	-1.1
7/18/2007	O26	30.0	2.78	59.67	173.86	59.68	173.90	105	0.9
7/18/2007	O26	29.4	2.76	59.84	174.23	59.81	174.24	107	0.7
7/19/2007	S25	31.2	2.88	61.00	173.48	61.00	173.53	75	-1.6
7/19/2007	S24	30.0	2.83	61.00	172.79	61.00	172.84	67	-0.8
7/19/2007	S23	30.0	2.71	61.00	172.14	61.00	172.18	64	-1.6
7/19/2007	R24	30.6	2.83	60.67	172.76	60.65	172.73	46	2.3
7/19/2007	R23	31.2	2.82	60.66	172.13	60.68	172.13	61	-1.5
7/19/2007	O27	30.0	2.75	59.67	174.47	59.66	174.43	115	1.4
7/19/2007	N27	29.4	2.71	59.35	174.44	59.33	174.43	121	1.8
7/19/2007	M27	29.4	2.78	59.01	174.38	58.99	174.34	128	2.0

Appendix A. Details of each successful tow at every station surveyed on the 2007 eastern Bering Sea bottom trawl survey.

Start Date	Station	Minutes fishing	Distance fished (km)	Start Latitude °N	Start Longitude °W	End Latitude °N	End Longitude °W	Bottom Depth (meters)	Bottom Temperature °C
7/19/2007	L27	30.0	2.77	58.68	174.26	58.66	174.24	154	3.1
7/19/2007	K27	28.8	2.67	58.35	174.31	58.32	174.29	163	3.3
7/20/2007	V27	30.0	2.77	62.00	175.15	62.00	175.20	81	-1.4
7/20/2007	V26	30.6	2.84	62.00	174.48	62.00	174.53	74	-1.5
7/20/2007	V25	30.0	2.78	62.00	173.71	62.01	173.76	63	-1.5
7/20/2007	U25	30.0	2.73	61.66	173.67	61.68	173.69	71	-1.4
7/20/2007	T25	30.6	2.81	61.32	173.58	61.35	173.57	74	-1.6
7/20/2007	O28	29.4	2.72	59.66	175.12	59.67	175.08	126	1.7
7/20/2007	N28	30.6	2.75	59.34	175.10	59.36	175.10	133	2.0
7/20/2007	M28	31.2	2.68	58.99	175.01	59.02	175.03	130	2.4
7/20/2007	L28	30.0	2.68	58.74	174.97	58.75	174.92	143	3.1
7/21/2007	U27	30.0	2.79	61.67	175.07	61.66	175.11	85	-1.4
7/21/2007	U26	30.6	2.86	61.67	174.42	61.67	174.47	77	-1.3
7/21/2007	T27	29.4	2.69	61.34	175.01	61.31	175.02	89	-1.4
7/21/2007	T26	30.0	2.83	61.33	174.35	61.34	174.30	80	-1.5
7/21/2007	S27	30.6	2.75	60.98	174.88	61.00	174.88	93	-1.3
7/21/2007	S26	29.4	2.70	61.00	174.20	61.00	174.15	83	-1.6
7/21/2007	R27	30.6	2.77	60.66	174.82	60.68	174.82	98	-0.4
7/21/2007	Q28	30.6	2.75	60.32	175.38	60.34	175.42	112	1.0
7/21/2007	Q27	30.6	2.80	60.34	174.70	60.34	174.75	103	0.5
7/21/2007	P28	30.6	2.79	59.99	175.27	60.02	175.27	117	1.1
7/22/2007	V28	26.4	2.42	61.99	175.83	62.01	175.83	92	-1.2
7/22/2007	U28	17.4	1.58	61.65	175.76	61.67	175.78	96	-1.2
7/22/2007	T28	31.8	2.90	61.32	175.67	61.34	175.66	97	-0.4
7/22/2007	S28	30.0	2.82	60.99	175.55	61.01	175.56	103	0.0
7/22/2007	S22	30.6	2.79	60.99	171.49	60.97	171.49	60	-1.3
7/22/2007	R28	30.0	2.70	60.66	175.45	60.68	175.46	107	0.8
7/22/2007	R22	30.0	2.79	60.68	171.44	60.65	171.44	63	-1.6
7/22/2007	Q22	30.0	2.79	60.33	171.39	60.33	171.34	66	-1.5
7/22/2007	Q21	30.0	2.79	60.33	170.66	60.33	170.61	63	-1.4
7/23/2007	U29	30.0	2.81	61.66	176.48	61.64	176.48	106	0.4
7/23/2007	T29	29.4	2.79	61.34	176.32	61.32	176.29	107	0.6
7/23/2007	S29	30.6	2.78	61.00	176.29	60.97	176.28	113	0.9
7/23/2007	R30	30.0	2.80	60.66	176.76	60.68	176.80	129	1.2
7/23/2007	R29	28.8	2.67	60.68	176.21	60.65	176.20	119	1.0
7/23/2007	I08	31.2	2.92	57.67	163.35	57.67	163.30	48	3.5
7/24/2007	T30	30.0	2.82	61.34	176.98	61.32	176.96	117	1.0
7/24/2007	S31	30.0	2.84	61.00	177.63	60.99	177.58	135	1.3
7/24/2007	S30	30.6	2.82	61.01	176.97	60.99	176.98	122	1.1
7/24/2007	R32	24.6	2.23	60.67	178.16	60.67	178.20	161	2.4

Appendix A. Details of each successful tow at every station surveyed on the 2007 eastern Bering Sea bottom trawl survey.

Start Date	Station	Minutes fishing	Distance fished (km)	Start Latitude °N	Start Longitude °W	End Latitude °N	End Longitude °W	Bottom Depth (meters)	Bottom Temperature °C
7/24/2007	R31	28.8	2.64	60.67	177.51	60.65	177.48	146	1.4
7/24/2007	J13	31.2	2.86	58.01	160.21	57.99	160.22	52	4.7
7/24/2007	I13	30.6	2.78	57.68	160.26	57.65	160.28	56	3.9
7/24/2007	H13	31.2	2.91	57.34	160.29	57.32	160.32	62	3.3
7/24/2007	G13	31.2	2.88	57.01	160.34	56.98	160.35	63	3.2
7/24/2007	F13	31.8	2.88	56.67	160.35	56.66	160.39	60	3.7
7/25/2007	Q31	30.0	2.80	60.36	177.39	60.35	177.34	149	1.6
7/25/2007	Q30	28.8	2.61	60.33	176.72	60.34	176.68	136	1.5
7/25/2007	Q29	30.0	2.78	60.34	176.06	60.34	176.01	122	1.2
7/25/2007	P30	27.6	2.53	60.01	176.66	60.01	176.70	142	1.8
7/25/2007	P29	30.6	2.88	59.99	175.96	59.99	176.01	131	1.9
7/25/2007	I12	30.0	2.79	57.65	160.88	57.68	160.88	57	2.0
7/25/2007	H12	31.2	2.87	57.31	160.94	57.34	160.93	64	2.6
7/25/2007	G12	31.2	2.86	56.99	160.95	57.02	160.97	63	3.0
7/25/2007	F12	31.2	2.82	56.66	160.99	56.68	160.99	68	3.2
7/25/2007	E12	30.6	2.83	56.32	161.00	56.35	161.00	55	5.3
7/26/2007	P32	28.8	2.66	60.01	177.93	59.99	177.92	142	1.7
7/26/2007	P31	24.6	2.29	60.00	177.24	60.00	177.20	136	1.6
7/26/2007	O31	31.2	2.89	59.67	177.15	59.65	177.14	174	2.3
7/26/2007	O30	30.0	2.79	59.67	176.55	59.67	176.50	136	1.9
7/26/2007	O29	30.0	2.80	59.67	175.90	59.67	175.85	138	2.0
7/26/2007	J12	31.2	2.88	57.98	160.84	58.01	160.84	47	3.6
7/26/2007	J11	31.2	2.89	58.01	161.48	57.98	161.48	56	3.8
7/26/2007	I11	30.6	2.82	57.68	161.51	57.66	161.51	53	3.0
7/26/2007	H11	30.6	2.84	57.34	161.53	57.32	161.53	56	2.8
7/26/2007	G11	30.6	2.85	57.00	161.56	56.98	161.56	69	2.5
7/27/2007	N31	29.4	2.74	59.33	177.04	59.34	177.09	149	2.5
7/27/2007	N30	29.4	2.83	59.33	176.37	59.34	176.42	136	2.1
7/27/2007	N29	30.0	2.71	59.33	175.75	59.36	175.75	137	2.0
7/27/2007	M32	30.0	2.75	59.00	177.57	59.00	177.61	136	2.7
7/27/2007	M31	29.4	2.76	59.01	176.95	58.99	176.93	137	2.5
7/27/2007	F11	31.8	2.94	56.68	161.58	56.65	161.58	91	2.8
7/27/2007	F10	31.8	2.94	56.65	162.16	56.68	162.14	75	2.4
7/27/2007	E11	31.2	2.92	56.34	161.59	56.33	161.64	65	3.9
7/27/2007	E10	31.2	2.91	56.33	162.21	56.35	162.18	79	2.5
7/27/2007	D10	30.6	2.84	56.00	162.26	55.99	162.29	71	2.8
7/28/2007	M30	30.0	2.78	58.99	176.31	59.02	176.31	135	2.4
7/28/2007	M29	30.6	2.87	59.00	175.74	59.00	175.69	134	2.3
7/28/2007	L31	30.6	2.77	58.67	176.87	58.67	176.82	137	2.5
7/28/2007	L30	29.4	2.68	58.67	176.22	58.67	176.17	140	2.4

Appendix A. Details of each successful tow at every station surveyed on the 2007 eastern Bering Sea bottom trawl survey.

Start Date	Station	Minutes fishing	Distance fished (km)	Start Latitude °N	Start Longitude °W	End Latitude °N	End Longitude °W	Bottom Depth (meters)	Bottom Temperature °C
7/28/2007	L29	30.6	2.88	58.67	175.56	58.67	175.51	136	2.7
7/28/2007	J10	30.6	2.85	57.98	162.11	58.01	162.11	37	7.2
7/28/2007	I10	31.2	2.85	57.65	162.13	57.67	162.13	47	4.8
7/28/2007	I09	31.8	2.93	57.68	162.71	57.67	162.75	44	5.4
7/28/2007	H10	31.2	2.83	57.31	162.15	57.34	162.15	52	4.1
7/28/2007	G10	31.2	2.91	56.98	162.18	57.01	162.20	63	2.4
7/29/2007	H09	31.2	2.89	57.33	162.76	57.33	162.81	51	3.0
7/29/2007	H08	30.6	2.86	57.35	163.37	57.32	163.37	54	2.0
7/29/2007	G09	31.2	2.93	57.02	162.81	56.99	162.79	61	2.4
7/29/2007	G08	31.2	2.86	57.01	163.39	57.01	163.35	66	1.5
7/29/2007	F09	30.6	2.81	56.69	162.80	56.66	162.80	72	1.8
7/30/2007	F08	29.4	2.72	56.67	163.40	56.65	163.37	77	1.2

