Fishery Management Report No. 17-34

Large-Mesh Bottom Trawl Survey of Crab and Groundfish: Kodiak, Chignik, South Peninsula, and Eastern Aleutian Management Districts, 2016

by

Kally Spalinger

November 2017

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

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Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

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

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$log_{2,}$ etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

FISHERY MANAGEMENT REPORT NO. 17-34

LARGE-MESH BOTTOM TRAWL SURVEY OF CRAB AND GROUNDFISH: KODIAK, CHIGNIK, SOUTH PENINSULA, AND EASTERN ALEUTIAN MANAGEMENT DISTRICTS, 2016

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ABSTRACT

This report summarizes the June through September 2016 bottom trawl survey to assess crab and groundfish resources in the Kodiak, Chignik, South Peninsula, and Eastern Aleutian Tanner crab *Chionoecetes bairdi* management districts. A total of 369 trawl hauls were conducted to assess relative abundance and condition of commercially important crabs, and spatial distribution, species composition, size frequency, and catch per unit effort of commercially important groundfish. Estimated mature and legal male Tanner crab abundance was low in all districts and did not allow for a commercial fishery. Red king crab *Paralithodes camtschaticus* abundance estimates in each of the surveyed management areas remain too low to consider opening a red king crab commercial fishery. Flathead sole *Hippoglossoides elassodon*, arrowtooth flounder *Atheresthes stomias*, yellowfin sole *Limanda aspera*, and walleye pollock *Gadus chalcogrammus* were the dominant groundfish captured during the survey.

Key words: crab, groundfish, *Chionoecetes bairdi*, *Paralithodes camtschaticus*, trawl survey, Kodiak, South Peninsula, Chignik, Eastern Aleutian, *Hippoglossoides elassodon*, *Atheresthes stomias*, *Limanda aspera*, *Gadus chalcogrammus*

INTRODUCTION

The Alaska Department of Fish and Game (ADF&G) conducted a bottom trawl survey during 2016 around Kodiak Island, along the Alaska Peninsula from Cape Douglas to False Pass, and in the Eastern Aleutian Islands from Akutan Island to Unalaska Island (Figure 1). The survey area corresponds to the Kodiak, Chignik, South Peninsula, and Eastern Aleutian districts of the Registration Area J (Westward) for Tanner crab *Chionoecetes bairdi* (AAC 35.505[1](a)(b)(c) and (f)); the Kodiak and Alaska Peninsula king crab registration areas, and the Dutch Harbor District of the Aleutian Islands king crab Registration Area (5 AAC 34.400[2], 34.500[3], and 34.604[4](1)); and the Kodiak, Chignik, and South Alaska Peninsula groundfish registration areas, and Aleutian Islands District of the Bering Sea-Aleutian Islands groundfish Registration Area (5 AAC 28.400[5], 28.500[6], 28.550[7], and 28.605[8](a)) (Figure 2). Tanner crab management units are districts; king crab and groundfish management units are areas. This report summarizes survey data by district or area accordingly.

ADF&G bottom trawl surveys began in 1963 around Kodiak Island. Early surveys focused on red king crab *Paralithodes camtschaticus* and targeted Long Island Bank (Reynolds and Powell 1964), Marmot Flats (McMullen 1967a), Portlock Bank (McMullen 1967b), Albatross Bank (McMullen 1968), and Alitak and Kaguyak bays (Kingsbury and James 1971; Figure 3). From 1973 to 1986 Tanner crab were surveyed as an adjunct to ADF&G's king crab pot surveys (Colgate and Hicks 1983). Trawl surveys to assess Tanner crab in the Kodiak District were initiated in 1980 in North Shelikof Strait (Colgate and Hicks 1982; Figure 3) and expanded to other areas of the Kodiak and Chignik districts in 1981 (Colgate and Hicks 1983), and to Pavlof Bay in the South Peninsula District in 1984 (Colgate 1984). The first comprehensive trawl survey of the Kodiak District was conducted in 1987 (Jackson 1990) and in 1988 became the standard Tanner crab stock assessment tool in the Kodiak, Chignik, and South Peninsula districts (Urban and Vining 1999; Spalinger 2015b). The Eastern Aleutian District bottom trawl survey

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[1] Alaska Administrative Code: *Description of* [Tanner crab] *Registration Area J Districts* [Westward]
[2] Alaska Administrative Code: *Description of* [king crab] *Registration Area K* [Kodiak]
[3] Alaska Administrative Code: *Description of* [king crab] *Registration Area M* [Alaska Peninsula]
[4] Alaska Administrative Code: *Description of red king crab* [Registration Area O (Aleutian Islands)] *districts*
[5] Alaska Administrative Code: *Description of Kodiak Area* [for groundfish]
[6] Alaska Administrative Code: *Description of Chignik Area* [for groundfish]
[7] Alaska Administrative Code: *Description of South Alaska Peninsula Area* [for groundfish]
[8] Alaska Administrative Code: *Description of Bering Sea–Aleutian Islands Area districts* [for groundfish]

was added to the regionwide survey program in 1990 and generally continued on a triennial basis until 2003. Beginning in 2004, selected locations of the Eastern Aleutian District have been annually surveyed. Since 1988 between 287 and 423 successful hauls have been completed annually (Table 1).

In 1999, ADF&G developed Tanner crab harvest strategies for the above districts (5 AAC 35.507[9], 34.509[10]; Urban et al. 1999) that use annual trawl survey abundance estimates to determine if thresholds are met and to set fishery guideline harvest levels (GHLs; Urban and Vining 1999). When abundance thresholds are met, Tanner crab guideline harvest levels (GHLs) are primarily determined by estimating the number of molting mature male crab (Appendix A1) in a district or section and applying a harvest rate based on composition of the male population.

Low Tanner crab abundance, as estimated by the trawl survey, has required fishery closures in multiple years (Sagalkin and Spalinger 2011). The Kodiak District was closed from 1994 to 2000 and from 2014 to 2017. The South Peninsula District was closed from 1990 to 2000, from 2002 to 2004, and from 2014 to 2017. The Chignik District was closed from 1990 to 2004, from 2007 to 2009, and from 2012 to 2017. The Eastern Aleutian District was closed from 1995 to 2002, in 2014, and in 2017.

Primary objectives of the 2016 crab and groundfish bottom trawl survey were to estimate the relative abundance and condition of Tanner and red king crabs and to determine spatial distribution, species composition, length frequency distributions, and CPUE of commercially important groundfish species.

Secondary objectives of the standard assessment survey were determination of 1) size frequency distribution of weathervane scallops *Patinopectin caurinus*; 2) sex composition of skate species (*Raja* spp. and *Bathyraja* spp.); and 3) chela (claw) height of male Tanner crab in Northeast, Eastside, and Westside sections of the Kodiak District (Spalinger 2015b). Collections of chela height of male Tanner crab in the Eastside, Westside, and remainder of the Northeast sections of the Kodiak District are ongoing ADF&G research projects; results are not presented here.

Additionally, the following special projects were conducted in 2016 (Spalinger 2016b):

1. Large-mesh survey hauls were made in the South Peninsula District outside of the existing survey area funded by a cooperative agreement with the Aleutians East Borough (AEB; Spalinger 2017).
2. Small-mesh tows in Chiniak Bay were conducted upon completion of the large-mesh bottom trawl survey. Data were incorporated into the small-mesh trawl survey time-series. Information on the small-mesh survey can be obtained by contacting the ADF&G shellfish management office in Kodiak.
3. Sea stars were monitored throughout the survey for signs of sea star wasting disease.

[9] Alaska Administrative Code: *Kodiak, Chignik, and South Peninsula Districts C. bairdi Tanner crab harvest strategies*
[10] Alaska Administrative Code: *Eastern Aleutian District Tanner crab harvest strategy*

METHODS

SURVEY DESIGN

The 2016 large-mesh bottom trawl survey was conducted in known Tanner crab habitat, using a fixed-grid station design that distributes stations uniformly throughout an area. Survey stations represent approximately 15,500 km^2 of crab and fish habitat in depths greater than 20 fathoms. Offshore stations average approximately 74.6 km^2 each and inshore stations average approximately 21.0 km^2 each. Station size variation results from irregular coastline topography and bathymetry (Appendix B2; Spalinger 2015b).

VESSEL AND FISHING GEAR

The R/V *Resolution* (27.7 m) has been used to conduct the large-mesh bottom trawl survey since 1988. The R/V *Resolution* is a house-forward stern trawler equipped with an aft net reel, telescoping deck crane, and paired hydraulic trawl winches. In 2016, skipper Denis Cox Jr. made 1 successful bottom trawl haul in each of 369 stations (Figure 1, Appendix C).

The trawl survey net is a 400-mesh eastern otter trawl designed to sweep a 12.2 m path. The net mouth is constructed with 10.2 cm stretch mesh, net body with 8.9 cm stretch mesh, and the codend with a 3.2 cm stretch mesh liner. The net has a 21.3 m headrope with 18 floats 20.3 cm in diameter. The footrope is 29.0 m long with a 1.0 cm diameter chain attached every 25.4 cm to ensure the footrope tends bottom. The dandylines are 45.7 m long, each consisting of an 18.3 m section of 1.5 cm cable and a pair of 27.4 m sections of 1.3 cm cable, one attached to the top and the other to the bottom of each net wing (Spalinger 2015b). Astoria "V" type doors weighing 340 kg and measuring 1.5 m x 2.1 m are used to spread the net.

Within each station, the trawl net was towed on bottom at an average speed of 4.9 km/h for a target haul length of 1.85 km (1 nmi) to provide a representative sample of fishery resources from each survey station without exceeding weight limitations of vessel equipment. Haul length was determined by Global Positioning System (GPS) as the distance traveled over ground by the vessel from when the footrope contacted bottom until the footrope left bottom. Irregular bottom type, net hang ups, or exceptionally large catches often caused haul length to differ from 1.85 km. The vessel captain estimated corrections in distance for hauls that were not straight. Haul locations were limited to trawlable substrate as determined from nautical charts and bottom mapping systems on the vessel. All hauls were made during daylight hours. Haul location, distance, time, and depth were recorded on ADF&G skipper trawl record forms. Quality of net performance was rated and a haul was discarded and repeated when the skipper and cruise leader determined the net did not adequately sample the bottom (Spalinger 2015b). A temperature-depth data logger was attached to the net's headrope and was approximately 2 m above the sea floor when fishing. Water temperature and depth were recorded in one-minute intervals for each haul. Only temperatures recorded when the footrope was on bottom were used to determine average water temperature during the haul.

CATCH SAMPLING PROCEDURES

Total catch weight from each haul was determined by weighing the full trawl codend with an electronic crane scale (MSI 9300; Measurement Systems International, Seattle, USA[11]; ±1.0 kg),

[11] Product names used in this publication are intended for scientific completeness and do not indicate product endorsement.

emptying the codend into on-deck sorting bins, and subtracting the empty codend weight from the full codend weight. Prior to emptying the trawl catch from the codend, a 1.5 m^2 subsampling net was tied into the on-deck sorting bin. After emptying the entire catch into the on-deck sorting bin, species selected for sampling from the entire haul (whole-haul) were weighed using a motion-compensated electronic scale (Marel 1500, Gardabaer, Iceland[10]; ±0.01 kg), counted, and measured (±1.0 cm) when applicable. The following species were whole-haul sampled: sablefish *Anoplopoma fimbria*, Pacific cod, walleye pollock, Pacific halibut *Hippoglossus stenolepis*, all rockfish *Sebastes* spp. and *Sebastolobus* spp., lingcod *Ophiodon elongatus*, Atka mackerel *Pleurogrammus monopteryguis*, giant Pacific octopus *Octopus dofleini*, squid *Berryteuthis magister*, Pacific herring *Clupea harengus*, salmon *Onchorhynchus* spp., weathervane scallop, red sea cucumber *Parastichopus californicus*, Bering skate *Bathyraja interrupta*, Aleutian skate *B. aleutica*, Alaska skate *B. parmifera*, longnose skate *Raja rhina*, big skate *R. binoculata*, Dungeness crab *Metacarcinus magister*, Tanner crab, red king crab, snow crab *Chionoecetes opilio*, hair crab *Erimacrus isenbeckii*, box crab *Lopholithodes foraminatus*, spiny dogfish *Squalus acanthius*, Pacific sleeper shark *Somniosus pacificus*, salmon shark *Lamna ditropis*, wolf-eel *Anarrichthys ocellatus*, and giant wrymouth *Cryptacanthodes giganteus*. As whole-haul species were removed from the on-deck sorting bin for sampling, the subsampling net was lifted by crane through remaining catch and the resulting subsample was placed on the sorting table for species composition sampling. All species on the sorting table were identified and weighed. Human-made products, kelp, empty shells, regurgitated fish, rocks, etc. in the subsample were classified as "debris" and weighed.

