THE 2003 TRIENNIEL ALEUTIAN ISLANDS GOLDEN KING CRAB SURVEY AND COMPARISONS TO THE 1997 AND 2000 SURVEYS

By

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FOREWORD

The first ADF&G survey of Aleutian Islands golden king crabs was conducted in 1991 (Blau and Pengilly 1994), with subsequent triennial surveys in 1997 and 2000 (Blau et al. 1998, Watson and Gish 2002). Those surveys were funded under the Bering Sea Crab Test Fishery program initiated by ADF&G in 1990. Beginning in 2003, primary funding for the Aleutian Island golden king crab project was supplied by federal appropriations to the State of Alaska. Operational plans for each of the four Aleutian Islands surveys are in Blau (1992), Watson and Blau (1997), Tracy et al. (2000), and Watson (2003).

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ABSTRACT

A survey for golden king crabs *Lithodes aequispinus* was conducted near Yunaska Island in the Aleutian Islands area east of 174°00 W longitude in July and August 2003 aboard the FV *Ballyhoo* to collect distribution and abundance information for a portion of the golden king crab stock. Eighty-four stations were fished and 19,122 golden king crabs were caught of which 11.9% were legal-sized males, 46.4% were sublegal males, and 41.7% were females. Depth, location, and date were recorded for each pot set and retrieved. Pot catches were enumerated to species, and golden king crab shell condition, carapace length (CL), legal size status, and reproductive condition of females were recorded. Ninety-seven percent of the legal male crabs, 45% of the sublegal males $\geq$ 90 mm CL, and 20% of the females were tagged and released. Recovery of tagged crabs in the 2003 Aleutian Islands commercial fishery was accomplished using at-sea observers and dockside tag recovery samplers. A total of 333 (4.3%) tagged crabs were recovered in 2003. The estimated exploitation rate incurred on legal males in the 2003-2004 commercial fishery was 5.2%. Catch trends, biological characteristics, and tag recoveries from the 2003 survey are compared to those of the 1997 and 2000 surveys at the 62 stations fished in common during the three surveys.

Keywords: golden king crab; *Lithodes aequispinus*; Aleutian Islands, Alaska; spatial distribution; abundance; catch per unit effort (CPUE); pot survey; tag-recovery rate; harvest rate

INTRODUCTION

The economic importance of the Aleutian Islands fishery for golden king crab *Lithodes aequispinus* is significant; 166 million pounds were landed from 1981 through 2002, with an exvessel value of $453 million (Granath et al. 2003). Despite the value of the fishery, knowledge of golden king crab abundance, distribution, and basic life history parameters remains limited. Without periodic baseline survey data for monitoring population trends, impacts on the golden king crab stock from fishery removals, fishing practices, and management measures have been difficult to evaluate.

In the absence of stock abundance surveys, the Alaska Department of Fish and Game (ADF&G) and the National Marine Fisheries Service (NMFS) have opportunistically collected biological data on golden king crabs during commercial fisheries as reviewed in Blau et al. (1996). In 1991, ADF&G surveyed golden king crabs in portions of what was then designated as the Dutch Harbor and Adak King Crab Management Areas. The department acquired information on the spatial distribution of the species by sex and size and date for estimation of biological parameters, including female crab size at sexual maturity (Blau and Pengilly 1994). In addition, 1,262 legal male golden king crabs were tagged during the survey for subsequent recovery during the commercial fishery. Recoveries of tagged crabs provided valuable insight to adult growth characteristics; however, insufficient data was available for estimating annual harvest rates in the fishery.

Triennial pot-based surveys of the Aleutians stock were incorporated into the long-term research plans for BS/AI crab stocks in 1995. These surveys were initiated to address the need for continuing golden king crab mark-recapture studies and to establish a time series database for identifying species life history parameters and detecting population trends. In 1997, a standard survey grid composed of 189 stations located between 52°00’ and 53°00’ N latitude and 169°00’ and 173°00 W longitude was established based upon the historic concentration of fishing effort in the area (Watson and Blau 1997). The first two triennial surveys were conducted in 1997 and 2000 near Yunaska and Amukta Islands during mid-summer and approximately 10,000 legal-sized and prerecruit males and female crabs were tagged and released during each survey. Extensive tag recovery efforts were initiated during subsequent commercial fishing seasons.

The golden king crab fishery has traditionally been managed on the basis of size, sex, and season, and monitored inseason through processor reports and fish ticket data to measure fishery performance against historic catch data. Annual harvest statistics revealed the existence of distinct areas east and west of 174° W longitude supporting the majority of commercial fishery effort. In 1996, based on the most recent five-year average harvests (Morrison and Gish 1997), the department established separate guideline harvest levels (GHLs) for each area; 3.2 million pounds for east of 174° W longitude and 2.7 million pounds for west of 174° W longitude. Following the 1998 implementation of an amended BS/AI FMP, in which overfishing definitions for the golden king crab stock were specified, the GHLs set for the eastern area were re-examined and returns of legal-sized crabs tagged during the 1997 survey became instrumental in estimating a stock exploitation rate. Analysis of the tag recoveries resulted in the subsequent revision of the GHL for this area to 3.0 million pounds (Bowers 1998).

An effective golden king crab tag recovery program in the Aleutian Islands fishery has been made possible through the implementation of regulations, passed by the Alaska Board of Fisheries (BOF) in 1995, which expanded observer coverage to include all participating vessels (Morrison and Gish 1997). Prior to that action, observers were required only on at-sea processors and catcher-processors. The current 100% observer coverage requirement provides an incentive to continue the golden king crab tagging program during the triennial surveys by presenting a relatively unique opportunity to recover tagged crabs through daily monitoring of individual vessel catches.

This report describes the location, design, methods, and results for the third triennial survey of Aleutian Islands golden king crabs, with comparisons to the 1997 and 2000 surveys and comments on abundance trends within the survey area.

TERMS

Terms for golden king crabs relative to sex and size groupings used in this report are defined by Blau and Pengilly (1994) and are as follows:

- Legal Male – Carapace width ≥ 6 inches (152 mm) outside lateral spines.
- Sublegal Male – Carapace width < 6 inches (152 mm) outside lateral spines.
- Legal Male Recruit – New-shelled, legal-sized male < 154 mm carapace length (CL).
- Legal Male Postrecruit – New-shelled, legal-sized male ≥ 154 mm and/or all old and very old shell crabs of legal size.
- Sublegal Male < 121 mm CL – All sublegal-sized males < 121 mm CL.
- Sublegal Male Prerecruit One – All sublegal-sized males ≥ 121 mm CL.
- Mature Female – External embryos or empty egg cases present.
- Immature Female – No external evidence of ovigerity.
- 'Leatherback' – Crab with a rubbery carapace regardless of estimated shell age.

OBJECTIVES

Prioritized objectives of the 2003 project were to:

1) Obtain a relative stock abundance index (pot survey catch per unit effort) of male and female golden king crabs in the Aleutian Islands Management area (Area O) centered near Yunaska and Amukta Islands (52°30' N latitude and 171° W longitude).
2) Estimate the spatial apportionment of fishery mortality, movements of crabs between seasons, and growth by tagging and releasing male and female golden king crabs during the 2003 pot survey and collecting tagged-crab recovery information from the 2003/2004 and 2004/2005 Aleutian Islands commercial golden king crab fishing seasons.

METHODS

Survey Design

Triennial survey sampling of golden king crab fishing grounds and adjacent habitat is restricted to a portion of Area O that has historically supported a significant portion of the golden king crab harvest. The 2003 survey area and station array was based on the standard grid established for the first triennial survey in 1997 (Watson and Blau 1997). The 30 day survey was conducted aboard the chartered 56.4 m (185 ft) vessel, FV *Ballyhoo* from July 1 to 30, 2003, and was centered near Yunaska and Amukta Islands. The charter began and ended in Dutch Harbor, with a captain, an engineer, a mate, and three crewmembers. Department staff included L. Watson (crew leader), and R. Gish (assistant crew leader), R. Burt and K. Granath, fishery biologists, and C. Lillo, fishery technician.

The area surveyed was located between 52°15' and 53°00' N latitude and 170°00' and 171°33' W longitude and encompassed approximately 2,100 nautical miles squared (nmi^2) of known golden king crab habitat (Figure 1). The 2003 station array consisted of 71 primary and 13 secondary stations, each spaced 5 nmi apart north-to-south and east-to-west, with each station consisting of 9 or 10 pots spaced 10 fathoms apart on a longline.

A complement of 75 identical king crab pots each measuring 7' x 7' x 34" were used to sample stations. Each pot was webbed with #92 tarred nylon twine with a stretch mesh of 2¾", and had two opposing 8" x 36" tunnel eye openings installed with inward-facing plastic fingers to reduce escapement of captured crabs and other marine biota from the pot. Each pot was baited with one gallon of frozen chopped Pacific herring *Clupea pallasi*.

Fishing parameters such as station, sequential pot number, bottom type (rock, sand, silt, mud, or gravel), depth, set date and time, lift date and time, latitude and longitude, and gear performance were recorded for each set pot. Survey itinerary and pot sampling methods are detailed in Watson (2003).

Catch Sampling

The contents of each pot fished were enumerated to provide species composition, catch per unit effort (CPUE), and size distributions for golden king crabs, scarlet king crabs *Lithodes couesi*, and deep-water *Chionoecetes* and *Paralomis* crabs. All sampled crabs were measured, assessed for shell age, and examined for disease. Carapace lengths (CL) of golden and scarlet king crabs were measured to the nearest millimeter (mm), from the posterior margin of the right eye orbit to the midpoint of the rear margin of the carapace as in Wallace et al. (1949). *Chionoecetes* crabs were measured in mm carapace width (CW) as described in Jadamec et al. (1999). Legal-size status of male crabs, shell condition, and female reproductive conditions were documented as outlined in Watson (2003). Excluding legal males and prerecruit males $\geq$ 121 mm CL, small males and females were subsampled when successive pots within a station contained a large number of crabs and sampling the full contents would unnecessarily delay overall survey progress. Sampling fractions

denoting the number of crabs sampled from a total count of the sex-size grouping were recorded whenever subsampling was performed.

While tagging female crabs on the first day of the charter, it was noticed that ovary color was visible through the articulating membrane between the dorsal margin of the carapace and the first abdominal somite. Two colors were observed: orange and clear (no color). Documenting ovary color was added to the survey objectives to assess whether or not the ovary color was significantly different between mature and immature crabs and to evaluate ovary color of mature females with matted setae with ovigerous females.

All other captured invertebrates and fish were identified, counted, and documented to characterize overall species composition of sampled pots. Fork length measurements to the nearest centimeter (cm) were recorded for commercially important groundfish species such as Greenland turbot *Reinhardtius hippoglossoides*, Pacific halibut *Hippoglossus stenolepis*, Pacific cod *Gadus macrocephalus*, sablefish *Anoplopoma fimbria*, and Atka mackeral *Pleurogrammus monopterygius*, as time allowed.

Tagging Strategy

Male and female golden king crabs ≥ 90 mm CL that were free of parasitic barnacles *Briarosaccus callosus* and severe injuries were selected for tagging. Tagging goals per station by sex and size class were as follows: 1) 100% of the captured legal-sized and prerecruit males ≥ 121 mm CL; 2) 50% of the sublegal legal-sized males ≥ 90 mm CL and ≤ 120 mm CL; and 3) 25% of the females ≥ 90 mm CL. Crabs were tagged through the isthmus muscle using Floy© tags as described by Gray (1965). The 2003 tags were fluorescent pink with fluorescent green tabs and sequentially numbered beginning at ‘K’ 00,001.

Ocean Bottom Temperatures

Ocean bottom temperatures (°C) were obtained across the depth ranges fished within the survey area by placing one of two submersible Brancker model XR-420 conductivity-temperature-depth recorders (CTDs) in pots at select stations. Temperature data were downloaded to a computer for analysis at the conclusion of the survey.

Observer Practicum Species Collection

Male and female golden king crabs and other animals captured were collected for the Mandatory Observer Program at the request of S. Coleman, ADF&G – Dutch Harbor. Collected live specimens were held in the vessel seawater tank and off loaded in Dutch Harbor at the end of the survey.

Tag Recovery

An intensive tagged crab recovery program was conducted after survey completion during the 2003/2004 golden king crab commercial fishery. Daily catches from individual vessels were monitored for the presence of tagged crabs using observers deployed fleet-wide for the duration of the season. Additionally, ADF&G dockside samplers were deployed at shoreside processing locations to examine delivered catches for tagged crabs and to interview vessel captains for tagged crab recovery location data. Industry participation, including vessel crews and processing personnel, was solicited prior to the fishing season and tagged crab recovery rewards were offered to vessel crews as incentives to note the location, date, and fate (retained for sale or released alive with the tag intact) of captured tagged crabs. When tagged crabs were landed, observers and ADF&G samplers recorded carapace length, assessed male crabs as either legal or sublegal in size, determined the shell age, and obtained the recapture date, location, and depth from the vessel captain. Tag recovery sampling instructions for observers and ADF&G samplers is detailed in Tracy et al. (2000).

Comparison of the 1997, 2000, and 2003 Survey Data Sets

Catch, catch per unit effort (CPUE), and tagged crab data for golden king crabs are from the 62 stations that were fished in common in each survey year to afford direct comparisons of these data. However, specific data from any station in any survey year may also be referenced, and will be specified at that time.

RESULTS

A total of 893 pots from 84 stations (Figure 1) were fished at an average depth of 183 fathoms with an average soak time of 2.0 days. The first stations were set July 3 and the last station was pulled July 29, 2003 (Appendix A). As a result of strong current and tidal conditions, primary stations 58, 59, 72, 94, 95, 116, and 139 were surveyed twice to determine if those conditions affected pot catches. In summary tables and figures, values reflect the average catch at each station that was surveyed twice. Stations 13, 71, and 115 were not surveyed because the captain could not be certain that the gear would be retrievable following the 2-d soak period. Secondary stations 4, 5, and 17 north of Carlile Island were fished for the first time; secondary station 76 was not sampled so that primary stations could be resurveyed. Six pots were lost during the survey as a result of snagged and broken longlines. Two pots were inadvertently set without bait. Several nonsurvey strings of variable pot numbers (5 to 10 per string) were set for collection of observer practicum sample crabs.

Golden King Crabs

2003 Survey

Golden king crabs were captured at 79 stations (Appendix A); none were caught at stations 5, 74, 93, 96, and 117.

Catch and Distribution. A total of 2,278 legal-sized males, 8,879 sublegal males, 4,286 mature females, and 3,679 immature female crabs were caught during the survey (Table 1). Higher numbers of male and female golden king crabs were captured north of Amukta, Chagulak, and Yunaska Islands on the Bering Sea side compared to catches on the Pacific Ocean side (Figure 2). Survey catches of recruit male crabs outnumbered postrecruit crabs by a ratio of 3.2:1 (Table 1). Similarly, sublegal males < 121 mm CL were captured at a 2.9:1 ratio over sublegals $\geq$ 121 mm CL. Mature female crabs were captured in greater numbers than immature crabs by a margin of 1.2:1.

The greatest number of survey pots were fished between 100 and 200 fathoms and accounted for 54% of the survey effort (Table 2). The overall survey CPUE for legal males was 2.6 crabs per pot with a peak CPUE by depth zone of 4.6 crabs per pot in the 350 to 399 fathom depth zone (Table 2). Distribution and relative abundance by station for legal males is shown in Figure 3. The overall survey CPUE for sublegal males was 9.9 crabs per pot with a peak CPUE by depth zone of 105.1 crabs in the 300 to 349 fathom depth zone (Table 2). Distribution and relative abundance by station for sublegal males is shown in Figure 3. Survey-wide, female CPUE was 8.9 crabs per pot with a peak CPUE by depth zone of 87.5 crabs in the 300 to 349 fathom depth zone (Table 2). Distribution and relative abundance by station for females is shown in Figure 4. Male and female golden king crab catch by depth grouping is detailed in Figures 5 and 6, respectively.

Size Distributions. Legal male crabs ranged in size from 128 mm to 186 mm CL around a single mode centered at 140 mm CL (Figure 7). Sublegal males ranged in size from 23 mm to 144 mm CL, with two distinct modes at 90 mm and 125 mm CL (Figure 7). Sublegal and legal males overlapped in size between 128 mm and 144 mm CL, and percent legal at size was closest to 50% at 136-mm CL (Table 3). Mature female crabs ranged in size from 89 mm to 156 mm CL and immature crabs ranged in size from 43 mm to 142 mm CL (Figure 8).

