

Fishery Management Report No. 13-41

The 2011 Pribilof District King Crab Survey

by

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Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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Weights and measures (metric)		General		Mathematics, statistics	
centimeter	cm	Alaska Administrative Code	AAC	<i>all standard mathematical signs, symbols and abbreviations</i>	
deciliter	dL	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	H _A
gram	g	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	base of natural logarithm	e
hectare	ha	at	@	catch per unit effort	CPUE
kilogram	kg	compass directions:		coefficient of variation	CV
kilometer	km	east	E	common test statistics	(F, t, χ^2 , etc.)
liter	L	north	N	confidence interval	CI
meter	m	south	S	correlation coefficient (multiple)	R
milliliter	mL	west	W	correlation coefficient (simple)	r
millimeter	mm	copyright	©	covariance	cov
		corporate suffixes:		degree (angular)	°
Weights and measures (English)		Company	Co.	degrees of freedom	df
cubic feet per second	ft ³ /s	Corporation	Corp.	expected value	E
foot	ft	Incorporated	Inc.	greater than	>
gallon	gal	Limited	Ltd.	greater than or equal to	≥
inch	in	District of Columbia	D.C.	harvest per unit effort	HPUE
mile	mi	et alii (and others)	et al.	less than	<
nautical mile	nmi	et cetera (and so forth)	etc.	less than or equal to	≤
ounce	oz	exempli gratia	e.g.	logarithm (natural)	ln
pound	lb	(for example)		logarithm (base 10)	log
quart	qt	Federal Information Code	FIC	logarithm (specify base)	log ₂ , etc.
yard	yd	id est (that is)	i.e.	minute (angular)	'
		latitude or longitude	lat. or long.	not significant	NS
Time and temperature		monetary symbols (U.S.)	\$, ¢	null hypothesis	H ₀
day	d	months (tables and figures): first three letters	Jan, ..., Dec	percent	%
degrees Celsius	°C	registered trademark	®	probability	P
degrees Fahrenheit	°F	trademark	™	probability of a type I error (rejection of the null hypothesis when true)	α
degrees kelvin	K	United States (adjective)	U.S.	probability of a type II error (acceptance of the null hypothesis when false)	β
hour	h	United States of America (noun)	USA	second (angular)	"
minute	min	U.S.C.	United States Code	standard deviation	SD
second	s	U.S. state	use two-letter abbreviations (e.g., AK, WA)	standard error	SE
				variance	
Physics and chemistry				population sample	Var var
all atomic symbols					
alternating current	AC				
ampere	A				
calorie	cal				
direct current	DC				
hertz	Hz				
horsepower	hp				
hydrogen ion activity (negative log of)	pH				
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

FISHERY MANAGEMENT REPORT NO. 13-41

THE 2011 PRIBILOF DISTRICT KING CRAB SURVEY

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TABLE OF CONTENTS

	Page
LIST OF TABLES.....	ii
LIST OF FIGURES.....	ii
LIST OF APPENDICES.....	ii
ABSTRACT.....	1
INTRODUCTION.....	1
METHODS.....	2
RESULTS AND DISCUSSION.....	4
Survey Results.....	4
Blue King Crab.....	5
Males.....	5
Females.....	5
Red King Crab.....	5
Males.....	5
Females.....	6
Occurrence of Fresh Injuries.....	6
Incidence of Disease or Parasites.....	6
Survey Distribution of Blue King Crab Relative to Red King Crab.....	6
Comparison with Results from the Previous Pribilof King Crab Surveys.....	7
ACKNOWLEDGEMENTS.....	7
REFERENCES CITED.....	8
TABLES AND FIGURES.....	10
APPENDIX A. CATCH OF KING CRAB AND OCEANOGRAPHIC DATA BY STATION DURING THE 2011 PRIBILOF DISTRICT POT SURVEY.....	27

LIST OF TABLES

Table	Page
1. Male blue king crab and red king crab catch and catch per pot lift by size category during the 2011 ADF&G Pribilof king crab pot survey.	11
2. Female blue king crab and red king crab catch and catch per pot lift by reproductive-condition category during the 2011 ADF&G Pribilof king crab pot survey.	11
3. Blue king crab and red king crab catch and catch per pot lift at the 130 stations fished in common during each of the 2003, 2005, 2008, and 2011 ADF&G Pribilof king crab pot surveys.	11

LIST OF FIGURES

Figure	Page
1. The Pribilof District of the Bering Sea king crab registration area, Area Q.	12
2. King crab harvest in the Pribilof District by statistical area for the 1993/94 through 1998/99 seasons.	12
3. Map of survey stations established for the AD&G Pribilof District king crab pot survey; stations enclosed in the blue polygon are the stations fished during the 2011 survey.	13
4. Within-station averages of recorded depths of pots in 160 survey stations during the 2011 ADF&G Pribilof king crab pot survey.	14
5. Average bottom temperature recorded at 155 survey stations during the 2011 ADF&G Pribilof king crab pot survey.	15
6. Average bottom temperature recorded at 155 stations during the 2011 ADF&G Pribilof king crab pot survey plotted as a function of average depth of survey station.	16
7. Catch of blue king crab by station during the 2011 ADF&G Pribilof king crab pot survey.	17
8. Size frequency distribution of male blue king crab captured during the 2011 ADF&G Pribilof king crab pot survey by legal status.	18
9. Size frequency distribution of female blue king crab captured during the 2011 ADF&G Pribilof king crab pot survey by maturity status.	19
10. Catch of red king crab by station during the 2011 ADF&G Pribilof king crab pot survey.	20
11. Size frequency distribution of male red king crab captured during the 2011 ADF&G Pribilof king crab pot survey by legal status.	21
12. Size frequency distribution of female red king crab captured during the 2011 ADF&G Pribilof king crab pot survey by maturity status.	22
13. Catch of blue king crab by station during the 2011 ADF&G Pribilof king crab pot survey.	23
14. Percent of survey stations with catch of blue king crab and red king crab by average depth of station and by average bottom temperature of station during the 2011 ADF&G Pribilof king crab pot survey.	24
15. Catch of blue king crab and legal male red king crab by station during the 2011 ADF&G Pribilof king crab pot survey.	25
16. Location of the 130 stations fished in common during each of the 2003, 2005, 2008, and 2011 ADF&G Pribilof king crab pot surveys.	26

LIST OF APPENDICES

Appendix	Page
A1. Catch of king crab and oceanographic data by station during the 2011 Pribilof District survey.	28

ABSTRACT

This report describes the Alaska Department of Fish and Game (ADF&G) 2011 Pribilof District king crab pot survey and documents the catch and distribution of catch of red king crab *Paralithodes camtschaticus* and blue king crab *P. platypus* during the survey. The survey was conducted from aboard the chartered *F/V Scandies Rose*, a 39.6-m commercial crab-pot fishing vessel during September 11 – October 10, 2011. One hundred sixty-one (161) 4-pot stations were fished with 641 successful pot lifts. Seventy-nine (79) blue king crab and 200 red king crab were captured during the survey and those were predominately larger, matured-sized crab. A total of 84 legal-sized male red king crab were captured during the survey. Although legal-sized male red king crab were captured at only 20 of the 161 survey stations, there was a wide overlap in the catch distribution of blue king crab and legal-sized red king crab over the surveyed area.

Key words: Red king crab, *Paralithodes camtschaticus*, blue king crab, *Paralithodes platypus*, Pribilof Islands, pot survey

INTRODUCTION

The Pribilof District includes the Bering Sea waters between 168°00' W longitude and the United States-Russia Maritime Boundary Line of 1990, bounded to the north by the latitude of Cape Newenham (58°39' N latitude) and bounded to the south by the latitude of Cape Sarichef (54°36' N latitude) between 168°00' W longitude and 171°00' W longitude and by 55°30' N latitude between 171°00' W longitude and the United States-Russia Maritime Boundary Line of 1990 (Figure 1). The commercial fisheries for red king crab *Paralithodes camtschaticus* and blue king crab *P. platypus* in the Pribilof District are managed by the Alaska Department of Fish and Game (ADF&G) under the State/Federal cooperative management regime established by the federal Fishery Management Plan (FMP) for Bering Sea/Aleutian Islands King and Tanner Crabs as adopted by the North Pacific Fisheries Management Council (NPFMC 2011). The FMP defines a minimum stock size threshold (MSST) and the maximum sustainable yield biomass (B_{MSY}) for stocks managed under the plan; the MSST sets the stock biomass threshold below which stocks are considered “overfished,” whereas the B_{MSY} is the minimum target for rebuilding of overfished stocks. An annual National Marine Fisheries Service (NMFS) summer eastern Bering Sea (EBS) trawl survey (Chilton et al. 2011) provides the data used for estimating the levels of Bering Sea red king crab and blue king crab stocks relative to MSST and B_{MSY} and for the determination of fishery total allowable catch established by the State of Alaska.

Historically, the Pribilof District king crab fishery was directed on blue king crab with the first season occurring in 1973/74 (Fitch et al. 2012). Annual landings of blue king crab fluctuated widely and the fishery was closed due to low stock abundance during the 1988/89–1994/95 seasons. ADF&G first opened a directed fishery on Pribilof District red king crab in the 1993/94 season after results of the annual summer NMFS EBS trawl survey in 1993 indicated a marked increase in abundance of red king crab around the Pribilof Islands. The Pribilof District king crab fishery was again opened only for red king crab in the 1994/95 season. However, after the 1995 NMFS trawl survey indicated an increase in blue king crab abundance and a continued harvestable level of red king crab in the Pribilof District, the fishery was opened concurrently for both red king crab and blue king crab in the 1995/96 season and as a combined red king crab and blue king crab fishery during the subsequent 1996/97–1998/99 seasons. Due to poor fishery performance for both red king crab and blue king crab during the 1996/97–1998/99 seasons, a declining trend in the abundance of blue king crab estimated from the annual NMFS trawl survey data, and poor precision in the abundance estimates of red king crab, the fishery was closed for both red king crab and blue king crab in the 1999/00 season (Zheng and Kruse 1999).

Results from the 2000 NMFS trawl survey showed a decline of Pribilof blue king crab to a level below the threshold for a fishery opening that was specified by the state harvest strategy in effect at that time (Zheng and Kruse 2000). The 2002 NMFS trawl survey showed a further decline to a level below the MSST in effect at that time (established in Amendment 7 of the FMP; NPFMC 1998), placing the stock in “overfished” status (NPFMC 2002). Although the Pribilof District fishery has been closed for red king crab and blue king crab since the end of the 1998/99 season, the Pribilof blue king crab stock has continued to decline and has shown no indication of rebuilding from overfished status (NPFMC 2012). The Pribilof red king crab stock, on the other hand, has remained above MSST since the end of the 1998/99 season (NPFMC 2012) and was, in fact, estimated through 2008 to be above B_{MSY} (NPFMC 2007, 2009). Hence closure of the fishery for red king crab was not due to low abundance estimates, but was in response to the potential for bycatch of blue king crab during a directed red king crab fishery and to the poor precision of the abundance estimates for the Pribilof red king crab stock afforded by the NMFS EBS trawl survey (Rugolo et al. 2006; Vining and Zheng 2008; NPFMC 2012).

ADF&G performed the first pot survey for red king crab and blue king crab in the Pribilof District in September 2003 to obtain information on the distribution and abundance of legal-sized red king crab relative to blue king crab during what would normally have been the fall fishing season (Gish and Pengilly 2004). The survey was designed to provide denser spatial sampling than the standard NMFS EBS trawl survey within that area and included areas of highest catch and effort during the 1993/94–1998/99 commercial fisheries. The primary objective of the 2003 survey was to determine the potential for prosecuting a directed fishery for red king crab in the Pribilof District while minimizing bycatch of blue king crab. The results of that survey showed a substantial overlap in the distribution of blue king crab with legal-sized male red king crab, a limited distribution within the surveyed area for both stocks, low and sporadic catches of both species, and little evidence of recruitment to either stock. Those results, coupled with the results of an ADF&G cost-recovery fishery on Pribilof District red king crab that was performed concurrent with the survey (Byersdorfer 2004), confirmed the poor reliability of the NMFS EBS trawl survey results for use in establishing harvest levels for a Pribilof District red king crab fishery and the significant risk of blue king crab bycatch during such a fishery. ADF&G conducted a second Pribilof District king crab pot survey in 2005 (Gish 2006) and a third pot survey in 2008 (Gish 2010). The 2005 and 2008 pot surveys corroborated the continued depressed condition of the blue king crab stock and the spatially sporadic distribution of red king crab seen in the 2003 survey and provided further insights into the spatial distribution of red king crab and blue king crab on a finer spatial scale than is afforded by the NMFS EBS trawl survey.

This report documents the results from the fourth ADF&G pot survey for red king crab and blue king crab in the Pribilof District that was conducted during September–October 2011.

METHODS

The survey was conducted aboard the chartered vessel *F/V Scandies Rose*, a 39.6 m (130 ft) commercial crab-pot fishing vessel. The vessel left Dutch Harbor, Alaska, to travel to the survey area on September 12, 2011 and arrived in the survey area to set the first station of pots on September 13. An unplanned interruption occurred mid-survey due to a need for immediate vessel repairs that required the vessel to return to Dutch Harbor. Fishing during the survey occurred September 13–28 and October 4–9 with pots lifted on a total of 19 days. The last pot

was pulled on October 9 and the chartered survey vessel returned to Dutch Harbor on October 10, 2011.