Appendix B1. Summary of crab density by tow (number/nm²) for red king crab (*Paralithodes camtschaticus*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
B07	6/16/2007	55 20.4	164 1.0	40	232	0	0	232	0	0	0	232
B08	6/16/2007	55 21.0	163 24.5	26	5972	1100	79	7151	1257	0	1257	8408
C07	6/17/2007	55 41.4	163 59.9	50	78	0	0	78	0	0	0	78
C08	6/16/2007	55 40.2	163 24.3	43	1093	0	0	1093	0	0	0	1093
C09	6/16/2007	55 40.4	162 50.2	26	1353	3263	398	5014	477	0	477	5491
D08	6/17/2007	56 0.8	163 23.1	49	0	0	0	0	77	0	77	77
D10	6/16/2007	55 59.8	162 13.8	37	1210	1855	1855	4921	4437	161	4598	9519
D10	7/27/2007	55 59.7	162 16.4	37	476	476	952	1903	2776	317	3093	4996
E07	6/17/2007	56 20.7	163 58.6	44	82	0	0	82	0	0	0	82
E10	6/16/2007	56 20.0	162 11.4	42	871	950	792	2613	2059	0	2059	4672
E10	7/27/2007	56 20.4	162 11.8	42	618	1081	618	2317	1545	0	1545	3862
E11	6/13/2007	56 20.3	161 37.5	33	1659	2608	3477	7744	8930	711	9641	17385
E11	7/27/2007	56 19.9	161 36.9	34	385	2155	1693	4233	17241	385	17626	21859
E12	6/13/2007	56 20.2	160 59.7	28	81	244	81	406	650	0	650	1055
E12	7/25/2007	56 20.0	160 60.0	28	318	0	318	636	3579	159	3738	4374
F07	6/17/2007	56 40.2	164 1.3	38	891	162	0	1053	0	0	0	1053
F08	7/30/2007	56 39.5	163 22.9	40	0	83	0	83	0	0	0	83
F09	6/16/2007	56 39.6	162 46.6	40	231	77	0	308	0	0	0	308
F09	7/29/2007	56 40.5	162 47.9	38	160	0	0	160	0	0	0	160
F10	6/15/2007	56 40.0	162 11.3	38	569	976	2359	3904	488	81	569	4474
F10	7/27/2007	56 39.8	162 9.0	39	153	767	1227	2147	843	0	843	2991
F11	6/13/2007	56 40.0	161 35.5	45	0	318	0	318	477	0	477	795
F11	7/27/2007	56 40.0	161 34.9	48	1610	2300	1686	5596	843	0	843	6439
F12	6/13/2007	56 40.5	160 59.4	36	1215	972	1377	3565	4051	162	4213	7777
F12	7/25/2007	56 40.1	160 59.3	36	2233	1436	4147	7816	10049	319	10368	18183
F13	6/13/2007	56 39.9	160 23.0	33	545	311	467	1323	4123	0	4123	5446
F13	7/24/2007	56 39.7	160 22.2	31	157	78	313	548	1252	78	1330	1878
F14	6/13/2007	56 41.0	159 46.0	21	164	246	328	739	246	0	246	985
F20	7/4/2007	56 49.8	169 18.1	42	0	0	0	0	234	0	234	234
G05	6/20/2007	56 59.8	165 13.0	36	161	0	0	161	0	0	0	161
G06	6/20/2007	56 59.4	164 36.2	38	986	164	0	1150	0	0	0	1150
G07	6/17/2007	56 60.0	164 1.7	34	984	492	82	1557	0	0	0	1557
G08	6/17/2007	57 0.2	163 25.5	36	80	80	80	239	80	0	80	319

Appendix B1. Summary of crab density by tow (number/nm²) for red king crab (*Paralithodes camtschaticus*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
G08	7/29/2007	57 0.6	163 22.2	34	787	315	0	1102	79	0	79	1180
G09	6/15/2007	57 0.2	162 47.7	30	229	306	1375	1910	1910	840	2750	4660
G09	7/29/2007	57 0.3	162 47.8	32	1000	615	1308	2923	2231	385	2615	5538
G10	6/15/2007	56 59.5	162 10.7	32	310	542	4185	5037	3720	2325	6045	11082
G10	7/28/2007	56 59.7	162 11.2	33	542	387	7282	8212	1549	1472	3021	11234
G11	6/13/2007	56 59.8	161 34.8	35	476	952	1984	3412	2778	397	3174	6587
G11	7/26/2007	56 59.4	161 33.9	36	710	710	1893	3312	1419	0	1419	4731
G12	6/13/2007	57 0.3	160 58.9	33	238	475	238	950	1663	0	1663	2613
G12	7/25/2007	57 0.2	160 57.6	33	1179	393	314	1887	4874	79	4952	6839
G13	6/12/2007	56 60.0	160 20.1	32	625	313	391	1328	3360	0	3360	4689
G13	7/24/2007	56 59.6	160 20.7	33	781	1562	1093	3436	5076	156	5232	8668
G14	6/12/2007	56 59.7	159 40.6	29	82	82	0	164	1229	0	1229	1393
G20	7/4/2007	56 59.8	169 33.4	31	162	81	0	242	0	0	0	242
G20	7/4/2007	57 9.8	169 20.1	37	121	0	0	121	121	0	121	241
G21	7/5/2007	56 50.1	169 54.6	38	164	0	0	164	82	0	82	247
G21	7/5/2007	56 59.8	170 9.7	36	971	0	0	971	162	0	162	1133
G21	7/6/2007	56 59.6	170 19.4	35	167	0	0	167	167	0	167	335
G21	7/6/2007	57 5.3	170 7.4	21	1268	91	181	1540	2537	0	2537	4077
G21	7/6/2007	57 0.6	170 0.6	34	847	0	0	847	1129	0	1129	1976
G22	7/5/2007	57 6.8	170 28.6	25	2255	886	564	3705	3061	0	3061	6766
H04	6/26/2007	57 20.6	165 52.1	37	82	0	0	82	0	0	0	82
H06	6/20/2007	57 19.8	164 36.8	36	82	0	0	82	0	0	0	82
H07	6/18/2007	57 20.0	164 0.8	32	238	0	0	238	0	0	0	238
H08	6/18/2007	57 20.5	163 23.4	28	729	648	162	1540	81	0	81	1621
H08	7/29/2007	57 20.2	163 22.3	28	393	393	315	1102	236	0	236	1338
H09	6/15/2007	57 20.3	162 45.9	24	1315	1083	1160	3559	2553	309	2863	6421
H09	7/29/2007	57 19.9	162 47.2	26	312	234	78	624	2184	78	2262	2886
H10	6/15/2007	57 20.1	162 8.9	27	642	321	2889	3853	4334	642	4976	8829
H10	7/28/2007	57 19.6	162 9.1	27	80	239	796	1114	4137	318	4455	5569
H11	6/13/2007	57 19.8	161 32.4	28	236	393	2827	3455	2591	864	3455	6910
H11	7/26/2007	57 19.9	161 32.0	29	317	159	1508	1984	2143	1270	3412	5396
H12	6/13/2007	57 20.3	160 55.6	34	389	156	78	622	933	0	933	1555
H12	7/25/2007	57 19.5	160 56.0	33	235	314	549	1099	3688	0	3688	4787

Appendix B1. Summary of crab density by tow (number/nm²) for red king crab (*Paralithodes camtschaticus*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
H13	6/12/2007	57 20.2	160 18.2	30	306	458	76	840	2139	229	2368	3209
H13	7/24/2007	57 19.8	160 18.4	32	774	387	619	1781	5265	0	5265	7045
H14	6/12/2007	57 19.9	159 40.9	29	393	0	0	393	785	0	785	1178
H15	6/11/2007	57 20.2	159 4.6	24	0	82	0	82	82	82	165	247
H20	7/5/2007	57 19.3	169 36.8	32	584	0	0	584	250	0	250	834
H21	7/5/2007	57 10.6	169 52.9	25	320	0	0	320	0	0	0	320
H21	7/7/2007	57 20.3	170 13.4	30	238	0	0	238	0	0	0	238
I07	6/18/2007	57 40.2	164 0.7	26	321	161	80	562	0	0	0	562
I08	6/18/2007	57 40.1	163 23.2	25	634	396	158	1188	792	0	792	1980
I08	7/23/2007	57 40.2	163 19.4	25	308	77	77	463	2544	0	2544	3007
I09	6/15/2007	57 39.9	162 45.1	22	1600	991	991	3582	3506	0	3506	7088
I09	7/28/2007	57 40.6	162 44.1	22	461	384	461	1306	2382	77	2459	3765
I10	6/15/2007	57 39.7	162 7.9	26	711	395	3478	4585	3241	1265	4506	9091
I10	7/28/2007	57 39.5	162 7.9	24	396	79	949	1424	3718	475	4193	5617
I11	6/14/2007	57 40.1	161 31.1	27	398	1193	2705	4296	2307	1512	3819	8115
I11	7/26/2007	57 40.1	161 30.5	27	319	80	798	1198	2475	160	2635	3832
I12	6/14/2007	57 40.3	160 53.6	31	157	235	627	1018	1018	157	1175	2193
I12	7/25/2007	57 40.0	160 52.9	30	565	323	646	1533	726	242	968	2502
I13	6/12/2007	57 40.0	160 16.3	27	0	0	156	156	468	0	468	624
I13	7/24/2007	57 39.9	160 16.3	29	566	485	1456	2507	3316	485	3801	6308
I14	6/12/2007	57 40.5	159 38.6	26	457	229	229	914	800	0	800	1715
I15	6/11/2007	57 39.9	159 0.8	23	0	0	0	0	154	0	154	154
I21	7/8/2007	57 39.4	170 15.3	38	0	0	0	0	0	77	77	77
J05	6/20/2007	58 0.3	165 15.1	25	162	0	0	162	81	0	81	243
J06	6/20/2007	57 59.4	164 36.7	24	0	158	0	158	79	0	79	237
J07	6/18/2007	58 0.1	164 1.1	24	243	162	0	406	81	0	81	487
J08	6/18/2007	58 0.2	163 23.0	23	556	159	0	714	397	0	397	1111
J09	6/15/2007	58 0.2	162 45.0	21	634	476	396	1506	159	79	238	1744
J10	6/15/2007	58 0.2	162 6.6	20	536	536	996	2069	920	153	1073	3142
J10	7/28/2007	57 59.8	162 6.6	19	0	396	316	712	2373	158	2531	3243
J11	6/14/2007	57 59.7	161 29.9	28	635	397	952	1984	1428	873	2301	4285
J11	7/26/2007	57 59.7	161 29.0	29	233	156	1011	1400	2644	233	2877	4277
J12	6/14/2007	58 0.5	160 52.1	24	235	392	392	1019	1097	549	1646	2665

Appendix B1. Summary of crab density by tow (number/nm²) for red king crab (*Paralithodes camtschaticus*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
J12	7/26/2007	57 59.9	160 50.6	24	858	936	1717	3512	1171	156	1327	4838
J13	6/12/2007	58 0.2	160 13.0	26	309	77	77	463	386	231	617	1080
J13	7/24/2007	57 60.0	160 12.8	27	473	630	473	1576	2916	0	2916	4492
J14	6/12/2007	58 0.2	159 35.7	22	77	0	77	153	537	0	537	690
J15	6/11/2007	57 59.7	158 57.1	20	75	0	0	75	75	0	75	151
K04	6/26/2007	58 20.0	165 56.0	23	0	0	0	0	79	0	79	79
K05	6/20/2007	58 19.8	165 17.3	22	0	0	80	80	240	0	240	320
K07	6/18/2007	58 19.9	164 0.8	20	246	246	0	492	82	0	82	575
K08	6/18/2007	58 19.7	163 22.8	19	331	83	0	414	165	0	165	579
K12	6/14/2007	58 17.1	160 48.2	16	0	0	147	147	147	0	147	294
K14	6/12/2007	58 20.5	159 33.0	12	76	76	0	152	228	0	228	381
L02	6/28/2007	58 41.0	167 13.2	24	158	0	0	158	79	0	79	237
L03	6/26/2007	58 40.1	166 33.9	20	81	0	0	81	0	0	0	81
L04	6/26/2007	58 40.1	165 55.6	19	81	0	0	81	0	0	0	81
L05	6/19/2007	58 40.2	165 19.5	19	80	159	0	239	159	80	239	478
L06	6/19/2007	58 40.1	164 38.6	19	80	0	0	80	0	0	0	80
L07	6/18/2007	58 40.2	164 0.7	16	81	0	0	81	162	0	162	243
L08	6/18/2007	58 40.1	163 21.5	15	0	0	0	0	79	0	79	79
M01	7/1/2007	58 60.0	167 52.7	21	0	82	82	164	82	0	82	246
M02	7/1/2007	59 0.4	167 14.2	20	81	0	81	162	243	0	243	404
M04	6/27/2007	59 0.7	165 56.7	15	81	0	0	81	0	0	0	81
M18	7/2/2007	58 59.8	168 32.7	24	79	79	0	159	79	0	79	238
N01	7/1/2007	59 19.6	167 55.1	20	0	0	0	0	239	0	239	239
N18	6/30/2007	59 20.2	168 34.2	21	0	0	83	83	0	83	83	166
O02	6/27/2007	59 39.6	167 18.2	15	0	76	0	76	0	0	0	76
O18	6/30/2007	59 40.0	168 37.4	20	162	0	162	325	81	0	81	406
O19	6/30/2007	59 40.0	169 15.9	25	81	81	0	162	162	0	162	323
P01	6/28/2007	60 0.6	167 59.4	12	78	78	0	156	156	0	156	311
Q18	6/28/2007	60 20.0	168 41.5	18	79	79	159	317	159	0	159	476