Length or width measurements were taken from selected shellfish species. Crab were categorized by shell condition and measurements were electronically recorded using digital calipers linked to a shellfish measurement database. Tanner crab carapace width (CW) was measured perpendicular to the carapace midline, between the lateral margin spines; however, legal status (meets minimum size requirement to retain in a fishery) was determined including lateral margin spines. King crab were measured for carapace length (CL) from the right eye socket to the medial-posterior edge of the carapace whereas legal status was determined by measuring perpendicular to the carapace midline including lateral margin spines. An explanation of the terms used to characterize Tanner and king crabs is presented in Appendix A. Dungeness crab were measured for CW and checked for legal status across the carapace immediately anterior to the tenth anterolateral spine (Spalinger 2015b).

Tanner, king, and Dungeness crabs were subsampled when each species/sex exceeded 200 individuals per haul. Chela height measurements (the greatest height, excluding spines, on the right chela) from up to 50 Tanner crab per haul were taken from male crab >60 mm CW in the Northeast, Eastside, and Westside sections of the Kodiak District. Clutch fullness of mature female Tanner, king, and Dungeness crabs was estimated by examining egg clutch and assigning a fractional clutch size relative to the size of the abdominal flap (Spalinger 2015b). Embryo development was noted by the presence or absence of eyed eggs. External signs of bitter crab disease, black mat, nemertean worms, and parasitic barnacles were recorded for all measured crab. When available, shell height measurements for 20 weathervane scallops per haul were collected following methods detailed in Spalinger (2015b).

Length measurements were taken from selected finfish species. Target sample size was 30 to 50 measurements per species per haul. Measurements were entered directly into a fish measurement database using a magnetic fish measuring board. Commercial finfish species were measured

from snout to mid-point of the caudal fin. Sharks were measured from snout to tip of caudal fin. Skates were measured along the dorsal surface from the snout to the anterior notch of the pectoral fin. All sharks and skates were measured and sex determined by the presence or absence of claspers (Spalinger 2015b).

CPUE, DENSITY, AND ABUNDANCE INDICES

Survey catch data were converted to density estimates for each haul by dividing the number or weight of animals caught in the haul by the area swept by the trawl during the haul. The area swept is the product of the assumed net width of 12.2 m and the distance towed:

$$density = \frac{number\ or\ weight\ of animals}{net\ width * distance\ towed}.$$

Relative abundance indices for Tanner and king crabs were derived from trawl survey data using the area swept technique (Alverson and Pereyra 1969). Density estimates were multiplied by the station area (Appendix B2) to estimate station abundance:

$$station\ abundance = density * station\ area.$$

The sum of abundances from stations in a geographic area provides a total abundance index for the area: $total\ district\ or\ section\ abundance = \sum station\ abundance.$

In addition to crab relative abundance indices, a commonly used measure in this report is CPUE, which is standardized to kg or number caught per km towed, allowing for comparisons between hauls:

$$CPUE = \frac{number\ or\ weight\ of animals}{distance\ towed}.$$

RESULTS AND DISCUSSION

Detailed haul data are in Appendix B1 and include date, station, start position, heading, average depth, distance towed, and bottom temperature.

KODIAK

In the Northeast, Eastside, Southeast, and Southwest sections of the Kodiak Tanner crab District 147 hauls were completed between June 9 and July 6 (haul numbers 1–148). One haul was unsuccessful because the net hung up on the bottom. Haul locations are shown in Appendices C1–C7. In the Westside and North Mainland sections, 62 hauls were completed between August 25 and September 2 (haul numbers 316–377). The total area of the surveyed sections used to determine abundance estimates for the Kodiak District was 8,307.2 km^2 (Appendix B2).

Tanner Crab

The 2016 survey captured 27,111 male Tanner crab in the Kodiak District, with a mean size of 99.8 mm CW, and 16,230 female Tanner crab, with a mean size of 75.5 mm CW. Two dominant size groups were observed in both male and female populations (Figure 4). A group of larger males ranged in size from approximately 90 mm CW to 130 mm CW , while a group of smaller males ranged from approximately 25 mm CW to 45 mm CW. The predominant group of large females had a mode located at 90 mm CW, while a group of smaller females ranged from approximately 25 mm CW to 45 mm CW, similar to the smaller males. Tanner crab were caught

in 91% of all hauls, with catches ranging from 0 to 3,023 crab per haul. The highest Tanner crab CPUE was 1,632 crab per km towed at station 510B in Barnabas Gully within the Eastside Section (Figure 5). Soft/new pliable shell and new shell crab comprised 88% (23,907) of the total male Tanner crab captured in the Kodiak District survey (Table 2). The majority of new shell crab were between 85 mm CW and 130 mm CW in the Eastside and Southwest sections and between 20 mm CW and 50 mm CW in the Northeast, Southeast, Westside, and North Mainland sections (Figures 6 and 7).

Tanner crab abundance estimates for each station were summed by management section (Appendix D1). The total 2016 Kodiak District surveyed Tanner crab abundance was estimated at 61.4 million crab, an increase from 40.1 million crab estimated in 2015 (Table 3). The largest increases were observed among sublegal males >114 mm CW and adult females. Decreases in abundance relative to the 2015 estimates were seen in sublegal males 70–91 mm CW, and postrecruit males ≥165 mm CW (Table 3).

The 2016 estimated abundance of legal-sized male Tanner crab in the Kodiak District was 1.0 million crab, slightly more than the 2015 estimate of 0.9 million, and the fifth lowest legal-sized male abundance estimate in trawl survey history (Table 3; Figure 8). In 2016, the abundance estimate of 0.5 million legal-sized male crab in the Eastside Section was the largest in the Kodiak District, while the Westside and Northeast sections had the smallest estimated abundances of legal males. Based on the Tanner crab harvest strategy (5 AAC 35.507[12]), the Eastside and Southeast sections were above the mature male abundance threshold but did not satisfy the minimum GHL criteria, while the Northeast, Southwest, Westside, and North Mainland sections were below the thresholds required to consider opening a commercial Tanner crab fishery (Table 4). Therefore, the Kodiak District did not open to commercial Tanner crab fishing in 2017.

Egg clutches of 5,612 mature female Tanner crab from the Kodiak District were examined (Figure 9); 78.1% (4,383) were multiparous, an increase from 36.8% in 2015 (Spalinger 2016a). Mature female egg clutches were more than half full in 73.1% (4,101) of samples. This was higher than 2015 when 56.3% of mature females sampled had egg clutches that were more than half full (Spalinger 2016a).

Red King Crab

Red king crab were caught in 12.0% of Kodiak Area hauls totaling 470 males and 319 females. King crab catch ranged from 0 to 436 crab per haul, with 77.9% of king crab caught inside Alitak Bay and 19.8% caught on Alitak Flats (Figure 10). Mean king crab size was 131.8 mm CL for males and 112.5 mm CL for females. The majority of female king crab were juvenile, and the majority of males were sublegal. During the 2016 Kodiak Area survey, 63.0% (85) of all adult females examined had an egg clutch that was more than half full (Figure 9), less than in 2015 (81.6%; Spalinger 2016a).

Red king crab abundance estimates were derived for 4 districts of the Kodiak Registration Area by size and sex categories (Table 5). The 2016 Kodiak red king crab abundance was estimated at 581,677 crab, up slightly from an estimated 555,111 crab in 2015. Relatively few male king crab are captured by the trawl survey each year (470 in 2016 and 461 in 2015; Spalinger 2016a). The largest increases in 2016 were observed among juvenile females and prerecruit males <113 mm

[12] Alaska Administrative Code: *Kodiak, Chignik, and South Peninsula Districts C. bairdi Tanner crab harvest strategies*

CL (Table 5, Figure 11). The total estimated abundance of legal males decreased from 340,308 crab in 2015 to 197,523 crab in 2016 and represented 54.1% of the total male abundance. High variability in annual abundance estimates are most likely due to low crab density and uneven distribution within the survey area.

Groundfish

The CPUE of all species from sample hauls in the Kodiak groundfish Area was 522 kg/km towed, with groundfish species comprising 78.0% of the total animal catch by weight. During the 2016 survey, arrowtooth flounder *Atheresthes stomias* was the dominant species caught by weight (23.8%), followed by flathead sole *Hippoglossoides elassodon* (21.1%), sunflower sea star *Pycnopodia helianthoides* (7.1%), Tanner crab (6.9%), and Pacific halibut (5.4%; Table 6). Arrowtooth flounder, flathead sole, and walleye pollock were the 3 most abundant species captured by weight in previous years (2012–2015; Figure 12). In 2016, walleye pollock was not one of the top 4 species captured by weight for the first time in survey history.

During the 2016 Kodiak Area bottom trawl survey, 26,359 fish representing 38 species were measured for length. Arrowtooth flounder and flathead sole were found in almost every haul, although flathead sole were most abundant inside bays (Figure 13). Yellowfin sole *Limanda aspera* were primarily found inside bays, with greater numbers along the north end of Kodiak Island. Northern rock sole and southern rock sole were found in small numbers around Kodiak Island though northern rock sole were more common (Figure 13). Sablefish, Pacific cod, and walleye pollock were seen throughout the survey with the highest densities of pollock along the east side of Kodiak Island. Rougheye rockfish *Sebastes aleutianus* concentrations were largest in Barnabas Gully (Figure 14).

SOUTH PENINSULA AND CHIGNIK

In the South Peninsula and Chignik Tanner crab districts, 139 hauls were completed from July 17 through August 14: 93 hauls in the South Peninsula District (haul numbers 195–238 and 267–315; Appendices C8–C11) and 46 hauls in the Chignik District (haul numbers 149–194; Appendices C11–C12). The total area used to determine abundance estimates was 3,163.7 km^2 in the South Peninsula District and 1,408.4 km^2 in the Chignik District (Appendix B2).

Tanner Crab

The 2016 trawl survey of the South Peninsula District caught 10,355 Tanner crab. The number per haul ranged from 0 to 2,863 Tanner crab, with the highest CPUE of 1,546 crab per km towed in the Western Section, in Morzhovoi Bay, station MOOX (Figure 15). The mean CW of Tanner crab in the South Peninsula District was 112.4 mm for males and 89.0 mm for females. The dominant male size class mode was at approximately 115 mm CW, while the predominant female mode was approximately 95 mm (Figure 4). Sublegal male crab 92–139 mm CW accounted for 82.3% (5,840) of the total male Tanner crab captured in the South Peninsula District survey (Table 2; Figures 16 and 17).