The survey area for the triennial Pribilof District pot survey was established in 2003 (Gish and Pengilly 2004). A primary survey area that encompasses the Pribilof Islands and covers approximately 3,600 nmi² was defined to be bounded by 56° 30' N latitude to the south, 57° 30' N latitude to the north, 169° 00' W longitude to the east, and 171° 00' W longitude to the west. The boundaries of the primary survey area coincide with the outer boundaries of the ADF&G shellfish statistical areas that accounted for 83% to 99% of total annual Pribilof Islands red king crab harvests for the 1993/94 through 1998/99 seasons (Morrison and Gish 1994, 1996, 1997a, 1997b; Morrison et al. 1998, 1999). In particular, the primary survey area includes statistical area 695700 (bounded by 57° 00' N latitude, 57° 30' N latitude, 169° 00' W longitude, and 170° 00' W longitude; Figure 2), which accounted for the largest portion of total Pribilof red king crab harvest during 1993/94–1998/99 (36%) and of total Pribilof Islands blue king crab harvest during 1995/96–1998/99 (42%). Hence the primary survey area includes the area of highest historical fishery production for the red king crab fishery and an area of potentially high blue king crab bycatch.

The standard survey station grid pattern was designed by first designating stations at the centers and corners of the 20 nmi x 20 nmi (37.04 km x 37.04 km) survey station squares established for the NMFS EBS trawl survey (Chilton et al. 2011) located within the primary survey area. Additional stations were added to achieve 5 nmi (9.26 km) spacing (north-to-south and east-to-west) between stations for a total of 164 stations in the primary survey area. An additional 118 stations with a 5 nmi (9.26 km) spacing (north-to-south and east-to-west) between stations were designated in a secondary survey area that was north and east of the primary survey area, extending the standard survey station grid north to 57° 55' N latitude and as far east as 168° 20' W longitude, resulting in a total of 282 standard survey stations (Figure 3).

Based on the catch of red king crab and blue king crab during the first three ADF&G pot surveys and recent NMFS EBS trawl surveys, stations in the primary and secondary survey areas were prioritized for sampling during the 2011 survey. Twenty-nine stations in the southwest corner of the primary survey area were, for example, assigned the lowest priority for sampling in 2011 due to indications that they are outside the distribution of king crab. One hundred sixty-eight (168) stations were identified as having highest priority for sampling during the 2011 survey.

Pots were set at intervals of 0.125 nmi (0.232 km) in a north-south orientation at each station fished. Each pot measured 7.0 ft x 7.0 ft x 2.8 ft (2.13 m x 2.13 m x 0.85 m), was fitted with 2.75 in (70 mm) stretched mesh on all webbing, and had two opposing tunnel openings measuring 8 in x 36 in (203 mm x 914 mm). Pots were baited with two 2-quart containers of chopped Pacific herring *Clupea pallasii* and one Pacific cod *Gadus macrocephalus* used as hanging bait.

Total number of stations fished during the survey was 161 (Figure 3; Appendix A1). However, total number of pot lifts for the survey was 641 due to one pot being lost at each of stations 78, 138, and 201 when lines snapped during hauling. For each pot fished, the vessel captain recorded the date and time the pot was set and hauled and the latitude, longitude, and depth in fathoms (fm) of the location the pot was set. Soak time for survey station pots ranged from 11.9 to 36.4 h and averaged 29.9 h (median = 31.1 h). Seven temperature/depth/conductivity data loggers, eight temperature/depth data loggers, and three temperature data loggers were deployed by placing a data logger in one pot in each of 155 stations to record bottom temperatures (°C)

every ten minutes (depths recorded by the temperature/depth/conductivity and temperature/depth data loggers and conductivity recorded by the temperature/depth/conductivity data loggers are not reported here).

The contents of each sampled pot were identified and enumerated. Captured red king crab and blue king crab were fully enumerated and measured to provide catch data by size and sex. Carapace length (CL) of red king crab and blue king crab was measured to the nearest mm from the posterior margin of the right eye orbit to the midpoint of the rear margin of the carapace (Wallace et al. 1949) as illustrated in Donaldson and Byersdorfer (2005). Shell condition was scored for each crab according to Donaldson and Byersdorfer (2005). Legal size status was determined for each male red king crab and blue king crab. Legal male red king crab and blue king crab are defined in regulation as ≥ 6.5 in (165 mm) carapace width outside the lateral spines; males < 6.5 in (165 mm) carapace width outside the lateral spines are “sublegal.” For summarizing data on male crab, males ≥ 120 mm CL were distinguished from males < 120 mm CL because red king crab and blue king crab ≥ 120 mm CL are considered “mature-sized” for management purposes (Vining and Zheng 2008). Also for data summarization purposes, legal male red king crab and blue king crab were classified as either “recruits” or “post-recruits” on the basis of CL and shell condition according to Vining and Zheng (2008): new-shell legal males < 150 mm CL were classified as recruits, whereas new-shell legal males ≥ 150 mm CL and all old-shell or very old-shell males of legal size were classified as post-recruits.

Reproductive condition (clutch fullness, egg development, clutch condition, and egg color) was recorded for each captured female king crab. Female king crab with eggs or empty egg cases on the pleopodal setae were classified as mature, whereas those with no eggs and no empty egg cases on the pleopodal setae were classified as immature. Clutch fullness and egg development (eyed versus uneyed eggs) of ovigerous females were scored according to Donaldson and Byersdorfer (2005).

Capture-related fresh injuries and the presence of macroscopically evident disease or parasites were noted for commercially important crab species. Further details on the methods used, including characteristics measured and recorded for other species, are provided in the survey project operational plan (Vanek 2013).

RESULTS AND DISCUSSION

SURVEY RESULTS

Depths of the 161 stations fished during the survey ranged from 11.0 to 50.0 fm (20 to 91 m; Figure 4, Appendix A1). Average temperatures recorded at 155 of the stations fished during the survey ranged from 1.9°C to 7.4°C (Figure 5; Appendix A1). The relationship between the station average bottom temperatures and the average depth of the pots fished within stations during the survey is shown in Figure 6.

A total of 29,427 crab of commercially important species were captured during the survey. The most abundant species was snow crab *Chionoecetes opilio* at 75.3% of the catch (N = 22,163 crab), followed by Tanner crab *C. bairdi* (35.4%; N = 5,154 crab), *C. bairdi* x *C. opilio* hybrid crab (6%; N = 1,800 crab), red king crab (0.6%; N = 200 crab), blue king crab (0.3%; N = 79 crab), and hair crab *Erimacrus isenbeckii* (0.1%; N = 31 crab). Details on the catch of red king crab and blue king crab only are reported below. Details on the catch of *Chionoecetes* crab and other species will be summarized and discussed in a separate report.

Blue King Crab

Only 79 blue king crab (56 males and 23 females) were captured during the survey for an overall survey catch per unit effort (CPUE, defined as number of crab per pot lift) for blue king crab of 0.12. Although at low densities, blue king crab showed a relatively broad catch distribution over the area surveyed north of St. George Island and east of St. Paul Island, with blue king crab occurring at 40 of the 161 stations fished (Figure 7; Appendix A1). The highest catch at any one station occurred at station 28 (just northwest of St. George Island), where 7 blue king crab (all females) were captured in 4 pot lifts (CPUE = 1.75).

Males

The blue king crab male total catch comprised 30 legal males (CPUE = 0.05) and 26 sublegal males (CPUE = 0.04; Table 1). Legal males ranged in size from 137–160 mm CL (Figure 8) and 10 (30%) of the 30 legal males were classified as post-recruits on the basis of size and shell condition. Sublegal males ranged in size from 96–141 mm CL, with 18 (69%) of the 26 sublegal males mature-sized.

Blue king crab males were widely distributed across 31 stations and were primarily found north of St. George and east and northeast of St. Paul Island, with a catch distribution extending to the eastern border of the surveyed area (Figure 7).

Females

All but three of the 23 captured blue king crab females were classified as mature (Table 2). Those females ranged in size from 110 to 145 mm CL, whereas the females classified as immature measured 69, 93, 136 mm CL (Figure 9; note that there is some uncertainty on the scoring of the pleopodal setae as clean for the 136 mm CL female that was classified as immature). Nine (45%) of the 20 mature females were barren with matted setae. Of the 11 (55%) ovigerous females, one had eggs that were eyed and the remainder had uneyed eggs. Clutches of 6 (55%) of the 11 ovigerous females were scored as full; clutches of the remaining ovigerous females were scored as $\frac{3}{4}$ full (N = 2 crab; 18% of ovigerous females), $\frac{1}{2}$ full (N = 2 crab; 18% of ovigerous females), and trace-to- $\frac{1}{8}$ full (N = 1 crab; 9% of ovigerous females).

Female blue king crab were captured at 11 stations (Figure 7). Over one-half (N = 13; 57%) of the females were captured at three stations adjacent to and north of St. George Island. All of the females captured at those three stations were mature, with roughly one-half (N = 7) carrying eggs.

Red King Crab

A total of 200 red king crab (98 males and 102 females) were captured during the survey for a survey CPUE for red king crab of 0.31. Although red king crab were caught at 23 of the 161 stations fished (Figure 10; Appendix A1), only two stations accounted for the majority of red king crab (N = 156; 78%) during the survey; 125 crab (62.5 %) were captured at station 108 (west of St. Paul Island) and 31 crab (15.5%) were captured at station 71 (located roughly midway between St. Paul and St. George Islands).

Males

Eighty-four (84) legal males and 14 sublegal male red king crab were captured for survey CPUEs of 0.13 and 0.02, respectively (Table 1). Males were found at 21 stations, with legal males occurring at 20 stations and sublegal males at 6 stations (Figure 10). All but one of the sublegal males were captured at stations that also captured legal males. The majority of legal

males (N = 55; 65%) were captured at two stations; 29 (35%) were captured at station 71 and 26 (31%) were captured at station 108. The majority of sublegal males (N = 9; 64%) were captured at station 108.

Legal male red king crab ranged in size from 137–194 mm CL and sublegal males ranged in size from 71 mm to 152 mm CL (Figure 11). Seventy-two (72; 86%) of the captured legal males were classified as post-recruits on the basis of size and shell condition. Twelve (12) of the 14 sublegal males were mature-sized.

Females

The 102 captured red king crab females comprised 3 classified as immature, ranging in size from 93 mm to 124 mm CL, and 99 classified as mature, ranging in size from 108 mm to 181 mm CL (Table 2; Figure 12). All females classified as mature were ovigerous, 3 with eyed eggs and 96 with uneyed eggs. Only 11 (11%) of the ovigerous females were scored as having full clutches; 70 (70%) were scored as $\frac{3}{4}$ full, 16 (16%) as $\frac{1}{2}$ full, 1 (1%) as $\frac{1}{4}$ full, and 1 as trace-to- $\frac{1}{8}$ full.

Females occurred at 5 out of 161 stations during the survey (Figure 10). The 3 females classified as immature and the majority of the females classified as mature (N = 87; 87%) were captured at station 108.

Occurrence of Fresh Injuries

A total of 3 blue king crab (4%) and 21 red king crab (11%) suffered fresh injuries from being captured and delivered to the sorting table on the survey vessel, using standard king crab pot gear and commercial fishing techniques as would occur during the fishery. Fresh injuries included: broken rostrums (14 crab; slightly over half of the injuries), cracked carapaces, broken legs, broken chela, and holes punched into the carapace. At least two red king crab had multiple injuries.

Incidence of Disease or Parasites

Torch lesions (chitinoclastic bacterial infection affecting the shell; also known as shell disease) were seen on 14 blue king crab (18%) and 37 red king crab (19%). The blue king crab were equally split between new and old shell conditions with one mature female in new shell condition, 4 sublegal males (2 new, 2 old shell condition) and 9 legal males (4 new, 5 old shell condition). In the red king crab, all twenty females (18 mature, 2 immature) were in new shell condition, and 17 legal males were mainly in older shell condition (4 new, 8 old, 5 very old shell condition); no sublegal red king crab males were seen with torch lesions. Lesions ranged from singular to multi-focal; and in size from small lesions (approximately 1 cm in diameter) to severe lesions over 2 cm in diameter. Lesions occurred in various locations: carapace, legs, chela, and dactyls.

SURVEY DISTRIBUTION OF BLUE KING CRAB RELATIVE TO RED KING CRAB

Although total catch of blue king crab in the survey (N = 79) was less than half the total catch of red king crab (N = 200), the number of stations that blue king crab were captured at (40 stations) was nearly twice the number of stations that red king crab were captured at (23 stations). Capture distribution of red king crab and blue king crab overlapped widely over the survey area (Figure 13). Nonetheless, captures of both red king crab and blue king crab occurred at only 7 of the 161 survey stations. Whereas catch of red king crab was largely concentrated at stations

south and east of St. Paul Island, blue king crab were captured at relatively low numbers (7 or less crab per station) at stations over a broad area extending from the vicinity of the Pribilof Islands to the eastern border of the surveyed area. Catch distributions of the two species showed differences in the pattern of presence and absence as a function of survey station depth and bottom temperature (Figure 14); stations fished at shallower depths (21–30 fm; 38–55 m) and warmer average temperatures (5.1–7.0° C) captured red king crab at a higher frequency than blue king crab.

There was no clear distinction between the survey catch distributions of blue king crab and legal male red king crab (Figure 15). Blue king crab co-occurred with legal male red king crab at 6 stations. Additionally, 7 of the 14 stations that captured legal red king crab and no blue king crab were within one survey station column and one survey station row of a station that captured one or more blue king crab. Although no blue king crab were captured at the two stations that produced the largest catches of legal male red king crab (stations 71 and 108, south and east of St. Paul Island), blue king crab were captured at three stations (stations 82, 95, and 97) located within the area between those two stations.