Shell Age and Incidence of Disease or Parasitism. The dominant shell condition of surveyed crabs was new-shell; 95% of the legal males, 99% of the sublegal males, and nearly 100% of the females were categorized as new-shell (Table 4). Seventy-five (3.3%) legal males and 28 (0.3%) sublegal males were assessed as 'leatherbacks', most of which were old shell or very old shell. The incidence of chitinoclastic shell disease or 'shell rust' was low, affecting 2.7% of legal males, 1.0% of sublegal males, and 2.2% of females. Low rates of parasitic barnacle *Briarosaccus callosus* infestations were found; 0.4% of the sublegal males and 0.9% of the females were afflicted. Snail fish *Liparidae* clutches were found in the branchial chambers of four legal male crabs, one sublegal, and one female crab. Capture-related mortality was observed in 0.4% of the legal males, 0.3% of the sublegal males, and 0.7% of the female golden king crabs. Nemertean worms were observed in the egg clutch of a single mature female crab.

Female Reproductive Condition. Forty-five percent of the captured females had clean pleopodal setae, indicating that those crabs were either immature and had never hatched an egg clutch or were mature but had molted without mating prior to capture; all were scored as immatures. Mature females with matted setae accounted for 15% of the females. Of the 3,988 ovigerous females examined, 50.7% carried eyed eggs, 44.1% had uneyed eggs, and 5.2% carried clutches with hatching embryos observed (Table 5). Of those with hatching clutches of eggs, most (187) were observed with less than 30% clutch fullness, indicating that these females were nearing complete hatching. However, the remaining 22 hatching-clutch females were noted with larger clutch sizes, indicative that these crabs had recently begun hatching. The dominant clutch size was 60% to 89% full. Egg color was primarily orange (70%), and of these, most were uneyed, indicative of early embryo development. Tan-colored eggs (30%) indicated that embryo development was advanced, particularly when coupled with the fact that most of these eggs were eyed. Dead embryos were not apparent in most (99%) clutches.

Ovary Color of Mature and Immature Female Crabs. The ovary color of 526 mature and 1,461 immature female crabs was noted when crabs were tagged. Mature female ovaries were predominantly orange in color (89.3%) whereas immature female ovaries were mostly clear (69.3%) (Figure 9). Immature female crabs with clear ovaries were smaller with a dominant mode at 90-mm CL whereas those with orange ovaries were larger (mode at 105-mm CL).

Tagged Crabs Released and Recaptured. A total of 7,759 golden king crabs were tagged and released on the survey. Ninety-seven percent of the legal males, 45% of the sublegal males $\geq$ 90 mm CL, and 20% of the females that were captured during the survey were tagged. Most of the tagged crabs were sublegal males (51.1%), followed by legal males (28.5%), and females (20.4%) (Tables 1 and 6). Distribution of tagging effort by sex and legal-size status is shown in Figures 10, 11, and 12.

The 2003/2004 Aleutian Islands commercial golden king crab fishery opened August 15 and closed September 8, 2004. Of the 7,759 tagged crabs released during the 2003 survey, 333 (4.3%) were recovered in the 2003/2004 commercial fishery east of 174° W longitude (Table 6). Legal-sized crabs were recovered at a rate of 10.5%, sublegal males at a rate of 2.2%, and females at a rate of 0.9%.

The estimate of the exploitation rate incurred on mature males in the 2003/2004 fishery was 5.2%, derived by multiplying the recovery rate of legal males (10.5%) times the percentage (49.7%) of mature-sized males ($\geq$ 121 mm CL) captured in the survey that were of legal size (Table 7).

Comparison of the 1997, 2000, and 2003 Surveys

A combined total of 7,792 legal males, 63,555 sublegal males, and 68,110 females were captured from a total of 2,324 pots during the three surveys (Appendix B and C). The 1997 and 2000 surveys were 35 days in length as compared to the 30 day 2003 survey. Area coverage in the 2003 survey (2,100 nmi^2) exceeded that of the 1997 (1,775 nmi^2) and 2000 (1,725 nmi^2). The average number of soak days per pot has diminished, from 3.5 days in 1997 to 2.6 days in 2000 to 2.0 days in the 2003 survey. Average depths fished were nearly identical during the 1997 and 2000 surveys at 205 fathoms as compared to 183 fathoms in the 2003 survey. The same fishing gear was used in all three

surveys. Catch, catch per unit effort (CPUE), and number of golden king crabs tagged by sex and survey year for all stations fished is summarized in Appendix B and C.

Sixty-two stations were fished in common on the 1997, 2000, and 2003 surveys (Figure 13). The 62 in-common stations accounted for 87% of the stations fished in 1997, 90% of those fished in 2000, and 74% of the stations fished in 2003. Unless otherwise noted, information presented herein reflects descriptive comparisons among the three surveys only for the 62 stations fished in common. Data from the 1997 and 2000 surveys are referenced from Blau et al. (1998) and Watson and Gish (2002) and the databases for those surveys as of June 3, 2004.

Catch and Distribution. Catch rates in the 62 in-common stations of legal males have declined from 4.6 crabs per pot in 1997 to 3.1 and 2.9 crabs per pot in 2000 and 2003, respectively. Catches declined at higher rates for sublegal males and females between 1997 and 2003. Sublegal male catch per pot dropped from 51.4 crabs in 1997 to 32.4 in 2000 and to 13.4 crabs per pot in 2003. Female catch trends were similar to that of sublegal males, declining from 60.1 crabs per pot in 1997 to 34.8 in 2000 and to 11.8 crabs per pot in 2003. Comparative CPUE and distribution of legal, sublegal, and females crabs is shown in Figures 14, 15, and 16, respectively.

The highest catch at a single station from the 62 in-common stations for legal males was 291 in 1997, 150 in 2000, and 131 in 2003 (Appendix B). The peak catch of sublegal male crabs at a single station was uniformly high in all three years; 2,756, 2,898, and 2,831 in the 1997, 2000, and 2003 surveys, respectively (Appendix B). The highest single-station female catch was in the 2000 survey at 2,963 crabs, in 1997 2,436 crabs were caught, and in 2003 the peak station catch was 1,756 crabs (Appendix C).

The catch per pot (CPUE) of legal males was highest in the 250-299 fathom zone in 1997 and 2000 at 11.6 and 7.5 crabs per pot, respectively (Figure 5). In 2003, the legal peak catch per pot (4.6 crabs) was in the 350-399 fathom zone, but CPUE in the 200-249 fathom zone was nearly as high at 4 crabs per pot. Sublegal male CPUE was highest in the 400-449 fathom zone in 2000 at 162 (Figure 5). Although the 1997 sublegal CPUE was also highest in the 400-449 fathom zone at 111.9, similar levels were noted in the 350-399 fathom and 450-499 fathom depth zones. In 2003, sublegal levels were uniformly below 20 crabs per pot in all depth zones with the exception of the 300-349 fathom zone where the catch per pot was 105.1 crabs. Catch trends for females mirrored that of sublegals (Figure 6). The highest catch per pot in 2000 was in the 400-449 fathom zone at 198.5 crabs; the 1997 peak CPUE was also noted at that depth (118.4 crabs) and was bracketed by similarly high levels in the 350-399 fathom and 450-499 fathom depth zones. In 2003, female levels were uniformly below 15 crabs per pot in all depth zones with the exception of the 300-349 fathom zone where the catch per pot was 87.5 crabs.

Size, Shell Age, and Incidence of Disease or Parasitism. Size distributions of golden king crabs from survey catches were similar among the three surveys; legal male sizes were concentrated at 140 mm CL. Sublegal male size distributions were characterized by modes at 90 mm and at 125 mm CL. Female size modes were evident at 45 mm, 70 mm, and from 90 to 110 mm CL.

Shell-age structure for all golden king crabs was nearly identical among the three surveys, with new-shell crabs dominating the catches (Table 4). The occurrence of legal male leatherbacks was

less than 3.0% and was negligible for sublegal males (< 0.5%). Shell rust or chitinoclastic bacterial infections were very low among golden king crabs in the 1997 and 2000 surveys, afflicting < 1.2% of surveyed crabs. In the 2003 survey, shell rust was more frequently observed, especially in legal males and females. Occurrence of 'cottage cheese' disease, parasitic barnacles, and egg predators was negligible in all surveys.

Female Reproductive Condition. Female reproductive conditions changed between the three surveys; the incidence of immature females (clean pleopodal setae) declined from 65% in 1997 to 55% in 2000 and to 46% in 2003. Mature females with matted setae were nearly equally abundant in 1997 and 2000 survey catches, at rates of 10.5% and 12%, respectively. In the 2003 survey, the abundance of matted setae females dropped sharply (2.3%). Changes in the abundance of ovigerous females was notable, with catch rates at a low of 24.5% in 1997 to 33% in 2000 to a high of 51.5% in 2003. Egg clutch composition was similar in all surveys; most egg clutches were orange, uneyed, and few dead eggs were observed (Table 5). The number of females with clutches in hatching status was highest in 2003 (5.2%) and lowest in 2000 (1.9%). Clutch fullness at the 90% to 100% level was comparable between the 2000 survey (79.5%) and the 1997 survey (76.2%); however, most females in the 2003 survey (64.7%) were assessed at the 60% to 89% level.

Tagged Crabs Released and Recaptured. A combined total of 27,488 golden king crabs were tagged from all stations fished in the three surveys: 7,167 legal males, 14,408 sublegal males, and 5,913 females (Table 6). First year recovery rates of legal males tagged in 1997 and 2000 were nearly identical, at 20.4% and 20.0%, respectively. However, legal males in the 2003-2004 commercial fishery were recovered at half that rate, amounting to 10.5%. Data from recoveries of legal male crabs was used to estimate the minimum exploitation rate incurred in subsequent commercial fisheries, derived by multiplying the recovery rate of legal males times the percentage of mature-sized males (≥ 121 mm CL) captured in the survey that were of legal size. The highest exploitation rate occurred in the 1997/1998 fishery (8.2%) whereas the lowest rate was incurred in the 2003/2004 fishery (5.2%) (Table 7).

First-year recoveries for sublegal males increased slightly from the 1997/1998 to the 2000/2001 fishery, but as with legal males, was substantially less in the 2003/2004 fishery (Table 6). Females have never been recaptured in large numbers; first-year recoveries in the 1997/1998 and 2000/2001 fisheries were uniformly low, with first-year recoveries in the 2003/2004 even lower (Table 6).

2003 Survey Catch Composition

There were 101 taxa identified in survey catches in addition to the predominant golden king crab catch. Occurrence of other commercial crab species included scarlet king crabs *L. couesi* (7 legal males and 9 sublegal males) and one legal-sized grooved Tanner crab *C. tanneri* (Table 8). Other invertebrates included sponges, corals, sea stars, shrimp, urchins, snails, Lyre crabs *Hyas*, and octopus *Octopus dofleini.* Commercial fish species were common, and in descending order of abundance were: Pacific cod *Gadus macrocephalus*, Pacific halibut *Hippoglossus stenolepis,* Greenland turbot *Rheinhardtius hippoglossoides,* sablefish *Anoplopoma fimbria,* Atka mackerel *Pleurogramma monopterigius*, rockfish (*Sebastes* and S*ebastalobus.*), and walleye pollock

Theragra chalcogramma. Other fish catches included sculpins, flatfish, rattails, and prowfish. Catches of skates *Raja* were also common in pot catches.

Fish Length Distributions

Incidental catches of commercially important fish species were measured from tip of snout to fork of tail to the nearest cm. A total of 1,228 fish were measured, including 970 Pacific cod (Figure 17), 148 Pacific halibut and 11 Greenland turbot (Figure 18), 63 sablefish and 17 Atka mackerel (Figure 19), and 9 Pacific ocean perch *Sebastes alutus*, 7 northern rockfish *Sebastes polyspinus*, and 3 rougheye rockfish *Sebastes aleutianus* (Figure 20).

Ocean Bottom Temperatures

Hourly bottom temperature readings were obtained using two submersible conductivity-temperature-depth recorders placed in separate pots at 23 different stations (Table 9). Temperatures ranged from a minimum of 2.6°C at 281 fathoms to a maximum of 5.9°C at 73 fathoms, the shallowest depth fished on the survey. The average ocean temperature for the survey was 4.1°C. Generally, as depth increased, water temperatures decreased.

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Table 1. Golden king crab catch, catch per unit effort (CPUE), and tagging summary by sex and size category from the 2003 Aleutian Islands golden king crab survey.

Sex-Size Category	Captured Number	Captured Percent	Average CPUE	Tagged Number	Tagged Percent
Legal Males					
Recruit	1,732	76.0	1.9	1,677	96.8
Postrecruit	545	23.9	0.6	535	98.2
Not Recorded	1	0.0	0.0	1	100.0
Total	2,278		2.6	2,213	97.1
Sublegal Males					
<121 mm CL	6,576	74.1	7.3	1,730	26.3
≥121 mm CL	2,302	25.9	2.6	2,231	96.9
Not Recorded	1	0.0	0.0	0	0.0
Total	8,879		9.9	3,961	44.6
Females					
Mature	4,286	53.8	4.8	1,172	27.3
Immature	3,679	46.2	4.1	413	11.2
Total	7,965		8.9	1,585	20.0
Grand Total	19,122		21.4	7,759	40.6

Table 2. Golden king crab catch and catch per unit effort (CPUE) by depth grouping from the 1997, 2000, and 2003 Aleutian Islands surveys. *Data presented is from all stations fished in each survey year.*

Depth	Number of Pots			Legal Males						Sublegal Males						Females					
				Number			CPUE			Number			CPUE			Number			CPUE		
(fathoms)	1997[a]	2000[b]	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003
50-99	68	70	68	118	131	112	1.7	1.9	1.7	1,840	2,685	547	27.1	38.4	8.0	2,733	2,632	730	40.2	37.6	10.7
100-149	210	195	307	776	423	547	3.7	2.2	1.8	4,251	4,133	1,371	20.2	21.2	4.5	7,716	5,050	1,591	36.7	25.9	5.2
150-199	138	148	178	536	346	511	3.9	2.3	2.9	2,486	1,697	792	18.0	11.5	4.5	5,612	2,563	1,143	40.7	17.3	6.4
200-249	99	89	146	693	434	578	7.0	4.9	4.0	7,968	1,983	1,820	80.5	22.3	12.5	7,088	1,055	1,669	71.6	11.9	12.3
250-299	59	138	165	686	1,032	437	11.6	7.5	2.7	3,052	3,606	3,217	51.7	26.1	19.5	1,890	2,192	1,944	32.0	15.9	11.8
300-349	50	10	10	181	23	6	3.6	2.3	0.6	4,282	121	1,051	85.6	12.1	105.1	3,559	118	875	71.2	11.9	87.5
350-399	30	49	19	6	68	87	0.2	1.4	4.6	3,341	3,009	81	111.4	61.4	4.3	3,441	3,307	13	114.7	67.5	0.7
400-449	30	29	0	16	45	-	0.5	1.6	-	3,579	4,699	-	119.3	162.0	-	3,551	5,678	-	118.4	195.8	-
450-499	19	0	0	0	-	-	0.0	-	-	1,944	-	-	102.3	-	-	1,960	-	-	103.2	-	-
Total	703	728	893	3,012	2,502	2,278	4.3	3.4	2.6	32,743	21,933	8,879	46.9	30.1	9.9	37,550	22,595	7,965	53.4	31.0	8.9

[a] 1997 survey data from Blau et al. (1998).
[b] 2000 survey data from Watson and Gish (2002).

Table 3. Size overlap of sublegal and legal male golden king crabs from the 2003 Aleutian Islands survey.

Carapace Length (mm)	Number of Crabs		Total Sampled	Percent Legal
	Sublegal	Legal		
128	163	1	164	0.6
129	126	1	127	0.8
130	151	3	154	1.9
131	128	4	132	3.0
132	139	21	160	13.1
133	118	25	143	17.5
134	106	48	154	31.2
135	86	46	132	34.8
136	67	84	151	55.6
137	51	90	141	63.8
138	32	119	151	78.8
139	27	114	141	80.9
140	13	138	151	91.4
141	10	102	112	91.1
142	7	139	146	95.2
143	4	91	95	95.8
144	1	108	109	99.1
Total	1,229	1,134	2,363	

[a] All male golden king crabs <128-mm carapace length had sublegal widths.
[b] All male golden king crabs >144-mm carapace length had legal widths.