Abundance estimates were derived for each size and sex category of Tanner crab by surveyed locale (Appendix D2). Tanner crab abundance in the surveyed portion of the South Peninsula District was estimated at 16.5 million crab (Table 7), a decrease from 20.9 million crab in 2015. The 2016 decrease in the Tanner crab abundance was primarily due to fewer juvenile females and sublegal males 70–114 mm CW (Figure 18). Estimated abundance of legal-sized male Tanner crab increased to 0.9 million crab in 2016 from 0.5 million crab in 2015. Tanner crab

abundance estimates from the 2016 survey did not meet regulatory requirements to open a commercial fishery in the Eastern Section of the South Peninsula District in 2017 (5 AAC 35.507; Table 4). Although requirements for the number of mature males in the Western Section were met (Table 4), the section remained closed because of declining abundance overall (Table 7). Additionally, a significant proportion of the estimated population was concentrated in a localized area of Morzhovoi Bay creating the potential for overexploitation and high handling mortality of females and sublegal males.

The 2016 Chignik District bottom trawl survey captured 2,396 Tanner crab with catches ranging from 1 to 528 Tanner crab per haul. Ivanof Bay showed the highest CPUE of Tanner crab at 285 crab per km towed from Station 400X (Figure 15). The mean Tanner crab CW in the Chignik District was 107.9 mm for males and 80.6 mm for females. The predominant male size class had a mode at approximately 120 mm CW (Figure 4). A predominant group of large female crab ranged in size from approximately 80 mm CW to 105 mm CW, while a group of smaller female crab had a mode at 40 mm CW. Mature male (≥115 mm CW) Tanner crab catch was 78.4% (609) new shell crab. Juvenile males with soft/new pliable or new shell conditions accounted for 44.1% (782) of the total male Tanner crab captured in the Chignik survey (Table 2), compared to 84.2% in 2015 (Spalinger 2016a). Ivanof Bay had the highest number of new shell male crab, while Chignik Bay had the highest number of old and very old shell male crab in the Chignik District (Figures 19 and 20).

Abundance estimates were derived for each size and sex category of Tanner crab by surveyed locale (Appendix D3). The 2016 Chignik District Tanner crab abundance was estimated at 2.2 million crab, a decrease from 8.7 million crab in 2015 and the lowest abundance estimate since 1995 (Table 7). Juvenile female crab and male crab <92 mm CW showed the largest decreases from the prior year (Figure 21). The estimated abundance of legal-sized male Tanner crab in 2016 decreased from 0.3 million crab in 2015 to 0.1 million crab (Table 7). Mature male abundance estimates from the 2016 survey did not meet regulatory requirements to open commercial Tanner crab fishing in the Chignik District in 2017 (Table 4).

The estimated number of adult female Tanner crab in 2016 increased by 3.2 million crab from the 2015 estimate in the South Peninsula District and decreased by 1.4 million crab in the Chignik District (Table 7). Egg clutches that were more than half full were found in 84.2% (1,297) of the 1,541 adult female Tanner crab examined in the South Peninsula District and in 83.4% (366) of the 439 adult females in the Chignik District (Figure 22). Multiparous females in the South Peninsula District accounted for 78.5% (1,209) of adult female Tanner crab examined in 2016 compared to 26.3% in 2015 (Spalinger 2016a). In the Chignik District, 82.7% (363) of adult females examined during the 2016 survey were multiparous, more than in 2015 (15.4%; Spalinger 2016a).

Red King Crab

The Alaska Peninsula king crab management area consists of waters west of Cape Kumlik and east of Scotch Cap Light (5 AAC 34.500), approximately corresponding to the South Peninsula and Chignik Tanner crab management district boundaries. The 2016 abundance estimate decreased from 582,180 crab in 2015 to 208,789 crab in 2016 (Table 5). A total of 511 male and 453 female red king crab were captured in the Alaska Peninsula Area, most of which were from Cold Bay (Figure 10). Male king crab mean carapace length was 103.7 mm and female red king crab mean carapace length was 101.9 mm. The majority (52.1%; 49) of female king crab

examined were juveniles. The patchy distribution of king crab in the sampling areas contributes to high annual variability in abundance estimates that may not be reflective of a changing population.

Groundfish

The CPUE of all species from sample hauls in the South Alaska Peninsula and Chignik groundfish registration areas was 566 kg/km towed, with groundfish species comprising 82.5% of the total animal catch. Flathead sole (29.3%), arrowtooth flounder (21.3%), and yellowfin sole (11.9%) were the dominant species by weight captured in the survey followed by Pacific halibut (4.1%) and Tanner crab (3.7%; Table 8). These species, with the exception of Pacific halibut, have been among the top 6 species in recent surveys (Spalinger 2013, 2014, 2015a, 2016a; Figure 12). In 2016, for the first time in survey history, walleye pollock was not one of the top 4 species captured by weight in the South Alaska Peninsula and Chignik areas.

Length measurements were taken from 15,598 fish representing 34 groundfish species in the South Alaska Peninsula and Chignik areas. Arrowtooth flounder and flathead sole were found area-wide (Figure 23). The largest concentrations of northern rock sole were west of Kupreanof Point, as were the highest concentrations of yellowfin sole (Figure 23). Sablefish were found in small numbers along the Alaska Peninsula (Figure 24). Rougheye rockfish were more abundant east of Kupreanof Point, while Pacific cod were abundant throughout the survey area. Walleye pollock were found along the Alaska Peninsula, in greatest numbers west of Kupreanof Point (Figure 24).

EASTERN ALEUTIAN

In the Eastern Aleutian Tanner crab District, 21 hauls (haul numbers 239–259) were completed from July 30 to August 4 (Appendices C13–C14). The total area used to determine abundance estimates was 461.3 km^2 (Appendix B2).

Tanner Crab

The 2016 Eastern Aleutian District survey captured 1,213 male and 2,096 female Tanner crab. Tanner crab catch ranged from 0 to 787 animals per haul, with the highest CPUE of 425 crab per km towed in Makushin Bay at Station MKC (Figure 25). Mean CW was 96.2 mm for males and 80.3 mm for females. Size frequencies of male Tanner crab in the Eastern Aleutian District showed a small mode at 95 mm CW (Figure 4). Most females were between 80 mm CW and 90 mm CW and of the 810 mature female Tanner crab sampled, 84.4% (684) had an egg clutch greater than half full (Figure 22).

Abundance estimates were derived for each size and sex category of Tanner crab by surveyed locale (Appendix D4). The Tanner crab abundance estimate for the Eastern Aleutian District in 2016 was 2.8 million crab, a decrease from 3.6 million crab in 2015 (Table 9). The 2016 legal-sized male Tanner crab abundance was estimated to be 40,975 crab, a decrease from 78,901 legal males in 2015, with Makushin Bay having the largest abundance of legal-sized male crab. Based on the Tanner crab harvest strategy (5 AAC 35.509), only the Makushin/Skan Bay Section was above the mature male abundance threshold, but did not satisfy the minimum GHL criteria to open a fishery (Table 4). The 2017 Eastern Aleutian District Tanner crab fishery did not open to commercial fishing.

Red King Crab

Red king crab abundance in the surveyed areas around Akutan and Unalaska islands remains at historic low levels. A total of 1 male red king crab was captured during the 2016 trawl survey in Makushin Bay.

Groundfish

The 2016 trawl survey stations in the Eastern Aleutian Tanner crab District are within the Aleutian Islands District of the Bering Sea-Aleutian Islands groundfish Registration Area. The CPUE of all species from sample hauls in that area was 489 kg/km towed, with groundfish species comprising 82.4% of the animal catch. Walleye pollock was the dominant species by weight (24.7%), followed by arrowtooth flounder (24.2%), flathead sole (14.6%), rex sole (6.0%), and Pacific cod (4.5%; Table 10, Figure 12).

Length measurements were taken from 2,552 fish representing 24 species during the 2016 eastern Aleutian survey. Arrowtooth flounder, flathead sole, Pacific cod, and walleye pollock were common around Unalaska and Akutan islands (Figures 26 and 27). Most northern and southern rock sole were found around Unalaska and Akutan bays (Figure 26). Yellowfin sole were observed in Akutan and Makushin bays (Figure 26). Sablefish were found in small numbers around Akutan and Unalaska islands, whereas rougheye rockfish were only found around Unalaska Island (Figure 27).

WEATHERVANE SCALLOPS

Weathervane scallop shell height measurements were collected during the 2016 survey. Eighty-three percent of all weathervane scallops caught were located in the Kodiak Area (Figure 28). The 1,153 sampled scallops averaged 151.1 mm in shell height (Figure 29). This was an increase from 147.0 mm in 2015 and above the average height since scallop measurements were first collected in 1999 (Figure 30).

SKATES

Skate species, sex, and length were determined for each skate caught during the 2016 trawl survey. A total of 3,015 skates were captured and measured from all districts surveyed. Bering skates made up 37.9% (1,143) of the total number of skates caught and averaged 29.7 cm from snout to anterior notch of the pectoral fin (Figure 31). Longnose skates comprised 27.3% (823) of the total number of skates caught and averaged 46.1 cm in length. Big skates comprised 25.5% (770) of the number of skates caught and had an average length of 60.0 cm. Aleutian skates accounted for 6.7% (183) of all skates caught and averaged 53.2 cm, while Alaska skates comprised 3.2% (96) and averaged 42.6 cm (Figure 31). Larger skate species, big and Aleutian skates, were mostly female (big skates: 80.1% [617] female; Aleutian skates: 68.9% [126] female), whereas the smaller species, longnose, Bering, and Alaska skates, were composed of 49.3% (406), 48.4% (553), and 44.8% (45) females respectively. Although Bering skates were the most abundant skate species encountered during the survey, they accounted for only 10.1% (1,961 kg) of the total skate catch by weight. Big skates accounted for 54.9% (10,668 kg) of the total skate catch by weight.

Skates were captured throughout the survey area, although species abundance varied by area. Bering skates were most abundant around Kodiak and Unalaska islands but were absent from bays along the Alaska Peninsula west of Kupreanof Point (Figure 32). Aleutian and Alaska

skates were found throughout the survey area with higher catches of Aleutian skates around Kodiak Island (Figure 32). Most longnose skates were captured east of the Shumagin Islands (Figure 33). Big skates were common throughout the survey area east of Akutan Island (Figure 33).

SEA STAR WASTING DISEASE MONITORING

Sea stars showing symptoms of sea star wasting disease were observed from 2 hauls in 2016. Observations were reported and photos sent to www.gordon.science.oregonstate.edu/sea_star_wasting/observation_log/.

WATER TEMPERATURE

Near-bottom temperatures (~2 m above sea floor) ranged from 4.94°C (Deadman Bay, stations ALQ and ALP) to 12.62°C (Terror Bay, Station KUYX), with an average of 7.30°C (Appendix B1). The bay with the coolest average near-bottom haul temperature was Deadman Bay (4.96°C), sampled during early July at an average depth of 144 m in the Kodiak District. The bay with the warmest average haul temperature was Cold Bay (10.38°C), sampled during mid-August at an average depth of 66 m in the South Peninsula District (Figure 34).

The average survey temperature in 2016 was 0.52°C higher than 2015. Average survey temperatures have been increasing since 2012. The 2016 average is the highest on record since temperature recording began in 1990 (Table 11).

SURVEY LIMITATIONS

The large-mesh trawl survey operates under the assumption that survey catch rates are proportional to true abundance of the species of interest; however, the survey has limitations in its ability to estimate abundance across all species. Species whose populations extend into areas untrawlable by the survey gear or species whose populations extend beyond the depth range and area covered by the survey may be underrepresented.

Determining abundance from trawl survey data that can be compared from year to year requires fish distribution, fish behavior in relation to the trawl, and trawl performance to be constant over time. By maintaining standardized gear and fishing practices within and between annual surveys we assume the following:

1. trawl performance is constant under various conditions,
2. area swept by the trawl is known and constant under various conditions, and
3. species and size selection by the trawl is constant under various conditions.