COMPARISON WITH RESULTS FROM THE PREVIOUS PRIBILOF KING CRAB SURVEYS

One hundred thirty (130) of the survey stations fished in 2011 were also fished in each of the 2003, 2005, and 2008 ADF&G Pribilof king crab pot surveys (Figure 16). Survey results for blue king crab in 2011 provided no evidence for stock rebuilding; as in the previous three surveys, blue king crab CPUE at the 130 stations was below 1 and the catches of legal males, sublegal males, and females at those 130 stations in 2011 was below the average catch for the four surveys that have been performed (Table 3). The catch of legal male, sublegal male, and female red king crab at the 130 in-common stations in 2011 was also below average. Although the CPUE of red king crab sex-size classes has exceeded 1 during some surveys at those 130 stations, the survey-to-survey variation in red king crab CPUE from has been high. For example, the CPUE of female red king crab has ranged from a low of 0.19 in 2001 to a high of 4.39 in 2005. Rather than reflecting actual changes in stock abundance, survey-to-survey variation in red king crab CPUE most likely reflects the difficulty in assessing the abundance of a stock with an extremely patchy spatial distribution over the surveyed area.

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TABLES AND FIGURES

Table 1.–Male blue king crab and red king crab catch and catch per pot lift (CPUE) by size category during the 2011 ADF&G Pribilof king crab pot survey.

Species	Legal				Sublegal				Total CPUE	
	Recruit	Post-Recruit	Subtotal	CPUE	<120 mm CL	≥120 mm CL	Subtotal	CPUE		
Blue king crab	20	10	30	0.05	8	18	26	0.04	56	0.09
Red king crab	12	72	84	0.13	2	12	14	0.02	98	0.15

Note: Recruit = new-shell legal males <150 mm CL
 Post-Recruit = new-shell legal males ≥150 mm CL and all old- or very old-shell males of legal size

Table 2.–Female blue king crab and red king crab catch and catch per pot lift (CPUE) by reproductive-condition category during the 2011 ADF&G Pribilof king crab pot survey.

Species	Mature				Immature		Total	CPUE
	Ovigerous	Matted Setae	Subtotal	CPUE	Subtotal	CPUE		
Blue king crab	11	9	20	0.03	3	<0.01	23	0.04
Red king crab	99	0	99	0.15	3	<0.01	102	0.16

Table 3.–Blue king crab and red king crab catch and catch per pot lift (CPUE) at the 130 stations fished in common during each of the 2003, 2005, 2008, and 2011 ADF&G Pribilof king crab pot surveys.

Species	Survey Year	Legal Males		Sublegal Males		Females	
		Number	CPUE	Number	CPUE	Number	CPUE
<u>Blue king crab</u>	2003	53	0.10	16	0.03	133	0.26
	2005	18	0.03	4	0.01	67	0.13
	2008	49	0.09	91	0.18	92	0.18
	2011	24	0.05	19	0.04	19	0.04
	Average:	36	0.07	33	0.06	78	0.15
<u>Red king crab</u>	2003	386	0.74	16	0.03	146	0.28
	2005	66	0.13	9	0.02	2,283	4.39
	2008	587	1.13	719	1.38	467	0.90
	2011	83	0.16	14	0.03	102	0.19
	Average:	281	0.54	190	0.36	750	1.44

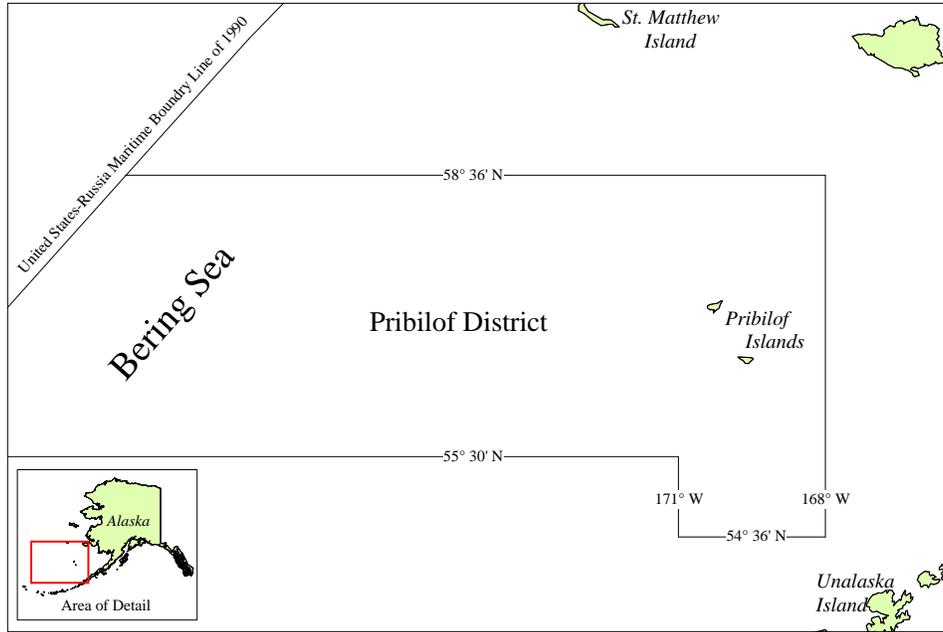


Figure 1.—The Pribilof District of the Bering Sea king crab registration area, Area Q.

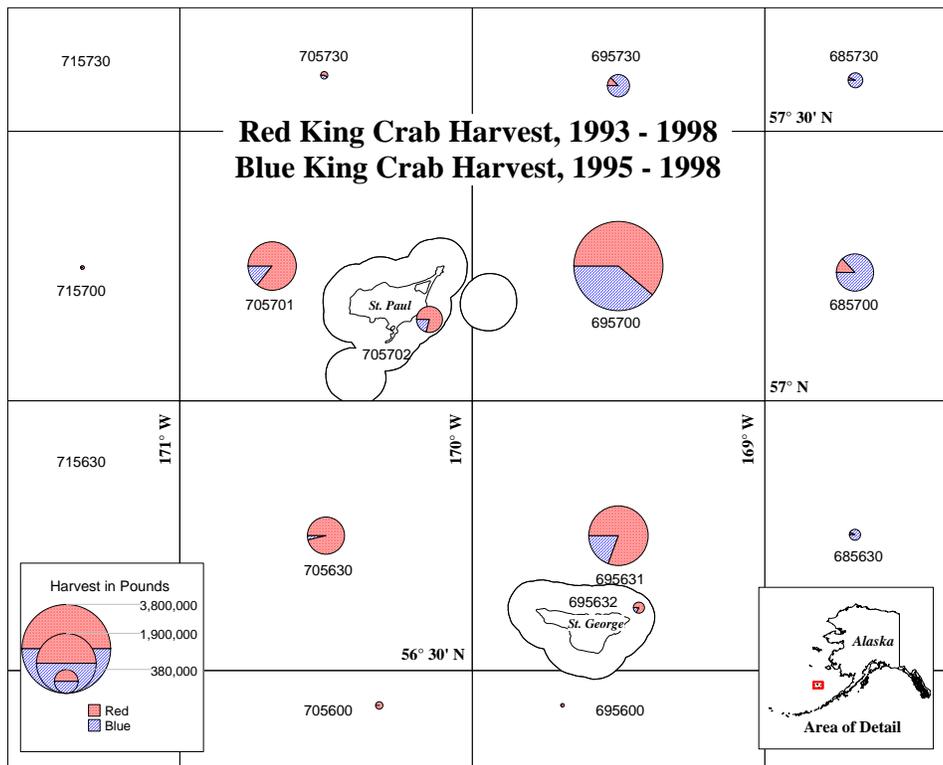


Figure 2.—King crab harvest in the Pribilof District by statistical area for the 1993/94 through 1998/99 seasons.

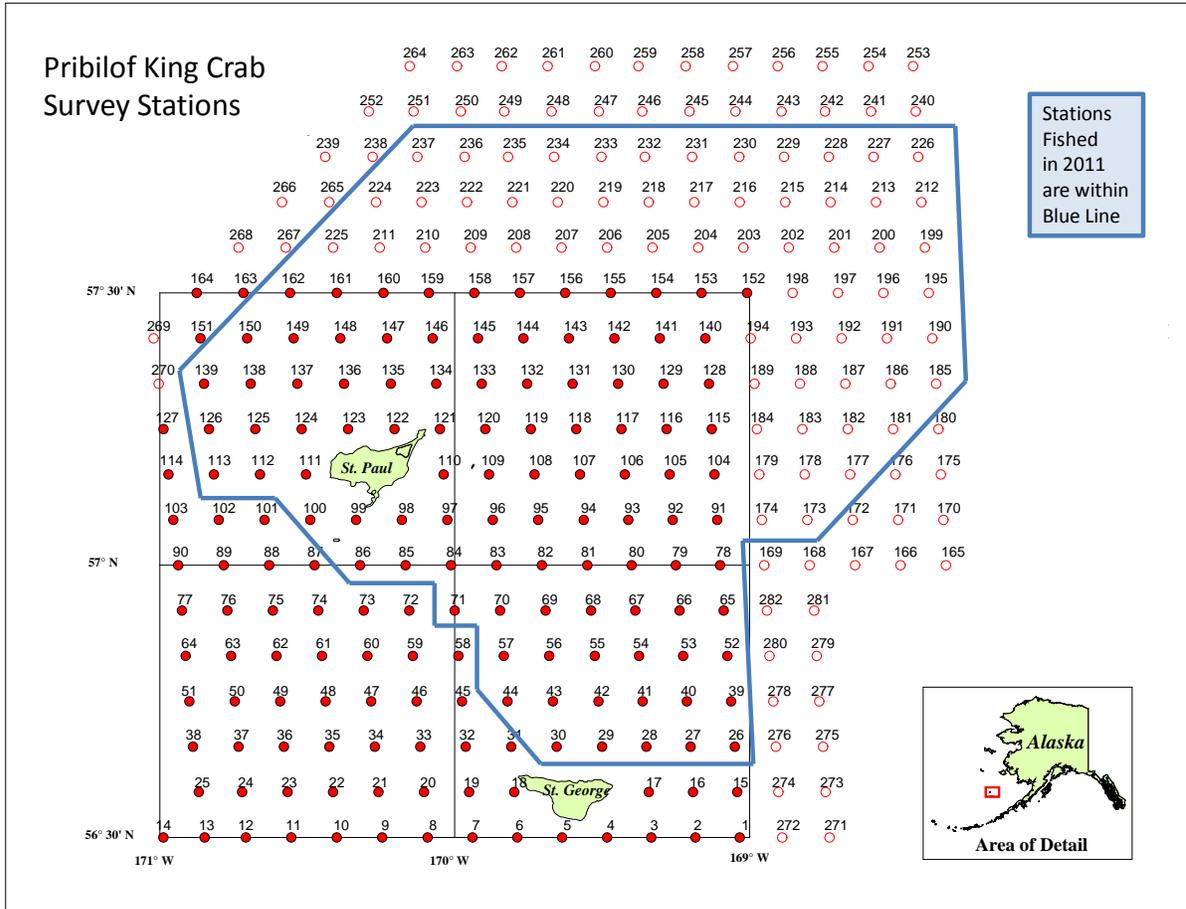


Figure 3.—Map of survey stations (closed circles denote stations in the primary survey area and open circles denote stations in the secondary survey area) established for the AD&G Pribilof District king crab pot survey; stations enclosed in the blue polygon are the stations fished during the 2011 survey.

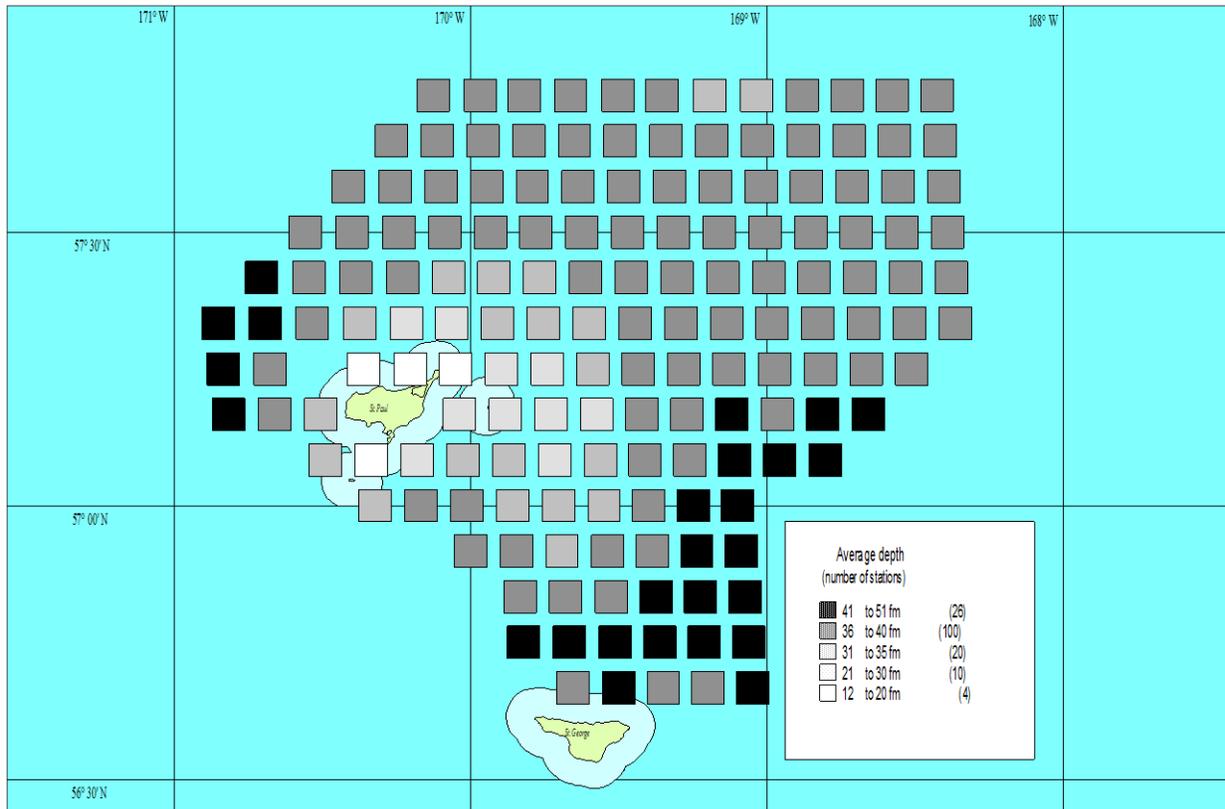


Figure 4.—Within-station averages of recorded depths (fm) of pots in 160 survey stations during the 2011 ADF&G Pribilof king crab pot survey.