Table 4. Shell age of golden king crabs from the 1997, 2000, and 2003 Aleutian Islands surveys. *Data presented is from all stations fished in each survey year.*

Shell Age Category	1997[a] Number	1997[a] Percent	2000[b] Number	2000[b] Percent	2003 Number	2003 Percent
			Legal Males			
New-pliable	6	0.2	5	0.2	0	0.0
New-hard	2,935	92.0	2,397	95.8	2,163	95.0
Old	236	7.4	95	3.8	114	5.0
Very Old	13	0.4	5	0.2	1	0.0
Total	3,190		2,502		2,278	
			Sublegal Males			
New-pliable	65	0.2	22	0.1	5	0.1
New-hard	32,514	99.3	21,801	99.4	8,812	99.2
Old	131	0.4	110	0.5	61	0.7
Very Old	33	0.1	0	0.0	1	0.0
Total	32,743		21,933		8,879	
			Females			
New-pliable	112	0.3	23	0.1	8	0.1
New-hard	37,070	99.7	22,549	99.8	7,944	99.7
Old	10	<0.1	23	0.1	13	0.2
Very Old	0	0.0	0	0.0	0	0.0
Total	37,192		22,595		7,965	

[a] 1997 survey data from Blau et al. (1998).
[b] 2000 survey data from Watson and Gish (2002).

Table 5. Clutch and egg characteristics for ovigerous female golden king crabs captured in the 1997, 2000, and 2003 Aleutian Islands surveys. *Data presented is from all stations fished in each survey year.*

	1997[a]		2000[b]		2003	
Characteristic	Number	Percent	Number	Percent	Number	Percent
Clutch Size						
1-29% full	483	5.3	203	2.7	400	10.0
30-59% full	409	4.5	181	2.4	783	19.6
60-89% full	1,264	13.9	1,152	15.4	2,579	64.7
90-100% full	6,916	76.2	5,965	79.5	226	5.7
Not Recorded	0		1		0	0.0
Total	9,072		7,502		3,988	
Live Egg Color						
Tan	2,168	23.9	2,033	27.1	1,205	30.2
Purple	0	0.0	8	0.1	0	0.0
Orange	6,904	76.1	5,461	70.8	2,783	69.8
Total	9,072		7,502		3,988	
Egg Development						
Uneyed	5,380	59.3	4,711	60.8	1,758	44.1
Eyed	3,402	37.5	2,648	35.3	2,021	50.7
Hatching	290	3.2	143	1.9	209	5.2
Total	9,072		7,502		3,988	
Dead Eggs						
Not apparent	8,464	93.3	7,396	98.6	3,958	99.2
<20%	544	6.0	98	1.3	29	0.7
>20%	64	0.7	8	0.1	1	0.0
Total	9,072		7,502		3,988	

[a] 1997 survey data from Blau et al. (1998).
[b] 2000 survey data from Watson and Gish (2002).

Table 6. Releases of tagged golden king crabs from the 1997, 2000, and 2003 Aleutian Islands surveys and recoveries from the 1997-1998 through 2003-2004 commercial fishery seasons.

Sex/Size Class	Number Tagged in 1997[a]	Commercial Fishery Recoveries							Number Tagged in 2000[b]	Commercial Fishery Recoveries				Number Tagged in 2003	Comm. Fish. Recoveries
		1997	1998	1999	2000	2001	2002	2003		2000	2001	2002	2003		2003
Legal Males	2,943	598	194	52	9	1	0	0	2,011	404	53	20	2	2,213	232
Sublegal Males	4,678	236	301	191	79	16	2	1	5,769	323	93	108	50	3,961	86[c]
Females	2,136	43	22	13	8	2	2	1	2,192	60	1	13	9	1,585	15
Total	9,757	877	517	256	96	19	4	2	9,972	787	147	141	61	7,759	333

[a] 1997 survey data from Blau et al. (1998).
[b] 2000 survey data from Watson and Gish (2002).
[c] Includes one sublegal male recovered and released twice during the 2003/2004 season.

Table 7. Tag recovery and calculated minimum exploitation rates for mature legal males estimated from tagged crab recaptures during the 1997-1998, 2000-2001, and 2003-2004 Aleutian Islands golden king crab fisheries.

Survey Year	No. Legal Males Tagged	No. Tagged Legal Males Recovered	Recovery Rate	No. Mature Males of Legal Size in Survey	No. Mature Males in Survey	Percent of Mature Legal-Sized Males	Estimated Exploitation Rate
1997[a]	2,943	601	20.4	3,173	7,952	39.9	8.2
2000[b]	2,011	402	20.0	2,589	7,666	33.8	6.8
2003	2,213	232	10.5	2,278	4,580	49.7	5.2

[a] 1997 survey data from Blau et al. (1998).
[b] 2000 survey data from Watson and Gish (2002).

Table 8. Species composition from pot catches in the 2003 Aleutian Islands golden king crab survey.

Rank	Common Name	Scientific Name	Number
1	Golden king crab	*Lithodes aequispinus*	19,122
2	Pacific cod	*Gadus macrocephalus*	2,274
3	Pacific halibut	*Hippoglossus stenolepis*	256
4	Pacific grenadier	*Coryphaenoides cinereus*	205
5	Greenland turbot	*Reinhardtius hippoglossoides*	161
6	Darkfin sculpin	*Malacocottus zonurus*	146
7	Sablefish	*Anoplopoma fimbria*	114
8	Hairy triton	*Fusitriton oregonensis*	107
9	Yellow Irish Lord	*Hemilepidotus jordani*	93
10	Atka mackerel	*Pleurogrammus monopterygius*	63
11	Aleutian skate	*Bathyraja aleutica*	53
12	Alaska volute	*Arctomelon stearnsii*	53
13	Unidentified snails	Gastropoda	52
14	Pribilof whelk	*Neptunea pribiloffensis*	48
15	Unidentified sponges	Porifera	47
16	Stylaster coral	*Stylaster*	38
17	Northern rockfish	*Sebastes polyspinus*	36
18	Green sea urchin	*Strongylocentrotus droebachiensis*	36
19	Thouarella coral	*Thouarella*	33
20	Pacific ocean perch	*Sebastus alutus*	28
21	Basketstar	*Gorgonocephalus eucnemis*	26
22	Unidentified gorgonian coral	Gorgonacea	23
23	Fanellia coral	*Fanellia*	23
24	Plumarella coral	*Plumarella*	21
25	Unidentified hydroids	Hydrozoa	20
26	Anthomastus coral	*Anthomastus*	20
27	Cyclohelia coral	*Cyclohelia*	19
28	Aleutian pandalid shrimp	*Pandalopsis aleutica*	19
29	Errinopora coral	*Errinopora*	18
30	Giant octopus	*Octopus dofleini*	18
31	Calcigorgia coral	*Calcigorgia*	17
32	Scarlet king crab	*Lithodes couesi*	16
33	Unidentified brittlestars	Ophiuroid	16
34	Distichopora coral	*Distichopora*	14
35	Caryophillia coral	*Caryophillia*	12
36	Unidentified sea spiders	Pycnogonida	11
37	Spiny lebbeid shrimp	*Lebbeus groenlandicus*	10
38	Unidentified snailfishes	Liparinidae	9
39	Blood sea star	*Henricia leviuscula*	9
40	Purple hermit crab	*Elassochirus tenuimanus*	8
41	Muriceides coral	*Muriceides*	7
42	Hippasteria sea star	*Hippasteria*	7
43	Ceramaster bat star	*Ceramaster*	7
44	Shortspine thornyhead	*Sebastalobus alascanus*	6
45	Sea raspberry	*Gersemia rubiformis*	6

-Continued-

Table 8. (page 2 of 3)

Rank	Common Name	*Scientific Name*	Number
46	Spiny red sea star	*Hippasteria spinosa*	6
47	Unidentified sun seastars	*Solaster*	6
48	Unidentified tunicates	Ascidian	6
49	Searcher	*Bathymaster signatus*	5
50	Walleye pollock	*Theragra chalcogramma*	5
51	Rougheye rockfish	*Sebastes aleutianus*	5
52	Pacific lyre crab	*Hyas lyratus*	5
53	Leafy bryozoan	*Flustra serrulata*	5
54	Spectacled sculpin	*Triglops septicus*	4
55	Paragorgia coral	*Paragorgia*	4
56	Arthrogorgia coral	*Arthrogorgia*	4
57	Unidentified Colus snails	*Colus*	4
58	Blackspined sea star	*Lethasterias nanimensis*	4
59	Tumid sea star	*Henricia tumida*	4
60	Unidentified bryozoans	Bryozoa	4
61	Prowfish	*Zaprora silenus*	3
62	Sinuous whelk	*Buccinum plectrum*	3
63	Red bat star	*Ceramaster japonicus*	3
64	Cushion sea star	*Pteraster tesselatus*	3
65	Unidentified sea cucumbers	Holothuroidea	3
66	Brownscaled sea cucumber	*Psolus fabricii*	3
67	skate egg case		2
68	Arrowtooth flounder	*Astheresthes stomias*	2
69	Primnoa coral	*Primnoa*	2
70	Red tree coral	*Primnoa willeyi*	2
71	Swiftia coral	*Swiftia*	2
72	Unidentified scale worms	Polynoidae	2
73	Unidentified amphipods	Amphipoda	2
74	Fragile whelk	*Volutopsius fragilis*	2
75	Rose sea star	*Crossaster papposus*	2
76	Pincushion sea star	*Diplopteraster multipes*	2
77	Asterias sea star	*Asterias*	2
78	Featherstar	*Florometra serratissima*	2
79	Unidentified 'hairy' brittlestar	*Ophiacantha.*	2
80	Unidentified skate	Rajidae	1
81	Sturgeon poacher	*Podothecus acipenserinus*	1
82	Unidentified rockfish	*Sebastes*	1
83	Dusky rockfish unidentified		1
84	Redstripe rockfish	*Sebastes proriger*	1
85	Crypthelia coral	*Crypthelia*	1
86	Unidentified tube worm		1
87	Lebbeid shrimp	*Lebbeus*	1
88	Crangon shrimp	*Crangon*	1
89	Sclerocrangon shrimp	*Sclerocrangon*	1
90	Sculptured shrimp	*Sclerocrangon boreas*	1

-Continued-

Table 8. (page 3 of 3)

Rank	Common Name	*Scientific Name*	Number
91	Grooved Tanner crab	*Chionoecetes tanneri*	1
92	Scaled crab	*Placentron wosnessenskii*	1
93	Unidentified chiton	Polyplacophora unidentified	1
94	Tritonia nudibranch	*Tritonia.*	1
95	'Tamiko' volute	*Arctomelon tamikoae*	1
96	Chlamys scallop	*Chlamys*	1
97	Unidentified squid		1
98	Unidentified starfish	Asteroidea	1
99	Sanguine sea star	*Henricia sanguinolenta*	1
100	Knobby six-rayed sea star	*Leptasteria polaris*	1
101	Sea potato	*Styela rustica*	1

Table 9. Ocean bottom temperatures at select stations fished during the 2003 Aleutian Islands golden king crab survey.

	Depth		Set	Temperature °C		
Station	(fathoms)	(m)	Date	Average	Minimum	Maximum
5	73	133	27-Jul	4.9	3.8	5.9
23	96	176	19-Jul	4.5	4.4	4.6
101	102	187	27-Jul	4.6	4.3	4.8
100	113	207	25-Jul	4.5	4.3	4.8
55	126	230	21-Jul	4.4	4.1	4.8
59	128	233	13-Jul	4.4	4.2	4.7
142	135	246	9-Jul	4.3	4.0	4.8
30	140	256	4-Jul	4.4	4.0	5.0
11	155	284	16-Jul	4.1	3.8	4.5
119	160	292	8-Jul	4.2	3.7	4.7
61	165	302	5-Jul	4.2	4.0	4.5
94	225	411	23-Jul	3.8	3.7	4.1
121	231	422	6-Jul	3.7	3.0	4.3
94	231	423	11-Jul	3.8	3.2	4.6
2	238	436	3-Jul	3.6	3.2	3.7
137	244	447	22-Jul	3.8	3.6	4.4
140	249	456	10-Jul	3.6	3.1	4.1
27	260	475	14-Jul	3.7	3.6	3.8
40	267	487	17-Jul	3.8	3.0	4.6
26	281	513	15-Jul	3.6	2.6	4.3
72	287	525	24-Jul	3.7	3.2	4.3
91	290	531	21-Jul	3.8	3.7	4.1
145	300	549	7-Jul	3.7	3.5	4.0

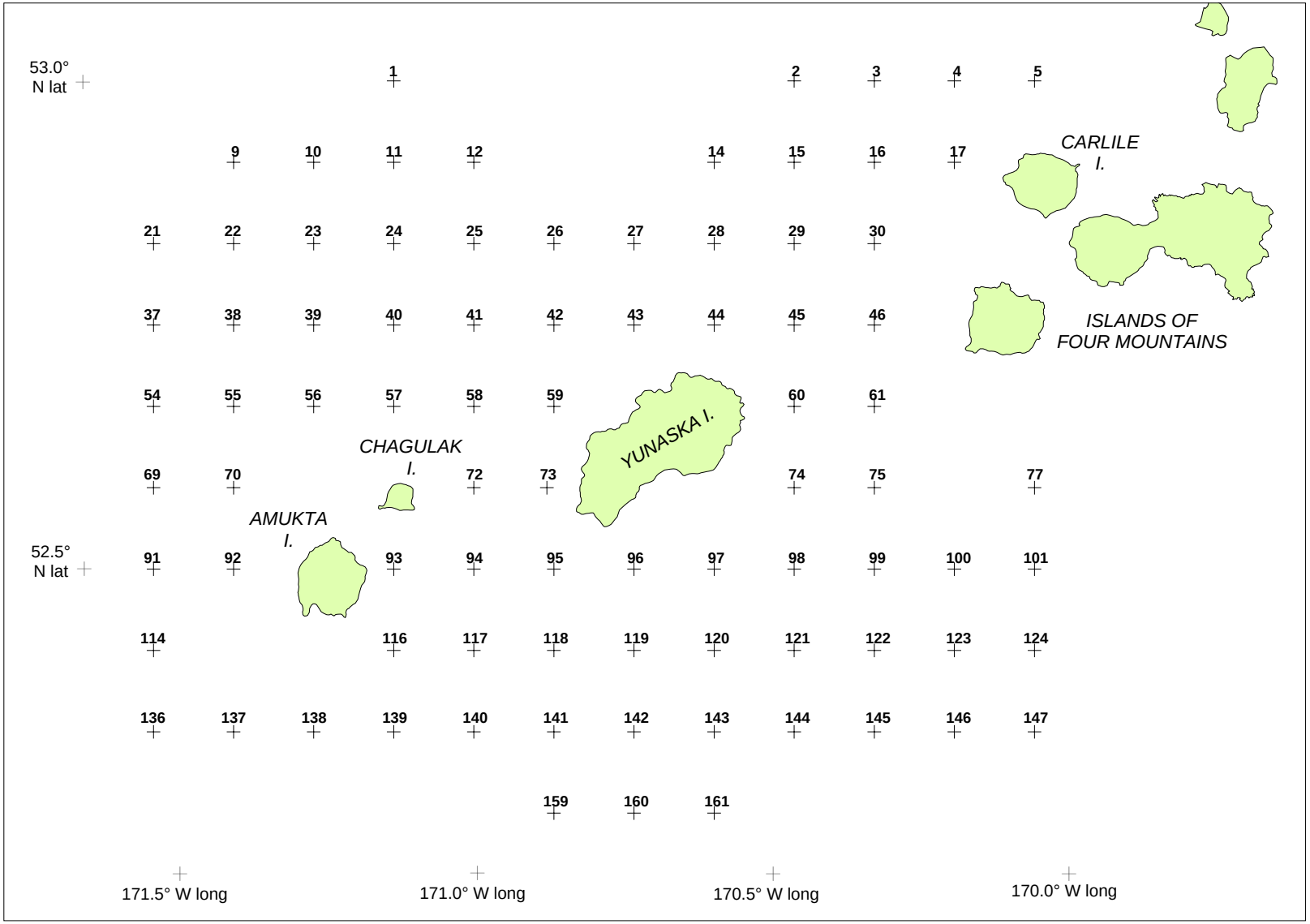

Figure 1. Survey area and mid-point locations for the 84 stations fished during the 2003 Aleutian Islands golden king crab survey.