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

Appendix B2. Summary of crab density by tow (number/nm²) for Pribilof District blue king crab (*Paralithodes platypus*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
G20	7/4/2007	56 59.8	169 33.4	31	0	0	0	0	81	0	81	81
H19	7/5/2007	57 20.0	168 59.2	37	164	246	164	574	656	0	656	1231
H20	7/7/2007	57 29.5	169 21.3	36	80	161	643	885	241	161	402	1287
I18	7/1/2007	57 40.1	168 24.3	38	0	0	0	0	0	82	82	82
I22	7/8/2007	57 40.1	170 54.3	45	0	0	83	83	0	0	0	83
J18	7/1/2007	57 59.9	168 26.3	38	0	0	81	81	81	0	81	163

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

Appendix B3. Summary of crab density by tow (number/nm²) for St. Matthew Island blue king crab (*Paralithodes platypus*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
N25	7/16/2007	59 20.1	173 9.7	53	169	339	423	931	0	0	0	931
N26	7/15/2007	59 19.7	173 48.1	59	0	0	163	163	0	0	0	163
O23	7/16/2007	59 39.8	171 54.2	40	0	0	80	80	0	0	0	80
O24	7/17/2007	59 40.3	172 34.3	45	80	319	319	718	0	0	0	718
O25	7/16/2007	59 39.9	173 13.5	50	237	475	870	1583	0	79	79	1662
O25	7/17/2007	59 30.2	172 52.5	50	159	397	79	636	0	0	0	636
O25	7/17/2007	59 49.7	172 55.6	42	79	238	238	554	79	158	238	792
O26	7/16/2007	59 30.7	173 30.1	54	923	755	587	2266	0	0	0	2266
O26	7/18/2007	59 49.6	174 14.1	57	81	0	0	81	0	0	0	81
O26	7/18/2007	59 40.5	173 52.6	56	243	324	81	648	0	0	0	648
P23	7/18/2007	59 50.1	172 15.0	40	0	78	78	156	0	0	0	156
P23	7/18/2007	59 58.7	171 56.4	36	0	0	80	80	0	0	0	80
P23	7/18/2007	60 9.7	172 19.2	30	0	0	476	476	0	159	159	634
P24	7/18/2007	59 59.3	172 35.1	35	80	80	80	240	80	0	80	320
P25	7/16/2007	59 50.6	173 34.1	50	83	664	581	1328	0	0	0	1328
P25	7/16/2007	60 0.7	173 18.8	39	98	197	197	491	0	0	0	491
P26	7/17/2007	60 6.9	173 46.8	47	163	163	245	572	0	0	0	572
P26	7/18/2007	60 0.8	173 56.5	51	478	159	80	716	0	0	0	716
P27	7/18/2007	60 10.0	174 20.8	54	169	0	507	676	85	85	169	845
Q23	7/18/2007	60 19.8	172 3.9	31	0	238	79	317	0	0	0	317
Q25	7/17/2007	60 19.0	173 24.1	33	236	0	944	1180	0	472	472	1651
Q25	7/17/2007	60 11.5	173 2.0	31	244	81	3986	4311	325	1627	1952	6263
Q26	7/17/2007	60 19.7	174 4.2	48	167	167	83	416	0	0	0	416
Q27	7/21/2007	60 20.5	174 43.2	55	0	80	80	161	0	0	0	161
R23	7/19/2007	60 40.3	172 7.8	32	0	80	80	160	0	0	0	160
R24	7/19/2007	60 39.7	172 44.6	23	796	2228	4694	7717	80	159	239	7955
R25	7/17/2007	60 40.8	173 28.1	34	0	81	814	895	0	163	163	1058
R26	7/17/2007	60 39.6	174 6.6	45	81	81	0	162	0	0	0	162
S26	7/21/2007	60 59.9	174 10.3	44	83	0	0	83	0	0	0	83
S27	7/21/2007	60 59.6	174 52.9	49	0	82	0	82	0	82	82	164

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

Appendix B4. Summary of crab density by tow (number/nm²) for Tanner crab (*Chionoecetes bairdi*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
A02	7/13/2007	55 0.8	166 56.5	83	84	1089	9803	10976	587	11982	12568	23545
A03	6/24/2007	55 0.5	166 20.7	79	237	1302	6626	8165	5088	7455	12543	20707
A04	6/24/2007	54 50.1	165 31.4	85	1854	4259	39938	46050	369	36497	36866	82917
A04	6/24/2007	54 60.0	165 45.8	72	577	2062	3135	5775	5910	11989	17898	23673
A05	6/24/2007	55 0.3	165 9.7	59	0	472	3145	3617	0	2831	2831	6448
B01	7/13/2007	55 21.0	167 33.5	79	0	1121	4831	5952	345	12853	13198	19150
B02	7/13/2007	55 20.1	166 58.3	74	0	492	6803	7294	738	3278	4016	11310
B03	6/24/2007	55 20.4	166 20.9	73	80	1761	10164	12005	2241	6163	8404	20409
B04	6/24/2007	55 20.3	165 46.8	63	243	3644	10771	14658	5800	10440	16241	30899
B05	6/21/2007	55 19.4	165 10.0	58	1012	7488	33394	41895	6017	11922	17938	59833
B06	6/21/2007	55 20.5	164 33.1	55	1055	2759	5600	9415	4058	4302	8360	17774
B07	6/16/2007	55 20.4	164 1.0	40	695	1467	1622	3784	232	77	309	4093
B08	6/16/2007	55 21.0	163 24.5	26	3857	14203	14553	32613	17917	481	18398	51011
C01	7/13/2007	55 40.3	167 35.2	72	0	414	2237	2652	0	912	912	3563
C02	7/13/2007	55 40.5	166 59.1	72	0	323	3961	4285	162	1698	1859	6144
C03	6/25/2007	55 40.5	166 23.5	67	245	2208	18772	21226	1945	5835	7780	29006
C04	6/24/2007	55 40.2	165 47.8	62	0	2754	3541	6295	79	630	708	7004
C05	6/21/2007	55 39.8	165 11.6	57	242	726	1210	2179	81	403	484	2663
C06	6/21/2007	55 40.1	164 37.0	53	164	987	2467	3618	247	2220	2467	6085
C07	6/17/2007	55 41.4	163 59.9	50	2325	1278	9531	13134	2724	4280	7004	20137
C08	6/16/2007	55 40.2	163 24.3	43	780	1405	1951	4136	312	858	1171	5307
C09	6/16/2007	55 40.4	162 50.2	26	159	4934	5412	10505	1671	80	1751	12256
C18	7/2/2007	55 40.0	168 11.0	73	0	493	1775	2268	0	1874	1874	4142
D01	7/13/2007	56 0.4	167 37.4	71	0	561	561	1122	80	1122	1203	2325
D02	6/29/2007	56 4.0	167 0.0	73	329	1070	9714	11113	1070	8808	9878	20991
D03	6/25/2007	56 0.2	166 23.6	66	245	3348	6860	10453	3511	4655	8166	18619
D04	6/25/2007	55 59.8	165 46.9	60	81	1054	2514	3650	406	3163	3569	7218
D05	6/21/2007	56 0.0	165 11.1	50	160	1437	9258	10854	878	6065	6943	17797
D06	6/21/2007	56 0.0	164 35.9	51	324	891	486	1702	405	648	1054	2755
D07	6/17/2007	55 60.0	164 2.2	48	159	557	2306	3022	159	1034	1193	4215
D08	6/17/2007	56 0.8	163 23.1	49	154	463	1697	2315	231	463	694	3009
D09	6/17/2007	55 59.1	162 49.5	44	81	244	488	814	81	0	81	895
D10	7/27/2007	55 59.7	162 16.4	37	159	79	79	317	0	0	0	317

Appendix B4. Summary of crab density by tow (number/nm²) for Tanner crab (*Chionoecetes bairdi*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
D18	7/2/2007	55 59.9	168 13.5	80	0	1845	7780	9625	0	12673	12673	22297
E01	7/13/2007	56 21.1	167 39.1	68	0	563	885	1448	0	1448	1448	2897
E02	6/29/2007	56 20.2	167 1.8	62	166	1576	3732	5473	2985	3897	6883	12356
E03	6/25/2007	56 20.3	166 25.1	54	0	565	5251	5816	1535	3635	5170	10986
E04	6/25/2007	56 20.1	165 48.0	50	0	490	1062	1552	327	1470	1797	3349
E05	6/21/2007	56 20.1	165 12.3	45	0	324	324	648	81	162	243	891
E06	6/21/2007	56 19.9	164 35.3	48	0	1429	1345	2774	336	1177	1513	4288
E07	6/17/2007	56 20.7	163 58.6	44	0	328	1722	2050	328	656	984	3034
E08	6/17/2007	56 20.1	163 25.0	47	0	491	1309	1800	245	164	409	2209
E09	6/16/2007	56 19.4	162 48.5	43	160	878	479	1516	638	399	1037	2553
E10	6/16/2007	56 20.0	162 11.4	42	317	713	792	1821	634	238	871	2692
E10	7/27/2007	56 20.4	162 11.8	42	77	850	0	927	0	0	0	927
E11	6/13/2007	56 20.3	161 37.5	33	0	553	158	711	237	0	237	948
E11	7/27/2007	56 19.9	161 36.9	34	77	308	308	693	154	0	154	847
E12	6/13/2007	56 20.2	160 59.7	28	0	487	81	568	81	0	81	650
E12	7/25/2007	56 20.0	160 60.0	28	0	159	159	318	0	0	0	318
E18	7/2/2007	56 18.7	168 14.8	86	1083	4416	22187	27687	83	26643	26727	54413
E19	7/4/2007	56 19.6	168 52.6	69	634	1980	2613	5227	79	4276	4355	9582
E20	7/4/2007	56 20.5	169 29.9	77	0	275	11280	11556	183	21002	21185	32741
E21	7/7/2007	56 20.2	170 3.9	58	250	3171	6092	9513	4339	4423	8762	18275
E22	7/7/2007	56 19.9	170 41.0	65	0	550	10534	11084	79	3852	3930	15014
F01	6/30/2007	56 40.3	167 39.7	56	81	1697	21893	23671	566	19958	20523	44194
F02	6/29/2007	56 39.8	167 3.9	53	0	487	2437	2925	244	1137	1381	4306
F03	6/25/2007	56 40.0	166 26.4	44	0	321	1203	1523	160	641	802	2325
F04	6/25/2007	56 40.9	165 51.4	43	0	325	1545	1871	244	407	651	2521
F05	6/21/2007	56 39.6	165 13.6	39	0	318	716	1035	239	159	398	1433
F06	6/20/2007	56 40.3	164 34.9	40	0	709	709	1417	315	0	315	1732
F07	6/17/2007	56 40.2	164 1.3	38	0	486	729	1215	729	0	729	1944
F08	6/17/2007	56 40.1	163 22.9	40	0	475	712	1187	237	79	317	1504
F08	7/30/2007	56 39.5	163 22.9	40	0	909	413	1323	83	0	83	1406
F09	6/16/2007	56 39.6	162 46.6	40	0	693	616	1309	231	77	308	1617
F09	7/29/2007	56 40.5	162 47.9	38	80	1280	800	2160	240	0	240	2400
F10	6/15/2007	56 40.0	162 11.3	38	81	1464	976	2521	81	81	163	2684