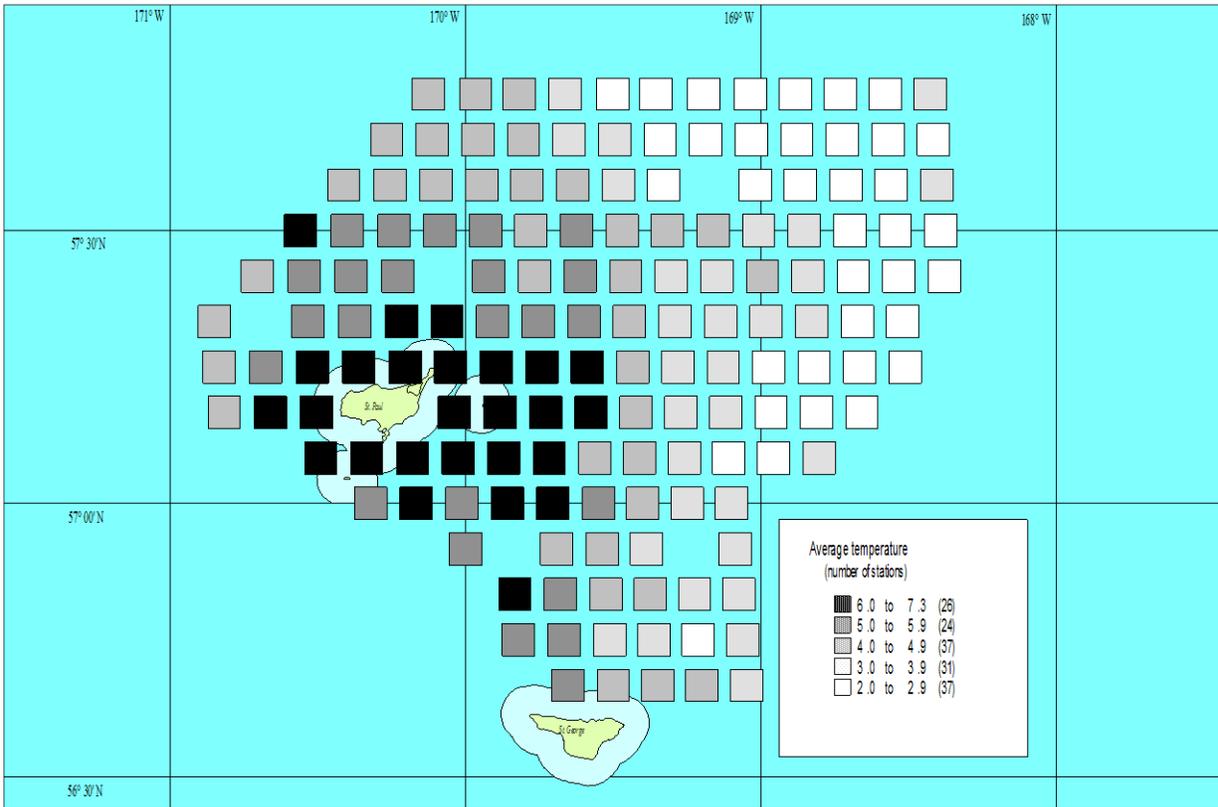


Figure 5.—Average bottom temperature (°C) recorded at 155 survey stations during the 2011 ADF&G Pribilof king crab pot survey.

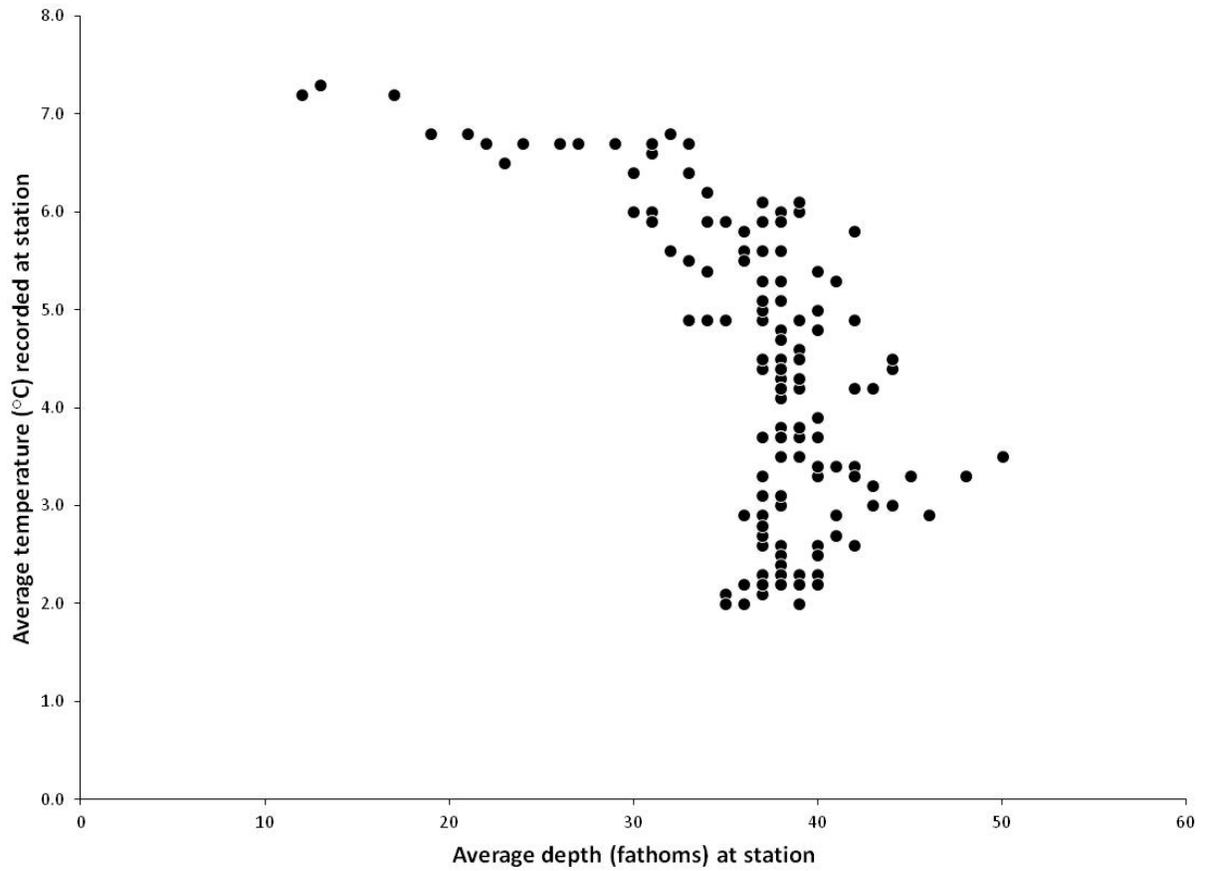


Figure 6.—Average bottom temperature (°C) recorded at 155 stations during the 2011 ADF&G Pribilof king crab pot survey plotted as a function of average depth (fm) of survey station.

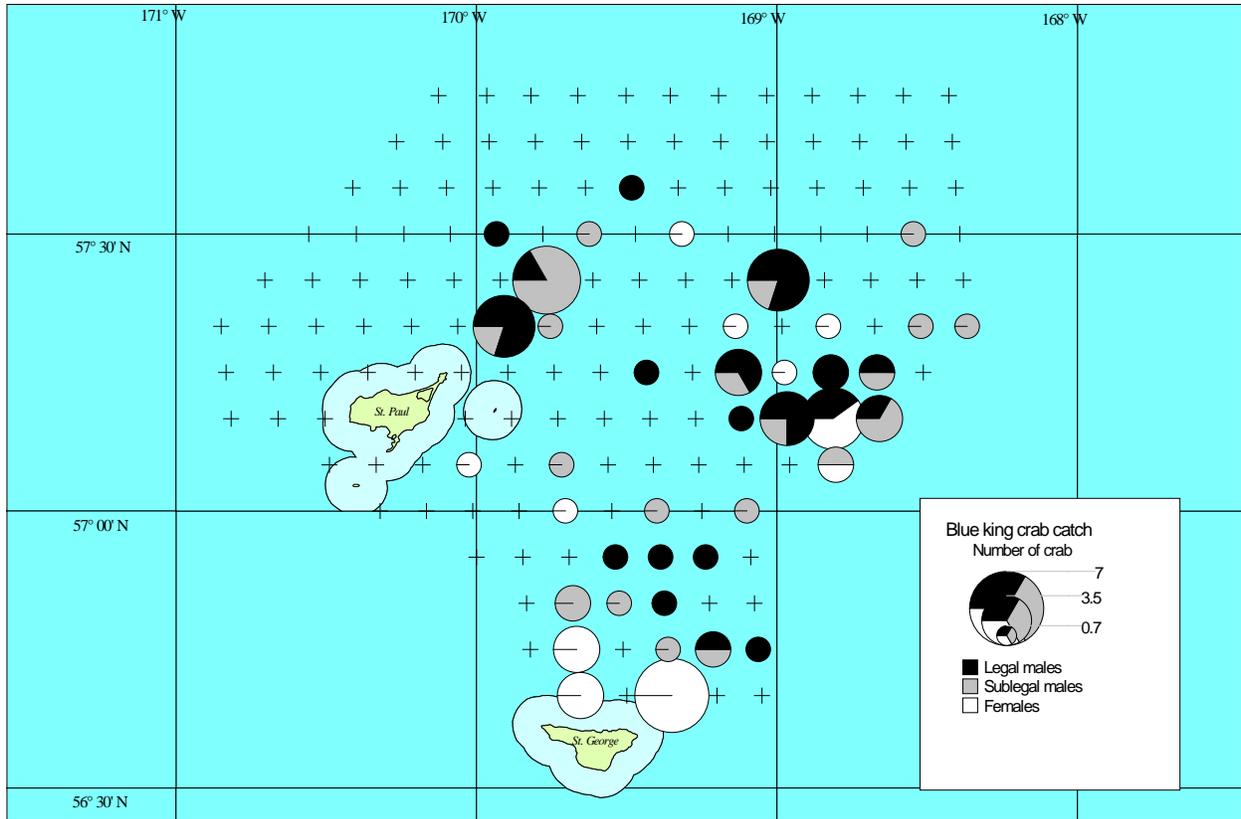


Figure 7.—Catch of blue king crab by station during the 2011 ADF&G Pribilof king crab pot survey.

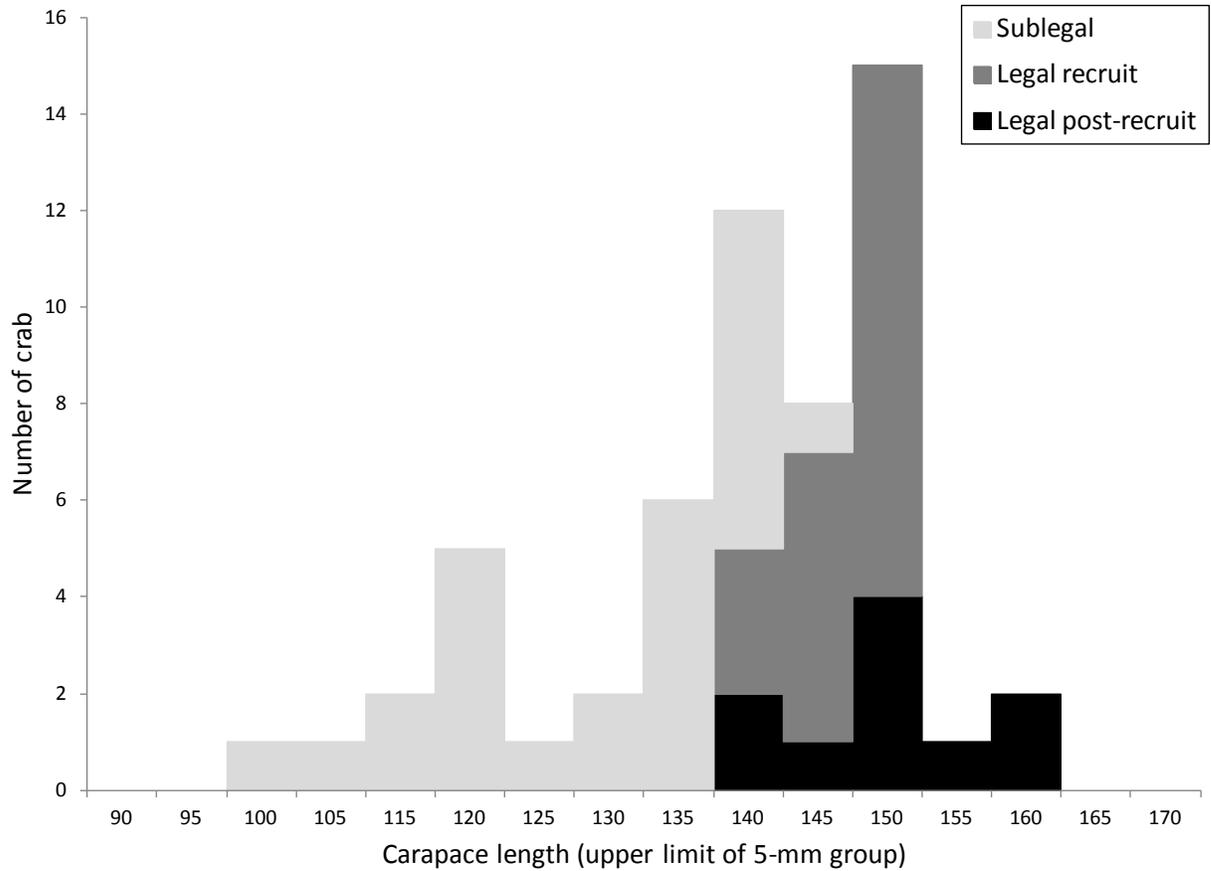


Figure 8.—Size frequency distribution of male blue king crab captured during the 2011 ADF&G Pribilof king crab pot survey by legal status (N = 56; see text for definitions of “sublegal,” “legal recruit,” and “legal post-recruit”).