The large-mesh trawl survey assumes that all sizes and sexes comprising the population of interest are equally accessible to survey gear, and all animals in the trawl path are captured. This may not be the case, as smaller animals can pass through the larger net mesh to avoid capture (size selectivity), some animals may be able to outswim the trawl, or escape under the footrope (escapement) and some fish may actually be “herded” into the trawl path by the doors and bridles in front of the net. These limitations may result in biased population estimates; however, standardized fishing gear, fishing practices, and sampling methods provide constant and proportional bias allowing estimates to be compared year to year.

Because of these limitations, the abundance estimates derived using trawl survey data are best considered relative abundance indices used to monitor changes in populations over time.

REFERENCES CITED

Alverson, D. L., and W. T. Pereyra. 1969. Demersal fish explorations in the northeastern Pacific Ocean–an evaluation of exploratory fishing methods and analytical approaches to stock size and yield forecasts. Journal of the Fisheries Research Board of Canada 26: 1985–2001.

Colgate, W. A. 1984. Westward Region Tanner crab, *Chionoecetes bairdi*, population index surveys. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Report to Industry, Kodiak.

Colgate, W. A., and D. M. Hicks. 1982. Investigations and life history and fishery for Tanner crab (*Chionoecetes bairdi*) in Alaska. Alaska Department of Fish and Game, Project No. 5-47-R. Commercial Fisheries Research and Development Act.

Colgate, W. A., and D. M. Hicks. 1983. Investigations of life history and fishery for Tanner crab (*Chionoecetes bairdi*) in the Westward Region, Alaska, 1982. Alaska Department of Fish and Game, Division of Commercial Fisheries, Technical Data Report 96, Juneau. http://www.sf.adfg.state.ak.us/FedAidPDFs/tdr.096.pdf

Jackson, D. R. 1990. A bottom trawl survey of crab and groundfish in the Kodiak Island and Alaska Peninsula Areas, June through September, 1989. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K90-22, Kodiak. http://www.sf.adfg.state.ak.us/FedAidPDFs/rir.4k.1990.22.pdf

Kingsbury, A. P., and K. E. James. 1971. Abundance and composition of king crabs in the Alitak and Kaguyak Bay areas during April and June 1970. Alaska Department of Fish and Game, Division of Commercial Fisheries, Informational Leaflet 152, Kodiak. http://www.sf.adfg.state.ak.us/FedAidPDFs/afrbil.152.pdf

McMullen, J. C. 1967a. King crab, *Paralithodes camtschatica* (Tilesius) offshore breeding study on Marmot Flats, Kodiak Island, spring of 1967. Alaska Department of Fish and Game, Division of Commercial Fisheries, Research Section, Informational Leaflet 112, Juneau. http://www.sf.adfg.state.ak.us/FedAidPDFs/afrbil.112.pdf

McMullen, J. C. 1967b. A preliminary study of king crab (*Paralithodes camtschatica)* ocean reproduction and the delineation of the Kodiak District continental shelf environmental zones. Alaska Department of Fish and Game, Division of Commercial Fisheries, Research Section, Informational Leaflet 93, Juneau. http://www.sf.adfg.state.ak.us/FedAidPDFs/afrbil.093.pdf

McMullen, J. C. 1968. Investigation of king crab ocean reproduction and brood stock composition, Kodiak Island. Alaska Department of Fish and Game, Division of Commercial Fisheries, Research Section, Informational Leaflet 126, Juneau. http://www.sf.adfg.state.ak.us/FedAidPDFs/afrbil.126.pdf

Reynolds, R. E., and G. C. Powell. 1964. King crab, *Paralithodes camtschatica* (Tilesius), trawl survey of Long Island Bank, east of Kodiak Island, Alaska, June 1963. Alaska Department of Fish and Game, Division of Biological Research, Informational Leaflet 44, Kodiak. http://www.sf.adfg.state.ak.us/FedAidPDFs/afrbil.044.pdf

Sagalkin, N. H., and K. Spalinger. 2011. Annual management report for shellfish fisheries in the Kodiak, Chignik, and Alaska Peninsula Areas, 2010. Alaska Department of Fish and Game, Fishery Management Report No. 11-43, Anchorage. http://www.adfg.alaska.gov/FedAidPDFs/FMR11-43.pdf

Spalinger, K. 2013. Bottom trawl survey of crab and groundfish: Kodiak, Chignik, South Peninsula, and Eastern Aleutians Management Districts, 2012. Alaska Department of Fish and Game, Fishery Management Report No. 13-27, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/FMR13-27.pdf

Spalinger, K. 2014. Bottom trawl survey of crab and groundfish: Kodiak, Chignik, South Peninsula, and Eastern Aleutians Management Districts, 2013. Alaska Department of Fish and Game, Fishery Management Report No. 14-34, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/FMR14-34.pdf

Spalinger, K. 2015a. Bottom trawl survey of crab and groundfish: Kodiak, Chignik, South Peninsula, and Eastern Aleutians Management Districts, 2014. Alaska Department of Fish and Game, Fishery Management Report No. 15-27, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/FMR15-27.pdf

REFERENCES CITED (Continued)

Spalinger, K. 2015b. Operational plan: Large-mesh bottom trawl survey of crab and groundfish: Kodiak, Chignik, South Peninsula, and Eastern Aleutian Management districts—Standard protocol 2015-2019. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Operational Plan ROP.CF.4K.2015.20, Kodiak.

Spalinger, K. 2016a. Large-mesh bottom trawl survey of crab and groundfish: Kodiak, Chignik, South Peninsula, and Eastern Aleutians Management Districts, 2015. Alaska Department of Fish and Game, Fishery Management Report No. 16-20, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/FMR16-20.pdf

Spalinger, K. 2016b. Special project plan: 2016 large-mesh bottom trawl survey of crab and groundfish for Kodiak, Chignik, South Peninsula, and Eastern Aleutian districts. Alaska Department of Fish and Game, Regional Information Report 4K16-02, Kodiak.

Spalinger, K. 2017. Project report to the Aleutians East Borough summarizing results of the 2013–2016 South Peninsula exploratory Tanner crab trawl survey. Alaska Department of Fish and Game, Regional Information Report 4K17-02, Kodiak.

Urban, D., and I. Vining. 1999. Reconstruction of historic abundances of Kodiak, Chignik, and South Peninsula Tanner crab, report to the Board of Fisheries. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K99-17, Kodiak.

Urban, D., D. Pengilly, D. Jackson, and I. Vining. 1999. A Tanner crab harvest strategy for Kodiak, Chignik, and the South Peninsula Districts, report to the Board of Fisheries. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Regional Information Report 4K99-21, Kodiak.

TABLES AND FIGURES

Table 1.–Number of bottom trawl survey hauls used to determine king and Tanner crab abundance, by Tanner crab management district, 1988–2016.

Year	Kodiak	Chignik	South Peninsula	Eastern Aleutian	Total
1988	217	0	108	0	325
1989	221	35	132	0	388
1990	217	37	123	46	423
1991	228	33	117	41	419
1992	209	29	114	0	352
1993	231	35	111	0	377
1994	200	34	122	44	400
1995	218	31	0	38	287
1996	223	27	122	0	372
1997	218	34	116	0	368
1998	219	35	93	0	347
1999	231	36	93	39	399
2000	221	37	94	35	387
2001	222	36	94	0	352
2002	226	47	95	0	368
2003	211	45	93	39	388
2004	226	45	94	24	389
2005	230	46	92	23	391
2006	216	46	90	28	380
2007	211	45	92	23	371
2008	215	44	89	23	371
2009	215	46	93	28	382
2010	213	45	90	23	371
2011	207	46	91	23	367
2012	209	46	91	28	374
2013	208	45	93	23	369
2014	211	45	92	23	371
2015	211	46	90	26	373
2016	209	46	93	21	369

Note: All hauls occurring in Chignik and South Peninsula Tanner crab districts are within the Alaska Peninsula king crab area.

Table 2.–Number of male red king and male Tanner crabs by management unit, crab cohort, and shell condition captured in the 2016 large-mesh bottom trawl survey.

		SHELL CONDITION				
Cohort	Definition	Soft/ New pliable	New	Old	Very old/ Very very old	Total
Kodiak Area red king crab						
Prerecruit IV	<95 mm CL	0	101	0	0	101
Prerecruit III	95–112 mm CL	0	135	0	0	135
Prerecruit II	113–130 mm CL	0	17	0	0	17
Prerecruit I	>130 mm CL and sublegal	0	6	0	0	6
Recruit	<164 mm CL and legal soft/new	0	17	–	–	17
Postrecruit	≥164 mm CL or legal and not soft/new	0	76	95	26	197
Total		0	352	95	26	473
Alaska Peninsula Area red king crab						
Prerecruit IV	<79 mm CL	0	14	0	0	14
Prerecruit III	79–95 mm CL	0	252	0	0	252
Prerecruit II	96–115 mm CL	7	155	0	0	162
Prerecruit I	>115 mm CL and sublegal	0	29	0	0	29
Recruit	<152 mm CL and legal soft/new	0	17	–	–	17
Postrecruit	≥152 mm CL or legal and not soft/new	0	34	6	3	43
Total		7	501	6	3	517
Kodiak District Tanner crab						
Prerecruit IV	<70 mm CW	733	3,497	16	2	4,248
Prerecruit III	70–91 mm CW	66	2,863	180	24	3,133
Prerecruit II	92–114 mm CW	23	8,725	909	134	9,791
Prerecruit I	≥115 mm CW and sublegal	13	7,317	1,200	158	8,688
Recruit	<165 mm CW and legal soft/new	7	659	–	–	666
Postrecruit	≥165 mm CW or legal and not soft/new	0	4	525	56	585
Total		842	23,065	2,830	374	27,111
Mature only	≥115 mm CW	20	7,980	1,725	214	9,939
Chignik District Tanner crab						
Prerecruit IV	<70 mm CW	17	143	0	0	160
Prerecruit III	70–91 mm CW	0	54	7	0	61
Prerecruit II	92–114 mm CW	0	568	190	19	777
Prerecruit I	≥115 mm CW and sublegal	0	538	151	5	694
Recruit	<165 mm CW and legal soft/new	0	70	–	–	70
Postrecruit	≥165 mm CW or legal and not soft/new	0	1	10	2	13
Total		17	1,374	358	26	1,775
Mature only	≥115 mm CW	0	609	161	7	777

-continued-

Table 2.–Page 2 of 2.

		SHELL CONDITION				
Cohort	Definition	Soft/ New pliable	New	Old	Very old/ Very very old	Total
South Peninsula District Tanner crab						
Prerecruit IV	<70 mm CW	64	307	29	2	402
Prerecruit III	70–91 mm CW	4	190	90	21	305
Prerecruit II	92–114 mm CW	4	809	1,530	320	2,663
Prerecruit I	≥115 mm CW and sublegal	3	765	1,720	689	3,177
Recruit	<165 mm CW and legal soft/new	0	133	–	–	133
Postrecruit	≥165 mm CW or legal and not soft/new	0	0	152	262	414
Total		75	2,204	3,521	1,294	7,094
Mature only	≥115 mm CW	3	898	1,872	951	3,724
Eastern Aleutian District Tanner crab						
Prerecruit IV	<70 mm CW	13	147	2	0	162
Prerecruit III	70–91 mm CW	0	182	84	11	277
Prerecruit II	92–114 mm CW	0	132	303	34	469
Prerecruit I	≥115 mm CW and sublegal	0	51	139	64	254
Recruit	<165 mm CW and legal soft/new	0	8	–	–	8
Postrecruit	≥165 mm CW or legal and not soft/new	0	0	31	12	43
Total		13	520	559	121	1,213
Mature only	≥115 mm CW	0	59	170	76	305

Note: En dashes indicate not applicable (NA).