Appendix B4. Summary of crab density by tow (number/nm²) for Tanner crab (*Chionoecetes bairdi*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
F10	7/27/2007	56 39.8	162 9.0	39	153	1380	460	1994	0	0	0	1994
F11	6/13/2007	56 40.0	161 35.5	45	318	636	318	1272	159	0	159	1431
F11	7/27/2007	56 40.0	161 34.9	48	920	1610	77	2606	0	0	0	2606
F12	6/13/2007	56 40.5	160 59.4	36	162	324	405	891	324	0	324	1215
F12	7/25/2007	56 40.1	160 59.3	36	319	1595	479	2393	160	0	160	2552
F13	6/13/2007	56 39.9	160 23.0	33	0	389	311	700	156	0	156	856
F13	7/24/2007	56 39.7	160 22.2	31	0	235	313	548	157	0	157	704
F18	7/2/2007	56 39.6	168 17.2	59	0	273	273	546	0	136	136	682
F19	7/4/2007	56 40.2	168 54.0	54	649	2109	5272	8029	730	1379	2109	10138
F19	7/4/2007	56 49.0	168 36.8	52	0	496	2397	2893	248	2314	2562	5455
F20	7/4/2007	56 40.6	169 30.6	42	160	1362	1602	3125	0	320	320	3445
F20	7/4/2007	56 49.8	169 18.1	42	156	1015	1015	2186	0	156	156	2342
F21	7/6/2007	56 40.1	170 7.0	51	164	983	7699	8845	2703	2211	4914	13759
F22	7/7/2007	56 41.3	170 43.8	60	698	1785	3027	5510	310	931	1242	6752
F23	7/10/2007	56 39.8	171 20.9	64	247	2059	4448	6755	330	1236	1565	8320
F24	7/10/2007	56 39.2	171 57.5	68	0	83	1654	1737	0	662	662	2399
F25	7/14/2007	56 41.0	172 33.9	72	0	0	3824	3824	0	8218	8218	12042
G01	6/30/2007	57 0.0	167 42.3	43	0	243	4043	4286	243	2264	2507	6793
G02	6/29/2007	57 0.2	167 5.7	40	0	78	1093	1171	78	0	78	1249
G03	6/25/2007	57 0.3	166 27.6	38	0	236	551	787	0	79	79	865
G04	6/25/2007	56 59.1	165 50.7	39	0	580	83	662	83	0	83	745
G05	6/20/2007	56 59.8	165 13.0	36	0	80	562	643	80	0	80	723
G06	6/20/2007	56 59.4	164 36.2	38	0	164	0	164	82	0	82	247
G07	6/17/2007	56 60.0	164 1.7	34	82	492	164	738	0	0	0	738
G08	6/17/2007	57 0.2	163 25.5	36	0	557	239	796	0	0	0	796
G08	7/29/2007	57 0.6	163 22.2	34	0	393	157	551	0	0	0	551
G09	6/15/2007	57 0.2	162 47.7	30	0	611	306	917	0	0	0	917
G09	7/29/2007	57 0.3	162 47.8	32	0	154	231	385	0	0	0	385
G10	6/15/2007	56 59.5	162 10.7	32	0	0	310	310	0	0	0	310
G10	7/28/2007	56 59.7	162 11.2	33	0	232	77	310	0	0	0	310
G11	6/13/2007	56 59.8	161 34.8	35	159	476	238	873	0	0	0	873
G11	7/26/2007	56 59.4	161 33.9	36	0	158	158	315	0	0	0	315
G12	6/13/2007	57 0.3	160 58.9	33	79	79	79	238	0	79	79	317

Appendix B4. Summary of crab density by tow (number/nm2) for Tanner crab (*Chionoecetes bairdi*).

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
G12	7/25/2007	57	0.2	160	57.6	33	0	79	79	157	0	0	0	157
G13	6/12/2007	56	60.0	160	20.1	32	78	313	313	703	0	0	0	703
G13	7/24/2007	56	59.6	160	20.7	33	0	390	547	937	234	0	234	1171
G14	6/12/2007	56	59.7	159	40.6	29	82	328	82	492	0	0	0	492
G18	7/2/2007	56	59.2	168	20.4	45	0	580	1856	2436	464	2784	3248	5684
G19	7/4/2007	57	0.5	168	58.1	42	0	235	706	941	0	0	0	941
G19	7/4/2007	57	9.8	168	38.3	40	0	782	2658	3440	156	1016	1173	4612
G20	7/4/2007	56	59.8	169	33.4	31	727	5091	4202	10021	81	646	727	10748
G20	7/4/2007	57	9.8	169	20.1	37	241	1205	2531	3978	241	362	603	4581
G21	7/5/2007	56	50.1	169	54.6	38	3452	17097	3535	24084	82	164	247	24331
G21	7/5/2007	56	59.8	170	9.7	36	12330	69162	22276	103769	1376	810	2186	105955
G21	7/6/2007	56	59.6	170	19.4	35	84	1758	4938	6779	1674	1507	3180	9960
G21	7/6/2007	57	5.3	170	7.4	21	0	91	1087	1178	0	91	91	1268
G21	7/6/2007	57	0.6	170	0.6	34	2729	48698	32386	83813	2164	659	2823	86635
G21	7/6/2007	56	55.4	170	11.5	43	808	6465	6303	13576	323	323	646	14223
G22	7/5/2007	57	6.8	170	28.6	25	1670	9090	19107	29867	1692	322	2014	31881
G22	7/6/2007	56	50.1	170	28.6	54	0	1267	5149	6417	396	1267	1664	8080
G22	7/7/2007	57	0.2	170	46.8	50	80	1677	7824	9580	80	878	958	10538
G23	7/10/2007	57	0.2	171	23.2	58	169	1013	3799	4981	422	2195	2617	7598
G24	7/10/2007	56	58.2	172	2.4	63	0	418	1673	2091	84	669	753	2844
G25	7/14/2007	57	0.5	172	39.1	65	0	0	2727	2727	0	4772	4772	7499
G26	7/14/2007	56	59.9	173	15.2	75	0	0	1205	1205	0	402	402	1607
H01	6/30/2007	57	20.0	167	44.8	40	0	237	2765	3002	79	1501	1580	4582
H02	6/29/2007	57	20.4	167	7.1	39	0	83	1905	1988	83	83	166	2154
H03	6/26/2007	57	19.8	166	29.0	36	0	2185	6960	9145	0	243	243	9388
H04	6/26/2007	57	20.6	165	52.1	37	0	653	2202	2855	82	0	82	2937
H05	6/20/2007	57	20.2	165	13.7	34	0	81	403	484	0	0	0	484
H06	6/20/2007	57	19.8	164	36.8	36	0	82	247	329	0	82	82	411
H07	6/18/2007	57	20.0	164	0.8	32	0	238	318	556	79	79	159	715
H08	6/18/2007	57	20.5	163	23.4	28	0	162	729	891	0	0	0	891
H08	7/29/2007	57	20.2	163	22.3	28	0	79	157	236	0	0	0	236
H09	6/15/2007	57	20.3	162	45.9	24	0	77	232	309	0	0	0	309
H09	7/29/2007	57	19.9	162	47.2	26	0	78	0	78	0	0	0	78

Appendix B4. Summary of crab density by tow (number/nm2) for Tanner crab (*Chionoecetes bairdi*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
H10	6/15/2007	57 20.1	162 8.9	27	0	161	80	241	80	0	80	321
H11	7/26/2007	57 19.9	161 32.0	29	0	0	79	79	0	0	0	79
H12	6/13/2007	57 20.3	160 55.6	34	0	467	156	622	78	0	78	700
H12	7/25/2007	57 19.5	160 56.0	33	0	78	0	78	0	0	0	78
H13	6/12/2007	57 20.2	160 18.2	30	0	0	382	382	0	0	0	382
H13	7/24/2007	57 19.8	160 18.4	32	0	232	0	232	0	0	0	232
H15	6/11/2007	57 20.2	159 4.6	24	0	0	82	82	0	0	0	82
H18	7/1/2007	57 20.1	168 22.0	40	0	236	1182	1418	0	236	236	1654
H19	7/5/2007	57 20.0	168 59.2	37	0	246	2051	2297	82	164	246	2544
H20	7/5/2007	57 19.3	169 36.8	32	0	584	2251	2835	83	1334	1418	4253
H20	7/7/2007	57 29.5	169 21.3	36	0	563	3057	3620	0	643	643	4263
H21	7/5/2007	57 10.6	169 52.9	25	0	0	880	880	80	80	160	1040
H21	7/7/2007	57 20.3	170 13.4	30	0	397	1112	1509	0	0	0	1509
H22	7/7/2007	57 20.2	170 51.4	44	0	492	984	1476	0	82	82	1558
H22	7/8/2007	57 29.8	170 35.2	39	83	1077	2899	4059	414	1491	1905	5964
H23	7/10/2007	57 19.9	171 28.2	54	0	413	495	908	165	578	743	1651
H24	7/10/2007	57 20.7	172 5.7	59	0	738	11314	12052	984	4427	5411	17464
H25	7/14/2007	57 20.6	172 49.7	62	0	0	1134	1134	0	405	405	1539
H26	7/14/2007	57 19.9	173 20.1	65	0	86	343	429	86	86	171	600
I01	6/30/2007	57 40.3	167 46.5	37	0	239	2308	2547	0	557	557	3104
I02	6/28/2007	57 40.3	167 7.1	37	0	0	889	889	0	0	0	889
I03	6/26/2007	57 40.1	166 30.6	34	0	728	6306	7033	81	0	81	7114
I04	6/26/2007	57 40.0	165 53.3	34	0	493	1397	1891	0	0	0	1891
I05	6/20/2007	57 40.2	165 15.2	31	0	0	322	322	0	0	0	322
I06	6/20/2007	57 39.5	164 36.8	28	0	333	250	583	83	83	167	750
I07	6/18/2007	57 40.2	164 0.7	26	0	0	80	80	0	0	0	80
I08	6/18/2007	57 40.1	163 23.2	25	0	79	0	79	0	0	0	79
I11	6/14/2007	57 40.1	161 31.1	27	0	80	80	159	0	0	0	159
I12	6/14/2007	57 40.3	160 53.6	31	0	0	78	78	0	0	0	78
I12	7/25/2007	57 40.0	160 52.9	30	0	81	0	81	0	0	0	81
I13	6/12/2007	57 40.0	160 16.3	27	0	0	78	78	0	0	0	78
I13	7/24/2007	57 39.9	160 16.3	29	0	0	81	81	0	0	0	81
I14	6/12/2007	57 40.5	159 38.6	26	0	114	0	114	0	0	0	114

Appendix B4. Summary of crab density by tow (number/nm²) for Tanner crab (*Chionoecetes bairdi*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
I18	7/1/2007	57 40.1	168 24.3	38	0	0	1142	1142	163	163	326	1468
I19	7/5/2007	57 30.5	168 44.6	37	0	83	1330	1413	0	416	416	1828
I19	7/5/2007	57 39.7	169 1.3	36	0	0	485	485	0	0	0	485
I19	7/5/2007	57 48.8	168 44.1	37	0	0	832	832	333	832	1165	1997
I20	7/6/2007	57 39.8	169 39.1	37	0	240	1041	1281	0	0	0	1281
I21	7/7/2007	57 30.4	169 59.0	36	0	1576	3467	5043	1340	1103	2443	7486
I21	7/7/2007	57 49.8	169 59.6	38	0	77	155	232	155	773	928	1160
I21	7/8/2007	57 39.4	170 15.3	38	0	1151	3454	4606	768	1535	2303	6908
I22	7/8/2007	57 40.1	170 54.3	45	0	414	4968	5382	83	828	911	6293
I23	7/10/2007	57 39.8	171 32.2	53	0	713	634	1346	79	158	238	1584
I24	7/10/2007	57 39.8	172 10.8	57	0	911	1904	2815	83	1573	1656	4471
I25	7/14/2007	57 40.1	172 48.5	63	0	238	477	715	159	318	477	1192
I26	7/14/2007	57 40.8	173 23.7	79	0	85	3384	3469	0	2284	2284	5753
J01	6/30/2007	57 59.9	167 48.1	36	0	0	980	980	0	0	0	980
J02	6/28/2007	58 0.3	167 10.4	34	0	1856	8729	10585	0	0	0	10585
J03	6/26/2007	58 0.3	166 31.7	31	0	1778	7558	9336	0	0	0	9336
J04	6/26/2007	57 59.6	165 54.6	30	0	151	301	452	0	0	0	452
J05	6/20/2007	58 0.3	165 15.1	25	0	0	162	162	0	0	0	162
J11	7/26/2007	57 59.7	161 29.0	29	0	0	78	78	0	0	0	78
J18	7/1/2007	57 59.9	168 26.3	38	81	325	2927	3334	244	1870	2114	5448
J19	7/5/2007	57 59.9	169 5.1	36	0	82	1795	1877	0	326	326	2203
J20	7/6/2007	58 0.1	169 41.7	37	0	0	4052	4052	0	675	675	4727
J20	7/6/2007	57 50.1	169 22.2	35	0	79	1104	1183	0	0	0	1183
J21	7/8/2007	57 59.8	170 20.7	39	0	384	2455	2839	2072	2532	4604	7443
J22	7/8/2007	57 50.4	170 36.1	41	0	157	549	706	78	392	471	1176
J22	7/8/2007	57 59.9	170 58.5	46	0	83	831	914	0	0	0	914
J23	7/10/2007	58 0.1	171 35.8	52	0	405	810	1215	0	1215	1215	2430
J24	7/10/2007	57 59.6	172 15.5	56	0	0	322	322	0	161	161	483
J25	7/14/2007	58 0.2	172 51.5	58	0	155	1317	1472	155	1007	1162	2635
J26	7/15/2007	58 0.1	173 28.8	62	0	0	1714	1714	327	1551	1878	3592
K01	7/1/2007	58 20.1	167 50.6	33	0	5758	86939	92697	0	460	460	93156
K02	6/28/2007	58 20.2	167 11.2	28	82	82	5725	5888	0	82	82	5970
K03	6/26/2007	58 20.0	166 33.3	24	0	79	946	1025	0	79	79	1104