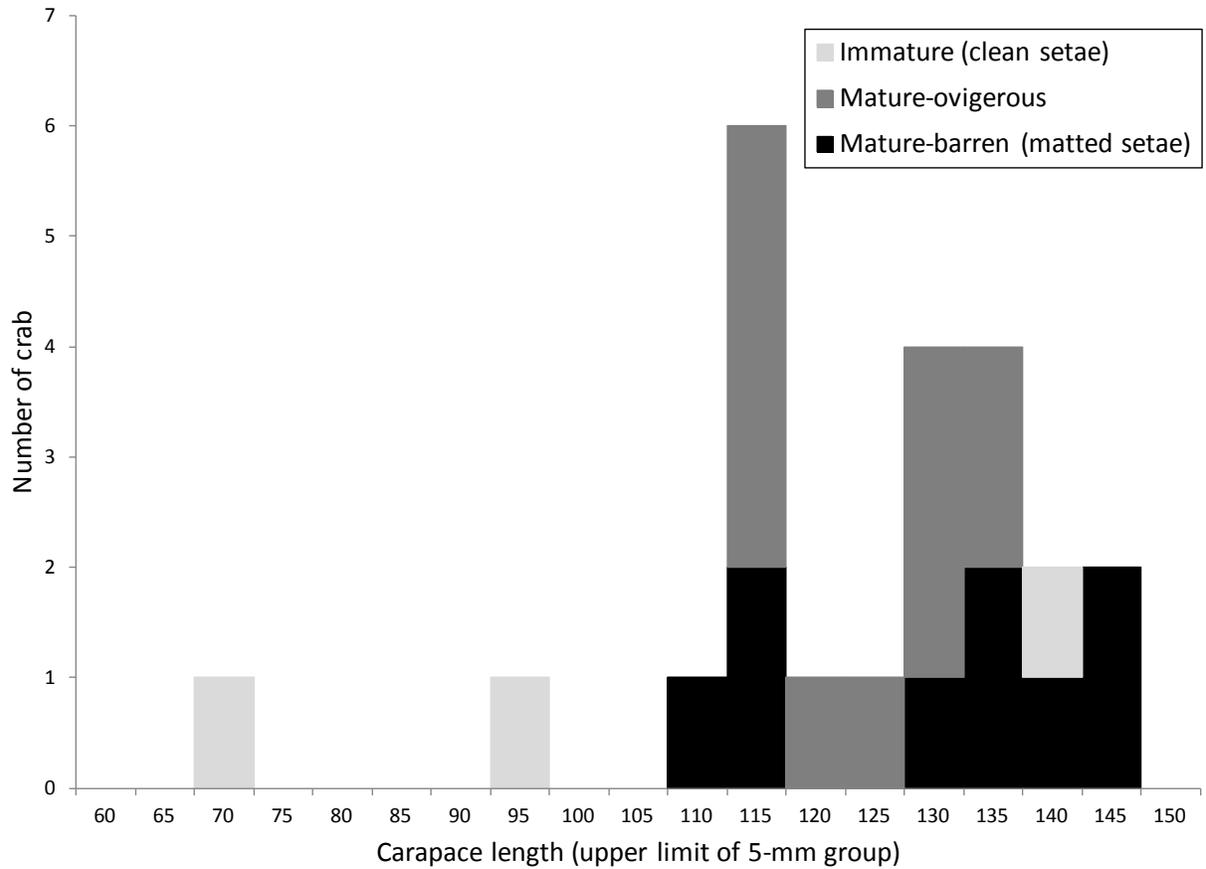


Figure 9.—Size frequency distribution of female blue king crab captured during the 2011 ADF&G Pribilof king crab pot survey by maturity status (N = 23; “clean setae” denotes females with no eggs and no empty egg cases on the pleopodal setae and “matted setae” denotes females with empty egg cases and no eggs on the pleopodal setae).

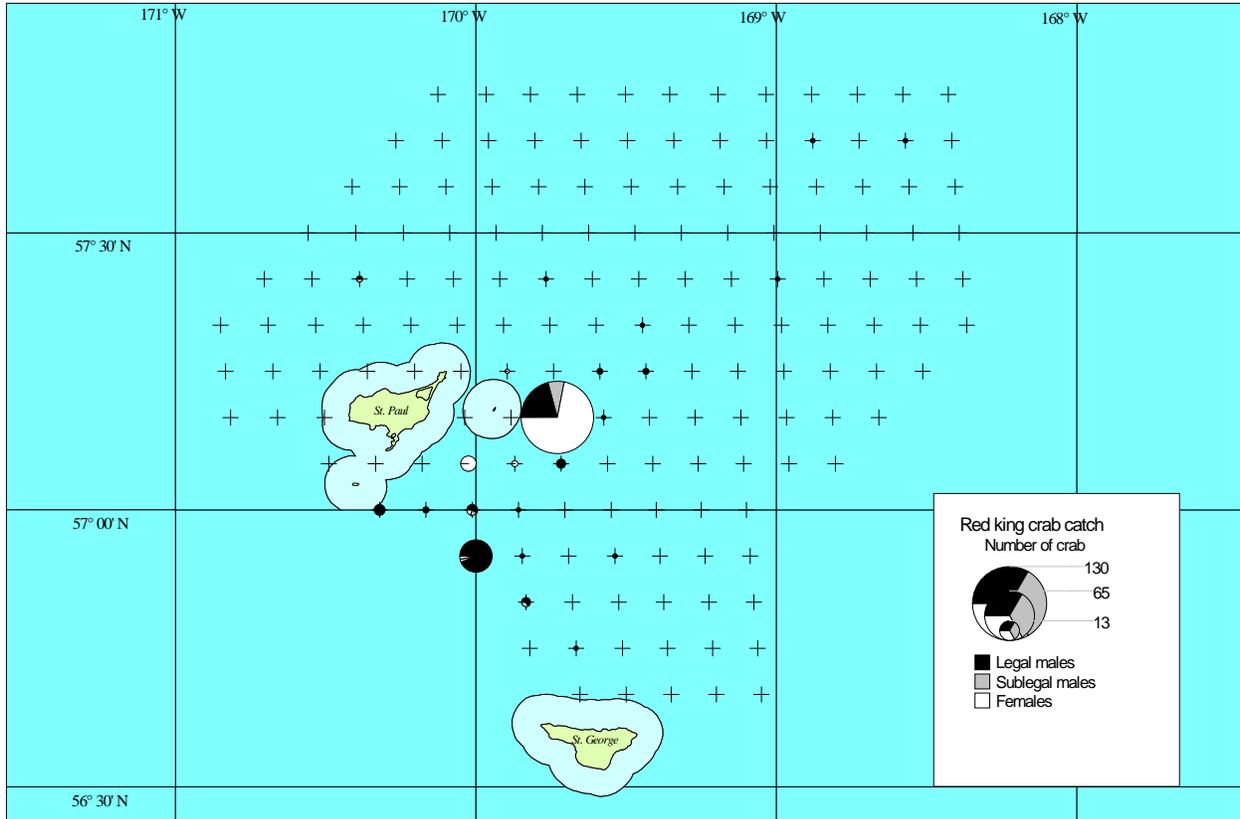


Figure 10.—Catch of red king crab by station during the 2011 ADF&G Pribilof king crab pot survey.

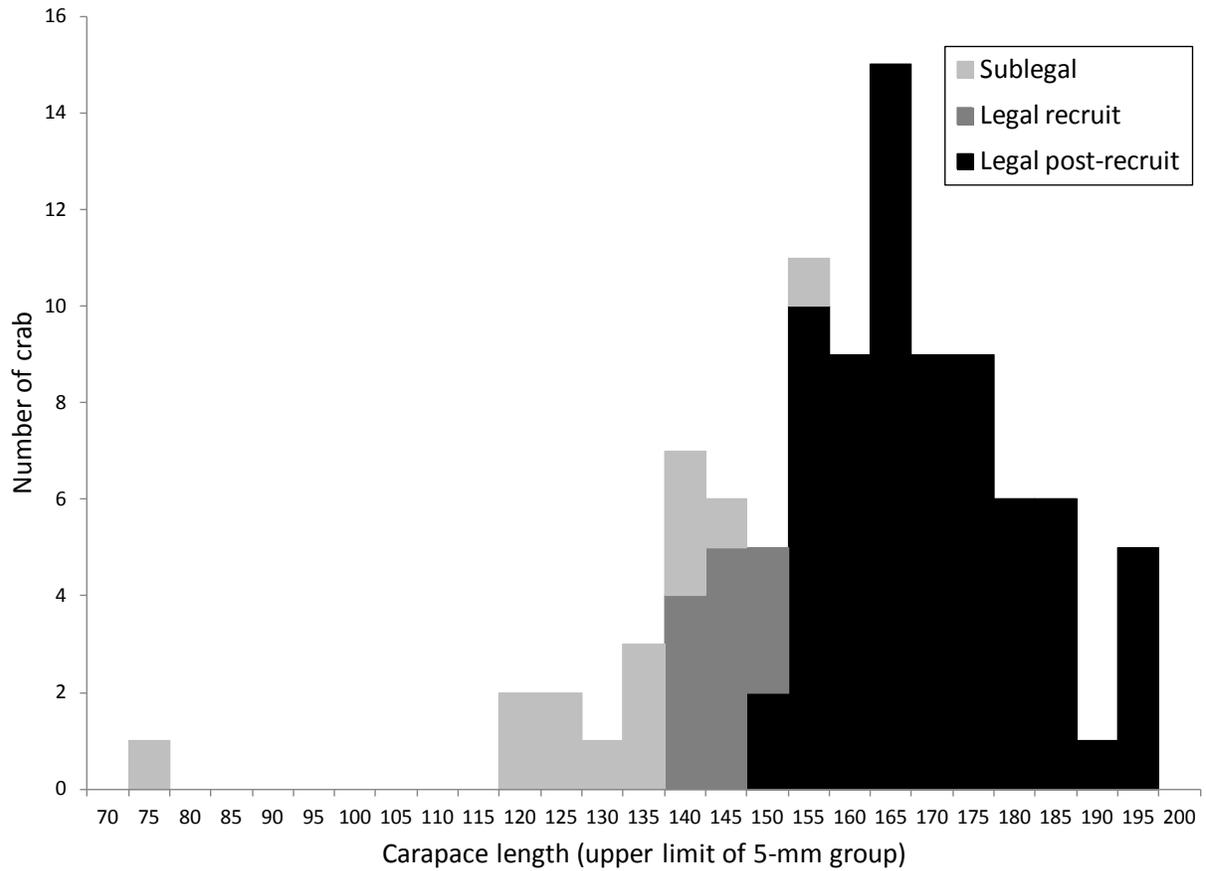


Figure 11.—Size frequency distribution of male red king crab captured during the 2011 ADF&G Pribilof king crab pot survey by legal status (N = 98; see text for definitions of “sublegal,” “legal recruit,” and “legal post-recruit”).

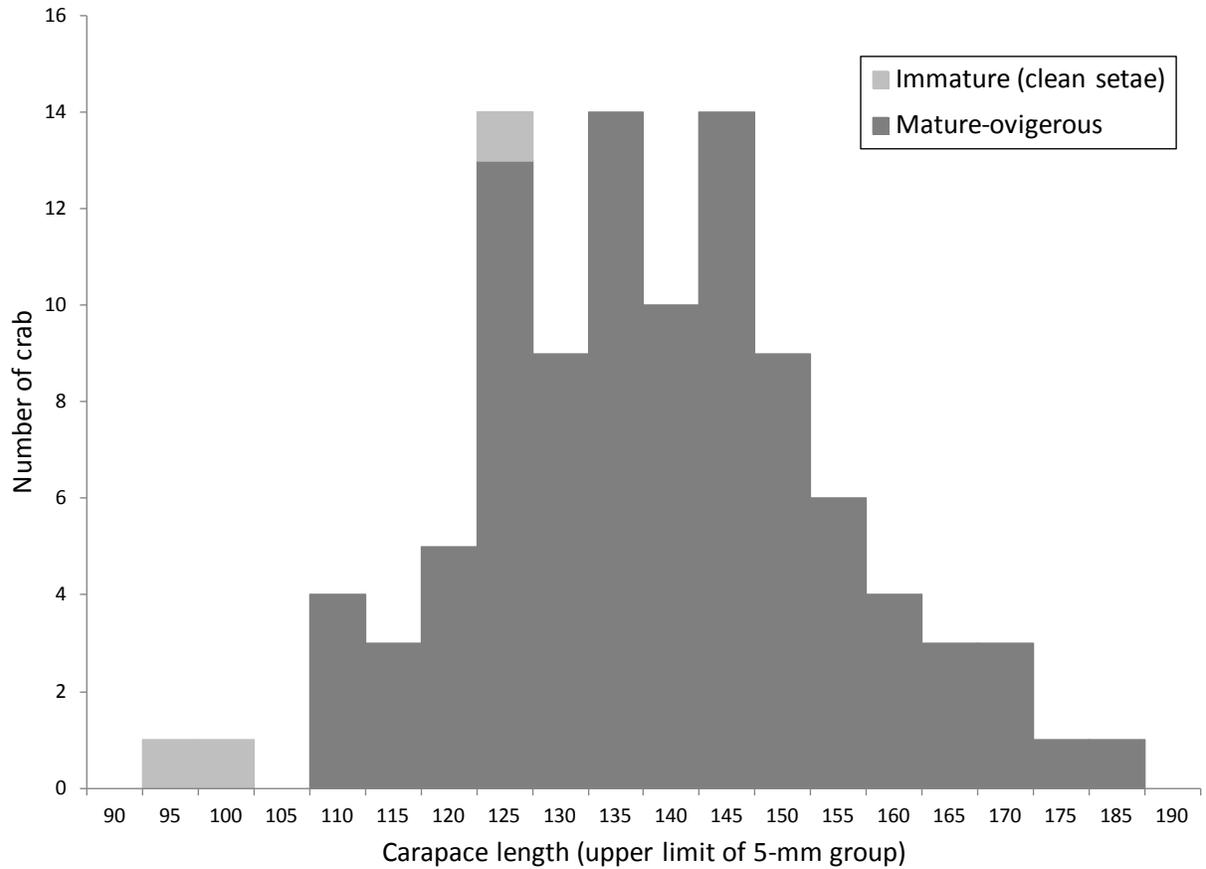


Figure 12.—Size frequency distribution of female red king crab captured during the 2011 ADF&G Pribilof king crab pot survey by maturity status (N = 102; “clean setae” denotes females with no eggs and no empty egg cases on the pleopodal setae; no female red king crab were captured with “matted setae” denoted by empty egg cases and no eggs on the pleopodal setae).