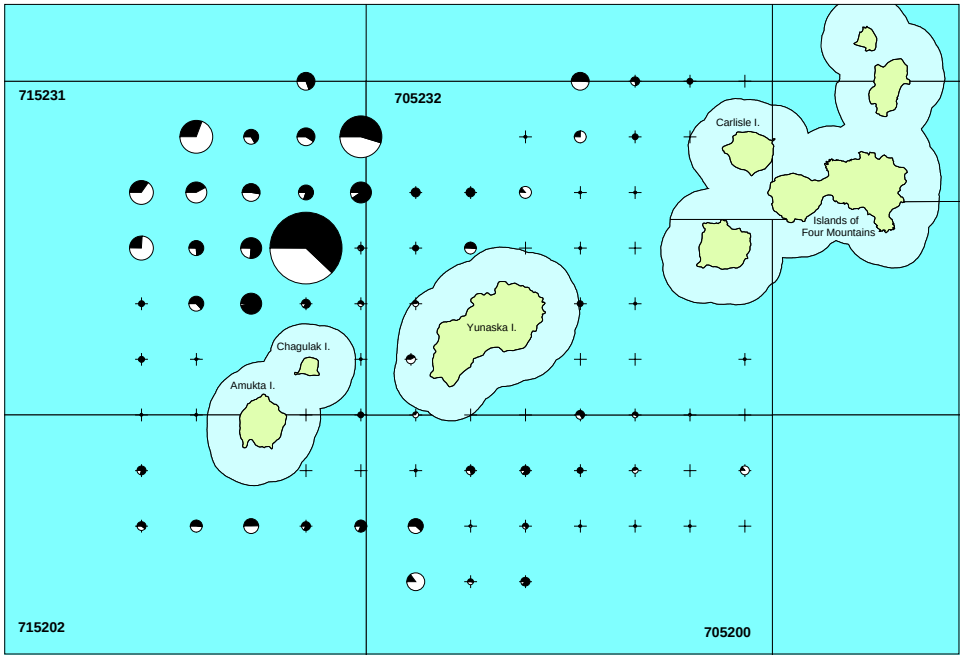

Figure 2. Male and female golden king crab catch per unit effort (CPUE) by station on the 2003 Aleutian Islands survey. *Size proportional to station CPUE, largest circle represents 465 crabs per pot. Males in black, females in white.*

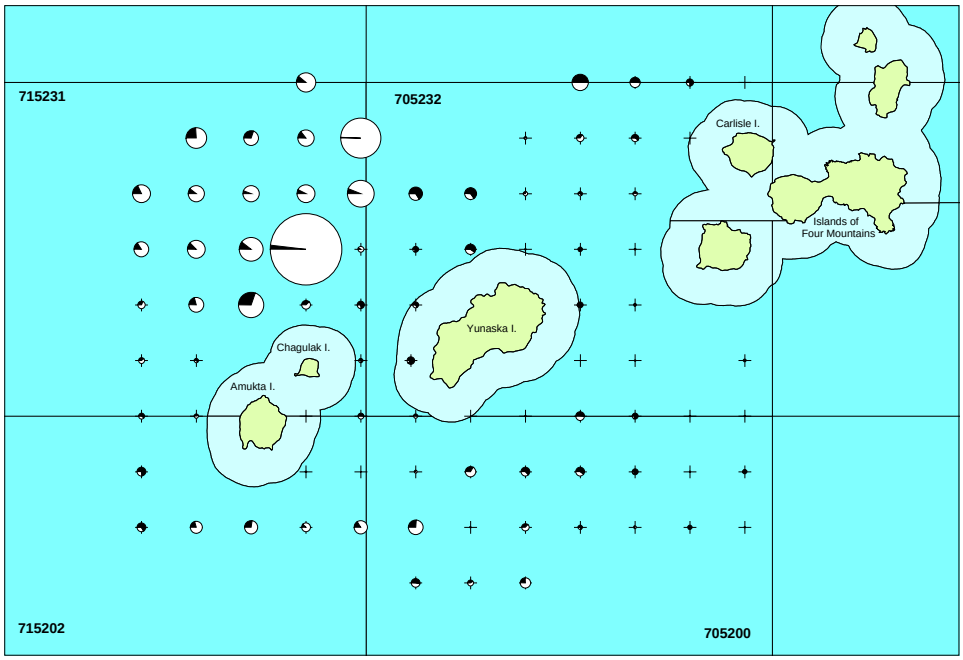

Figure 3. Legal and sublegal male golden king crab catch per unit effort (CPUE) by station on the 2003 Aleutian Islands survey. *Size proportional to station CPUE, largest circle represents 288 crabs per pot. Legal males in black, sublegal males in white.*

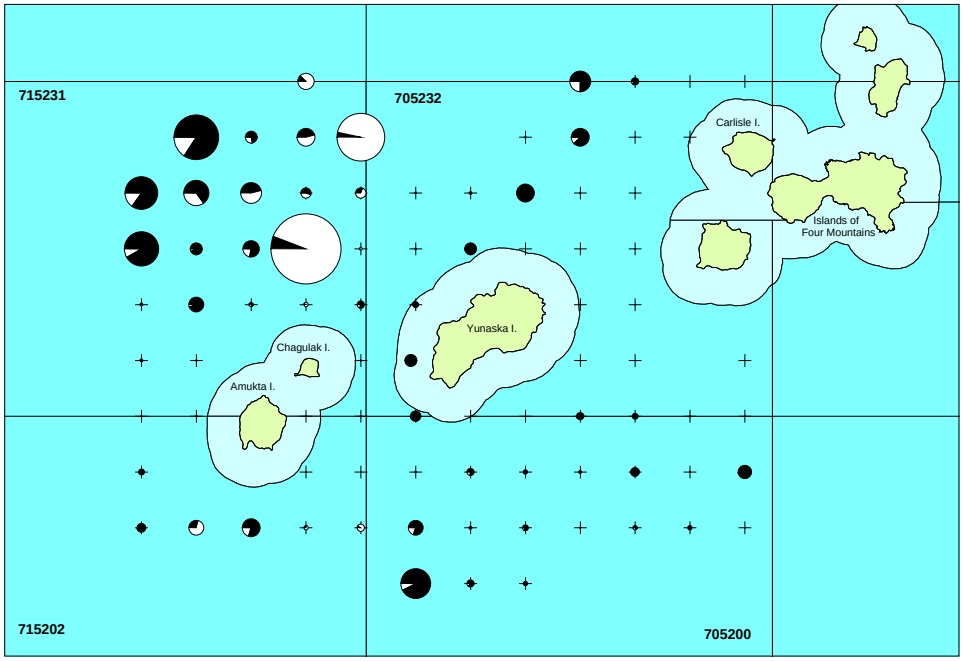

Figure 4. Mature and immature female golden king crab catch per unit effort (CPUE) by station on the 2003 Aleutian Islands survey. *Size proportional to station CPUE, largest circle represents 176 crabs per pot. Mature females in black, immature females in white.*

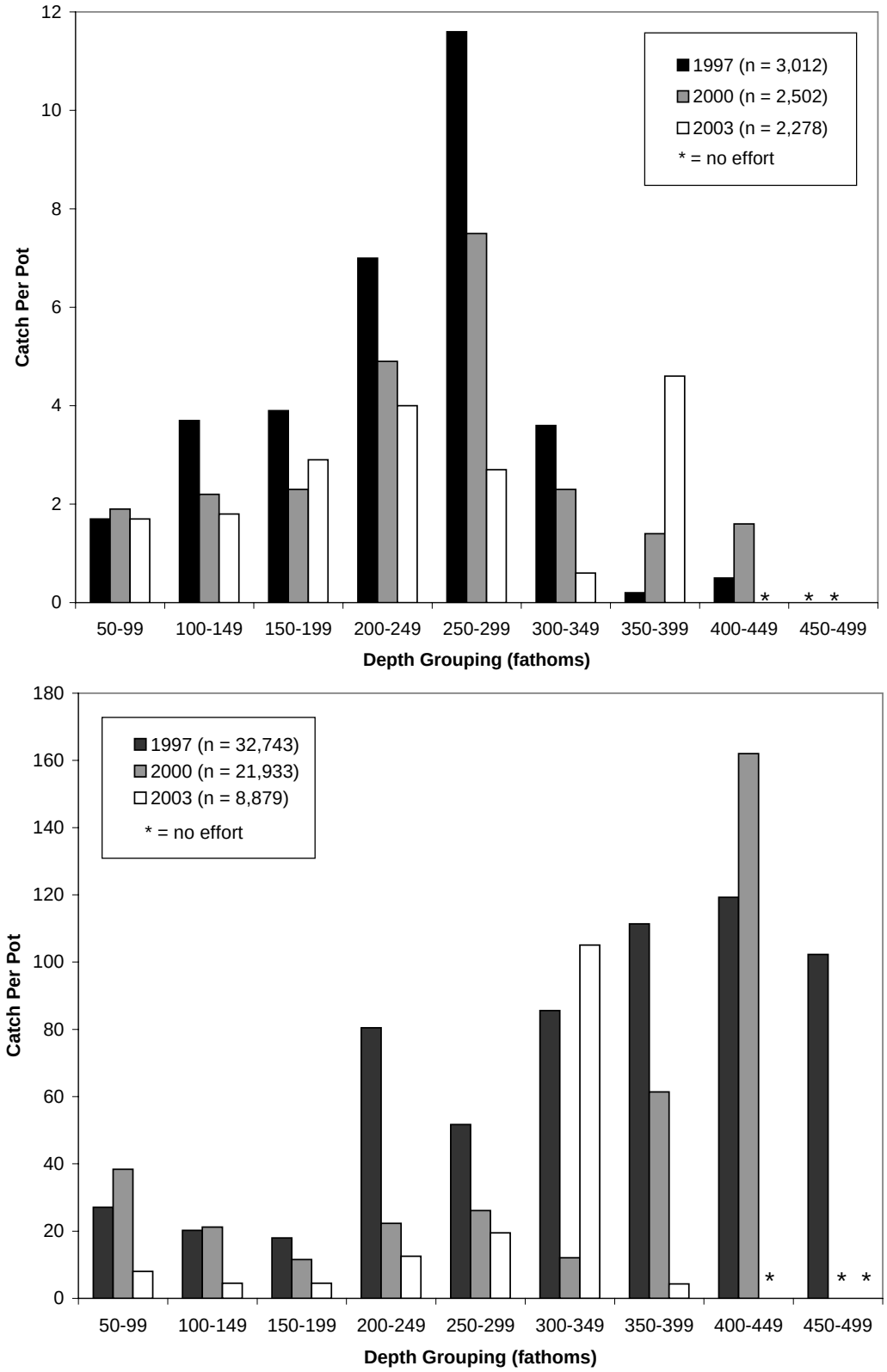

Figure 5. Legal male (top) and sublegal male (bottom) golden king crab percent catch by 50-fathom depth groupings in the 1997, 2000, and 2003 Aleutian Islands surveys.

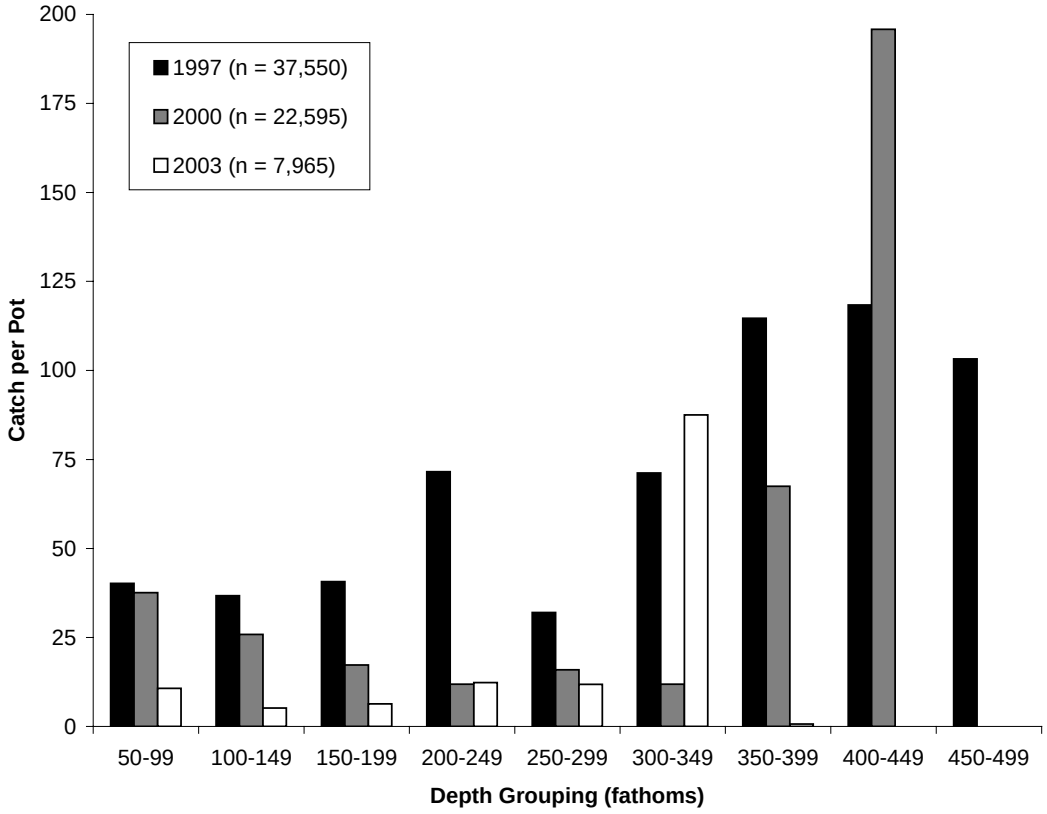

Figure 6. Female golden king crab percent catch by 50-fathom depth groupings in the 1997, 2000, and 2003 Aleutian Islands surveys.

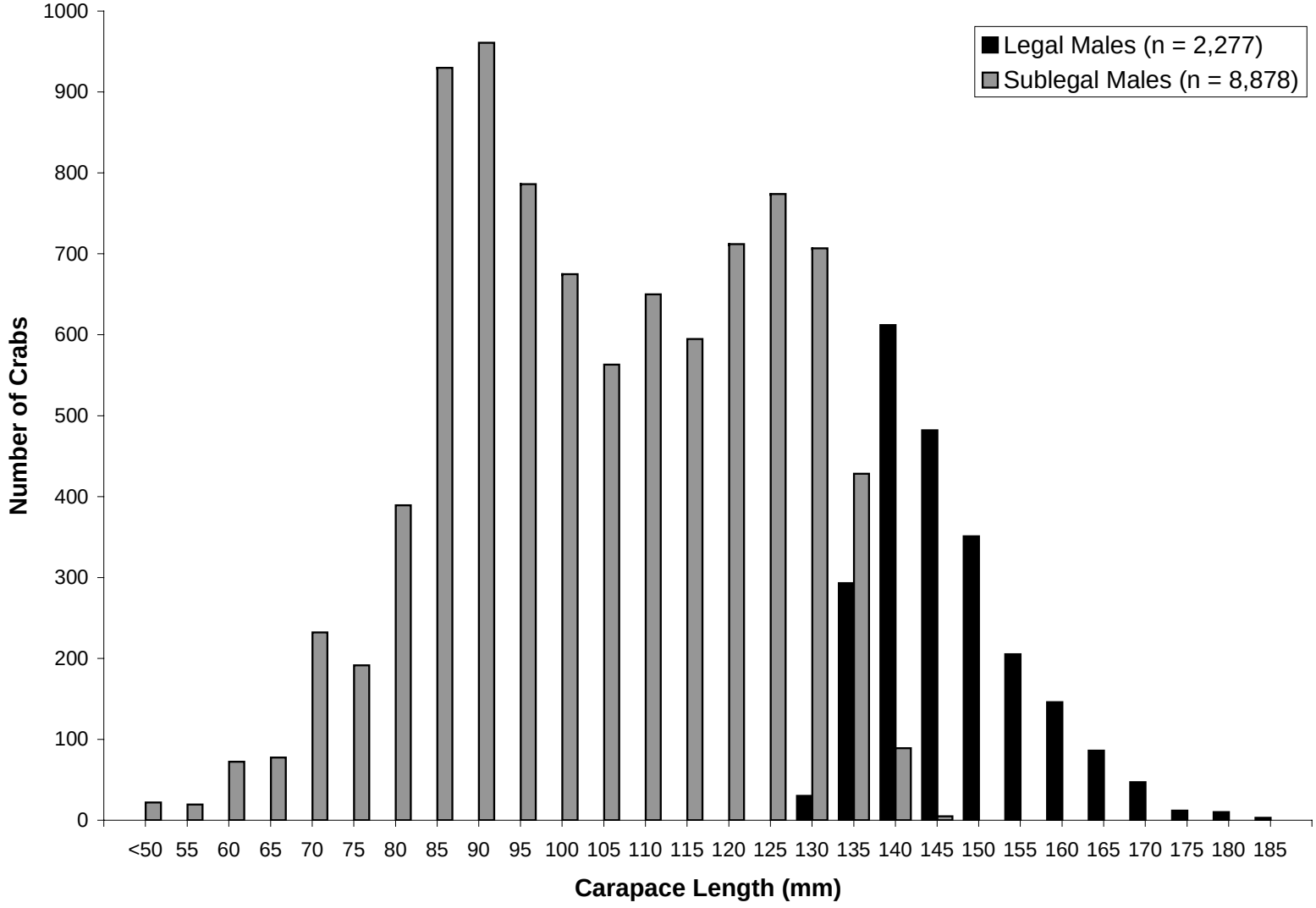

Figure 7. Length distributions of legal and sublegal male golden king crabs from the 2003 Aleutian Islands survey.