Appendix B4. Summary of crab density by tow (number/nm²) for Tanner crab (*Chionoecetes bairdi*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
K04	6/26/2007	58 20.0	165 56.0	23	0	0	159	159	0	0	0	159
K06	6/19/2007	58 19.9	164 38.3	23	0	0	79	79	0	0	0	79
K18	7/1/2007	58 19.5	168 28.0	36	0	818	22368	23187	273	818	1091	24278
K19	7/6/2007	58 19.8	169 7.5	36	0	78	6518	6596	0	842	842	7438
K20	7/6/2007	58 20.0	169 44.1	37	0	80	2254	2334	80	322	402	2737
K21	7/8/2007	58 19.6	170 22.8	39	0	0	1791	1791	0	0	0	1791
K22	7/8/2007	58 20.2	171 1.0	44	0	0	480	480	559	559	1119	1598
K23	7/9/2007	58 19.7	171 39.1	51	79	0	1104	1183	0	315	315	1498
K24	7/9/2007	58 20.0	172 17.9	55	0	404	1049	1453	81	404	484	1937
K25	7/9/2007	58 19.7	172 55.8	59	0	78	311	388	0	233	233	621
K26	7/15/2007	58 20.5	173 33.7	61	0	250	2414	2663	0	499	499	3163
K27	7/19/2007	58 20.1	174 18.1	87	0	0	3622	3622	0	4043	4043	7665
L01	7/1/2007	58 40.4	167 52.8	24	0	78	1096	1174	0	0	0	1174
L02	6/28/2007	58 41.0	167 13.2	24	0	79	158	237	0	0	0	237
L18	7/1/2007	58 40.1	168 30.1	27	0	259	24563	24822	0	5688	5688	30510
L19	7/2/2007	58 40.0	169 9.8	33	0	0	3012	3012	0	238	238	3250
L20	7/2/2007	58 40.1	169 47.6	35	0	0	45651	45651	0	21684	21684	67335
L21	7/8/2007	58 40.3	170 25.8	39	0	77	154	231	0	77	77	308
L22	7/9/2007	58 40.2	171 5.5	44	0	124	618	742	124	1360	1484	2226
L23	7/9/2007	58 40.3	171 45.0	49	0	78	1244	1322	0	233	233	1555
L24	7/9/2007	58 40.0	172 22.2	54	0	166	1493	1659	83	166	249	1907
L25	7/9/2007	58 39.8	172 59.8	60	0	156	390	546	468	624	1093	1639
L26	7/15/2007	58 40.2	173 38.2	67	0	0	508	508	0	339	339	846
L27	7/19/2007	58 40.0	174 15.0	83	0	81	6509	6591	0	6428	6428	13019
L28	7/20/2007	58 44.6	174 56.7	77	0	0	13604	13604	0	8398	8398	22002
L29	7/28/2007	58 40.3	175 32.1	73	0	0	7437	7437	0	8141	8141	15578
L30	7/28/2007	58 40.2	176 11.5	75	0	0	6389	6389	0	8575	8575	14965
L31	7/28/2007	58 40.0	176 50.8	73	0	0	3004	3004	0	5359	5359	8363
M18	7/2/2007	58 59.8	168 32.7	24	0	0	874	874	0	159	159	1033
M19	7/2/2007	59 0.0	169 11.3	28	0	0	51153	51153	0	11190	11190	62343
M20	7/2/2007	59 0.1	169 49.7	33	0	2120	89037	91157	0	33919	33919	125076
M21	7/8/2007	58 59.9	170 29.0	38	0	0	607	607	0	531	531	1138
M22	7/15/2007	59 0.1	171 7.8	41	0	322	1127	1449	0	161	161	1610

Appendix B4. Summary of crab density by tow (number/nm²) for Tanner crab (*Chionoecetes bairdi*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
M24	7/9/2007	59 0.4	172 25.8	53	0	77	1546	1624	155	928	1082	2706
M25	7/9/2007	58 59.4	173 6.3	57	0	493	1232	1724	82	821	903	2627
M26	7/15/2007	59 0.2	173 43.5	62	0	0	1100	1100	79	786	864	1964
M27	7/19/2007	58 60.0	174 21.5	68	0	486	1540	2026	2512	7294	9806	11832
M28	7/20/2007	59 0.2	175 1.2	69	0	0	2015	2015	336	2855	3191	5207
M29	7/28/2007	59 0.2	175 42.9	72	0	0	2434	2434	157	1806	1963	4398
M30	7/28/2007	59 0.2	176 18.7	72	0	0	891	891	81	973	1054	1945
M31	7/27/2007	58 59.8	176 56.4	73	0	82	327	408	0	327	327	735
M32	7/27/2007	59 0.1	177 35.5	73	0	0	1227	1227	0	900	900	2126
N19	6/30/2007	59 20.3	169 15.0	26	0	0	3411	3411	0	714	714	4125
N20	6/30/2007	59 20.3	169 52.0	32	0	0	46670	46670	0	31112	31112	77782
N21	7/15/2007	59 20.1	170 31.9	36	0	0	542	542	0	0	0	542
N22	7/15/2007	59 20.1	171 10.9	40	0	160	1596	1756	80	239	319	2075
N23	7/16/2007	59 20.0	171 49.9	42	0	0	878	878	0	479	479	1356
N24	7/17/2007	59 20.1	172 30.5	46	0	162	1133	1295	81	486	567	1862
N25	7/16/2007	59 20.1	173 9.7	53	0	169	2456	2625	85	847	931	3556
N26	7/15/2007	59 19.7	173 48.1	59	0	0	732	732	81	1300	1382	2113
N27	7/19/2007	59 20.4	174 25.9	65	0	83	83	166	0	0	0	166
N28	7/20/2007	59 21.0	175 6.0	71	0	1459	11270	12729	1885	1721	3606	16335
N29	7/27/2007	59 20.8	175 45.2	73	0	0	1414	1414	250	1414	1663	3077
N30	7/27/2007	59 20.1	176 23.6	73	0	80	6847	6926	1115	4219	5334	12260
N31	7/27/2007	59 20.0	177 3.8	80	0	0	987	987	82	411	494	1481
O19	6/30/2007	59 40.0	169 15.9	25	0	0	81	81	0	0	0	81
O20	6/29/2007	59 40.6	169 55.0	30	0	0	6346	6346	0	5500	5500	11845
O21	7/15/2007	59 39.8	170 34.9	35	0	0	639	639	0	80	80	719
O22	7/16/2007	59 39.9	171 16.0	38	0	78	233	311	0	0	0	311
O24	7/17/2007	59 40.3	172 34.3	45	0	80	399	479	0	239	239	718
O25	7/16/2007	59 39.9	173 13.5	50	0	0	712	712	0	79	79	791
O25	7/17/2007	59 30.2	172 52.5	50	0	238	3895	4134	79	2862	2941	7075
O25	7/17/2007	59 49.7	172 55.6	42	0	0	79	79	0	396	396	475
O26	7/16/2007	59 30.7	173 30.1	54	0	252	1594	1846	252	839	1091	2937
O26	7/18/2007	59 49.6	174 14.1	57	0	81	244	326	81	326	407	733
O26	7/18/2007	59 40.5	173 52.6	56	0	0	729	729	162	891	1053	1782

Appendix B4. Summary of crab density by tow (number/nm²) for Tanner crab (*Chionoecetes bairdi*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
O27	7/19/2007	59 40.1	174 27.2	61	0	0	82	82	0	492	492	574
O28	7/20/2007	59 39.8	175 6.2	67	0	165	496	661	165	83	248	909
O29	7/26/2007	59 40.3	175 52.6	74	0	0	2656	2656	322	2334	2656	5313
O30	7/26/2007	59 40.2	176 31.4	73	0	0	1530	1530	483	725	1208	2739
O31	7/26/2007	59 39.6	177 8.6	93	0	0	467	467	234	234	467	934
P18	6/28/2007	60 0.0	168 40.0	19	0	0	159	159	0	0	0	159
P19	6/29/2007	59 59.8	169 18.9	22	0	0	79	79	0	0	0	79
P20	6/29/2007	60 0.2	169 58.1	28	0	77	77	154	0	0	0	154
P21	7/16/2007	59 59.8	170 37.8	34	0	0	159	159	0	0	0	159
P22	7/16/2007	60 0.1	171 18.0	36	0	0	80	80	0	0	0	80
P23	7/18/2007	59 50.1	172 15.0	40	0	0	78	78	0	78	78	156
P23	7/18/2007	59 58.7	171 56.4	36	0	0	0	0	0	241	241	241
P24	7/18/2007	59 59.3	172 35.1	35	0	0	240	240	0	160	160	400
P25	7/16/2007	59 50.6	173 34.1	50	0	0	747	747	0	249	249	996
P26	7/17/2007	60 6.9	173 46.8	47	0	0	163	163	0	327	327	490
P26	7/18/2007	60 0.8	173 56.5	51	0	159	159	318	0	239	239	557
P27	7/18/2007	59 59.7	174 36.5	58	0	0	237	237	0	79	79	316
P27	7/18/2007	60 10.0	174 20.8	54	0	0	507	507	169	423	592	1099
P28	7/21/2007	60 0.2	175 16.4	62	0	81	1209	1289	242	1289	1531	2820
P29	7/25/2007	59 59.4	175 59.2	70	0	156	860	1017	78	2268	2346	3363
P30	7/25/2007	60 0.5	176 40.8	76	0	267	4179	4446	0	89	89	4535
P32	7/26/2007	60 0.2	177 55.4	76	0	0	254	254	0	0	0	254
Q25	7/17/2007	60 19.0	173 24.1	33	0	0	0	0	0	236	236	236
Q25	7/17/2007	60 11.5	173 2.0	31	0	0	619	619	0	0	0	619
Q26	7/17/2007	60 19.7	174 4.2	48	0	0	916	916	83	916	999	1915
Q27	7/21/2007	60 20.5	174 43.2	55	0	0	241	241	80	642	723	964
Q28	7/21/2007	60 19.9	175 24.1	60	0	163	2697	2860	490	2942	3432	6293
Q29	7/25/2007	60 20.3	176 2.1	65	0	81	243	324	0	648	648	972
Q30	7/25/2007	60 20.1	176 42.1	73	0	0	0	0	0	344	344	344
Q31	7/25/2007	60 21.1	177 21.9	80	0	80	241	322	0	161	161	482
R24	7/19/2007	60 39.7	172 44.6	23	0	0	80	80	0	0	0	80
R25	7/17/2007	60 40.8	173 28.1	34	0	0	244	244	0	81	81	325
R26	7/17/2007	60 39.6	174 6.6	45	0	0	81	81	0	243	243	324

Appendix B4. Summary of crab density by tow (number/nm²) for Tanner crab (*Chionoecetes bairdi*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
R27	7/21/2007	60 40.2	174 48.9	52	0	0	0	0	0	81	81	81
R28	7/22/2007	60 40.1	175 27.5	57	0	0	417	417	83	0	83	501
R29	7/23/2007	60 39.9	176 12.3	63	0	0	84	84	0	253	253	337
R30	7/23/2007	60 40.2	176 46.7	69	0	0	402	402	80	161	241	643
R32	7/24/2007	60 40.0	178 10.8	86	0	0	202	202	0	1415	1415	1617
S28	7/22/2007	60 60.0	175 33.2	55	0	0	80	80	0	0	0	80
S29	7/23/2007	60 59.1	176 17.0	60	0	0	162	162	0	81	81	243
S30	7/24/2007	61 0.1	176 58.5	65	0	0	399	399	0	319	319	718
T26	7/21/2007	61 20.0	174 19.7	42	0	0	79	79	0	0	0	79
T29	7/23/2007	61 19.5	176 18.3	57	0	0	323	323	0	403	403	726
T30	7/24/2007	61 19.7	176 57.9	62	0	0	0	0	0	80	80	80
Z05	6/24/2007	54 40.4	165 9.0	43	0	0	80	80	0	0	0	80