Table 3.–Tanner crab abundance estimates from bottom trawl surveys in the Kodiak District, 1988–2016.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
Northeast Section													
1988	1,354,563	217,078	1,571,638	1,274,732	289,983	268,883	326,707	190,027	15,768	13,809	219,603	2,379,906	3,951,540
1989	3,562,665	2,901,955	6,464,622	3,450,667	1,199,743	1,310,029	1,079,253	599,728	70,706	112,008	782,443	7,822,131	14,286,750
1990	1,146,817	1,903,207	3,050,024	943,650	1,037,219	720,004	586,379	257,979	56,545	54,928	369,451	3,656,706	6,706,726
1991	3,144,089	1,651,931	4,796,019	2,582,124	1,110,887	1,120,967	992,477	429,496	19,580	52,116	501,194	6,307,649	11,103,662
1992	1,560,481	1,116,510	2,676,992	1,199,954	1,136,238	843,412	746,968	206,437	14,149	7,070	227,655	4,154,223	6,831,213
1993	1,003,154	712,050	1,715,206	957,185	286,858	493,452	515,267	265,334	21,702	16,787	303,823	2,556,583	4,271,788
1994	379,160	675,363	1,054,522	369,462	145,016	177,380	278,265	87,780	43,550	2,401	133,732	1,103,859	2,158,380
1995	2,881,474	634,972	3,516,446	2,802,299	689,231	194,665	172,907	9,823	54,115	0	63,938	3,923,037	7,439,481
1996	1,537,904	1,245,559	2,783,465	1,191,112	1,555,298	844,004	276,488	29,604	34,066	1,604	65,273	3,932,173	6,715,636
1997	367,576	667,066	1,034,641	389,356	829,336	821,252	414,430	40,953	18,402	0	61,632	2,516,008	3,550,650
1998	1,432,219	2,489,211	3,921,433	1,035,848	2,227,219	1,821,360	1,390,255	233,803	42,610	11,255	287,669	6,763,756	10,685,184
1999	1,548,521	948,973	2,497,494	1,758,178	265,791	564,559	709,719	173,790	104,130	1,904	279,826	3,578,072	6,075,563
2000	5,612,101	1,392,676	7,004,776	5,488,536	1,142,866	701,967	813,908	296,792	232,186	12,240	541,220	8,693,242	15,698,017
2001	14,224,509	4,717,370	18,941,884	13,744,180	4,971,609	2,796,557	1,458,801	160,749	249,893	2,963	413,604	23,384,747	42,326,627
2002	3,556,337	2,324,491	5,880,827	3,822,565	2,408,504	2,343,203	1,608,007	186,087	45,108	0	231,195	10,413,463	16,294,283
2003	1,397,871	2,655,317	4,053,190	1,527,024	1,671,604	2,965,222	2,719,471	367,217	134,752	5,115	507,088	9,390,400	13,443,591
2004	2,675,275	4,068,495	6,743,769	2,370,872	1,261,423	2,032,007	2,900,407	871,582	128,281	13,008	1,012,868	9,577,567	16,321,335
2005	3,640,106	3,090,388	6,730,489	3,927,579	1,467,199	1,434,734	2,797,064	784,428	257,122	4,905	1,046,453	10,673,021	17,403,505
2006	8,299,208	1,778,568	10,077,776	7,409,023	2,315,274	941,307	918,622	124,433	112,352	7,640	244,424	11,828,644	21,906,413
2007	5,647,488	2,056,515	7,704,011	4,069,065	2,309,251	2,300,020	1,929,099	174,433	167,966	0	342,396	10,949,823	18,653,830
2008	6,202,343	2,887,383	9,089,720	5,634,536	1,841,866	2,523,683	1,749,983	236,512	99,876	3,798	340,185	12,090,245	21,179,965
2009	3,151,614	1,871,597	5,023,208	2,616,365	2,911,974	3,088,462	2,665,171	660,261	27,141	0	687,402	11,969,368	16,992,570
2010	2,609,808	3,919,178	6,528,986	2,409,673	1,654,530	1,082,441	2,154,069	508,471	284,974	13,066	806,513	8,107,216	14,636,198
2011	1,170,402	951,553	2,122,530	1,225,874	216,752	378,393	860,921	89,261	180,250	2,564	282,944	2,964,876	5,087,405
2012	4,060,858	642,565	4,703,423	3,971,588	165,200	203,056	564,008	38,217	179,306	0	217,523	5,121,379	9,824,797
2013	24,153,683	924,263	25,077,944	23,958,866	1,505,604	424,102	217,363	38,337	66,306	0	109,389	26,215,315	51,293,257
2014	5,588,535	3,939,670	9,528,207	4,587,128	2,708,974	1,449,195	358,933	14,374	132,663	6,340	153,376	9,257,611	18,785,815
2015	446,120	1,556,365	2,002,486	456,990	854,937	587,615	205,224	25,568	30,355	0	55,923	2,160,691	4,163,174
2016	762,246	1,320,996	2,083,245	647,522	390,092	448,772	242,371	19,546	46,001	0	65,547	1,794,303	3,877,545
Eastside Section													
1988	2,061,612	762,131	2,823,741	1,599,434	434,894	610,398	689,188	279,635	97,689	1,914	379,236	3,713,138	6,536,873
1989	2,317,720	3,435,663	5,753,382	1,980,606	1,228,590	1,376,860	1,267,477	803,733	265,385	29,979	1,099,095	6,952,620	12,705,993
1990	1,474,420	9,743,534	11,217,949	1,248,609	670,041	1,957,553	3,885,702	752,612	135,298	57,684	945,596	8,707,493	19,925,444

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Table 3.–Page 2 of 7.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
1991	1,502,408	3,688,811	5,191,212	1,208,037	305,498	665,703	2,695,398	3,037,784	495,211	38,804	3,571,802	8,446,428	13,637,637
1992	1,496,933	1,974,291	3,471,219	1,614,073	332,577	503,076	1,607,073	538,014	270,350	76,998	885,359	4,942,146	8,413,360
1993	1,723,645	1,504,593	3,228,233	1,362,718	252,488	406,370	1,003,473	116,158	375,400	18,761	510,320	3,535,354	6,763,587
1994	1,768,545	571,131	2,339,674	1,311,718	706,289	465,080	572,335	47,970	122,224	2,837	173,030	3,228,440	5,568,113
1995	3,796,919	505,422	4,302,338	3,326,875	594,529	456,568	411,404	28,656	84,020	2,394	115,069	4,904,441	9,206,776
1996	2,099,149	916,541	3,015,687	2,187,039	705,080	609,876	849,489	107,557	179,489	14,539	301,583	4,653,060	7,668,750
1997	802,759	652,062	1,454,823	772,755	678,463	724,638	708,745	118,243	104,662	15,679	238,584	3,123,182	4,578,002
1998	4,404,845	2,431,490	6,836,331	3,867,630	1,770,282	2,730,752	2,243,275	294,484	440,937	86,566	821,987	11,433,925	18,270,254
1999	6,310,010	1,600,247	7,910,253	5,119,000	408,238	1,087,114	2,085,986	382,318	799,959	120,985	1,303,262	10,003,590	17,913,837
2000	5,398,723	3,674,341	9,073,059	5,190,112	1,536,413	723,524	1,849,312	491,788	888,960	79,337	1,460,088	10,759,437	19,832,495
2001	28,315,476	3,112,801	31,428,278	22,797,216	3,242,923	1,459,292	1,198,178	72,247	1,114,209	87,196	1,273,651	29,971,255	61,399,533
2002	15,562,836	5,106,468	20,669,305	4,210,311	9,013,454	2,980,690	1,443,261	278,685	695,323	40,874	1,014,881	18,662,589	39,331,894
2003	2,538,553	10,743,918	13,282,473	2,658,298	3,103,448	10,681,111	5,693,592	224,498	497,337	26,157	747,989	22,884,433	36,166,904
2004	4,253,152	3,190,654	7,443,810	3,826,028	1,146,767	3,560,082	8,910,259	1,242,489	210,371	12,804	1,465,666	18,908,799	26,352,608
2005	1,555,530	3,316,790	4,872,320	1,768,741	135,364	1,329,192	7,272,525	3,119,978	562,552	52,577	3,735,106	14,240,924	19,113,246
2006	31,188,007	560,029	31,748,035	27,977,142	510,977	593,571	4,873,241	762,936	1,972,515	23,297	2,758,751	36,713,676	68,461,704
2007	41,719,338	2,377,545	44,096,877	21,273,691	25,935,359	1,605,777	3,832,203	211,070	1,459,224	19,162	1,689,456	54,336,471	98,433,348
2008	9,194,846	14,228,404	23,423,248	6,778,541	4,641,796	12,247,181	2,638,020	96,815	1,000,301	32,203	1,129,318	27,434,846	50,858,092
2009	2,971,070	10,171,061	13,142,131	713,239	3,485,397	5,299,719	13,579,233	2,465,072	283,128	39,072	2,787,271	25,864,842	39,006,970
2010	2,270,293	6,593,711	8,864,007	1,988,996	276,452	2,240,091	10,231,640	3,525,464	1,085,738	103,669	4,714,871	19,452,032	28,316,042
2011	5,284,450	2,629,107	7,917,357	5,207,569	106,517	562,576	4,291,741	1,081,083	1,298,589	55,296	2,434,967	12,603,359	20,520,713
2012	2,580,953	528,942	3,109,895	2,551,792	114,209	449,397	4,005,572	572,867	2,120,042	141,893	2,834,799	9,955,764	13,065,652
2013	31,043,971	540,413	31,584,385	29,714,530	1,410,781	428,598	1,102,368	14,128	611,938	28,389	654,455	33,310,730	64,895,112
2014	21,630,034	1,692,635	23,322,673	14,496,219	7,153,197	1,306,894	591,517	13,351	278,706	1,128	293,185	23,841,009	47,163,678
2015	1,447,891	3,605,608	5,053,497	1,229,573	2,571,766	3,442,996	642,003	79,144	65,453	13,843	158,439	8,044,769	13,098,266
2016	1,180,550	10,511,567	11,692,115	1,146,547	2,464,945	7,700,220	5,496,141	310,276	184,976	4,052	499,302	17,307,144	28,999,256
Southeast Section													
1988	200,497	283,473	483,970	157,833	159,910	420,986	1,034,596	663,903	123,022	46,508	833,434	2,606,755	3,090,725
1989	889,864	433,255	1,323,119	678,165	82,753	165,490	478,213	152,444	69,701	9,771	231,914	1,636,530	2,959,639
1990	1,103,929	667,540	1,771,468	1,042,974	104,310	226,362	509,185	279,905	100,818	4,420	385,142	2,267,965	4,039,429
1991	4,622,254	846,496	5,468,750	4,411,554	418,644	247,522	332,468	171,063	33,757	7,382	212,203	5,622,382	11,091,131
1992	2,145,762	1,295,586	3,441,342	1,640,284	676,401	433,272	576,851	32,734	131,767	9,970	174,472	3,501,275	6,942,612
1993	3,937,489	599,152	4,536,636	3,662,608	249,525	433,469	414,651	27,357	116,382	8,769	152,508	4,912,758	9,449,390
1994	112,690	222,891	335,580	88,248	28,664	87,917	474,049	108,209	54,865	4,252	167,325	846,202	1,181,783