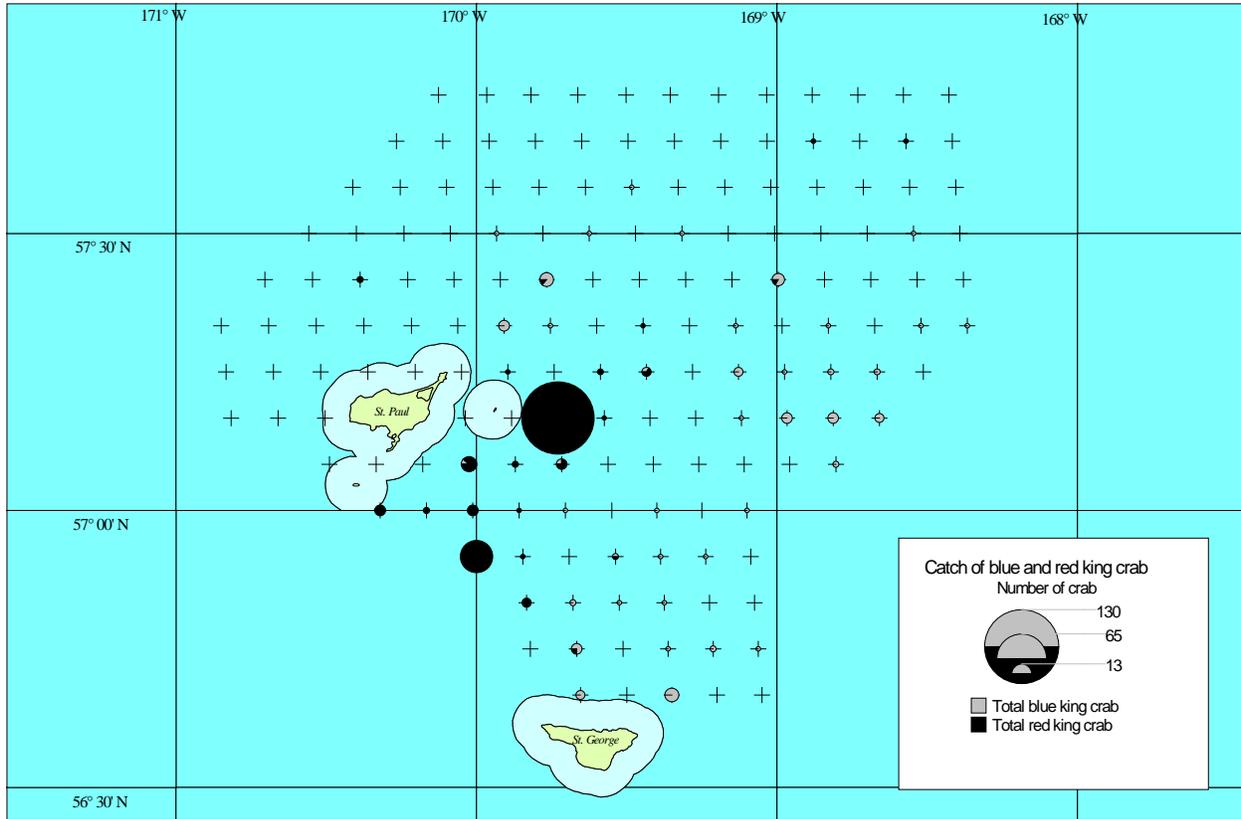


Figure 13.—Catch of blue king crab (N = 79; both sexes and all sizes) and red king crab (N = 200; both sexes and all sizes) by station during the 2011 ADF&G Pribilof king crab pot survey.

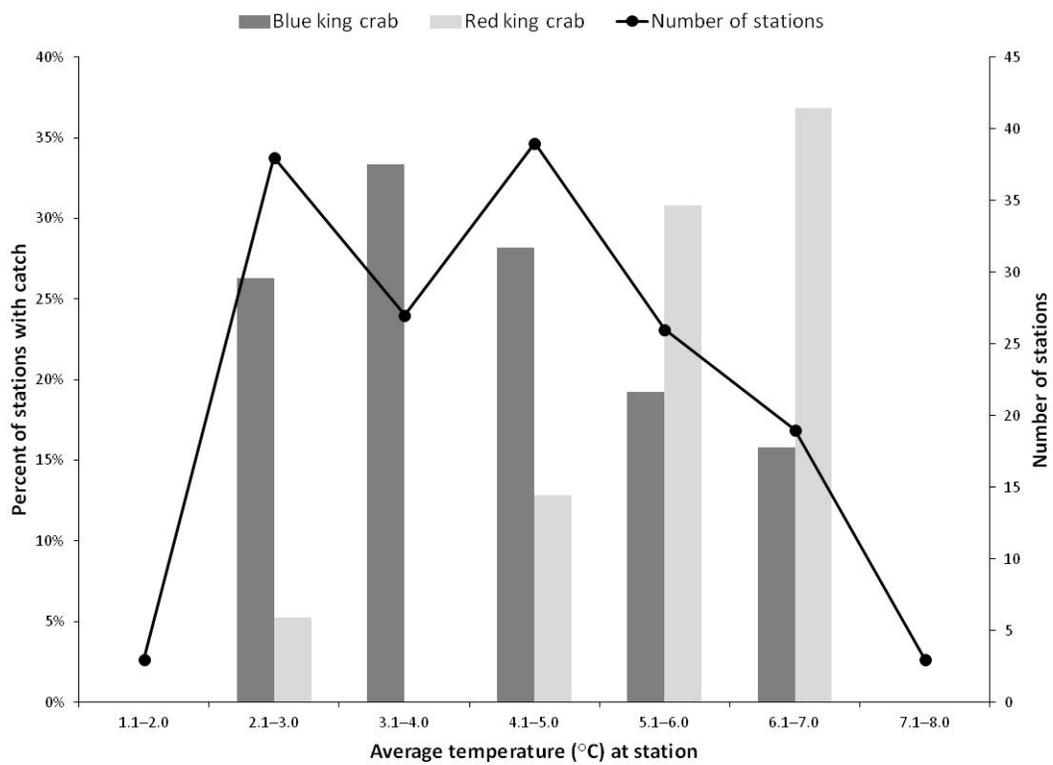
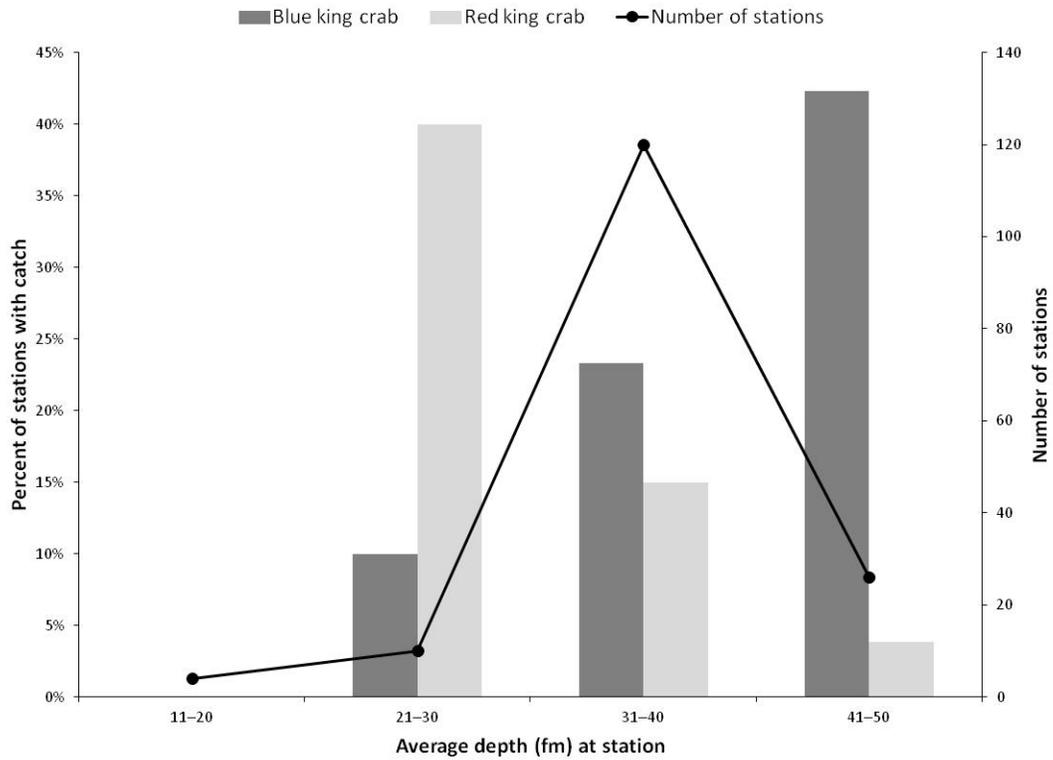


Figure 14.—Percent of survey stations with catch of blue king crab and red king crab by average depth (fm) of station (top panel) and by average bottom temperature (°C) of station (bottom panel) during the 2011 ADF&G Pribilof king crab pot survey.

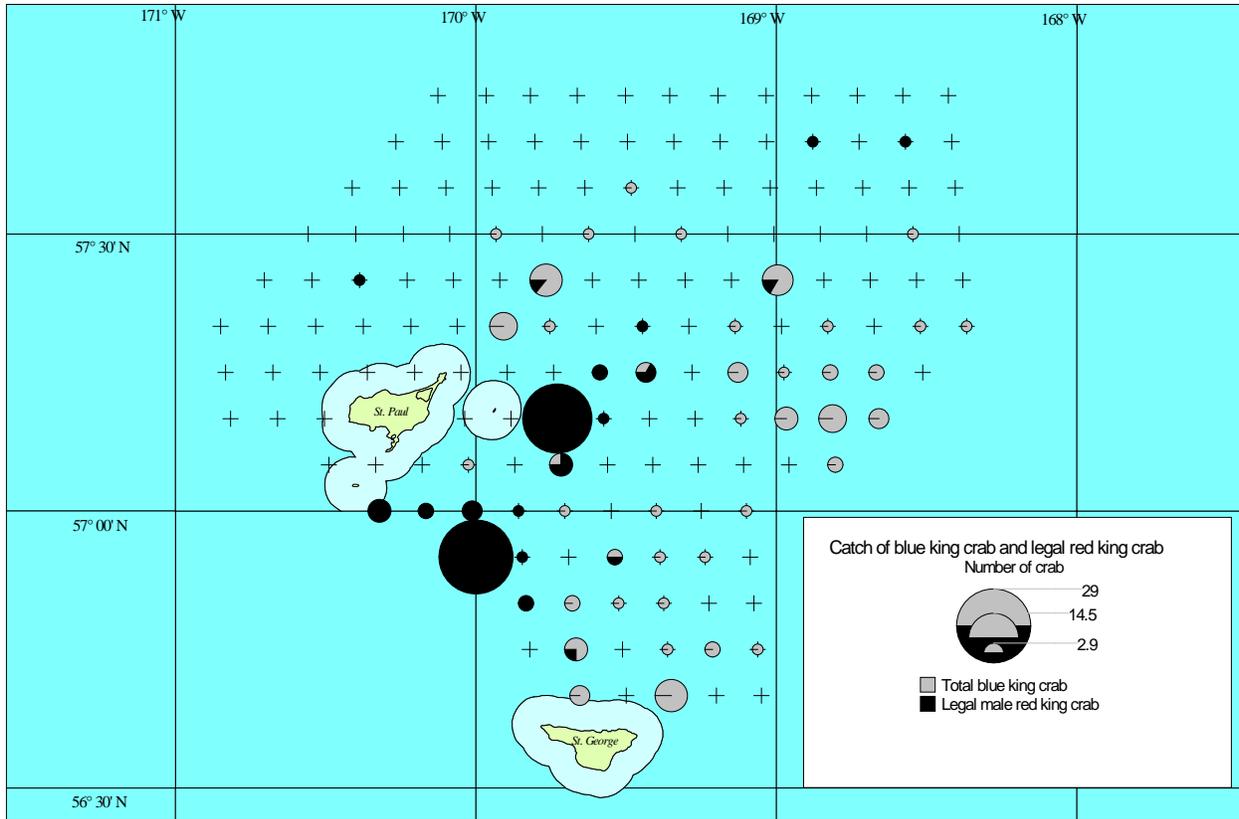


Figure 15.—Catch of blue king crab (N = 79; both sexes and all sizes) and legal male red king crab (N = 84) by station during the 2011 ADF&G Pribilof king crab pot survey.