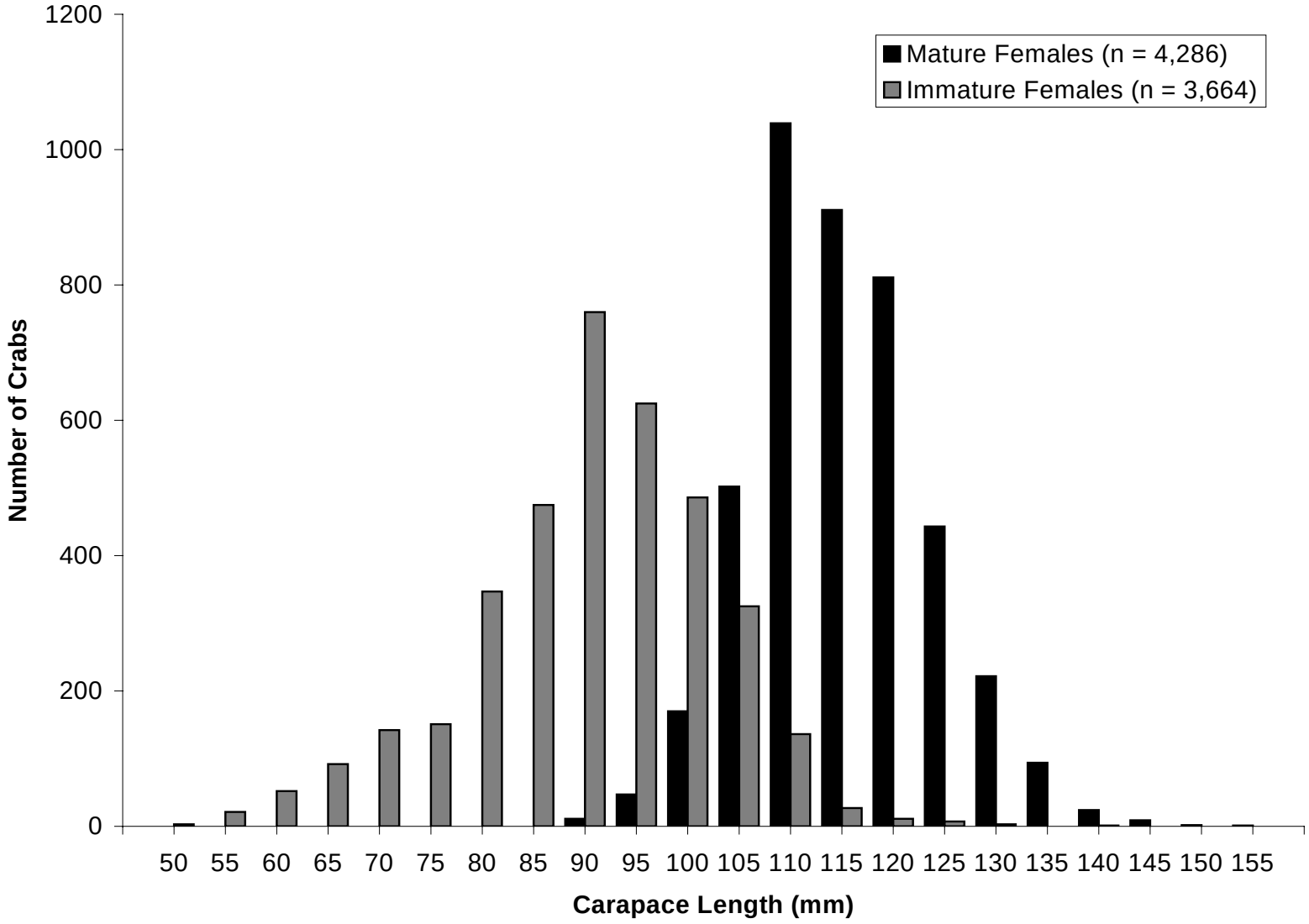

Figure 8. Length distributions of mature and immature female golden king crabs from the 2003 Aleutian Islands survey.

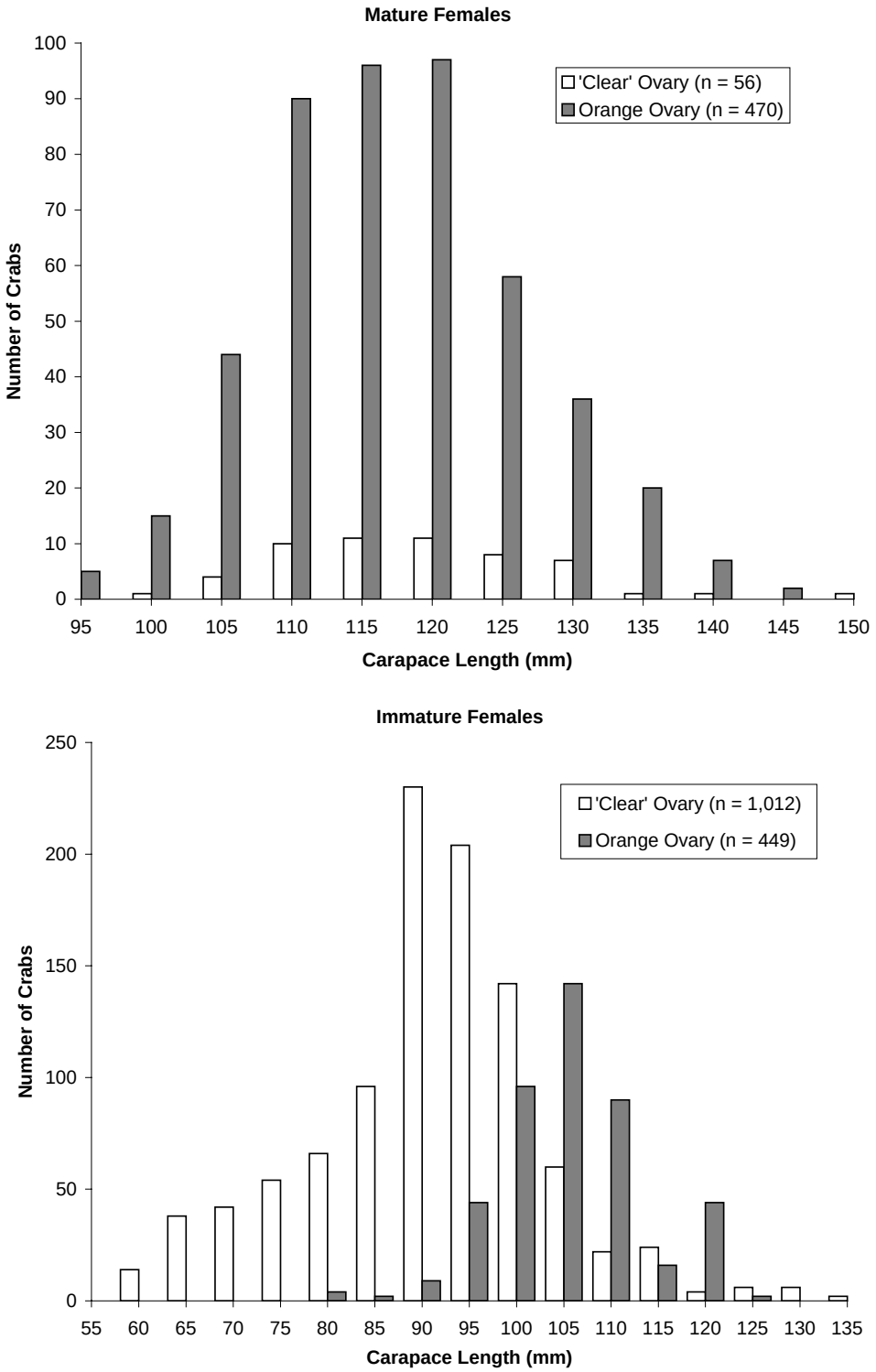

Figure 9. Mature (top panel) and immature (bottom panel) female golden king crab ovary color as observed through the articulating membrane between the dorsal margin of the carapace and the first abdominal somite during the 2003 Aleutian Islands survey.

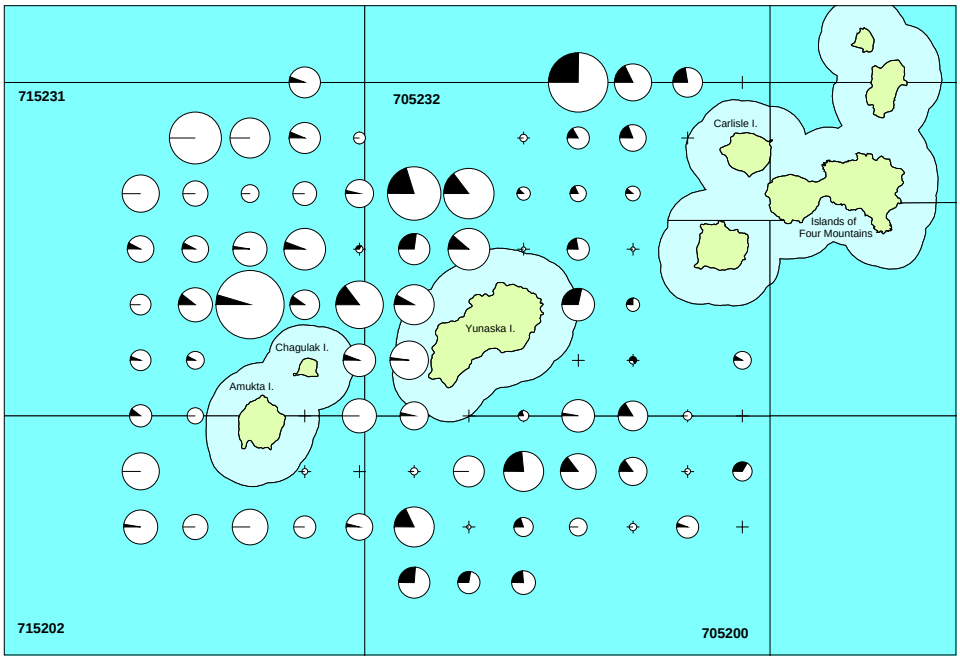

Figure 10. Tagged legal male golden king crab releases from the 2003 Aleutian Islands survey and recaptures from the 2003-2004 Aleutian Islands commercial fishery. *Size proportional to number of tag released at station; largest circle represents 131 crabs. Proportion recovered in black, proportion not recovered in white.*

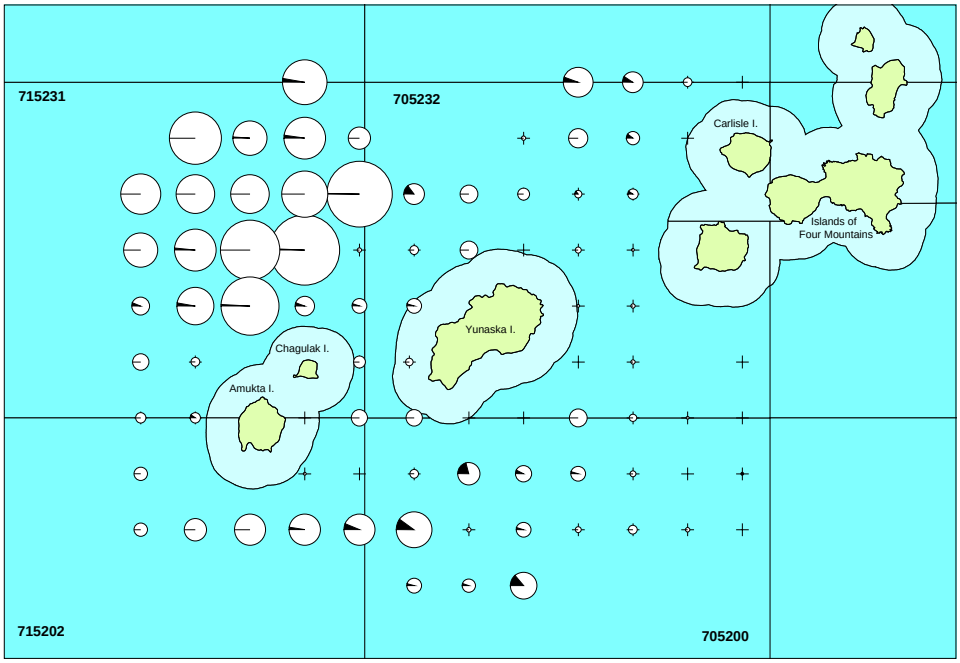

Figure 11. Tagged sublegal male golden king crab releases from the 2003 Aleutian Islands survey and recaptures from the 2003-2004 Aleutian Islands commercial fishery. *Size proportional to number of tag released at station; largest circle represents 341 crabs. Proportion recovered in black, proportion not recovered in white.*

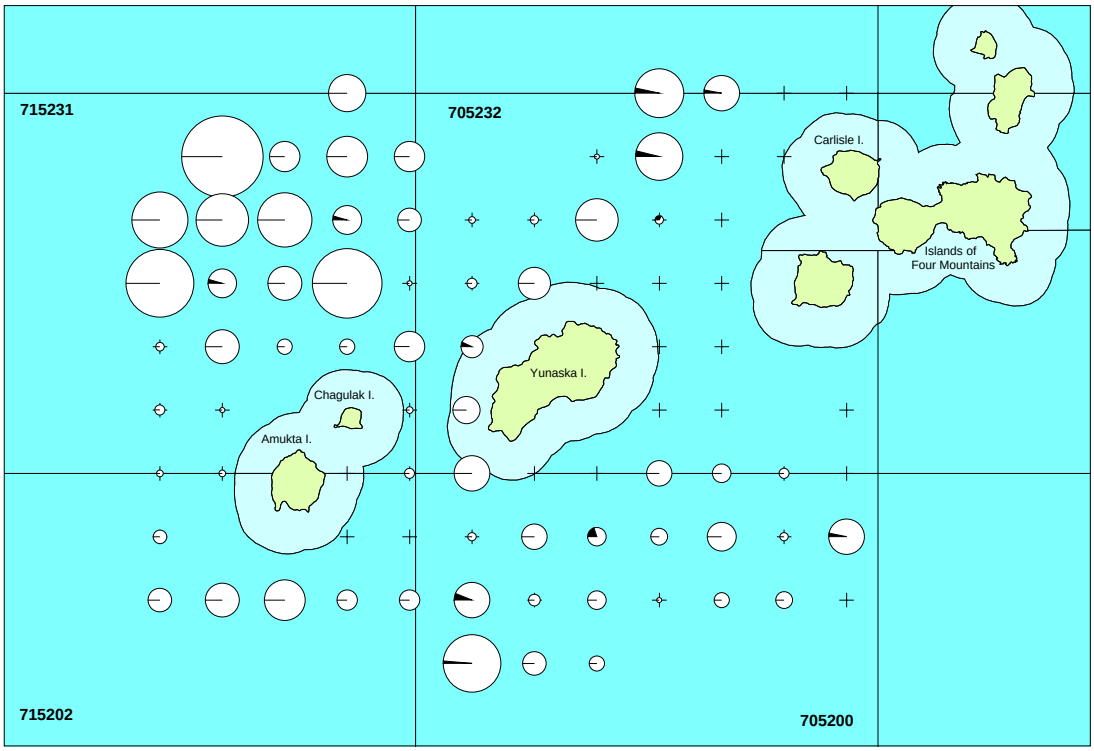

Figure 12. Tagged female golden king crab releases from the 2003 Aleutian Islands survey and recaptures from the 2003-2004 Aleutian Islands commercial fishery. *Size proportional to number of tag released at station; largest circle represents 139 crabs. Proportion recovered in black, proportion not recovered in white.*

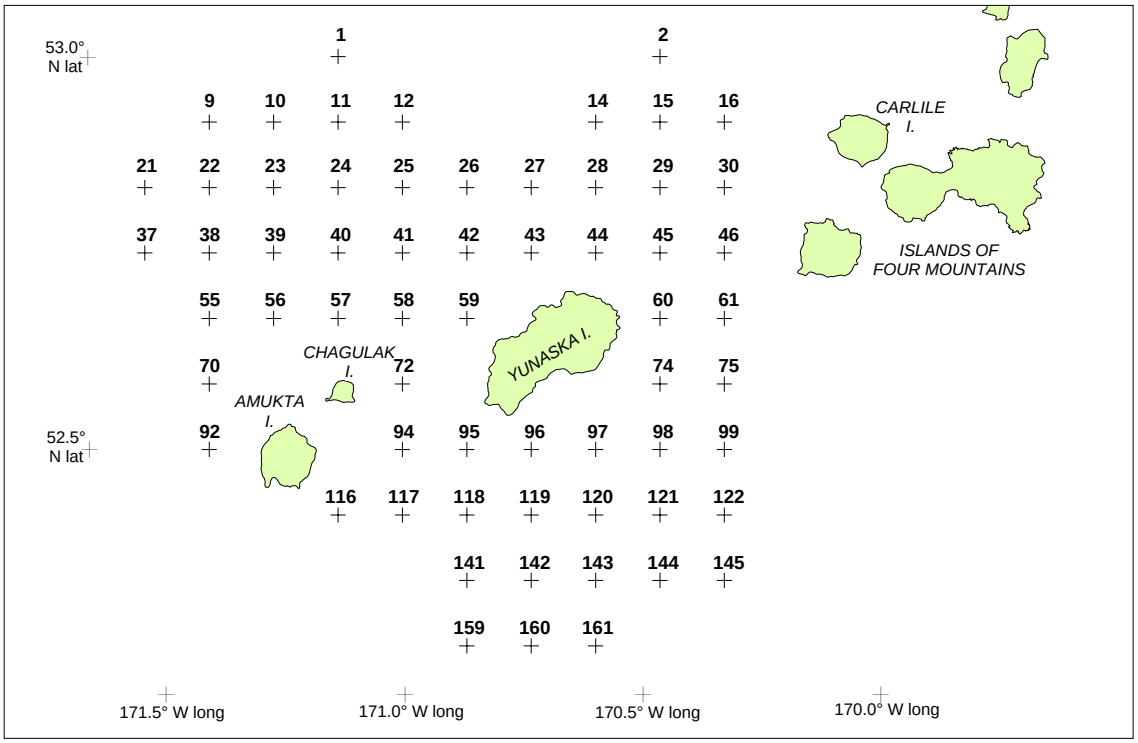

Figure 13. Location of the 62 stations fished in common during the 1997, 2000, and 2003 Aleutian Islands golden king crab surveys.