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Table 3.–Page 3 of 7.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
1995	2,728,374	110,416	2,838,788	2,425,956	15,058	28,567	82,914	76,922	47,722	2,370	127,013	2,679,503	5,518,291
1996	2,567,949	141,850	2,709,796	2,275,506	486,974	112,033	124,449	55,489	68,182	7,990	131,660	3,130,611	5,840,404
1997	460,020	141,759	601,779	361,126	206,539	114,929	45,617	3,133	45,000	1,337	49,471	777,677	1,379,455
1998	1,989,704	128,041	2,117,746	2,242,548	47,419	92,558	228,165	28,851	26,243	866	55,960	2,666,650	4,784,391
1999	3,996,432	162,133	4,158,564	4,106,466	99,398	96,118	196,110	127,718	66,631	8,583	202,931	4,701,024	8,859,587
2000	3,429,039	365,885	3,794,922	3,758,976	303,921	81,514	189,459	19,224	127,295	253	146,773	4,480,631	8,275,551
2001	9,488,305	2,951,287	12,439,595	9,581,995	2,259,658	347,865	323,337	48,356	226,017	13,947	288,322	12,801,173	25,240,766
2002	2,704,520	1,415,379	4,119,898	3,062,744	4,500,968	2,670,371	405,352	21,057	365,786	5,094	391,938	11,031,370	15,151,262
2003	485,324	486,433	971,755	633,559	1,571,809	1,719,939	1,007,266	53,344	101,025	0	154,368	5,086,935	6,058,690
2004	4,557,134	362,642	4,919,772	4,319,951	438,628	604,252	1,734,860	254,883	61,506	0	316,387	7,414,074	12,333,843
2005	3,974,816	543,333	4,518,148	3,772,471	377,237	482,212	1,505,853	103,931	212,793	1,411	318,135	6,455,897	10,974,042
2006	14,229,497	1,407,828	15,637,326	14,507,269	1,003,803	554,434	1,071,796	7,806	301,186	0	308,990	17,446,288	33,083,614
2007	11,147,631	4,023,885	15,171,517	8,136,054	8,499,631	2,091,359	1,137,307	10,109	296,480	0	306,590	20,170,931	35,342,446
2008	1,257,827	1,789,092	3,046,919	1,082,572	1,697,133	3,423,425	1,317,045	28,846	135,311	0	164,157	7,684,324	10,731,234
2009	461,747	953,150	1,414,896	575,126	562,448	1,241,843	3,237,290	689,613	41,942	5,463	737,020	6,353,725	7,768,620
2010	2,765,279	1,200,706	3,965,983	2,152,156	291,725	1,189,260	4,497,766	1,051,935	547,876	7,263	1,607,073	9,737,972	13,703,955
2011	1,680,379	396,584	2,076,961	1,793,239	74,326	275,014	1,984,475	349,879	1,443,757	43,057	1,836,691	5,963,736	8,040,692
2012	2,641,094	117,645	2,758,739	2,294,756	1,061,299	328,130	1,278,907	13,636	899,049	27,446	940,131	5,903,217	8,661,956
2013	14,824,757	327,711	15,152,466	13,028,248	744,088	179,865	509,315	32,203	437,505	13,646	483,354	14,944,865	30,097,334
2014	7,502,972	3,258,512	10,761,485	5,062,376	3,857,090	1,475,411	834,941	5,949	1,233,588	33,414	1,272,952	12,502,771	23,264,259
2015	503,717	828,631	1,332,347	387,771	768,767	1,389,686	706,388	51,276	30,988	990	83,254	3,335,861	4,668,205
2016	2,610,392	841,734	3,452,125	2,565,037	58,101	279,590	1,084,647	49,367	135,920	0	185,287	4,172,660	7,624,782
Southwest Section													
1988	168,241	101,027	269,266	146,165	12,664	42,072	441,675	805,810	37,444	36,343	879,598	1,522,179	1,791,445
1989	2,161,446	149,408	2,310,854	1,974,657	115,379	120,845	251,155	184,204	85,314	54,731	324,251	2,786,286	5,097,141
1990	2,378,410	604,993	2,983,400	1,914,348	844,074	463,410	353,987	35,574	34,465	6,232	76,272	3,652,090	6,635,489
1991	1,245,204	184,801	1,430,009	1,026,247	211,779	325,523	482,974	93,291	37,950	3,471	134,713	2,181,238	3,611,240
1992	457,701	199,984	657,687	452,004	154,433	321,545	234,993	268,797	67,275	4,972	347,850	1,510,826	2,168,510
1993	6,656,831	244,880	6,901,712	6,173,568	505,032	182,383	392,983	251,151	69,761	13,352	334,263	7,588,231	14,489,938
1994	205,702	120,562	326,266	131,883	70,631	60,596	145,516	129,012	23,086	7,429	159,528	568,154	894,421
1995	151,983	91,200	243,183	137,703	57,629	109,652	124,067	33,632	48,012	0	81,642	510,695	753,877
1996	348,244	44,723	392,967	326,523	98,732	162,622	240,134	36,056	74,311	1,571	111,940	939,945	1,332,916
1997	265,172	66,131	331,303	255,708	102,022	82,314	185,339	123,764	88,079	3,169	216,032	841,415	1,172,719
1998	240,981	36,904	277,887	234,957	60,269	54,856	63,017	22,385	86,073	2,193	110,654	523,754	801,642

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Table 3.–Page 4 of 7.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
1999	816,972	30,112	847,079	844,138	56,872	45,036	176,080	33,257	119,806	4,314	157,380	1,279,504	2,126,585
2000	3,009,608	67,986	3,077,591	2,954,868	185,143	113,642	167,077	54,853	104,402	714	159,969	3,580,700	6,658,290
2001	9,672,768	316,212	9,988,979	7,059,524	3,525,999	295,809	217,015	117,119	74,703	1,972	193,797	11,292,141	21,281,118
2002	2,512,503	977,812	3,490,315	1,591,013	1,805,551	1,786,814	426,985	85,254	74,423	1,974	161,652	5,772,011	9,262,329
2003	89,552	308,930	398,483	74,124	335,702	799,556	1,319,622	115,208	89,783	8,873	213,865	2,742,868	3,141,350
2004	339,318	310,200	649,517	307,349	65,503	319,995	958,023	1,234,236	131,485	16,512	1,382,233	3,033,102	3,682,621
2005	594,163	226,717	820,882	566,754	43,965	158,694	593,624	337,438	467,100	22,971	827,508	2,190,542	3,011,422
2006	6,083,090	599,707	6,682,799	7,081,452	243,424	134,088	470,954	106,125	599,976	23,463	729,563	8,659,481	15,342,283
2007	10,427,476	1,418,621	11,846,098	8,459,186	3,214,163	511,501	613,319	135,796	1,052,076	29,074	1,216,944	14,015,110	25,861,206
2008	5,896,237	3,635,586	9,531,824	2,281,075	5,997,435	4,618,642	705,968	129,965	245,688	9,747	385,400	13,988,520	23,520,341
2009	372,548	2,355,494	2,728,040	185,107	537,600	2,512,879	3,365,105	239,277	140,077	8,254	387,610	6,988,301	9,716,347
2010	41,228	3,260,718	3,301,947	24,725	89,283	1,413,042	4,628,258	1,040,662	191,450	6,499	1,238,613	7,393,920	10,695,866
2011	351,460	682,149	1,033,969	340,014	9,730	59,931	770,507	330,665	421,889	13,094	766,008	1,946,186	2,980,159
2012	651,509	731,402	1,382,912	691,609	29,696	43,232	578,782	29,725	514,252	10,480	579,235	1,922,554	3,305,464
2013	19,348,907	242,245	19,591,156	18,807,043	527,903	138,491	413,483	1,202	307,769	5,957	314,928	20,201,853	39,793,007
2014	5,796,662	364,728	6,161,385	6,005,256	2,772,452	716,993	463,264	14,300	115,658	0	129,958	10,087,921	16,249,309
2015	1,369,584	1,115,833	2,485,418	674,077	1,983,536	1,322,929	440,869	75,075	80,231	2,627	157,933	4,579,340	7,064,760
2016	56,207	1,322,990	1,379,195	41,753	394,105	1,309,251	936,681	57,851	30,240	0	88,090	2,769,877	4,149,074
Westside Section													
1988	970,601	515,472	1,486,074	748,320	50,614	199,783	264,921	135,354	18,143	11,886	165,384	1,429,018	2,915,089
1989	3,479,271	551,919	4,031,190	2,765,719	496,645	261,120	283,878	115,149	19,287	4,741	139,177	3,946,536	7,977,729
1990	711,701	2,095,150	2,806,854	351,550	641,582	373,763	461,881	100,744	54,900	14,632	170,276	1,999,049	4,805,903
1991	191,465	566,348	757,814	130,432	145,919	484,967	439,399	35,343	22,320	4,211	61,876	1,262,593	2,020,406
1992	168,907	419,821	588,729	129,030	171,208	214,116	299,797	114,508	46,032	5,616	166,156	980,310	1,569,035
1993	397,675	569,780	967,457	266,120	160,850	148,165	263,960	45,811	86,363	6,767	138,938	978,040	1,945,497
1994	158,351	248,765	407,116	108,532	113,241	74,756	90,261	31,732	42,413	0	74,149	460,938	868,061
1995	168,592	394,759	563,352	107,727	163,412	158,089	135,944	14,105	88,641	2,203	104,951	670,125	1,233,481
1996	221,984	406,956	628,942	104,838	263,795	293,384	226,222	36,715	99,629	469	136,815	1,025,059	1,654,001
1997	221,626	675,157	896,784	83,886	291,925	416,764	292,420	67,195	62,405	2,605	132,205	1,217,201	2,113,986
1998	783,575	639,572	1,423,147	693,719	170,270	289,460	223,183	26,840	53,771	3,008	83,621	1,460,256	2,883,401
1999	786,633	303,891	1,090,528	495,747	389,828	252,141	208,931	43,439	102,079	8,631	154,151	1,500,799	2,591,322
2000	857,983	673,744	1,531,726	529,492	452,760	470,344	245,893	88,067	73,382	11,132	172,580	1,871,071	3,402,796
2001	1,838,858	867,797	2,706,655	1,454,818	690,480	406,475	419,781	61,894	74,190	9,850	145,933	3,117,483	5,824,141
2002	527,722	793,616	1,321,340	314,807	576,533	490,709	314,587	97,176	71,244	9,680	178,098	1,874,738	3,196,077