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

Appendix B5. Summary of crab density by tow (number/nm²) for snow crab (*Chionoecetes opilio*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
A02	7/13/2007	55 0.8	166 56.5	83	168	0	0	168	84	0	84	251
A04	6/24/2007	54 60.0	165 45.8	72	0	165	165	330	0	0	0	330
A05	6/24/2007	55 0.3	165 9.7	59	236	79	236	550	0	0	0	550
B02	7/13/2007	55 20.1	166 58.3	74	82	0	0	82	0	0	0	82
B03	6/24/2007	55 20.4	166 20.9	73	0	0	80	80	0	0	0	80
B04	6/24/2007	55 20.3	165 46.8	63	243	0	81	324	0	0	0	324
B05	6/21/2007	55 19.4	165 10.0	58	78	0	235	313	0	0	0	313
B06	6/21/2007	55 20.5	164 33.1	55	812	243	406	1461	0	0	0	1461
B07	6/16/2007	55 20.4	164 1.0	40	309	154	309	772	0	0	0	772
B08	6/16/2007	55 21.0	163 24.5	26	550	550	1022	2122	0	0	0	2122
C01	7/13/2007	55 40.3	167 35.2	72	0	0	83	83	0	0	0	83
C03	6/25/2007	55 40.5	166 23.5	67	162	0	243	405	0	0	0	405
C04	6/24/2007	55 40.2	165 47.8	62	236	79	315	630	0	0	0	630
C05	6/21/2007	55 39.8	165 11.6	57	323	161	81	565	0	0	0	565
C06	6/21/2007	55 40.1	164 37.0	53	411	164	247	822	0	0	0	822
C07	6/17/2007	55 41.4	163 59.9	50	233	233	233	700	0	0	0	700
C08	6/16/2007	55 40.2	163 24.3	43	156	0	0	156	0	0	0	156
D01	7/13/2007	56 0.4	167 37.4	71	80	0	0	80	0	0	0	80
D02	6/29/2007	56 4.0	167 0.0	73	82	82	82	247	0	0	0	247
D03	6/25/2007	56 0.2	166 23.6	66	82	0	0	82	0	0	0	82
D04	6/25/2007	55 59.8	165 46.9	60	487	81	811	1379	0	0	0	1379
D05	6/21/2007	56 0.0	165 11.1	50	319	399	2713	3432	0	0	0	3432
D06	6/21/2007	56 0.0	164 35.9	51	243	0	486	729	0	0	0	729
D07	6/17/2007	55 60.0	164 2.2	48	0	159	239	398	0	0	0	398
D08	6/17/2007	56 0.8	163 23.1	49	154	231	77	463	0	0	0	463
D09	6/17/2007	55 59.1	162 49.5	44	163	407	163	732	0	0	0	732
D18	7/2/2007	55 59.9	168 13.5	80	0	160	0	160	0	0	0	160
E01	7/13/2007	56 21.1	167 39.1	68	724	161	2012	2897	21884	0	21884	24781
E02	6/29/2007	56 20.2	167 1.8	62	332	332	995	1659	83	0	83	1741
E03	6/25/2007	56 20.3	166 25.1	54	323	242	323	889	0	0	0	889
E04	6/25/2007	56 20.1	165 48.0	50	490	490	1552	2532	82	0	82	2614
E05	6/21/2007	56 20.1	165 12.3	45	162	405	729	1296	0	0	0	1296
E06	6/21/2007	56 19.9	164 35.3	48	84	168	1513	1766	0	0	0	1766

Appendix B5. Summary of crab density by tow (number/nm²) for snow crab (*Chionoecetes opilio*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
E07	6/17/2007	56 20.7	163 58.6	44	0	82	492	574	0	0	0	574
E08	6/17/2007	56 20.1	163 25.0	47	0	0	82	82	0	0	0	82
E09	6/16/2007	56 19.4	162 48.5	43	160	80	80	319	0	0	0	319
E10	6/16/2007	56 20.0	162 11.4	42	158	79	79	317	0	0	0	317
E11	6/13/2007	56 20.3	161 37.5	33	0	79	0	79	0	0	0	79
E18	7/2/2007	56 18.7	168 14.8	86	167	0	83	250	167	0	167	417
E21	7/7/2007	56 20.2	170 3.9	58	334	167	417	918	167	0	167	1085
E22	7/7/2007	56 19.9	170 41.0	65	472	79	393	943	157	0	157	1101
F01	6/30/2007	56 40.3	167 39.7	56	2020	1455	3150	6625	162	0	162	6786
F02	6/29/2007	56 39.8	167 3.9	53	731	894	1706	3331	162	406	569	3900
F03	6/25/2007	56 40.0	166 26.4	44	401	160	2325	2886	0	0	0	2886
F04	6/25/2007	56 40.9	165 51.4	43	163	569	651	1383	0	0	0	1383
F05	6/21/2007	56 39.6	165 13.6	39	0	0	239	239	0	0	0	239
F06	6/20/2007	56 40.3	164 34.9	40	315	157	79	551	0	0	0	551
F07	6/17/2007	56 40.2	164 1.3	38	162	162	810	1134	0	0	0	1134
F08	6/17/2007	56 40.1	163 22.9	40	0	158	237	396	0	0	0	396
F08	7/30/2007	56 39.5	163 22.9	40	248	0	165	413	0	0	0	413
F09	6/16/2007	56 39.6	162 46.6	40	77	77	231	385	0	0	0	385
F09	7/29/2007	56 40.5	162 47.9	38	0	480	320	800	0	0	0	800
F10	6/15/2007	56 40.0	162 11.3	38	81	0	0	81	0	0	0	81
F11	7/27/2007	56 40.0	161 34.9	48	77	77	0	153	0	0	0	153
F12	7/25/2007	56 40.1	160 59.3	36	160	0	0	160	0	0	0	160
F13	7/24/2007	56 39.7	160 22.2	31	0	0	78	78	0	0	0	78
F18	7/2/2007	56 39.6	168 17.2	59	819	409	1365	2593	11601	0	11601	14194
F19	7/4/2007	56 40.2	168 54.0	54	162	243	324	730	0	0	0	730
F19	7/4/2007	56 49.0	168 36.8	52	1240	413	4959	6612	20373	0	20373	26985
F20	7/4/2007	56 49.8	169 18.1	42	0	234	78	312	0	0	0	312
F21	7/6/2007	56 40.1	170 7.0	51	655	164	328	1147	82	0	82	1228
F22	7/7/2007	56 41.3	170 43.8	60	466	78	155	698	0	0	0	698
F23	7/10/2007	56 39.8	171 20.9	64	1977	2142	247	4366	2389	0	2389	6755
F24	7/10/2007	56 39.2	171 57.5	68	0	0	83	83	0	0	0	83
G01	6/30/2007	57 0.0	167 42.3	43	1698	1537	5176	8410	323	0	323	8734
G02	6/29/2007	57 0.2	167 5.7	40	547	156	78	781	78	0	78	859

Appendix B5. Summary of crab density by tow (number/nm²) for snow crab (*Chionoecetes opilio*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
G03	6/25/2007	57 0.3	166 27.6	38	0	236	236	472	0	0	0	472
G04	6/25/2007	56 59.1	165 50.7	39	248	166	0	414	0	0	0	414
G05	6/20/2007	56 59.8	165 13.0	36	0	161	80	241	0	0	0	241
G07	6/17/2007	56 60.0	164 1.7	34	0	82	0	82	0	0	0	82
G08	6/17/2007	57 0.2	163 25.5	36	80	159	398	637	0	0	0	637
G08	7/29/2007	57 0.6	163 22.2	34	157	0	0	157	0	0	0	157
G09	6/15/2007	57 0.2	162 47.7	30	0	76	76	153	0	0	0	153
G09	7/29/2007	57 0.3	162 47.8	32	0	0	77	77	0	0	0	77
G13	6/12/2007	56 60.0	160 20.1	32	0	156	0	156	0	0	0	156
G18	7/2/2007	56 59.2	168 20.4	45	812	1392	3364	5568	9281	0	9281	14849
G19	7/4/2007	57 0.5	168 58.1	42	549	235	235	1020	157	0	157	1177
G19	7/4/2007	57 9.8	168 38.3	40	1642	391	1720	3752	313	0	313	4065
G20	7/4/2007	56 59.8	169 33.4	31	727	727	566	2020	0	0	0	2020
G20	7/4/2007	57 9.8	169 20.1	37	1085	1085	2531	4701	482	0	482	5183
G21	7/5/2007	56 50.1	169 54.6	38	411	82	247	740	0	0	0	740
G21	7/5/2007	56 59.8	170 9.7	36	324	405	486	1214	81	0	81	1295
G21	7/6/2007	56 59.6	170 19.4	35	335	335	167	837	0	0	0	837
G21	7/6/2007	57 0.6	170 0.6	34	470	565	282	1317	0	0	0	1317
G21	7/6/2007	56 55.4	170 11.5	43	485	485	162	1131	0	0	0	1131
G22	7/5/2007	57 6.8	170 28.6	25	242	242	242	725	0	0	0	725
G22	7/6/2007	56 50.1	170 28.6	54	79	0	158	238	79	0	79	317
G22	7/7/2007	57 0.2	170 46.8	50	1517	639	399	2555	1118	0	1118	3672
G23	7/10/2007	57 0.2	171 23.2	58	1857	3039	1013	5909	30894	0	30894	36803
G24	7/10/2007	56 58.2	172 2.4	63	4182	3345	0	7527	0	0	0	7527
G25	7/14/2007	57 0.5	172 39.1	65	584	97	0	682	0	0	0	682
G26	7/14/2007	56 59.9	173 15.2	75	884	402	80	1366	321	0	321	1687
H01	6/30/2007	57 20.0	167 44.8	40	316	869	1027	2212	0	0	0	2212
H02	6/29/2007	57 20.4	167 7.1	39	83	83	497	663	0	0	0	663
H03	6/26/2007	57 19.8	166 29.0	36	890	1295	1133	3318	162	0	162	3480
H04	6/26/2007	57 20.6	165 52.1	37	653	6281	979	7913	0	0	0	7913
H05	6/20/2007	57 20.2	165 13.7	34	0	0	242	242	0	0	0	242
H06	6/20/2007	57 19.8	164 36.8	36	0	0	82	82	0	0	0	82
H07	6/18/2007	57 20.0	164 0.8	32	0	159	79	238	0	0	0	238

Appendix B5. Summary of crab density by tow (number/nm²) for snow crab (*Chionoecetes opilio*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
H08	6/18/2007	57 20.5	163 23.4	28	0	0	81	81	0	0	0	81
H11	7/26/2007	57 19.9	161 32.0	29	79	0	0	79	0	0	0	79
H18	7/1/2007	57 20.1	168 22.0	40	473	1024	1182	2678	0	0	0	2678
H19	7/5/2007	57 20.0	168 59.2	37	985	903	1231	3118	0	0	0	3118
H20	7/5/2007	57 19.3	169 36.8	32	3419	1584	3669	8672	167	0	167	8839
H20	7/7/2007	57 29.5	169 21.3	36	1850	2654	2735	7239	1448	0	1448	8687
H21	7/5/2007	57 10.6	169 52.9	25	80	0	0	80	0	0	0	80
H21	7/7/2007	57 20.3	170 13.4	30	0	79	0	79	0	0	0	79
H22	7/7/2007	57 20.2	170 51.4	44	82	82	0	164	574	0	574	738
H22	7/8/2007	57 29.8	170 35.2	39	911	1077	1408	3396	83	0	83	3479
H23	7/10/2007	57 19.9	171 28.2	54	6109	4788	3055	13953	8017	0	8017	21970
H24	7/10/2007	57 20.7	172 5.7	59	3034	984	246	4263	82	0	82	4345
H25	7/14/2007	57 20.6	172 49.7	62	243	81	81	405	0	0	0	405
H26	7/14/2007	57 19.9	173 20.1	65	0	171	0	171	0	0	0	171
I01	6/30/2007	57 40.3	167 46.5	37	398	1194	1512	3104	0	0	0	3104
I02	6/28/2007	57 40.3	167 7.1	37	81	727	970	1778	81	0	81	1859
I03	6/26/2007	57 40.1	166 30.6	34	1547	24971	6188	32706	970	0	970	33676
I04	6/26/2007	57 40.0	165 53.3	34	931	18470	1397	20798	0	0	0	20798
I05	6/20/2007	57 40.2	165 15.2	31	80	483	80	643	0	0	0	643
I18	7/1/2007	57 40.1	168 24.3	38	82	489	1468	2039	245	0	245	2283
I19	7/5/2007	57 30.5	168 44.6	37	416	499	1247	2161	0	0	0	2161
I19	7/5/2007	57 39.7	169 1.3	36	1092	1213	2548	4853	243	0	243	5096
I19	7/5/2007	57 48.8	168 44.1	37	83	666	1414	2163	1082	0	1082	3245
I20	7/6/2007	57 39.8	169 39.1	37	1521	1601	2642	5765	2322	0	2322	8086
I21	7/7/2007	57 30.4	169 59.0	36	2837	867	1418	5122	236	0	236	5359
I21	7/7/2007	57 49.8	169 59.6	38	27760	15676	3593	47029	1933	0	1933	48963
I21	7/8/2007	57 39.4	170 15.3	38	614	998	1919	3531	384	0	384	3915
I22	7/8/2007	57 40.1	170 54.3	45	331	745	662	1739	166	0	166	1904
I23	7/10/2007	57 39.8	171 32.2	53	5939	2534	396	8869	475	79	554	9424
I24	7/10/2007	57 39.8	172 10.8	57	5299	2236	1987	9522	32176	423	32599	42121
I25	7/14/2007	57 40.1	172 48.5	63	3257	2780	79	6117	0	0	0	6117
J01	6/30/2007	57 59.9	167 48.1	36	245	1224	3306	4775	490	0	490	5265
J02	6/28/2007	58 0.3	167 10.4	34	1776	33161	87640	122578	83623	489	84112	206690

Appendix B5. Summary of crab density by tow (number/nm²) for snow crab (*Chionoecetes opilio*).