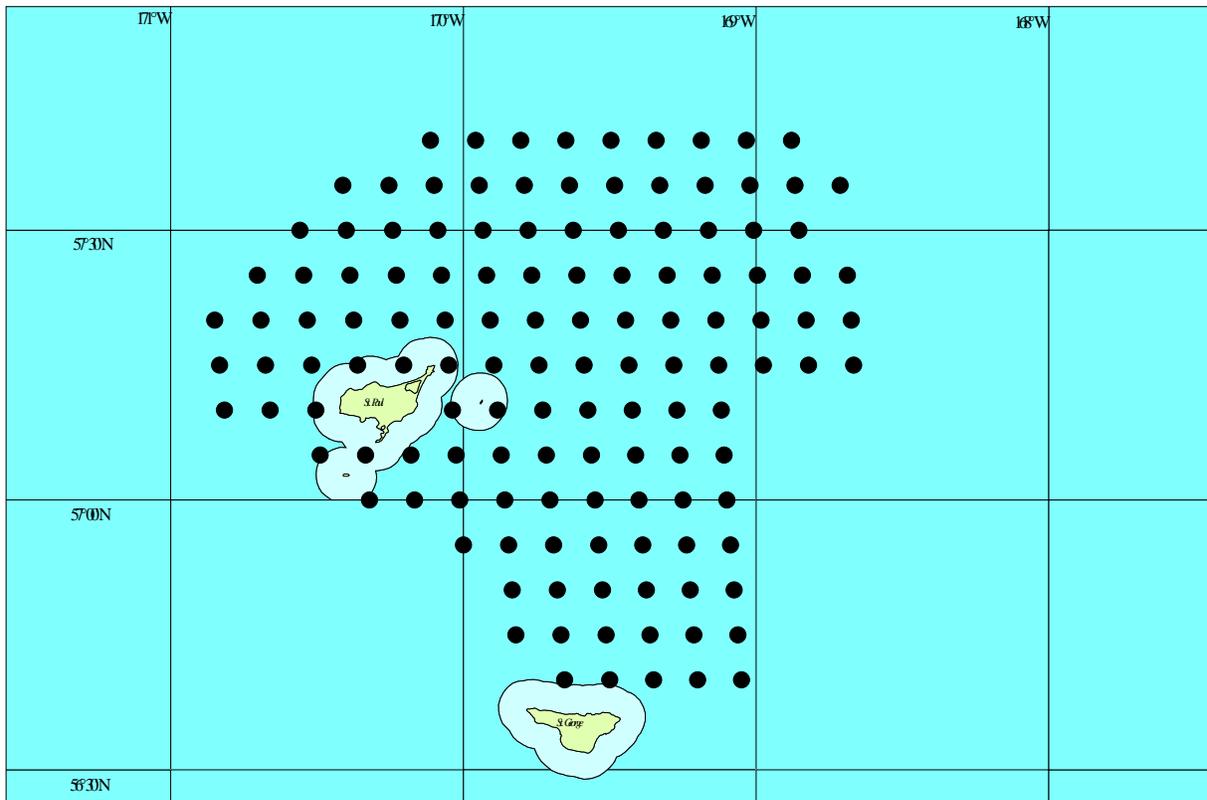


Figure 16.—Location of the 130 stations fished in common during each of the 2003, 2005, 2008, and 2011 ADF&G Pribilof king crab pot surveys.

**APPENDIX A. CATCH OF KING CRAB AND
OCEANOGRAPHIC DATA BY STATION DURING THE
2011 PRIBILOF DISTRICT POT SURVEY**

Appendix A1.-Catch of king crab and oceanographic data by station during the 2011 Pribilof District survey.

Station	Pots	Date Lifted	Soak Time (h)	Depth (fm)	Bottom Temperature (°C)			N Latitude	W Longitude	Blue King Crab		Red King Crab			
					Avg	Min	Max			Males		Females	Males		Females
										Legal	Sublegal	Legal	Sublegal		
26	4	9/14	24.9	50	3.5	3.3	3.8	56° 40.00'	169° 03.00'	0	0	0	0	0	0
27	4	9/14	25.3	38	4.4	3.6	6.1	56° 40.00'	169° 12.00'	0	0	0	0	0	0
28	4	9/14	25.4	37	4.4	4.1	5.7	56° 40.00'	169° 21.00'	0	0	7	0	0	0
29	4	9/14	25.7	43	4.2	3.8	4.7	56° 40.00'	169° 30.00'	0	0	0	0	0	0
30	4	9/14	25.9	40	5.0	4.7	5.3	56° 40.00'	169° 39.25'	0	0	3	0	0	0
39	4	9/16	30.8	48	3.3	3.1	3.4	56° 45.00'	169° 03.75'	1	0	0	0	0	0
40	4	9/16	33.0	46	2.9	2.8	3.0	56° 45.00'	169° 12.75'	1	1	0	0	0	0
41	4	9/16	33.4	43	3.2	2.8	3.9	56° 45.00'	169° 21.75'	0	1	0	0	0	0
42	4	9/15	32.8	42	3.4	2.9	4.9	56° 45.00'	169° 30.75'	0	0	0	0	0	0
43	4	9/15	32.5	41	5.3	4.4	5.7	56° 45.00'	169° 40.00'	0	0	3	1	0	0
44	4	9/14	26.1	42	5.8	5.6	6.2	56° 45.00'	169° 49.25'	0	0	0	0	0	0
52	4	9/16	32.1	45	3.3	3.3	3.3	56° 50.00'	169° 04.50'	0	0	0	0	0	0
53	4	9/16	32.6	44	3.0	2.8	3.2	56° 50.00'	169° 13.50'	0	0	0	0	0	0
54	4	9/16	33.8	42	4.2	2.7	4.7	56° 50.00'	169° 22.50'	1	0	0	0	0	0
55	4	9/15	31.9	38	4.1	3.8	4.4	56° 50.00'	169° 31.50'	0	1	0	0	0	0
56	4	9/15	32.0	37	5.6	5.4	6.0	56° 50.00'	169° 40.75'	0	2	0	0	0	0
57	4	9/15	32.2	39	6.0	5.6	6.3	56° 50.00'	169° 50.00'	0	0	0	2	1	0
65	4	9/17	34.3	44	3.0	2.8	3.3	56° 55.00'	169° 05.25'	0	0	0	0	0	0
66	4	9/17	36.3	42	N/A	N/A	N/A	56° 55.00'	169° 14.25'	1	0	0	0	0	0
67	4	9/17	31.8	40	3.9	2.8	4.5	56° 55.00'	169° 23.25'	1	0	0	0	0	0
68	4	9/15	31.7	37	4.9	4.7	5.3	56° 55.00'	169° 32.25'	1	0	0	1	0	0
69	4	9/15	31.5	35	4.9	4.7	5.1	56° 55.00'	169° 41.50'	0	0	0	0	0	0
70	4	9/15	31.3	36	N/A	N/A	N/A	56° 55.00'	169° 50.75'	0	0	0	1	0	0
71	4	9/15	30.2	38	5.6	5.6	5.7	56° 55.00'	170° 00.00'	0	0	0	29	1	1

-continued-

Station	Pots	Date Lifted	Soak Time (h)	Depth (fm)	Bottom Temperature (°C)			N Latitude	W Longitude	Blue King Crab		Red King Crab			
					Avg	Min	Max			Males		Females	Males		Females
										Legal	Sublegal		Legal	Sublegal	
78	3	9/17	35.1	43	3.0	2.6	3.3	57° 0.00'	169° 06.00'	0	1	0	0	0	0
79	4	9/17	31.7	41	3.4	2.3	4.0	57° 0.00'	169° 15.00'	0	0	0	0	0	0
80	4	9/17	32.1	38	4.4	4.0	4.9	57° 0.00'	169° 24.00'	0	1	0	0	0	0
81	4	10/9	27.9	32	5.6	4.6	6.1	57° 0.00'	169° 33.00'	0	0	0	0	0	0
82	4	10/9	27.7	33	6.4	5.6	6.8	57° 0.00'	169° 42.25'	0	0	1	0	0	0
83	4	10/9	27.5	34	6.2	5.8	6.3	57° 0.00'	169° 51.50'	0	0	0	1	0	0
84	4	10/9	27.2	36	5.8	5.7	5.9	57° 0.00'	170° 00.75'	0	0	0	3	1	1
85	4	10/9	26.7	37	6.1	5.6	6.8	57° 0.00'	170° 10.00'	0	0	0	2	0	0
86	4	10/9	26.5	34	5.9	5.8	6.2	57° 0.00'	170° 19.25'	0	0	0	4	0	0
91	4	9/17	34.4	41	2.7	2.3	3.2	57° 5.00'	169° 06.56'	0	0	0	0	0	0
92	4	9/17	32.6	40	3.3	3.1	3.5	57° 5.00'	169° 15.62'	0	0	0	0	0	0
93	4	9/17	32.3	38	4.3	3.8	4.6	57° 5.00'	169° 24.69'	0	0	0	0	0	0
94	4	10/9	28.0	33	4.9	4.7	5.2	57° 5.00'	169° 33.75'	0	0	0	0	0	0
95	4	10/8	30.7	30	6.4	6.2	6.7	57° 5.00'	169° 43.00'	0	1	0	3	0	0
96	4	10/8	31.0	32	6.8	6.8	6.8	57° 5.00'	169° 52.25'	0	0	0	0	0	2
97	4	10/8	31.2	33	6.7	6.6	6.8	57° 5.00'	170° 01.50'	0	0	1	0	0	8
98	4	10/9	26.2	21	6.8	6.7	6.8	57° 5.00'	170° 10.75'	0	0	0	0	0	0
99	4	10/9	25.9	19	6.8	6.7	6.8	57° 5.00'	170° 20.06'	0	0	0	0	0	0
100	4	10/9	25.7	31	6.6	6.2	6.7	57° 5.00'	170° 29.38'	0	0	0	0	0	0
104	4	10/7	29.3	41	3.4	3.4	3.5	57° 10.00'	169° 07.12'	1	0	0	0	0	0
105	4	10/8	33.8	39	3.7	3.6	3.8	57° 10.00'	169° 16.25'	0	0	0	0	0	0
106	4	10/8	33.5	37	4.4	4.3	4.6	57° 10.00'	169° 25.37'	0	0	0	0	0	0
107	4	10/8	33.0	30	6.0	4.9	6.7	57° 10.00'	169° 34.50'	0	0	0	1	0	0
108	4	10/8	32.5	24	6.7	6.6	6.8	57° 10.00'	169° 43.75'	0	0	0	26	9	90

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Station	Pots	Date Lifted	Soak Time (h)	Depth (fm)	Bottom Temperature (°C)			N Latitude	W Longitude	Blue King Crab		Red King Crab			
					Avg	Min	Max			Males		Females	Males		Females
										Legal	Sublegal		Legal	Sublegal	
109	4	10/8	31.8	26	6.7	6.6	6.7	57° 10.00'	169° 53.00'	0	0	0	0	0	0
110	4	10/8	31.6	21	6.8	6.8	6.9	57° 10.00'	170° 02.25'	0	0	0	0	0	0
111	4	9/24	32.3	31	6.7	6.5	7.1	57° 10.00'	170° 30.25'	0	0	0	0	0	0
112	4	9/24	31.5	38	6.0	5.4	6.7	57° 10.00'	170° 39.62'	0	0	0	0	0	0
113	4	9/24	31.4	44	4.4	4.2	4.6	57° 10.00'	170° 49.00'	0	0	0	0	0	0
115	4	10/7	29.7	40	3.4	3.3	3.4	57° 15.00'	169° 07.69'	2	1	0	0	0	0
116	4	10/7	30.0	39	3.5	3.5	3.6	57° 15.00'	169° 16.87'	0	0	0	0	0	0
117	4	10/7	30.3	37	4.5	4.3	4.7	57° 15.00'	169° 26.06'	1	0	0	2	0	0
118	4	10/7	30.5	31	6.0	5.3	6.2	57° 15.00'	169° 35.25'	0	0	0	2	0	0
119	4	10/7	30.8	23	6.5	6.4	6.6	57° 15.00'	169° 44.50'	0	0	0	0	0	0
120	4	9/25	31.8	22	6.7	6.1	7.1	57° 15.00'	169° 53.75'	0	0	0	0	1	0
121	4	9/25	31.9	17	7.2	7.1	7.3	57° 15.00'	170° 03.00'	0	0	0	0	0	0
122	4	9/25	32.3	13	7.3	7.2	7.4	57° 15.00'	170° 12.25'	0	0	0	0	0	0
123	4	9/25	32.7	12	7.2	7.2	7.3	57° 15.00'	170° 21.69'	0	0	0	0	0	0
124	4	9/24	32.0	N/A	6.2	6.0	6.7	57° 15.00'	170° 31.13'	0	0	0	0	0	0
125	4	9/24	31.7	40	5.4	5.1	5.8	57° 15.00'	170° 40.56'	0	0	0	0	0	0
126	4	9/24	31.1	44	4.4	4.3	4.9	57° 15.00'	170° 50.00'	0	0	0	0	0	0
128	4	10/5	25.0	40	3.4	3.3	3.4	57° 20.00'	169° 08.25'	0	0	1	0	0	0
129	4	10/7	31.3	39	3.5	3.4	3.6	57° 20.00'	169° 17.50'	0	0	0	0	0	0
130	4	10/7	31.1	38	4.5	4.3	4.6	57° 20.00'	169° 26.75'	0	0	0	1	0	0
131	4	10/7	30.9	33	5.5	4.9	5.8	57° 20.00'	169° 36.00'	0	0	0	0	0	0
132	4	10/7	30.9	31	5.9	5.7	6.1	57° 20.00'	169° 45.25'	0	1	0	0	0	0
133	4	9/25	31.5	31	5.9	5.7	6.1	57° 20.00'	169° 54.50'	4	1	0	0	0	0
134	4	9/25	31.3	27	6.7	6.3	7.1	57° 20.00'	170° 03.75'	0	0	0	0	0	0