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Table 3.–Page 5 of 7.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2003	571,353	1,595,583	2,166,935	527,990	305,060	850,071	549,657	114,971	113,968	10,548	239,486	2,472,262	4,639,202
2004	348,491	536,566	885,057	318,080	123,002	164,582	183,538	105,808	75,246	6,710	187,762	976,964	1,862,027
2005	1,277,045	612,264	1,889,310	1,010,851	367,489	312,238	187,999	58,631	114,705	6,418	179,753	2,058,329	3,947,639
2006	2,743,480	1,978,839	4,722,322	2,050,866	1,069,393	739,258	422,756	61,494	242,097	26,030	329,622	4,611,892	9,334,219
2007	728,050	1,229,735	1,957,783	346,342	1,001,330	638,751	366,951	55,293	203,496	12,441	271,233	2,624,613	4,582,398
2008	1,512,322	1,677,824	3,190,145	1,337,898	816,547	1,306,246	1,483,097	216,263	28,473	18,447	263,184	5,206,972	8,397,115
2009	1,035,614	1,624,414	2,660,033	801,669	518,633	566,992	682,822	329,135	53,427	10,634	393,196	2,963,312	5,623,343
2010	487,127	1,154,821	1,641,949	449,979	262,351	403,098	397,571	137,521	140,056	15,631	293,211	1,806,207	3,448,153
2011	796,308	592,852	1,389,159	916,487	63,828	96,545	199,071	42,043	101,665	20,900	164,607	1,440,538	2,829,698
2012	1,230,971	597,220	1,828,188	1,210,838	694,666	197,830	142,793	48,115	69,367	20,940	138,422	2,384,543	4,212,731
2013	1,845,914	747,782	2,593,696	1,486,424	945,497	484,694	171,860	34,055	49,742	3,942	87,740	3,176,215	5,769,911
2014	487,317	1,304,338	1,791,655	201,481	647,794	727,617	549,343	66,180	35,895	3,573	105,649	2,231,878	4,023,535
2015	777,276	421,495	1,198,773	653,892	130,508	204,181	171,388	35,964	22,643	1,588	60,195	1,220,160	2,418,935
2016	1,234,892	1,170,363	2,405,251	860,497	268,734	246,642	159,084	16,797	47,240	929	64,969	1,599,927	4,005,180
North Mainland Section													
1988	3,803,918	864,861	4,668,774	3,414,071	165,284	455,217	1,183,668	754,408	82,256	19,542	856,202	6,074,429	10,743,199
1989	3,969,314	1,434,954	5,404,260	3,877,932	295,569	350,999	1,158,793	189,639	109,856	25,549	325,042	6,008,316	11,412,570
1990	6,785,956	3,258,002	10,043,956	5,787,780	2,123,024	755,595	1,447,654	105,810	113,735	12,042	231,587	10,345,625	20,389,574
1991	756,795	1,115,682	1,872,473	604,265	606,410	538,129	947,691	73,675	110,321	4,747	188,743	2,885,230	4,757,700
1992	2,380,859	898,210	3,279,064	2,277,881	225,267	394,130	760,276	115,928	71,015	18,074	205,016	3,862,553	7,141,614
1993	3,812,336	1,022,424	4,834,760	3,215,647	150,171	418,016	820,823	157,191	146,366	36,468	340,024	4,944,670	9,779,427
1994	3,023,464	536,326	3,559,785	2,228,793	544,326	232,789	360,222	143,779	116,171	58,654	318,600	3,684,721	7,244,504
1995	626,586	246,766	873,352	676,802	133,804	61,121	151,273	38,079	49,674	18,654	106,405	1,129,397	2,002,745
1996	4,440,247	390,480	4,830,724	4,282,618	340,132	215,938	341,477	34,667	164,164	21,683	220,512	5,400,663	10,231,385
1997	2,395,879	263,515	2,659,391	2,345,315	505,071	343,654	654,118	56,366	183,001	8,054	247,417	4,095,567	6,754,956
1998	3,768,977	228,212	3,997,185	3,527,326	316,628	274,498	293,843	7,596	121,637	15,550	144,781	4,557,071	8,554,251
1999	3,978,558	249,442	4,227,996	4,095,930	513,789	193,813	560,732	46,816	102,885	0	149,700	5,513,955	9,741,951
2000	4,426,732	535,607	4,962,337	4,544,305	1,373,199	537,535	345,613	66,809	57,974	2,151	126,932	6,927,573	11,889,904
2001	5,571,967	581,737	6,153,698	5,958,910	493,796	449,541	398,103	21,432	174,614	5,736	201,780	7,502,119	13,655,815
2002	7,070,671	651,122	7,721,788	7,272,356	2,446,359	930,488	220,236	9,268	26,941	358	36,568	10,905,999	18,627,785
2003	1,587,275	1,005,976	2,593,247	3,245,030	614,372	253,586	227,890	23,143	52,385	4,156	79,684	4,420,553	7,013,798
2004	4,827,287	273,465	5,100,750	4,066,870	288,413	396,743	417,827	28,863	52,195	5,164	86,221	5,256,063	10,356,807
2005	6,017,629	608,052	6,625,677	5,495,788	571,959	188,006	255,203	64,158	23,541	2,023	89,723	6,600,666	13,226,334
2006	5,865,058	1,934,340	7,799,394	6,395,502	1,559,448	806,047	167,646	130,695	39,728	15,957	186,380	9,115,018	16,914,410

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Table 3.–Page 6 of 7.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2007	1,165,031	273,927	1,438,960	1,349,852	79,351	170,283	207,977	32,345	78,147	25,821	136,314	1,943,767	3,382,721
2008	2,046,897	166,688	2,213,584	2,135,203	28,454	75,700	224,712	11,471	114,250	22,573	148,294	2,612,354	4,825,933
2009	2,285,824	183,381	2,469,202	1,996,739	69,811	180,720	384,244	0	157,132	25,713	182,846	2,814,356	5,283,555
2010	2,086,932	289,967	2,376,892	2,139,002	216,572	386,245	319,907	41,817	39,193	7,747	88,756	3,150,473	5,527,360
2011	7,379,368	159,146	7,538,512	7,351,002	174,676	280,882	472,413	67,174	9,494	13,894	90,561	8,369,531	15,908,038
2012	2,394,801	59,001	2,453,802	2,436,596	30,897	77,286	199,129	257,161	16,018	19,047	292,225	3,036,134	5,489,937
2013	3,528,706	431,504	3,960,211	3,721,679	272,190	176,174	136,384	55,005	74,411	32,712	162,128	4,468,550	8,428,755
2014	1,825,022	59,311	1,884,330	1,573,768	52,143	101,010	134,845	46,202	9,285	19,772	75,259	1,937,022	3,821,351
2015	3,425,527	308,791	3,734,320	3,392,838	567,480	395,155	257,889	197,470	138,914	11,318	347,703	4,961,057	8,695,374
2016	5,837,945	756,175	6,689,057	4,769,014	462,576	410,191	360,521	49,813	42,722	1,213	93,748	6,096,048	12,785,104
KODIAK DISTRICT TOTALS													
1988	8,559,432	2,744,042	11,303,463	7,340,555	1,113,349	1,997,339	3,940,755	2,829,137	374,322	130,002	3,333,457	17,725,425	29,028,871
1989	16,380,280	8,907,154	25,287,427	14,727,746	3,418,679	3,585,343	4,518,769	2,044,897	620,249	236,779	2,901,922	29,152,419	54,439,822
1990	13,601,233	18,272,426	31,873,651	11,288,911	5,420,250	4,496,687	7,244,788	1,532,624	495,761	149,938	2,178,324	30,628,928	62,502,565
1991	11,462,215	8,054,069	19,516,277	9,962,659	2,799,137	3,382,811	5,890,407	3,840,652	719,139	110,731	4,670,531	26,705,520	46,221,776
1992	8,210,643	5,904,402	14,115,033	7,313,226	2,696,124	2,709,551	4,225,958	1,276,418	600,588	122,700	2,006,508	18,951,333	33,066,344
1993	17,531,130	4,652,879	22,184,004	15,637,846	1,604,924	2,081,855	3,411,157	863,002	815,974	100,904	1,779,876	24,515,636	46,699,627
1994	5,647,912	2,375,038	8,022,943	4,238,636	1,608,167	1,098,518	1,920,648	548,482	402,309	75,573	1,026,364	9,892,314	17,915,262
1995	10,353,928	1,983,535	12,337,459	9,477,362	1,653,663	1,008,662	1,078,509	201,217	372,184	25,621	599,018	13,817,198	26,154,651
1996	11,215,477	3,146,109	14,361,581	10,367,636	3,450,011	2,237,857	2,058,259	300,088	619,841	47,856	967,783	19,081,511	33,443,092
1997	4,513,032	2,465,690	6,978,721	4,208,146	2,613,356	2,503,551	2,300,669	409,654	501,549	30,844	945,341	12,571,050	19,549,768
1998	12,620,301	5,953,430	18,573,729	11,602,028	4,592,087	5,263,484	4,441,738	613,959	771,271	119,438	1,504,672	27,405,412	45,979,123
1999	17,437,126	3,294,798	20,731,914	16,419,459	1,733,916	2,238,781	3,937,558	807,338	1,295,490	144,417	2,247,250	26,576,944	47,308,845
2000	22,734,186	6,710,239	29,444,411	22,466,289	4,994,302	2,628,526	3,611,262	1,017,533	1,484,199	105,827	2,607,562	36,312,654	65,757,053
2001	69,111,883	12,547,204	81,659,089	60,596,643	15,184,465	5,755,539	4,015,215	481,797	1,913,626	121,664	2,517,087	88,068,918	169,728,000
2002	31,934,589	11,268,888	43,203,473	20,273,796	20,751,369	11,202,275	4,418,428	677,527	1,278,825	57,980	2,014,332	58,660,170	101,863,630
2003	6,669,928	16,796,157	23,466,083	8,666,025	7,601,995	17,269,485	11,517,498	898,381	989,250	54,849	1,942,480	46,997,451	70,463,535
2004	17,000,657	8,742,022	25,742,675	15,209,150	3,323,736	7,077,661	15,104,914	3,737,861	659,084	54,198	4,451,137	45,166,569	70,909,241
2005	17,059,289	8,397,544	25,456,826	16,542,184	2,963,213	3,905,076	12,612,268	4,468,564	1,637,813	90,305	6,196,678	42,219,379	67,676,188
2006	68,408,340	8,259,311	76,667,652	65,421,254	6,702,319	3,768,705	7,925,015	1,193,489	3,267,854	96,387	4,557,730	88,374,999	165,042,643
2007	70,835,014	11,380,228	82,215,246	43,634,190	41,039,085	7,317,691	8,086,856	619,046	3,257,389	86,498	3,962,933	104,040,715	186,255,949
2008	26,110,472	24,384,977	50,495,440	19,249,825	15,023,231	24,194,877	8,118,825	719,872	1,623,899	86,768	2,430,538	69,017,261	119,512,680
2009	10,278,417	17,159,097	27,437,510	6,888,245	8,085,863	12,890,615	23,913,865	4,383,358	702,847	89,136	5,175,345	56,953,904	84,391,405
2010	10,260,667	16,419,101	26,679,764	9,164,531	2,790,913	6,714,177	22,225,254	6,305,870	2,289,287	157,832	8,752,994	49,647,820	76,327,574

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Table 3.–Page 7 of 7.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2011	16,662,367	5,411,391	22,078,488	16,834,185	645,829	1,653,341	8,579,128	1,960,105	3,455,644	148,805	5,575,778	33,288,226	55,366,705
2012	13,560,186	2,676,775	16,236,959	13,157,179	2,095,967	1,298,931	6,769,191	959,721	3,798,034	219,806	5,002,335	28,323,591	44,560,537
2013	94,745,938	3,213,918	97,959,858	90,716,790	5,406,063	1,831,924	2,550,773	174,930	1,547,671	84,646	1,811,994	102,317,528	200,277,376
2014	42,830,542	10,619,194	53,449,735	31,926,228	17,191,650	5,777,120	2,932,843	160,356	1,779,114	64,227	2,030,379	59,858,212	113,307,947
2015	7,970,115	7,836,723	15,806,841	6,795,141	6,876,994	7,342,562	2,423,761	464,497	368,584	30,366	863,447	24,301,878	40,108,714
2016	11,682,232	15,923,825	27,700,988	10,030,370	4,038,553	10,394,666	8,279,445	503,650	487,099	6,194	996,943	33,739,959	61,440,941

Table 4.–Tanner crab mature male abundance threshold levels from regulatory harvest strategies, estimates of number of mature male crab by survey year from bottom trawl surveys, and fishery guideline harvest levels (GHLs), 2012–2016.