Station	Date	N. Lat.		W. Long		Fathoms	Males				Females			GRAND TOTAL
							Large	Medium	Small	Total	Large	Small	Total	
J03	6/26/2007	58	0.3	166	31.7	31	5335	68910	20451	94695	3557	0	3557	98252
J04	6/26/2007	57	59.6	165	54.6	30	0	151	151	301	0	0	0	301
J18	7/1/2007	57	59.9	168	26.3	38	407	7806	2683	10895	894	81	976	11871
J19	7/5/2007	57	59.9	169	5.1	36	0	734	5304	6039	1387	0	1387	7426
J20	7/6/2007	58	0.1	169	41.7	37	10130	10130	17560	37821	230584	0	230584	268404
J20	7/6/2007	57	50.1	169	22.2	35	1025	1498	5047	7570	2129	0	2129	9699
J21	7/8/2007	57	59.8	170	20.7	39	54018	27299	5228	86544	11113	0	11113	97657
J22	7/8/2007	57	50.4	170	36.1	41	627	1255	2039	3921	392	0	392	4313
J22	7/8/2007	57	59.9	170	58.5	46	831	582	1412	2825	166	0	166	2991
J23	7/10/2007	58	0.1	171	35.8	52	3889	3565	810	8264	18094	1052	19146	27410
J24	7/10/2007	57	59.6	172	15.5	56	3378	5309	2252	10939	12890	0	12890	23830
J25	7/14/2007	58	0.2	172	51.5	58	1499	19484	4197	25179	77	0	77	25257
J26	7/15/2007	58	0.1	173	28.8	62	1061	4245	0	5306	0	0	0	5306
K01	7/1/2007	58	20.1	167	50.6	33	3447	24819	8043	36309	2987	0	2987	39296
K02	6/28/2007	58	20.2	167	11.2	28	0	82	245	327	82	0	82	409
K03	6/26/2007	58	20.0	166	33.3	24	0	158	79	237	0	0	0	237
K18	7/1/2007	58	19.5	168	28.0	36	540	8646	99424	108610	48828	2728	51556	160166
K19	7/6/2007	58	19.8	169	7.5	36	313	4179	47549	52040	60593	2525	63118	115158
K20	7/6/2007	58	20.0	169	44.1	37	540	13331	14772	28643	4830	161	4991	33633
K21	7/8/2007	58	19.6	170	22.8	39	6245	10543	6568	23357	55528	0	55528	78884
K22	7/8/2007	58	20.2	171	1.0	44	799	1918	2717	5435	60310	0	60310	65745
K23	7/9/2007	58	19.7	171	39.1	51	4889	4574	2839	12302	12153	1013	13166	25468
K24	7/9/2007	58	20.0	172	17.9	55	12119	21687	15521	49328	610006	279819	889826	939154
K25	7/9/2007	58	19.7	172	55.8	59	6599	5434	543	12577	155	0	155	12732
K26	7/15/2007	58	20.5	173	33.7	61	250	832	250	1332	7990	0	7990	9322
L18	7/1/2007	58	40.1	168	30.1	27	776	5947	11894	18616	2845	0	2845	21461
L19	7/2/2007	58	40.0	169	9.8	33	793	3805	6659	11257	713	159	872	12129
L20	7/2/2007	58	40.1	169	47.6	35	2283	19402	86737	108421	89019	12554	101572	209993
L21	7/8/2007	58	40.3	170	25.8	39	4102	9625	12456	26183	41679	479	42158	68341
L22	7/9/2007	58	40.2	171	5.5	44	2516	16465	12806	31787	138309	0	138309	170096
L23	7/9/2007	58	40.3	171	45.0	49	4805	8681	3720	17207	14703	8055	22757	39964
L24	7/9/2007	58	40.0	172	22.2	54	2156	2239	663	5058	1161	83	1244	6302
L25	7/9/2007	58	39.8	172	59.8	60	1328	10624	6640	18591	8461	292	8753	27344

Appendix B5. Summary of crab density by tow (number/nm2) for snow crab (*Chionoecetes opilio*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
L26	7/15/2007	58 40.2	173 38.2	67	592	1354	85	2031	0	0	0	2031
L29	7/28/2007	58 40.3	175 32.1	73	0	0	78	78	626	0	626	705
M18	7/2/2007	58 59.8	168 32.7	24	0	0	159	159	0	0	0	159
M19	7/2/2007	59 0.0	169 11.3	28	161	3211	294133	297506	9591	70336	79928	377433
M20	7/2/2007	59 0.1	169 49.7	33	14840	29679	169595	214114	150515	80557	231072	445186
M21	7/8/2007	58 59.9	170 29.0	38	4473	37612	34088	76173	13257	0	13257	89430
M22	7/15/2007	59 0.1	171 7.8	41	61475	11667	1795	74937	242	0	242	75179
M23	7/9/2007	58 59.5	171 47.0	46	5959	27413	9932	43305	4577	3026	7603	50908
M24	7/9/2007	59 0.4	172 25.8	53	1005	3943	1856	6804	2551	0	2551	9355
M25	7/9/2007	58 59.4	173 6.3	57	821	1642	1314	3777	41168	549	41717	45494
M26	7/15/2007	59 0.2	173 43.5	62	1493	1571	157	3221	393	0	393	3614
M27	7/19/2007	58 60.0	174 21.5	68	4709	9810	1046	15566	0	0	0	15566
M29	7/28/2007	59 0.2	175 42.9	72	0	0	0	0	79	0	79	79
N19	6/30/2007	59 20.3	169 15.0	26	159	1349	10075	11582	2459	714	3173	14755
N20	6/30/2007	59 20.3	169 52.0	32	1944	7709	175789	185442	60671	40447	101118	286560
N21	7/15/2007	59 20.1	170 31.9	36	852	6259	34911	42022	18242	1920	20163	62185
N22	7/15/2007	59 20.1	171 10.9	40	14294	38119	48178	100591	4230	319	4549	105140
N23	7/16/2007	59 20.0	171 49.9	42	2264	13130	21280	36674	2314	1117	3431	40105
N24	7/17/2007	59 20.1	172 30.5	46	18272	27558	4493	50323	1052	486	1538	51861
N25	7/16/2007	59 20.1	173 9.7	53	1270	4064	1270	6604	3302	85	3387	9991
N26	7/15/2007	59 19.7	173 48.1	59	2520	3576	1626	7721	103101	329	103430	111152
N27	7/19/2007	59 20.4	174 25.9	65	2242	2824	249	5315	0	0	0	5315
N28	7/20/2007	59 21.0	175 6.0	71	82	328	0	410	984	0	984	1393
N29	7/27/2007	59 20.8	175 45.2	73	0	83	0	83	0	0	0	83
O19	6/30/2007	59 40.0	169 15.9	25	0	162	404	565	0	0	0	565
O20	6/29/2007	59 40.6	169 55.0	30	0	4654	68117	72771	24962	13962	38924	111696
O21	7/15/2007	59 39.8	170 34.9	35	320	4638	36272	41229	14493	1932	16425	57654
O22	7/16/2007	59 39.9	171 16.0	38	544	6492	21693	28729	14426	641	15067	43796
O23	7/16/2007	59 39.8	171 54.2	40	80	3738	12168	15985	40232	2367	42599	58584
O24	7/17/2007	59 40.3	172 34.3	45	2393	6382	6063	14839	9158	916	10074	24913
O25	7/16/2007	59 39.9	173 13.5	50	2216	1583	633	4432	475	237	712	5144
O25	7/17/2007	59 30.2	172 52.5	50	4452	4134	795	9381	1351	238	1590	10971
O25	7/17/2007	59 49.7	172 55.6	42	1188	5543	15284	22015	24665	448	25114	47129

Appendix B5. Summary of crab density by tow (number/nm2) for snow crab (*Chionoecetes opilio*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
O26	7/16/2007	59 30.7	173 30.1	54	3608	8140	1762	13510	4196	168	4364	17874
O26	7/18/2007	59 49.6	174 14.1	57	1467	2526	652	4645	0	0	0	4645
O26	7/18/2007	59 40.5	173 52.6	56	2915	8261	3077	14253	2349	243	2592	16845
O27	7/19/2007	59 40.1	174 27.2	61	2130	2376	1639	6145	11388	3769	15157	21302
O28	7/20/2007	59 39.8	175 6.2	67	1158	1654	661	3473	9674	413	10087	13560
O29	7/26/2007	59 40.3	175 52.6	74	1127	161	0	1288	0	0	0	1288
O30	7/26/2007	59 40.2	176 31.4	73	0	161	161	322	81	81	161	483
P19	6/29/2007	59 59.8	169 18.9	22	0	0	397	397	0	397	397	795
P20	6/29/2007	60 0.2	169 58.1	28	0	1770	52521	54292	16027	10346	26373	80665
P21	7/16/2007	59 59.8	170 37.8	34	80	1195	14494	15768	7902	0	7902	23671
P22	7/16/2007	60 0.1	171 18.0	36	0	1117	12760	13877	16679	0	16679	30555
P23	7/18/2007	59 50.1	172 15.0	40	763	7249	23272	31284	37070	0	37070	68354
P23	7/18/2007	59 58.7	171 56.4	36	269	1482	18722	20473	29290	10984	40273	60746
P23	7/18/2007	60 9.7	172 19.2	30	1505	19314	70633	91452	10730	27591	38320	129772
P24	7/18/2007	59 59.3	172 35.1	35	160	2243	20593	22996	18638	11183	29820	52816
P25	7/16/2007	59 50.6	173 34.1	50	3062	30007	15922	48991	830	0	830	49822
P25	7/16/2007	60 0.7	173 18.8	39	0	2345	39548	41893	30135	9430	39565	81458
P26	7/17/2007	60 6.9	173 46.8	47	961	11115	23876	35951	97676	12288	109963	145914
P26	7/18/2007	60 0.8	173 56.5	51	1513	2149	398	4060	0	80	80	4140
P27	7/18/2007	59 59.7	174 36.5	58	710	2130	1341	4181	4023	1420	5443	9624
P27	7/18/2007	60 10.0	174 20.8	54	4819	3720	507	9046	0	338	338	9385
P28	7/21/2007	60 0.2	175 16.4	62	1048	967	1048	3062	3546	2256	5802	8864
P29	7/25/2007	59 59.4	175 59.2	70	2190	1173	0	3363	1720	78	1799	5161
P30	7/25/2007	60 0.5	176 40.8	76	89	0	89	178	0	0	0	178
Q19	6/29/2007	60 19.6	169 19.6	21	0	0	79	79	0	0	0	79
Q20	6/29/2007	60 19.7	170 1.8	26	0	244	12702	12947	3908	407	4316	17262
Q21	7/22/2007	60 19.7	170 38.4	32	0	0	21252	21252	10451	209	10660	31912
Q22	7/22/2007	60 20.0	171 21.6	34	0	968	40582	41549	26827	9307	36135	77684
Q23	7/18/2007	60 19.8	172 3.9	31	158	1584	11883	13626	1188	713	1901	15527
Q25	7/17/2007	60 19.0	173 24.1	33	236	1651	14862	16750	4010	14391	18401	35151
Q25	7/17/2007	60 11.5	173 2.0	31	163	5309	93615	99086	9898	34025	43923	143010
Q26	7/17/2007	60 19.7	174 4.2	48	3555	38211	102637	144402	92511	4270	96781	241184
Q27	7/21/2007	60 20.5	174 43.2	55	0	1285	2650	3934	3613	2489	6102	10037