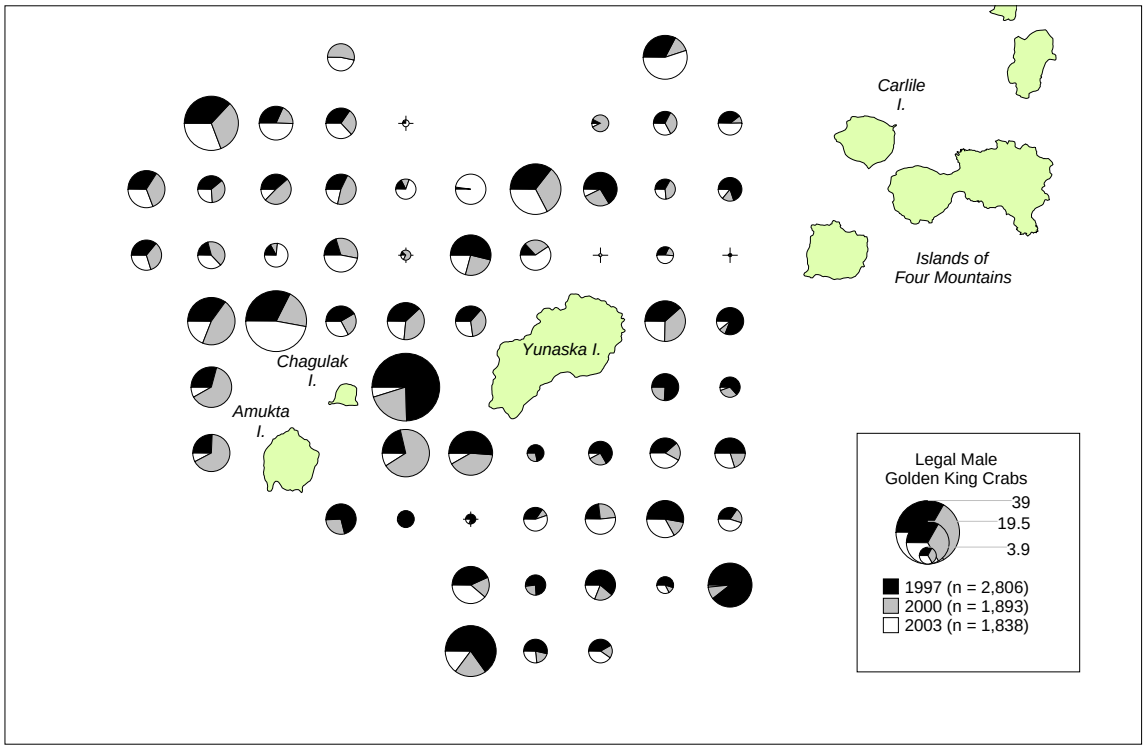

Figure 14. Legal male golden king crab catch per unit effort (CPUE) by station from the 1997, 2000, and 2003 Aleutian Islands golden king crab surveys.

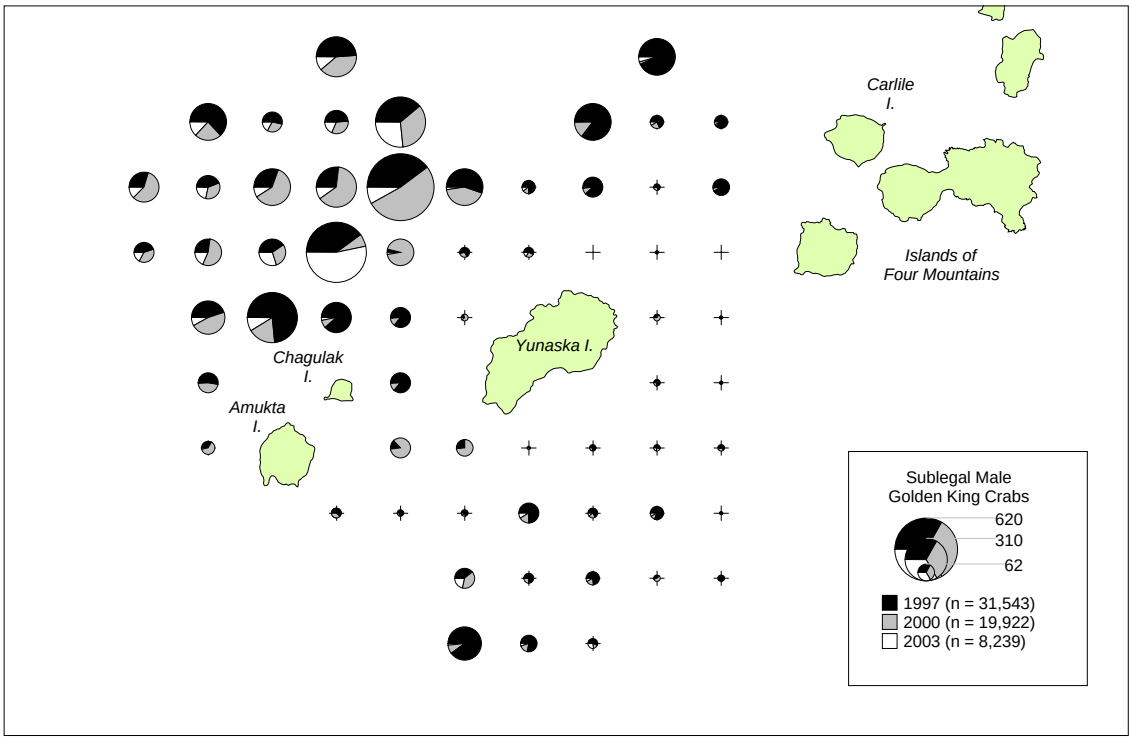

Figure 15. Sublegal male golden king crab catch per unit effort (CPUE) by station from the 1997, 2000, and 2003 Aleutian Islands golden king crab surveys.

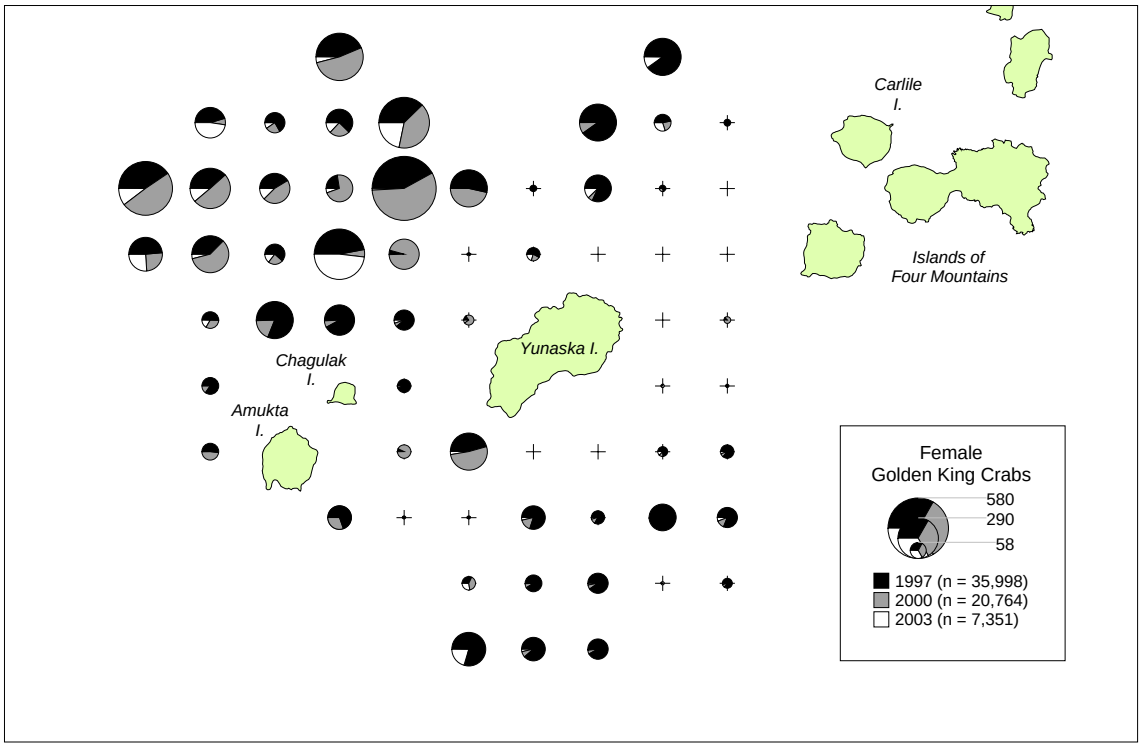

Figure 16. Female golden king crab catch per unit effort (CPUE) by station from the 1997, 2000, and 2003 Aleutian Islands golden king crab surveys.

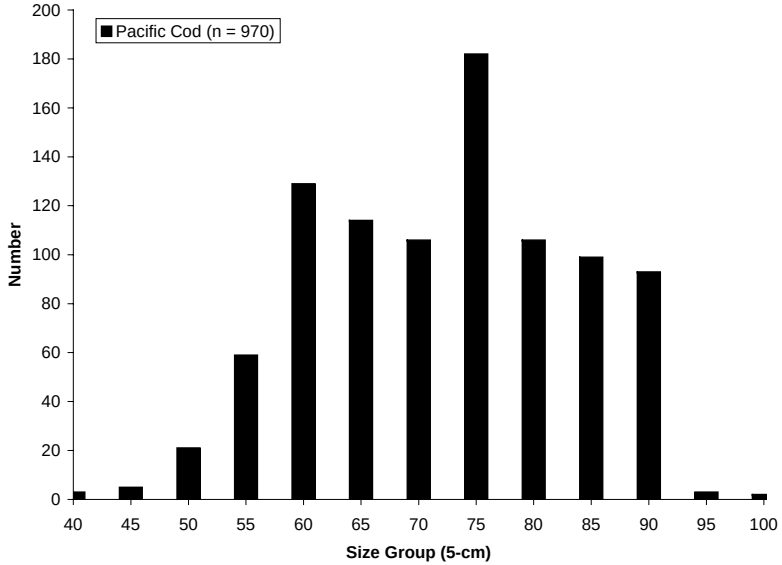

Figure 17. Pacific cod length distribution from the 2003 Aleutian Islands pot survey.

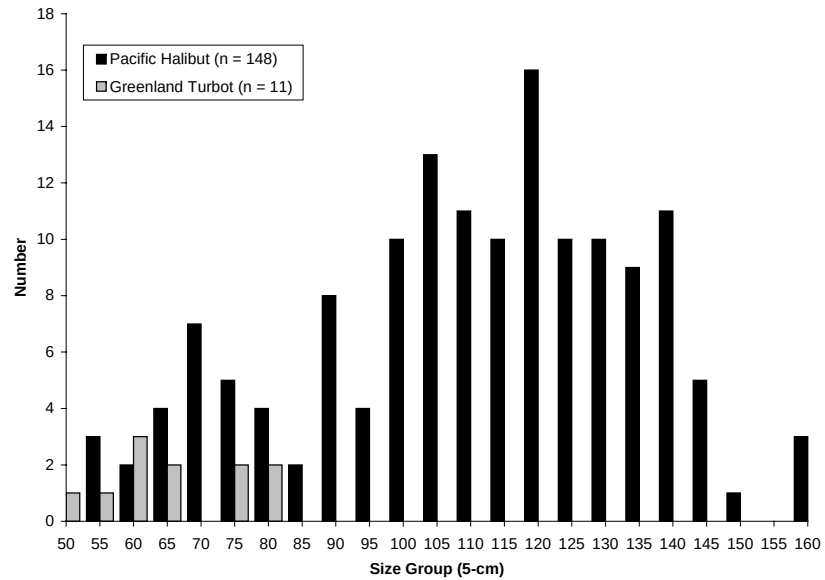

Figure 18. Pacific halibut and Greenland turbot length distributions from the 2003 Aleutian Islands pot survey.

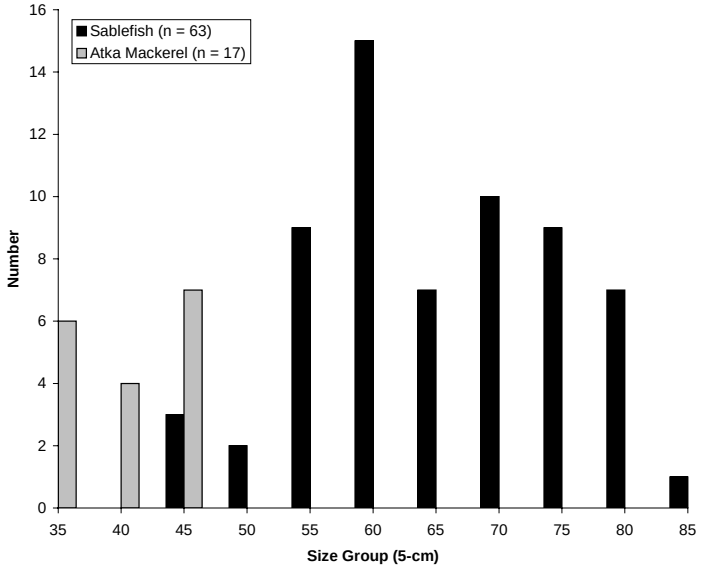

Figure 19. Sablefish and Atka mackerel length distributions from the 2003 Aleutian Islands pot survey.

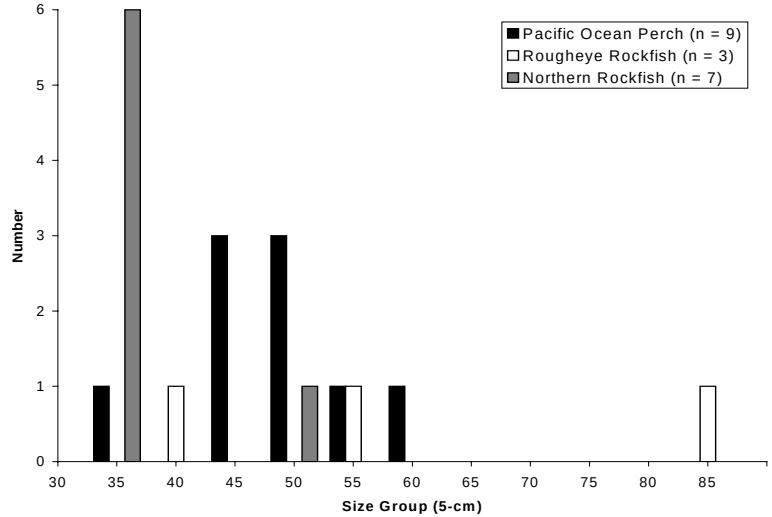

Figure 20. Pacific ocean perch, rougheye rockfish, and northern rockfish length distributions from the 2003 Aleutian Islands pot survey.