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Station	Pots	Date Lifted	Soak Time (h)	Depth (fm)	Bottom Temperature (°C)			N Latitude	W Longitude	Blue King Crab		Red King Crab			
					Avg	Min	Max			Males		Females	Males		Females
										Legal	Sublegal	Legal	Sublegal		
135	4	9/25	30.9	29	6.7	6.3	7.1	57° 20.00'	170° 13.00'	0	0	0	0	0	0
136	4	9/25	30.7	35	5.9	5.7	6.1	57° 20.00'	170° 22.50'	0	0	0	0	0	0
137	4	9/24	30.5	36	5.6	5.4	5.8	57° 20.00'	170° 32.00'	0	0	0	0	0	0
138	3	9/24	30.5	42	N/A	N/A	N/A	57° 20.00'	170° 41.50'	0	0	0	0	0	0
139	4	9/24	30.7	44	4.5	4.5	4.6	57° 20.00'	170° 51.00'	0	0	0	0	0	0
140	4	10/5	25.5	38	3.8	3.5	4.2	57° 25.00'	169° 09.00'	0	0	0	0	0	0
141	4	10/6	31.9	40	3.7	3.6	3.9	57° 25.00'	169° 18.25'	0	0	0	0	0	0
142	4	10/6	32.2	40	4.8	4.7	4.9	57° 25.00'	169° 27.50'	0	0	0	0	0	0
143	4	10/6	32.5	37	5.3	4.9	5.5	57° 25.00'	169° 36.75'	0	0	0	0	0	0
144	4	9/27	31.5	34	4.9	4.7	5.2	57° 25.00'	169° 46.00'	1	5	0	1	0	0
145	4	9/27	31.6	34	5.4	5.0	5.8	57° 25.00'	169° 55.25'	0	0	0	0	0	0
146	4	9/27	33.0	32	N/A	N/A	N/A	57° 25.00'	170° 04.50'	0	0	0	0	0	0
147	4	9/26	29.8	36	5.5	5.4	5.7	57° 25.00'	170° 13.75'	0	0	0	0	0	0
148	4	9/26	30.9	37	5.9	5.8	6.1	57° 25.00'	170° 23.25'	0	0	0	1	1	0
149	4	9/26	30.7	38	5.9	5.7	6.1	57° 25.00'	170° 32.75'	0	0	0	0	0	0
150	4	9/26	30.5	42	4.9	4.8	5.0	57° 25.00'	170° 42.25'	0	0	0	0	0	0
152	4	10/5	23.8	38	3.7	3.5	3.9	57° 30.00'	169° 00.50'	0	0	0	0	0	0
153	4	10/5	26.0	38	4.5	4.3	4.5	57° 30.00'	169° 09.75'	0	0	0	0	0	0
154	4	10/5	26.5	37	4.5	4.0	4.7	57° 30.00'	169° 19.00'	0	0	1	0	0	0
155	4	10/6	34.9	38	4.5	4.1	4.7	57° 30.00'	169° 28.25'	0	0	0	0	0	0
156	4	10/6	32.9	38	5.3	5.1	5.4	57° 30.00'	169° 37.50'	0	1	0	0	0	0
157	4	9/27	31.2	38	4.3	4.0	4.6	57° 30.00'	169° 46.75'	0	0	0	0	0	0
158	4	9/27	31.8	37	5.0	4.7	5.2	57° 30.00'	169° 56.00'	1	0	0	0	0	0
159	4	9/27	32.7	37	5.1	5.0	5.3	57° 30.00'	170° 05.25'	0	0	0	0	0	0

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Station	Pots	Date Lifted	Soak Time (h)	Depth (fm)	Bottom Temperature (°C)			N Latitude	W Longitude	Blue King Crab		Red King Crab			
					Avg	Min	Max			Males		Females	Males		Females
										Legal	Sublegal	Legal	Sublegal	Legal	Sublegal
160	4	9/26	29.8	38	5.1	4.9	5.4	57° 30.00'	170° 14.50'	0	0	0	0	0	0
161	4	9/26	30.1	38	5.1	5.0	5.3	57° 30.00'	170° 24.00'	0	0	0	0	0	0
162	4	9/26	30.2	39	6.1	5.6	6.2	57° 30.00'	170° 33.50'	0	0	0	0	0	0
173	4	9/18	33.9	42	3.3	3.0	3.5	57° 5.00'	168° 48.24'	0	1	1	0	0	0
174	4	9/18	33.2	42	2.6	2.2	3.3	57° 5.00'	168° 57.50'	0	0	0	0	0	0
177	4	9/18	30.6	41	2.9	2.6	3.2	57° 10.00'	168° 39.54'	1	2	0	0	0	0
178	4	9/18	31.2	41	2.7	2.4	2.9	57° 10.00'	168° 48.78'	2	0	3	0	0	0
179	4	9/18	32.6	40	2.3	2.2	2.5	57° 10.00'	168° 58.00'	3	1	0	0	0	0
181	4	9/18	29.6	40	2.5	2.4	2.7	57° 15.00'	168° 30.78'	0	0	0	0	0	0
182	4	9/18	30.0	40	2.6	2.1	3.0	57° 15.00'	168° 40.02'	1	1	0	0	0	0
183	4	9/18	31.8	40	2.3	2.2	2.4	57° 15.00'	168° 49.26'	2	0	0	0	0	0
184	4	9/18	32.2	40	2.5	2.4	2.6	57° 15.00'	168° 58.50'	0	0	1	0	0	0
185	4	9/19	30.1	39	N/A	N/A	N/A	57° 20.00'	168° 22.02'	0	1	0	0	0	0
186	4	9/19	34.0	40	2.3	2.2	2.4	57° 20.00'	168° 31.26'	0	1	0	0	0	0
187	4	9/19	34.3	40	2.2	2.1	2.3	57° 20.00'	168° 40.50'	0	0	0	0	0	0
188	4	10/5	22.3	40	3.7	3.3	4.0	57° 20.00'	168° 49.74'	0	0	1	0	0	0
189	4	10/5	24.6	37	3.7	3.6	3.9	57° 20.00'	168° 59.00'	0	0	0	0	0	0
190	4	9/19	30.7	39	2.3	2.2	2.4	57° 25.00'	168° 22.80'	0	0	0	0	0	0
191	4	9/19	33.6	39	2.2	2.1	2.3	57° 25.00'	168° 32.04'	0	0	0	0	0	0
192	4	9/19	33.3	39	2.0	2.0	2.1	57° 25.00'	168° 41.28'	0	0	0	0	0	0
193	4	10/5	22.8	39	3.8	3.6	4.1	57° 25.00'	168° 50.52'	0	0	0	0	0	0
194	4	10/5	24.3	39	4.2	4.0	4.3	57° 25.00'	168° 59.75'	4	1	0	1	0	0
195	4	9/19	31.5	38	2.6	2.5	2.9	57° 30.00'	168° 23.52'	0	0	0	0	0	0
196	4	9/19	32.1	38	2.6	2.5	2.8	57° 30.00'	168° 32.76'	0	1	0	0	0	0

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Station	Pots	Date Lifted	Soak Time (h)	Depth (fm)	Bottom Temperature (°C)			N Latitude	W Longitude	Blue King Crab		Red King Crab			
					Avg	Min	Max			Males		Females	Males		Females
										Legal	Sublegal	Legal	Sublegal		
197	4	9/19	32.8	38	2.5	2.4	2.7	57° 30.00'	168° 42.00'	0	0	0	0	0	0
198	4	10/5	23.4	38	3.5	3.2	3.8	57° 30.00'	168° 51.24'	0	0	0	0	0	0
199	4	9/20	31.8	38	3.0	2.7	3.3	57° 35.00'	168° 24.30'	0	0	0	0	0	0
200	4	9/20	28.4	37	2.6	2.5	2.8	57° 35.00'	168° 33.54'	0	0	0	0	0	0
201	3	9/21	33.0	38	2.4	2.3	2.6	57° 35.00'	168° 42.78'	0	0	0	0	0	0
202	4	9/21	29.8	37	2.1	2.0	2.3	57° 35.00'	168° 52.02'	0	0	0	0	0	0
203	4	9/22	32.2	37	2.1	2.0	2.1	57° 35.00'	169° 01.25'	0	0	0	0	0	0
204	4	9/22	32.0	37	N/A	N/A	N/A	57° 35.00'	169° 10.44'	0	0	0	0	0	0
205	4	9/22	28.4	37	2.3	2.2	2.4	57° 35.00'	169° 19.75'	0	0	0	0	0	0
206	4	10/6	34.4	38	3.7	3.5	4.1	57° 35.00'	169° 29.00'	1	0	0	0	0	0
207	4	10/6	33.4	39	4.3	4.0	4.6	57° 35.00'	169° 38.25'	0	0	0	0	0	0
208	4	9/27	30.7	38	4.2	4.0	4.4	57° 35.00'	169° 47.50'	0	0	0	0	0	0
209	4	9/27	32.1	38	4.8	4.7	4.9	57° 35.00'	169° 56.75'	0	0	0	0	0	0
210	4	9/27	32.3	38	4.7	4.6	4.7	57° 35.00'	170° 06.00'	0	0	0	0	0	0
211	4	9/26	29.8	39	4.6	4.4	4.7	57° 35.00'	170° 15.25'	0	0	0	0	0	0
212	4	9/20	31.2	37	2.9	2.9	3.0	57° 40.00'	168° 25.02'	0	0	0	0	0	0
213	4	9/20	29.3	37	2.7	2.5	2.9	57° 40.00'	168° 34.26'	0	0	0	1	0	0
214	4	9/21	32.3	38	2.3	2.1	2.5	57° 40.00'	168° 43.50'	0	0	0	0	0	0
215	4	9/21	30.6	37	2.1	2.0	2.2	57° 40.00'	168° 52.74'	0	0	0	1	0	0
216	4	9/22	31.0	37	2.1	2.1	2.1	57° 40.00'	169° 02.00'	0	0	0	0	0	0
217	4	9/22	31.6	36	2.0	2.0	2.1	57° 40.00'	169° 11.25'	0	0	0	0	0	0
218	4	9/22	28.9	38	2.2	2.0	2.4	57° 40.00'	169° 20.50'	0	0	0	0	0	0
219	4	10/6	34.0	37	3.3	3.2	3.4	57° 40.00'	169° 29.75'	0	0	0	0	0	0
220	4	10/6	33.7	38	3.7	3.4	3.9	57° 40.00'	169° 39.00'	0	0	0	0	0	0

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Appendix A1.–Page 7 of 7.

Station	Pots	Date Lifted	Soak Time (h)	Depth (fm)	Bottom Temperature (°C)			N Latitude	W Longitude	Blue King Crab		Red King Crab			
					Avg	Min	Max			Males		Females	Males		Females
										Legal	Sublegal	Legal	Sublegal		
221	4	9/27	12.0	38	4.4	4.3	4.5	57° 40.00'	169° 48.25'	0	0	0	0	0	0
222	4	9/27	13.4	38	4.4	4.3	4.6	57° 40.00'	169° 57.50'	0	0	0	0	0	0
223	4	9/28	14.8	39	4.3	4.3	4.4	57° 40.00'	170° 06.75'	0	0	0	0	0	0
224	4	9/28	16.2	39	4.5	4.4	4.5	57° 40.00'	170° 16.00'	0	0	0	0	0	0
225	4	9/26	29.8	39	4.9	4.8	5.2	57° 35.00'	170° 24.73'	0	0	0	0	0	0
226	4	9/20	30.6	38	3.1	2.8	3.3	57° 45.00'	168° 25.67'	0	0	0	0	0	0
227	4	9/20	30.2	37	2.8	2.6	3.0	57° 45.00'	168° 34.77'	0	0	0	0	0	0
228	4	9/21	31.7	37	2.3	2.2	2.3	57° 45.00'	168° 43.87'	0	0	0	0	0	0
229	4	9/21	31.3	36	2.2	2.1	2.3	57° 45.00'	168° 52.97'	0	0	0	0	0	0
230	4	9/22	30.4	35	2.1	2.0	2.1	57° 45.00'	169° 02.07'	0	0	0	0	0	0
231	4	9/22	29.8	35	2.0	1.9	2.1	57° 45.00'	169° 11.69'	0	0	0	0	0	0
232	4	9/22	29.4	37	2.2	2.0	2.4	57° 45.00'	169° 21.31'	0	0	0	0	0	0
233	4	9/28	24.6	36	2.9	2.6	3.0	57° 45.00'	169° 30.15'	0	0	0	0	0	0
234	4	9/28	23.0	37	3.1	2.7	3.7	57° 45.00'	169° 39.77'	0	0	0	0	0	0
235	4	9/28	21.4	38	4.4	4.2	4.5	57° 45.00'	169° 49.13'	0	0	0	0	0	0
236	4	9/28	19.8	38	4.1	3.9	4.3	57° 45.00'	169° 57.97'	0	0	0	0	0	0
237	4	9/28	18.1	38	4.2	4.2	4.2	57° 45.00'	170° 07.59'	0	0	0	0	0	0