Appendix B5. Summary of crab density by tow (number/nm²) for snow crab (*Chionoecetes opilio*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
Q28	7/21/2007	60 19.9	175 24.1	60	2370	1961	1226	5557	245	1553	1798	7355
Q29	7/25/2007	60 20.3	176 2.1	65	1215	2025	891	4132	2998	243	3241	7372
Q30	7/25/2007	60 20.1	176 42.1	73	1291	1808	1722	4821	39098	3534	42632	47454
Q31	7/25/2007	60 21.1	177 21.9	80	80	0	0	80	161	0	161	241
R22	7/22/2007	60 39.8	171 26.4	33	0	242	12812	13054	10476	1283	11758	24812
R23	7/19/2007	60 40.3	172 7.8	32	0	320	10786	11105	4402	5634	10035	21141
R24	7/19/2007	60 39.7	172 44.6	23	0	0	1671	1671	0	955	955	2625
R25	7/17/2007	60 40.8	173 28.1	34	0	407	11554	11961	19935	4882	24817	36778
R26	7/17/2007	60 39.6	174 6.6	45	81	811	31801	32693	56633	28317	84950	117642
R27	7/21/2007	60 40.2	174 48.9	52	893	3411	5523	9828	19425	3854	23279	33106
R28	7/22/2007	60 40.1	175 27.5	57	334	250	2671	3256	1085	1670	2755	6010
R29	7/23/2007	60 39.9	176 12.3	63	590	674	253	1517	0	0	0	1517
R30	7/23/2007	60 40.2	176 46.7	69	884	723	0	1607	80	0	80	1687
R31	7/24/2007	60 39.9	177 29.5	78	256	0	0	256	0	170	170	426
R32	7/24/2007	60 40.0	178 10.8	86	303	101	202	606	7681	0	7681	8287
S22	7/22/2007	60 58.7	171 29.4	31	0	1123	150516	151639	97874	66209	164083	315722
S23	7/19/2007	61 0.1	172 9.6	33	0	297	12332	12629	3910	2912	6823	19451
S24	7/19/2007	61 0.0	172 48.9	35	0	239	8592	8831	8974	3989	12963	21794
S25	7/19/2007	60 59.7	173 30.4	39	0	939	49588	50528	18901	32871	51771	102299
S26	7/21/2007	60 59.9	174 10.3	44	83	1415	6245	7743	7244	4163	11407	19150
S27	7/21/2007	60 59.6	174 52.9	49	82	1800	18823	20705	18894	4341	23234	43940
S28	7/22/2007	60 60.0	175 33.2	55	1594	5182	3348	10125	80	1913	1993	12118
S29	7/23/2007	60 59.1	176 17.0	60	2831	2670	971	6472	728	566	1294	7766
S30	7/24/2007	61 0.1	176 58.5	65	1674	718	0	2392	80	319	399	2790
S31	7/24/2007	60 59.5	177 36.6	72	953	159	79	1191	0	79	79	1270
T25	7/20/2007	61 20.1	173 34.6	39	0	401	13710	14111	11667	6282	17950	32061
T26	7/21/2007	61 20.0	174 19.7	42	0	636	22867	23502	31513	14006	45519	69021
T27	7/21/2007	61 19.5	175 0.9	46	167	2091	23668	25926	15772	3772	19543	45469
T28	7/22/2007	61 19.8	175 39.8	52	775	2791	7132	10699	12947	2326	15273	25971
T29	7/23/2007	61 19.5	176 18.3	57	1223	7185	13911	22319	1533	1613	3146	25465
T30	7/24/2007	61 19.7	176 57.9	62	1913	956	239	3108	80	478	558	3666
U25	7/20/2007	61 40.0	173 40.8	37	0	0	278962	278962	203833	167863	371696	650658
U26	7/21/2007	61 40.1	174 26.7	40	0	708	21986	22694	7888	4382	12270	34964

Appendix B5. Summary of crab density by tow (number/nm²) for snow crab (*Chionoecetes opilio*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
U27	7/21/2007	61 39.9	175 5.5	45	81	1293	19709	21083	9600	3512	13112	34195
U28	7/22/2007	61 39.6	175 46.2	51	143	2426	11274	13843	12131	2141	14271	28115
U29	7/23/2007	61 39.0	176 28.7	56	481	2643	5126	8250	14552	13849	28401	36650
V25	7/20/2007	62 0.2	173 44.1	33	0	0	68458	68458	30762	16846	47607	116065
V26	7/20/2007	62 0.1	174 30.2	39	0	0	39648	39648	27591	15767	43358	83006
V27	7/20/2007	62 0.0	175 10.6	43	0	81	47841	47922	30806	17114	47920	95842
V28	7/22/2007	62 0.2	175 49.8	49	0	1393	7988	9381	6223	1300	7524	16905

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

Appendix B6. Summary of crab density by tow (number/nm²) for hair crab (*Erimacrus isenbeckii*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
B08	6/16/2007	55 21.0	163 24.5	26	393	0	0	393	0	0	0	393
C09	6/16/2007	55 40.4	162 50.2	26	318	80	0	398	0	0	0	398
E09	6/16/2007	56 19.4	162 48.5	43	80	0	0	80	0	0	0	80
E10	6/16/2007	56 20.0	162 11.4	42	238	0	0	238	79	0	79	317
E10	7/27/2007	56 20.4	162 11.8	42	232	0	0	232	0	0	0	232
E12	7/25/2007	56 20.0	160 60.0	28	0	80	0	80	0	0	0	80
E20	7/4/2007	56 20.5	169 29.9	77	0	92	0	92	0	0	0	92
F06	6/20/2007	56 40.3	164 34.9	40	79	0	0	79	0	0	0	79
F09	6/16/2007	56 39.6	162 46.6	40	231	0	0	231	77	0	77	308
F09	7/29/2007	56 40.5	162 47.9	38	0	0	80	80	0	0	0	80
F10	6/15/2007	56 40.0	162 11.3	38	163	0	0	163	163	0	163	325
F11	6/13/2007	56 40.0	161 35.5	45	318	0	0	318	159	0	159	477
F11	7/27/2007	56 40.0	161 34.9	48	153	0	0	153	77	0	77	230
F12	6/13/2007	56 40.5	160 59.4	36	81	0	0	81	0	0	0	81
F12	7/25/2007	56 40.1	160 59.3	36	160	0	0	160	160	0	160	319
F13	6/13/2007	56 39.9	160 23.0	33	467	0	0	467	0	0	0	467
G06	6/20/2007	56 59.4	164 36.2	38	82	0	0	82	0	0	0	82
G08	6/17/2007	57 0.2	163 25.5	36	80	0	0	80	0	0	0	80
G08	7/29/2007	57 0.6	163 22.2	34	0	0	0	0	79	0	79	79
G09	6/15/2007	57 0.2	162 47.7	30	0	0	76	76	0	0	0	76
G09	7/29/2007	57 0.3	162 47.8	32	385	0	0	385	154	0	154	538
G10	6/15/2007	56 59.5	162 10.7	32	310	0	0	310	0	0	0	310
G10	7/28/2007	56 59.7	162 11.2	33	232	0	0	232	0	0	0	232
G11	6/13/2007	56 59.8	161 34.8	35	0	0	0	0	79	0	79	79
G12	6/13/2007	57 0.3	160 58.9	33	79	79	0	158	0	0	0	158
G13	6/12/2007	56 60.0	160 20.1	32	78	0	0	78	0	0	0	78
G13	7/24/2007	56 59.6	160 20.7	33	234	0	0	234	156	0	156	390
G19	7/4/2007	57 9.8	168 38.3	40	78	0	0	78	0	0	0	78
G21	7/6/2007	57 0.6	170 0.6	34	0	94	0	94	0	0	0	94
G22	7/5/2007	57 6.8	170 28.6	25	81	242	0	322	0	0	0	322
H07	6/18/2007	57 20.0	164 0.8	32	79	0	0	79	0	0	0	79
H08	6/18/2007	57 20.5	163 23.4	28	81	81	0	162	0	0	0	162
H08	7/29/2007	57 20.2	163 22.3	28	315	0	0	315	0	0	0	315

Appendix B6. Summary of crab density by tow (number/nm²) for hair crab (*Erimacrus isenbeckii*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
H09	7/29/2007	57 19.9	162 47.2	26	78	0	0	78	78	0	78	156
H10	6/15/2007	57 20.1	162 8.9	27	80	0	0	80	0	0	0	80
H10	7/28/2007	57 19.6	162 9.1	27	80	0	0	80	0	0	0	80
H11	6/13/2007	57 19.8	161 32.4	28	157	0	0	157	0	0	0	157
H11	7/26/2007	57 19.9	161 32.0	29	159	0	0	159	0	0	0	159
H12	6/13/2007	57 20.3	160 55.6	34	156	0	0	156	0	0	0	156
H12	7/25/2007	57 19.5	160 56.0	33	78	0	0	78	0	0	0	78
H16	6/11/2007	57 20.2	158 23.8	16	0	238	0	238	79	79	159	397
H19	7/5/2007	57 20.0	168 59.2	37	82	0	0	82	82	0	82	164
H20	7/7/2007	57 29.5	169 21.3	36	0	0	0	0	80	0	80	80
H21	7/5/2007	57 10.6	169 52.9	25	0	80	0	80	0	0	0	80
I02	6/28/2007	57 40.3	167 7.1	37	0	0	0	0	81	0	81	81
I06	6/20/2007	57 39.5	164 36.8	28	83	0	0	83	0	0	0	83
I07	6/18/2007	57 40.2	164 0.7	26	80	80	0	161	0	0	0	161
I08	6/18/2007	57 40.1	163 23.2	25	0	79	0	79	0	0	0	79
I08	7/23/2007	57 40.2	163 19.4	25	77	308	0	386	0	0	0	386
I09	6/15/2007	57 39.9	162 45.1	22	76	0	0	76	0	0	0	76
I11	6/14/2007	57 40.1	161 31.1	27	0	80	0	80	0	0	0	80
I12	6/14/2007	57 40.3	160 53.6	31	78	0	0	78	0	0	0	78
I12	7/25/2007	57 40.0	160 52.9	30	242	0	0	242	0	0	0	242
J03	6/26/2007	58 0.3	166 31.7	31	79	0	0	79	0	0	0	79
J05	6/20/2007	58 0.3	165 15.1	25	0	81	0	81	0	0	0	81
J06	6/20/2007	57 59.4	164 36.7	24	158	0	0	158	0	0	0	158
J11	6/14/2007	57 59.7	161 29.9	28	0	79	0	79	0	0	0	79
J14	6/12/2007	58 0.2	159 35.7	22	0	77	0	77	0	0	0	77
K01	7/1/2007	58 20.1	167 50.6	33	0	79	0	79	0	0	0	79
K02	6/28/2007	58 20.2	167 11.2	28	82	0	0	82	0	0	0	82
K03	6/26/2007	58 20.0	166 33.3	24	79	0	0	79	0	0	0	79
K12	6/14/2007	58 17.1	160 48.2	16	0	883	0	883	0	1030	1030	1914
K14	6/12/2007	58 20.5	159 33.0	12	0	457	0	457	0	152	152	609
L01	7/1/2007	58 40.4	167 52.8	24	157	0	0	157	157	0	157	313
M01	7/1/2007	58 60.0	167 52.7	21	164	655	0	819	0	0	0	819
M18	7/2/2007	58 59.8	168 32.7	24	318	318	0	636	318	0	318	954

Appendix B6. Summary of crab density by tow (number/nm²) for hair crab (*Erimacrus isenbeckii*).

Station	Date	N. Lat.	W. Long	Fathoms	Males				Females			GRAND TOTAL
					Large	Medium	Small	Total	Large	Small	Total	
N01	7/1/2007	59 19.6	167 55.1	20	0	318	0	318	159	0	159	477
N18	6/30/2007	59 20.2	168 34.2	21	83	1162	0	1245	166	0	166	1411
N19	6/30/2007	59 20.3	169 15.0	26	0	0	0	0	79	0	79	79
O01	6/27/2007	59 40.5	167 56.9	17	0	81	0	81	0	0	0	81
O02	6/27/2007	59 39.6	167 18.2	15	0	76	0	76	0	0	0	76
O18	6/30/2007	59 40.0	168 37.4	20	0	569	0	569	0	0	0	569
O19	6/30/2007	59 40.0	169 15.9	25	0	0	0	0	81	0	81	81
P20	6/29/2007	60 0.2	169 58.1	28	0	0	0	0	77	0	77	77
Q19	6/29/2007	60 19.6	169 19.6	21	0	79	0	79	237	0	237	316

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

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