APPENDIX

Appendix A. Golden king crab catch, catch per unit effort (CPUE), and tagging effort by station from the 2003 Aleutian Islands survey.

			Average														
	Set		Soak	Depth	N latitude		W longitude		Legal Males			Sublegal Males			Females		
Station	Date	Pots	Days	(fm)	Degrees	Minutes	Degrees	Minutes	Number	CPUE	Tagged	Number	CPUE	Tagged	Number	CPUE	Tagged
1	7/16	10	3.1	249	52	58.06	171	10.18	34	3.4	34	275	27.5	153	137	13.7	37
2	7/3	10	2.3	205	53	0.33	170	27.27	107	10.7	103	106	10.6	73	205	20.5	59
3	7/3	10	2.2	104	52	59.98	170	19.75	45	4.5	45	44	4.4	43	34	3.4	34
4	7/27	10	1.9	97	53	0.35	170	10.78	46	4.6	31	16	1.6	9	0	0.0	0
5	7/27	10	1.9	69	53	0.17	170	3.48	0	0.0	0	0	0.0	0	0	0.0	0
9	7/19	10	1.4	230	52	53.52	171	24.55	85	8.5	81	268	26.8	202	795	79.5	139
10	7/16	10	3.5	161	52	55.27	171	16.18	53	5.3	51	119	11.9	98	86	8.6	26
11	7/16	10	3.0	153	52	54.51	171	10.33	34	3.4	32	201	20.1	135	162	16.2	42
12	7/15	10	2.0	335	52	54.29	171	0.53	6	0.6	6	1,051	105.1	48	875	87.5	26
14	7/15	10	2.0	275	52	53.62	170	34.31	3	0.3	3	6	0.6	3	4	0.4	0
15[a]	7/3	11	2.4	132	52	55.04	170	27.70	21	1.9	18	40	3.6	35	178	16.2	0
16	7/3	9	2.6	117	52	55.09	170	20.42	31	3.4	26	21	2.3	20	0	0.0	1
17	7/27	10	1.8	101	52	55.39	170	11.07	0	0.0	0	0	0.0	0	0	0.0	53
21	7/20	10	1.3	139	52	50.53	171	33.26	45	4.5	44	203	20.3	129	465	46.5	71
22	7/19	10	1.7	103	52	50.43	171	24.58	23	2.3	22	194	19.4	120	297	29.7	64
23	7/19	10	1.6	95	52	50.51	171	17.01	13	1.3	13	209	20.9	121	200	20.0	70
24	7/16	10	3.2	109	52	50.35	171	9.24	20	2.0	20	246	24.6	160	67	6.7	23
25[b]	7/15	9	2.3	210	52	50.08	171	4.67	29	3.2	27	456	50.7	302	51	5.7	16
26	7/15	9	2.3	371	52	50.93	170	50.75	84	9.3	84	44	4.9	41	3	0.3	2
27	7/14	10	2.1	265	52	49.57	170	44.60	75	7.5	75	40	4.0	31	6	0.6	3
28	7/14	10	2.2	203	52	49.87	170	35.92	8	0.8	8	19	1.9	16	165	16.5	46
29	7/4	10	2.1	115	52	49.95	170	28.53	12	1.2	11	7	0.7	7	3	0.3	3
30	7/4	10	2.0	142	52	49.36	170	20.42	9	0.9	9	11	1.1	11	0	0.0	0
37	7/21	9	1.4	99	52	44.59	171	35.41	26	2.9	26	135	15.0	97	454	50.4	103
38	7/21	9	1.3	85	52	44.98	171	24.83	27	3.0	26	187	20.8	139	76	8.4	23
39	7/17	9	2.9	100	52	44.48	171	16.73	40	4.4	39	340	37.8	254	117	13.0	29
40	7/17	10	3.0	252	52	45.04	171	10.38	53	5.3	53	2,831	283.1	341	1,756	175.6	108
41	7/13	10	2.0	363	52	44.55	170	59.77	3	0.3	3	37	3.7	3	10	1.0	1

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			Average														
	Set		Soak	Depth	N latitude		W longitude		Legal Males			Sublegal Males			Females		
Station	Date	Pots	Days	(fm)	Degrees	Minutes	Degrees	Minutes	Number	CPUE	Tagged	Number	CPUE	Tagged	Number	CPUE	Tagged
42	7/13	10	1.9	269	52	44.87	170	52.22	35	3.5	33	8	0.8	8	4	0.4	4
43	7/14	10	2.1	178	52	45.21	170	44.91	54	5.4	53	36	3.6	30	84	8.4	28
44	7/14	10	2.2	102	52	45.58	170	35.77	1	0.1	1	0	0.0	0	0	0.0	0
45	7/4	10	2.1	150	52	44.80	170	29.10	18	1.8	18	4	0.4	4	0	0.0	0
46[b]	7/4	9	2.1	120	52	44.90	170	20.78	1	0.1	1	1	0.1	1	0	0.0	0
54[b]	7/21	9	1.8	264	52	40.42	171	34.25	17	1.9	17	36	4.0	33	6	0.7	3
55	7/21	10	1.7	187	52	40.70	171	25.17	38	3.8	38	145	14.5	112	108	10.8	31
56	7/17	9	2.9	233	52	39.78	171	16.39	131	14.6	131	299	33.2	238	14	1.6	8
57	7/17	10	2.8	298	52	40.01	171	10.06	30	3.0	30	48	4.8	37	15	1.5	8
58	7/13	10	2.2	253	52	39.85	170	58.94	22	2.2	22	13	1.3	11	72	7.2	21
2058[c]	7/25	10	1.6	263	52	39.48	170	59.81	47	4.7	46	13	1.3	10	6	0.6	4
59	7/13	9	1.9	133	52	39.93	170	53.49	6	0.7	5	1	0.1	1	0	0.0	0
2059[c]	7/25	10	1.5	151	52	40.25	170	53.94	46	4.6	45	25	2.5	23	48	4.8	15
60	7/5	10	1.5	138	52	40.19	170	28.02	37	3.7	35	1	0.1	1	0	0.0	0
61	7/5	10	1.7	163	52	40.16	170	19.93	8	0.8	8	2	0.2	2	0	0.0	0
69	7/21	10	1.4	269	52	35.37	171	34.15	17	1.7	17	27	2.7	26	8	0.8	4
70	7/21	10	1.5	221	52	34.79	171	25.40	13	1.3	13	8	0.8	8	1	0.1	1
72[d]	7/12	9	1.8	284	52	35.00	170	59.74	5	0.5	5	4	0.4	3	0	0.0	0
2072[c]	7/24	10	2.4	294	52	34.90	171	0.36	33	3.3	31	12	1.2	11	2	0.2	2
73	7/12	10	1.9	135	52	34.51	170	54.75	47	4.7	47	7	0.7	7	73	7.3	20
74	7/5	10	1.7	143	52	35.00	170	28.70	0	0.0	0	0	0.0	0	0	0.0	0
75	7/5	10	1.8	194	52	35.05	170	21.25	3	0.3	3	2	0.2	2	0	0.0	0
77	7/27	10	1.4	126	52	34.21	170	4.03	12	1.2	12	0	0.0	0	0	0.0	0
91	7/21	10	1.5	282	52	30.61	171	34.45	19	1.9	19	13	1.3	12	2	0.2	2
92	7/21	10	1.5	178	52	30.94	171	25.32	10	1.0	10	12	1.2	11	2	0.2	2
93	7/11	10	1.7	113	52	30.23	171	8.50	0	0.0	0	0	0.0	0	0	0.0	0
94	7/11	10	2.4	226	52	30.15	171	0.51	6	0.6	6	8	0.8	6	1	0.1	1
2094[c]	7/23	10	1.9	221	52	30.34	170	59.42	33	3.3	33	29	2.9	22	3	0.3	3
95	7/10	10	1.9	106	52	30.12	170	50.86	0	0.0	0	0	0.0	0	0	0.0	0
2095[b,c]	7/23	9	2.4	182	52	30.37	170	53.56	28	3.1	28	26	2.9	25	111	12.3	32

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			Average														
	Set		Soak	Depth	N latitude		W longitude		Legal Males			Sublegal Males			Females		
Station	Date	Pots	Days	(fm)	Degrees	Minutes	Degrees	Minutes	Number	CPUE	Tagged	Number	CPUE	Tagged	Number	CPUE	Tagged
96	7/8	10	1.8	78	52	29.96	170	45.60	0	0.0	0	0	0.0	0	0	0.0	0
97	7/8	10	2.0	137	52	29.74	170	37.50	5	0.5	5	0	0.0	0	0	0.0	0
98	7/6	10	1.7	157	52	30.03	170	30.05	37	3.7	37	35	3.5	31	37	3.7	19
99	7/6	10	1.8	141	52	29.96	170	20.40	31	3.1	31	7	0.7	6	25	2.5	10
100	7/25	10	1.5	111	52	30.01	170	12.40	4	0.4	4	1	0.1	1	4	0.4	4
101	7/27	10	1.4	100	52	28.82	170	4.39	1	0.1	0	0	0.0	0	0	0.0	0
114[b]	7/22	8	1.8	275	52	25.63	171	32.55	47	5.9	46	18	2.3	17	18	2.3	6
116	7/11	10	2.1	171	52	25.69	171	8.25	2	0.2	2	1	0.1	1	1	0.1	0
2116[c]	7/23	10	1.7	94	52	25.89	171	9.70	0	0.0	0	0	0.0	0	0	0.0	0
117	7/11	10	2.5	230	52	25.61	171	0.52	0	0.0	0	0	0.0	0	0	0.0	0
118	7/10	10	1.7	187	52	25.73	170	50.57	3	0.3	3	9	0.9	8	3	0.3	3
119	7/8	10	2.1	155	52	25.77	170	45.37	33	3.3	32	64	6.4	48	39	3.9	19
120	7/8	10	2.1	169	52	25.58	170	36.84	51	5.1	51	30	3.0	28	16	1.6	10
121[d]	7/6	9	1.8	221	52	25.90	170	30.59	42	4.2	41	28	2.8	23	9	0.9	9
122	7/6	10	1.8	128	52	25.64	170	19.14	27	2.7	27	4	0.4	4	42	4.2	22
123	7/25	10	1.5	103	52	26.29	170	12.13	2	0.2	2	0	0.0	0	3	0.3	3
124	7/27	10	1.3	134	52	24.76	170	4.53	16	1.6	15	1	0.1	1	95	9.5	32
136	7/22	9	1.8	196	52	21.42	171	34.53	40	4.4	40	20	2.2	17	39	4.3	16
137	7/22	9	1.9	235	52	21.01	171	23.97	22	2.4	22	84	9.3	45	99	11.0	31
138	7/23	10	1.9	228	52	20.67	171	17.76	42	4.2	42	110	11.0	79	153	15.3	42
139[b]	7/10	9	1.8	281	52	20.99	171	9.04	7	0.8	7	54	6.0	36	3	0.3	1
2139[c]	7/23	10	2.2	272	52	21.46	171	10.55	11	1.1	11	76	7.6	49	29	2.9	12
140	7/10	10	2.2	249	52	20.85	171	0.02	25	2.5	25	130	13.0	81	36	3.6	13
141	7/9	10	1.8	149	52	20.61	170	50.74	50	5.0	50	140	14.0	101	118	11.8	33
142	7/9	10	2.1	137	52	20.64	170	45.57	1	0.1	1	3	0.3	2	5	0.5	5
143	7/7	10	1.8	160	52	20.46	170	36.95	17	1.7	15	29	2.9	22	21	2.1	11
144	7/7	10	1.8	286	52	20.43	170	31.18	13	1.3	13	6	0.6	5	2	0.2	1
145	7/7	10	1.8	295	52	20.43	170	21.59	3	0.3	3	12	1.2	9	11	1.1	8
146	7/25	10	1.6	133	52	22.23	170	12.18	19	1.9	18	3	0.3	3	12	1.2	9

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Appendix A. (page 4 of 4)

			Average														
	Set		Soak	Depth	N latitude		W longitude		Legal Males			Sublegal Males			Females		
Station	Date	Pots	Days	(fm)	Degrees	Minutes	Degrees	Minutes	Number	CPUE	Tagged	Number	CPUE	Tagged	Number	CPUE	Tagged
147	7/26	10	1.3	222	52	20.53	170	5.04	1	0.1	0	0	0.0	0	0	0.0	0
159	7/9	10	1.7	197	52	15.42	170	50.69	36	3.6	34	32	3.2	24	386	38.6	75
160	7/9	10	1.7	122	52	15.28	170	45.88	18	1.8	18	26	2.6	20	39	3.9	16
161	7/7	10	1.9	122	52	15.14	170	37.22	23	2.3	21	70	7.0	65	14	1.4	7
Total		893	2.0	183					2,278	2.6	2,213	8,879	9.9	3,961	7,965	8.9	1,585

[a] One additional pot inadvertently set.
[b] One pot was lost during retrieval.
[c] Four-digit station numbers beginning in ‘2’ denote resurveyed stations.
[d] One pot was not baited when set.

Appendix B. Male golden king crab catch, catch per unit effort (CPUE), and tagging effort by station from the 1997, 2000, and 2003 Aleutian Islands surveys. *Data presented is from all stations fished in each survey year.*

	Legal Males									Sublegal Males								
	Number Caught			CPUE			Number Tagged			Number Caught			CPUE			Number Tagged		
Station	1997[a]	2000[b]	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003
1	0	39	34	0.0	3.9	3.4	0	1	34	1,058	951	275	117.6	95.1	27.5	5	2	153
2	64	24	107	6.4	2.4	10.7	55	23	103	2,152	52	106	215.2	5.2	10.6	114	34	73
3	nf[c]	53	45	nf	5.3	4.5	nf	48	45	nf	232	44	nf	23.2	4.4	nf	204	43
4	nf	nf	46	nf	nf	4.6	nf	nf	31	nf	nf	16	nf	nf	1.6	nf	nf	9
5	nf	nf	0	nf	nf	0.0	nf	nf	0	nf	nf	0	nf	nf	0.0	nf	nf	0
9	92	88	85	10.2	8.8	8.5	90	85	81	1,150	479	268	127.8	47.9	26.8	327	245	202
10	34	20	53	3.4	2.0	5.3	33	20	51	372	206	119	37.2	20.6	11.9	107	72	98
11	32	26	34	3.2	2.6	3.4	32	26	32	527	353	201	52.7	35.3	20.1	108	107	135
12	1	1	6	0.1	0.1	0.6	1	1	6	1,538	1,362	1,051	153.8	136.2	105.1	9	1	48
13	0	nf	nf	0.0	nf	nf	0	nf	nf	886	nf	nf	88.6	nf	nf	5	nf	nf
14	3	34	3	0.3	3.4	0.3	3	32	3	1,752	297	6	175.2	29.7	0.6	7	18	3
15	19	20	21	1.9	2.0	1.9	19	20	18	262	88	40	26.2	8.8	3.6	65	67	35
16	27	7	31	2.7	0.7	3.4	27	7	26	290	16	21	29.0	1.6	2.3	71	16	20
17	nf	nf	0	nf	nf	0.0	nf	nf	0	nf	nf	0	nf	nf	0.0	nf	nf	0
21	50	51	45	5.0	5.1	4.5	49	51	44	476	924	203	47.6	92.4	20.3	61	235	129
22	34	24	23	3.4	3.0	2.3	34	23	22	391	601	194	39.1	30.1	19.4	80	226	120
23	39	49	13	3.9	4.9	1.3	38	48	13	698	1,377	209	69.8	137.7	20.9	55	402	121
24	30	43	20	3.0	4.3	2.0	28	42	20	664	1,557	246	66.4	155.7	24.6	131	159	160
25	8	5	29	0.8	0.6	3.2	5	5	27	2,471	2,898	456	247.1	322.0	50.7	40	51	302
26	1	1	84	0.1	0.1	9.3	1	1	84	1,107	850	44	110.7	85.0	4.9	11	7	41
27	82	73	75	8.2	7.3	7.5	80	72	75	278	58	40	27.8	5.8	4.0	114	53	31
28	71	28	8	7.1	2.8	0.8	70	24	8	709	81	19	70.9	8.1	1.9	168	67	16
29	15	18	12	1.5	1.8	1.2	15	18	11	104	42	7	10.4	4.2	0.7	50	40	7
30	44	10	9	4.4	1.0	0.9	44	10	9	434	28	11	43.4	2.8	1.1	220	28	11
37	31	33	26	3.5	3.3	2.9	29	33	26	346	326	135	38.5	32.6	15.0	56	127	97
38	15	34	27	1.7	3.4	3.0	15	32	26	273	604	187	30.4	60.4	20.8	22	411	139
39	10	6	40	1.0	0.6	4.4	10	3	39	513	370	340	51.3	37.0	37.8	25	346	254
40	23	37	53	2.3	3.7	5.3	22	37	53	2,131	359	2,831	213.1	35.9	283.1	50	95	341

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Appendix B. (page 2 of 4)

	Legal Males									Sublegal Males								
	Number Caught			CPUE			Number Tagged			Number Caught			CPUE			Number Tagged		
Station	1997[a]	2000[b]	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003
41	2	11	3	0.2	1.2	0.3	2	11	3	51	1,127	37	5.1	125.3	3.7	9	48	3
42	90	42	35	9.0	4.2	3.5	90	41	33	114	48	8	11.4	4.8	0.8	64	43	8
43	11	25	54	1.2	2.5	5.4	11	23	53	112	59	36	12.5	5.9	3.6	33	53	30
44	0	0	1	0.0	0.0	0.1	0	0	1	0	0	0	0.0	0.0	0.0	0	0	0
45	12	7	18	1.2	0.7	1.8	12	7	18	27	9	4	2.7	0.9	0.4	16	9	4
46	1	1	1	0.1	0.1	0.1	1	1	1	0	1	1	0.0	0.1	0.1	0	1	1
54	nf	84	17	nf	8.4	1.9	nf	30	17	nf	315	36	nf	31.5	4.0	nf	57	33
55	70	91	38	7.0	9.1	3.8	70	91	38	805	839	145	80.5	83.9	14.5	56	278	112
56	101	63	131	10.1	6.3	14.6	99	61	131	2,756	665	299	275.6	66.5	33.2	83	153	238
57	38	23	30	3.8	2.3	3.0	38	23	30	1,278	121	48	127.8	12.1	4.8	22	22	37
58[d]	56	45	69	5.6	5.6	3.5	56	44	68[e]	643	78	26	64.3	9.8	1.3	113	64	21[e]
59[d]	37	32	52	3.7	3.6	2.7	37	31	50[e]	23	68	26	2.3	7.6	1.4	23	64	24[e]
60	58	55	37	5.8	5.5	3.7	57	53	35	51	93	1	5.1	9.3	0.1	48	83	1
61	59	6	8	5.9	0.6	0.8	59	6	8	22	5	2	2.2	0.5	0.2	18	5	2
69	nf	31	17	nf	3.1	1.7	nf	0	17	nf	232	27	nf	23.2	2.7	nf	0	26
70	46	98	13	4.6	9.8	1.3	46	98	13	364	319	8	36.4	31.9	0.8	32	186	8
72[d]	291	80	38	29.1	8.0	1.9	291	78	36[e]	584	86	16	58.4	8.6	0.8	57	55	14[e]
73	0	nf	47	0.0	nf	4.7	0	nf	47	0	nf	7	0.0	nf	0.7	0	nf	7
74[f]	63	20	0	6.3	2.0	0.0	61	38[e]	0	100	35	0	10.0	3.5	0.0	81	68[e]	0
75[f]	34	17	3	3.4	1.7	0.3	34	30[e]	3	22	7	2	2.0	0.7	0.2	10	13[e]	2
77	nf	nf	12	nf	nf	1.2	nf	nf	12	nf	nf	0	nf	nf	0.0	nf	nf	0
91	nf	235	19	nf	23.5	1.9	nf	0	19	nf	582	13	nf	58.2	1.3	nf	0	12
92	33	85	10	3.3	8.5	1.0	32	85	10	103	191	12	10.3	19.1	1.2	14	135	11
93	nf	nf	0	nf	nf	0.0	nf	nf	0	nf	nf	0	nf	nf	0.0	nf	nf	0
94[d]	46	150	39	5	15	2.0	46	147	39[e]	104	669	37	10	67	1.9	13	282	28[e]
95[d]	91	72	28	9.1	7.2	1.5	89	71	28[e]	157	460	26	16.0	46.0	1.4	95	185	25[e]
96[f]	23	9	0	2.3	0.9	0.0	23	17[e]	0	10	8	0	1.0	0.8	0.0	10	13[e]	0

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	Legal Males									Sublegal Males								
	Number Caught			CPUE			Number Tagged			Number Caught			CPUE			Number Tagged		
Station	1997[a]	2000[b]	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003
97[f]	42	16	5	4.2	1.6	0.5	42	27[e]	5	57	16	0	5.7	1.6	0.0	45	30[e]	0
98	34	17	37	3.4	1.7	3.7	32	17	37	85	39	35	8.5	3.9	3.5	45	36	31
99	52	21	31	5.2	2.1	3.1	45	21	31	48	23	7	4.8	2.3	0.7	28	23	6
100	nf	nf	4	nf	nf	0.4	nf	nf	4	nf	nf	1	nf	nf	0.1	nf	nf	1
101	nf	nf	1	nf	nf	0.1	nf	nf	0	nf	nf	0	nf	nf	0.0	nf	nf	0
114	nf	147	47	nf	14.7	5.9	nf	0	46	nf	230	18	nf	23.0	2.3	nf	0	17
115	35	nf	nf	3.9	nf	nf	35	nf	nf	157	nf	nf	17.5	nf	nf	74	nf	nf
116[d,f]	71	28	2	7.1	2.8	0.1	71	51[e]	2[e]	170	109	1	17.0	10.9	0.1	102	196[e]	1[e]
117	34	1	0	3.4	0.1	0.0	34	1	0	81	13	0	8.1	1.5	0.0	5	13	0
118	11	1	3	1.1	0.1	0.3	11	1	3	49	11	9	4.9	1.1	0.9	13	9	8
119	21	6	33	2.1	0.6	3.3	21	6	32	544	117	64	54.4	11.7	6.4	106	47	48
120	23	25	51	2.3	2.5	5.1	23	24	51	170	56	30	17.0	5.6	3.0	87	37	28
121	75	20	42	7.5	2.0	4.7	74	20	41	283	37	28	28.3	3.7	3.1	173	33	23
122	21	11	27	2.1	1.2	2.7	20	11	27	21	8	4	2.1	0.9	0.4	8	7	4
123	52	nf	2	5.2	nf	0.2	51	nf	2	78	nf	0	7.8	nf	0.0	60	nf	0
124	29	nf	16	2.9	nf	1.6	28	nf	15	24	nf	1	2.4	nf	0.1	19	nf	1
125	43	nf	nf	4.3	nf	nf	43	nf	nf	12	nf	nf	1.2	nf	nf	9	nf	nf
126	12	nf	nf	1.2	nf	nf	12	nf	nf	19	nf	nf	1.9	nf	nf	19	nf	nf
136	nf	nf	40	nf	nf	4.4	nf	nf	40	nf	nf	20	nf	nf	2.2	nf	nf	17
137	nf	nf	22	nf	nf	2.4	nf	nf	22	nf	nf	84	nf	nf	9.3	nf	nf	45
138	nf	nf	42	nf	nf	4.2	nf	nf	42	nf	nf	110	nf	nf	11.0	nf	nf	79
139[d]	nf	17	18	nf	1.7	0.9	nf	17	18[e]	nf	161	130	nf	16.1	6.8	nf	69	85[e]
140	nf	42	25	nf	4.2	2.5	nf	42	25	nf	259	130	nf	25.9	13.0	nf	71	81
141	56	23	50	5.6	2.3	5.0	55	19	50	252	255	140	25.2	25.5	14.0	121	96	101
142	34	11	1	3.4	1.1	0.1	34	9	1	211	71	3	21.1	7.1	0.3	115	41	2
143	55	18	17	5.5	1.8	1.7	53	17	15	248	62	29	24.8	6.2	2.9	148	53	22
144	22	5	13	2.2	0.5	1.3	22	2	13	45	62	6	4.5	6.2	0.6	22	5	5
145	151	17	3	16.8	1.7	0.3	143	13	3	122	4	12	13.6	0.4	1.2	75	4	9

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	Legal Males									Sublegal Males								
	Number Caught			CPUE			Number Tagged			Number Caught			CPUE			Number Tagged		
Station	1997[a]	2000[b]	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003	1997	2000	2003
146	7	nf	19	0.7	nf	1.9	7	nf	18	1	nf	3	0.1	nf	0.3	1	nf	3
147	28	nf	1	2.8	nf	0.1	26	nf	0	23	nf	0	2.3	nf	0.0	15	nf	0
159	157	48	36	15.7	4.8	3.6	149	44	34	1,612	150	32	161.0	15.0	3.2	421	86	24
160	36	13	18	3.6	1.3	1.8	35	12	18	385	85	26	38.5	8.5	2.6	203	54	20
161	24	9	23	2.4	1.0	2.3	23	9	21	138	37	70	13.8	4.2	7.0	66	27	65
Total	3,012	2,502	2,278	4.3	3.4	2.6	2,943	2,011	2,213	32,743	21,933	8,879	46.9	30.1	9.9	4,678	5,767	3,961

[a] 1997 survey data from Blau et al. (1998).
[b] 2000 survey data from Watson and Gish (2002).
[c] nf - station not fished.
[d] Station was sampled twice in 2003.
[e] Value represents the combined number of crabs tagged from the two samplings of the station.
[f] Station was sampled twice in 2000.

Appendix C. Female golden king crab catch, catch per unit effort (CPUE), and tagging effort by station from the 1997, 2000, and 2003 Aleutian Islands surveys. *Data presented is from all stations fished in each survey year.*

	Number Caught			CPUE			Number Tagged		
Station	1997[a]	2000[b]	2003	1997	2000	2003	1997	2000	2003
1	1,326	1,753	137	147.4	175.3	13.7	9	0	37
2	1,830	26	205	183.0	2.6	20.5	24	17	59
3	nf[c]	178	34	nf	17.8	3.4	nf	129	34
4	nf	nf	0	nf	nf	0.0	nf	nf	0
5	nf	nf	0	nf	nf	0.0	nf	nf	0
9	682	115	795	75.8	11.5	79.5	0	0	139
10	581	204	86	58.1	20.4	8.6	10	0	26
11	770	306	162	77.0	30.6	16.2	10	0	42
12	1,519	1,614	875	151.9	161.4	87.5	15	0	26
13	634	nf	nf	63.4	nf	nf	0	nf	nf
14	1,853	200	4	185.3	20.0	0.4	1	9	0
15	254	123	178	25.4	12.3	16.2	26	104	0
16	99	0	0	9.9	0.0	0.0	9	0	1
17	nf	nf	0	nf	nf	0.0	nf	nf	53
21	1,812	2,181	465	181.2	218.1	46.5	0	0	71
22	1,008	1,049	297	100.8	131.1	29.7	10	154	64
23	652	719	200	65.2	71.9	20.0	5	163	70
24	266	845	67	26.6	84.9	6.7	10	0	23
25	2,436	2,963	51	243.6	329.2	5.7	10	1	16
26	1,115	962	3	111.5	96.2	0.3	1	2	2
27	72	5	6	7.2	0.5	0.6	10	3	3
28	1,087	80	165	108.7	8.0	16.5	121	73	46
29	89	33	3	8.9	3.3	0.3	6	33	3
30	7	2	0	0.7	0.2	0.0	1	1	0
37	842	484	454	93.6	48.4	50.4	0	0	103
38	700	1,219	76	77.8	121.9	8.4	5	251	23
39	539	210	117	53.9	21.0	13.0	5	186	29
40	1,719	175	1,756	171.9	17.5	175.6	10	1	108
41	69	1,373	10	6.9	152.6	1.0	2	13	1
42	39	20	4	3.9	2.0	0.4	4	8	4
43	212	86	84	23.6	8.6	8.4	25	78	28
44	0	0	0	0.0	0.0	0.0	0	0	0
45	5	2	0	0.5	0.2	0.0	2	2	0
46	0	0	0	0.0	0.0	0.0	0	0	0
54	nf	42	6	nf	4.2	0.7	nf	0	3
55	320	206	108	32.0	20.6	10.8	0	0	31
56	1,948	439	14	194.8	43.9	1.6	0	0	8

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	Number Caught			CPUE			Number Tagged		
Station	1997[a]	2000[b]	2003	1997	2000	2003	1997	2000	2003
57	1,503	118	15	150.3	11.8	1.5	0	0	8
58[d]	641	35	78	64.1	4.4	3.9	10	16	25[e]
59[d]	38	164	48	3.8	18.2	2.5	10	31	15[e]
60	0	8	0	0.0	0.8	0.0	0	8	0
61	13	83	0	1.3	8.3	0.0	2	0	0
69	nf	0	8	nf	0.0	0.8	nf	0	4
70	494	91	1	49.4	9.1	0.1	0	0	1
72[d]	329	19	2	32.9	1.9	0.1	0	0	2[e]
73	0	nf	73	0.0	nf	7.3	0	nf	20
74[f]	4	9	0	0.4	0.9	0.0	1	15[e]	0
75[f]	16	5	0	1.6	0.5	0.0	3	10[e]	0
77	nf	nf	0	nf	nf	0.0	nf	nf	0
91	nf	198	2	nf	19.8	0.2	nf	0	2
92	251	230	2	25.1	23.0	0.2	0	0	2
93	nf	nf	0	nf	nf	0.0	nf	nf	0
94[d]	27	351	4	2.7	35.1	0.2	0	50	4[e]
95[d]	959	1,077	111	95.9	107.7	5.8	30	79	32[e]
96[f]	0	0	0	0.0	0.0	0.0	0	0	0
97[f]	1	2	0	0.1	0.2	0.0	0	3[e]	0
98	201	35	37	20.1	3.5	3.7	16	32	19
99	671	38	25	37.1	3.8	2.5	118	31	10
100	nf	nf	4	nf	nf	0.4	nf	nf	4
101	nf	nf	0	nf	nf	0.0	nf	nf	0
114	nf	1,265	18	nf	126.5	2.3	nf	0	6
115	610	nf	nf	67.8	nf	nf	30	nf	nf
116[d,f]	753	328	1	75.3	32.8	0.1	30	397[e]	0
117	51	2	0	5.1	0.2	0.0	0	2	0
118	24	7	3	2.4	0.7	0.3	2	1	3
119	798	163	39	79.8	16.3	3.9	150	47	19
120	273	41	16	27.3	4.1	1.6	98	31	10
121	127	7	9	127.0	0.7	1.0	48	5	9
122	543	77	42	54.3	8.6	4.2	168	25	22
123	95	nf	3	9.5	nf	0.3	33	nf	3
124	210	nf	95	21.0	nf	9.5	79	nf	32
125	1	nf	nf	0.1	nf	nf	1	nf	nf
126	0	nf	nf	0.0	nf	nf	0	nf	nf
136	nf	nf	39	nf	nf	4.3	nf	nf	16

-Continued-

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	Number Caught			CPUE			Number Tagged		
Station	1997[a]	2000[b]	2003	1997	2000	2003	1997	2000	2003
137	nf	nf	99	nf	nf	11.0	nf	nf	31
138	nf	nf	153	nf	nf	15.3	nf	nf	42
139[d]	nf	64	32	nf	6.4	1.7	nf	23	13[e]
140	nf	84	36	nf	8.4	3.6	nf	22	13
141	137	171	118	13.7	17.1	11.8	17	28	33
142	535	49	5	53.5	4.9	0.5	175	21	5
143	620	49	21	62.0	4.9	2.1	97	25	11
144	5	56	2	0.5	5.6	0.2	1	4	1
145	162	21	11	18.0	2.1	1.1	54	17	8
146	0	nf	12	0.0	nf	1.2	0	nf	9
147	12	nf	0	1.2	nf	0.0	3	nf	0
159	1,465	21	386	146.5	2.1	38.6	195	7	75
160	882	77	39	88.2	7.7	3.9	280	24	16
161	614	36	14	61.4	4.0	1.4	154	10	7
Total	37,550	22,595	7,965	53.4	31.0	8.9	2,136	2,192	1,585

[a] 1997 survey data from Blau et al. (1998).
[b] 2000 survey data from Watson and Gish (2002).
[c] nf - station not fished.
[d] Station was sampled twice in 2003.
[e] Value represents the combined number of crabs tagged from the two samplings of the station.
[f] Station was sampled twice in 2000.

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