	Threshold (number of mature males >114 mm CW)	Number of mature males (>114 mm CW)				
		2012	2013	2014	2015	2016
Kodiak District						
Northeast Section	1,123,000	781,530	326,746	510,906	261,148	307,916
Eastside Section	1,552,000	6,863,093[a]	1,756,823[a]	884,700	800,442	5,995,438[a]
Southeast Section	733,000	2,219,031[a]	992,667[a]	2,107,892[a]	789,643[a]	1,269,931[a]
Southwest Section	1,236,000	1,158,016	728,411	593,222	590,902	1,024,770
Westside Section	764,000	281,213	259,600	654,992	231,581	224,052
North Mainland Section	1,469,000	491,353	298,510	210,103	605,589	454,268
Chignik District	973,000	1,616,431[a]	1,653,733[a]	1,908,221[a]	1,218,248[a]	675,315
South Peninsula District						
Eastern Section	2,015,000	4,145,991[a]	709,695	806,075	1,157,759	1,365,881
Western Section	1,250,000	2,433,936[a]	959,803	2,628,187[a]	1,937,176[a]	4,038,090[a]
Eastern Aleutian District						
Akutan Section	200,000	149,485	88,268	487,384[a]	13,552	75,207
Unalaska/Kalekta Bay Section	65,000	625,838[a]	182,886[a]	196,112[a]	175,550[a]	14,865
Makushin/Skan Bay Section	45,000	135,313[a]	155,397[a]	273,775[a]	205,331[a]	152,183[a]
	Minimum GHL (pounds)	GHL for following Tanner season (pounds)				
		2012	2013	2014	2015	2016
Kodiak District						
Northeast Section	100,000	below threshold	below threshold	below threshold	below threshold	below threshold
Eastside Section	100,000	520,000	–[b]	below threshold	below threshold	–[b]
Southeast Section	100,000	140,000	–[b]	–[b]	–[b]	–[b]
Southwest Section	100,000	below threshold	below threshold	below threshold	below threshold	below threshold
Westside Section	100,000	below threshold	below threshold	below threshold	below threshold	below threshold
North Mainland Section	100,000	below threshold	below threshold	below threshold	below threshold	below threshold
Chignik District	200,000	–[b]	–[b]	–[b]	–[b]	below threshold
South Peninsula District						
Eastern Section	200,000	230,000	below threshold	below threshold	below threshold	below threshold
Western Section	200,000	–[b]	below threshold	–[c]	–[c]	–[c]
Eastern Aleutian District						
Akutan Section	35,000	below threshold	below threshold	–[c]	below threshold	below threshold
Unalaska/Kalekta Bay Section	35,000	35,000	–[b]	–[b]	–[b]	below threshold
Makushin/Skan Bay Section	35,000	–[b]	–[b]	35,000	35,000	–[b]

[a] Above mature male harvest strategy threshold.
[b] The calculated fishery GHL did not meet minimum GHL requirements.
[c] GHL requirements were met but, due to uncertainty in survey estimates and conservation concerns, the fishery was not opened.

Table 5.–Red king crab abundance estimates from trawl surveys in the Kodiak and Alaska Peninsula areas, 2007–2016.

	Females			Prerecruit males				Recruit	Postrecruit	Legal	Total	Total
Year	Juvenile	Adult	Total	IV	III	II	I	males	males	males	males	crab
KODIAK AREA												
Northeast District												
2007	451	2,112	2,563	0	0	0	0	0	0	0	0	2,563
2008	0	369	369	0	0	0	0	0	1,098	1,098	1,098	1,467
2009	635	270	905	270	1,080	270	0	270	0	270	1,890	2,795
2010	0	0	0	0	347	0	0	0	0	0	347	347
2011	0	0	0	0	0	1,419	0	0	0	0	1,419	1,419
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	1,519	1,182	2,701	270	0	0	0	0	0	0	270	2,971
2014	365	0	365	0	0	0	0	0	0	0	0	365
2015	0	0	0	0	0	0	0	0	365	365	365	365
2016	0	7,154	7,154	0	0	0	0	0	365	365	365	7,519
Southeast District												
2007	0	0	0	0	0	0	0	729	668	1,397	1,397	1,397
2008	0	0	0	513	0	0	0	0	0	0	513	513
2009	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	4,232	0	0	0	0	0	0	4,232	4,232
2014	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	1,234	0	851	0	0	0	2,085	2,085
Southwest District												
2007	387,177	5,309	392,486	337,765	0	714	551	7,588	11,069	18,657	357,685	750,172
2008	8,655	6,477	15,133	6,295	787	0	2,471	4,421	21,462	25,883	35,435	50,567
2009	152	3,727	3,879	4,166	0	0	0	1,831	14,181	16,013	20,179	24,058
2010	26,655	22,075	48,730	22,907	22,658	10,572	787	3,211	23,842	27,054	83,978	132,708
2011	140,454	48,314	188,769	74,180	25,982	5,640	4,302	1,124	12,134	13,257	123,362	312,131
2012	45,939	36,492	82,431	2,074	49,552	43,670	5,559	5,917	10,772	16,689	117,543	199,974
2013	19,763	135,960	155,724	1,551	12,884	50,872	30,011	8,948	12,101	21,050	116,369	272,092
2014	5,297	160,757	166,054	4,367	3,798	17,750	48,305	145,759	59,583	205,343	279,560	445,613
2015	9,080	164,249	173,329	3,245	6,933	7,450	22,922	114,777	224,867	339,646	380,197	553,526
2016	124,312	80,131	204,444	66,445	86,292	10,107	2,881	11,825	185,336	197,158	362,882	567,326

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Table 5.–Page 2 of 6.

	Females			Prerecruit males				Recruit	Postrecruit	Legal	Total	Total
Year	Juvenile	Adult	Total	IV	III	II	I	males	males	males	males	crab
Shelikof District												
2007	0	0	0	182	0	0	0	149	267	416	598	598
2008	0	0	0	1,387	0	0	0	0	17,943	17,943	19,330	19,330
2009	1,081	0	1,081	0	0	0	0	120	203	323	323	1,404
2010	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	334	334	0	0	0	0	0	334	334	334	668
2012	0	446	446	0	446	446	0	446	0	446	1,337	1,782
2013	226	0	226	750	226	0	0	0	0	0	976	1,202
2014	120	0	120	612	0	0	0	0	0	0	612	732
2015	774	0	774	0	0	149	0	0	297	297	446	1,220
2016	4,747	0	4,747	0	0	0	0	0	0	0	0	4,747
KODIAK AREA TOTAL												
2007	387,628	7,421	395,049	337,947	0	714	551	8,466	12,004	20,470	359,680	754,730
2008	8,655	6,846	15,502	8,195	787	0	2,471	4,421	40,503	44,924	56,376	71,877
2009	1,868	3,997	5,865	4,436	1,080	270	0	2,221	14,384	16,606	22,392	28,257
2010	26,655	22,075	48,730	22,907	23,005	10,572	787	3,211	23,842	27,054	84,325	133,055
2011	140,454	48,648	189,103	74,180	25,982	7,059	4,302	1,124	12,468	13,591	125,115	314,218
2012	45,939	36,938	82,877	2,074	49,998	44,116	5,559	6,363	10,772	17,135	118,880	201,756
2013	21,508	137,142	158,651	6,803	13,110	50,872	30,011	8,948	12,101	21,050	121,847	280,497
2014	5,782	160,757	166,539	4,979	3,798	17,750	48,305	145,759	59,583	205,343	280,172	446,710
2015	9,854	164,249	174,103	3,245	6,933	7,599	22,922	114,777	225,529	340,308	381,008	555,111
2016	129,059	87,285	216,345	66,445	87,526	10,107	3,732	11,825	185,701	197,523	365,332	581,677
ALASKA PENINSULA AREA												
Morzhovoi Bay												
2007	0	0	0	0	0	881	0	0	0	0	881	881
2008	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	2,517	2,517	0	0	0	0	0	0	0	0	2,517
2011	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	892	24,095	24,988	24,988	24,988
2014	0	0	0	0	0	0	793	0	34,110	34,110	34,903	34,903
2015	5,696	57,912	63,608	949	8,544	5,696	5,696	4,747	33,228	37,975	58,861	122,469
2016	0	949	949	0	0	0	0	0	1,663	1,663	1,663	2,613

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Table 5.–Page 3 of 6.

	Females			Prerecruit males				Recruit	Postrecruit	Legal	Total	Total
Year	Juvenile	Adult	Total	IV	III	II	I	males	males	males	males	crab
Cold Bay/Belkofski Bay												
2007	2,572	693	3,265	1,561	0	0	705	0	0	0	2,266	5,530
2008	0	2,771	2,771	0	0	0	1,170	0	1,659	1,659	2,829	5,599
2009	0	483	483	0	161	161	0	0	0	0	322	805
2010	1,073	28,206	29,280	1,516	537	537	358	0	1,045	1,045	3,992	33,272
2011	433	836	1,269	433	866	433	433	1,299	5,052	6,351	8,515	9,784
2012	8,279	23,754	32,033	1,352	1,484	4,418	1,173	1,195	25,606	26,801	35,228	67,262
2013	1,154	230	1,384	2,678	0	0	0	0	0	0	2,678	4,063
2014	4,909	5,902	10,811	4,456	0	0	0	230	0	230	4,686	15,497
2015	18,714	2,696	21,410	10,917	10,493	1,560	0	1,136	1,560	2,696	25,665	47,075
2016	49,586	24,851	74,437	2,216	39,894	32,575	4,433	2,216	7,897	10,114	89,232	163,667
Pavlof Bay/Volcano Bay												
2007	0	0	0	662	0	0	0	0	949	949	1,611	1,611
2008	0	1,899	1,899	0	0	0	949	0	8,544	8,544	9,494	11,393
2009	0	946	946	0	0	0	0	0	12,580	12,580	12,580	13,526
2010	6,192	23,939	30,131	828	1,208	5,658	4,071	0	1,656	1,656	13,420	43,552
2011	396,062	426,614	822,676	46,000	334,662	605,503	265,585	82,260	65,898	148,158	1,399,908	2,222,584
2012	0	0	0	0	0	0	0	0	5,733	5,733	5,733	5,733
2013	10,653	85,740	96,393	6,038	4,830	37,436	72,456	37,436	28,437	65,873	186,633	283,026
2014	16,906	83,486	100,392	7,246	7,246	0	5,685	0	9,344	9,344	29,519	129,912
2015	0	1,489	1,489	3,798	0	0	1,786	3,275	5,713	8,988	14,572	16,061
2016	4,028	11,005	15,033	0	1,689	2,501	0	1,440	11,372	12,813	17,002	32,034
Beaver Bay/Balboa Bay/Unga Strait												
2007	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	747	0	0	0	0	2,989	2,989	3,737	3,737
2009	0	0	0	0	0	0	0	0	564	564	564	564
2010	773	0	773	747	0	0	0	0	3,553	3,553	4,301	5,074
2011	0	0	0	0	0	0	921	0	1,709	1,709	2,630	2,630
2012	0	0	0	0	0	0	0	0	3,163	3,163	3,163	3,163
2013	0	0	0	0	0	0	0	0	2,242	2,242	2,242	2,242
2014	0	0	0	0	618	0	0	0	1,955	1,955	2,573	2,573
2015	0	0	0	0	0	0	0	0	564	564	564	564
2016	0	0	0	0	0	0	0	0	0	0	0	0

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Table 5.–Page 4 of 6.

Year	Females			Prerecruit males				Recruit	Postrecruit	Legal	Total	Total
	Juvenile	Adult	Total	IV	III	II	I	males	males	males	males	crab
Stepovak Bay												
2007	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0
West Nagai Strait												
2007	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	1,135	0	0	0	0	0	0	1,135	1,135
2009	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	5,546	0	5,546	0	0	0	0	1,849	0	1,849	1,849	7,394
2014	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0
Ivanof Bay												
2007	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	246	246	246	246
2010	0	0	0	0	0	0	0	0	0	0	0	0
2011	1,166	1,166	2,332	0	0	0	2,332	2,332	1,166	3,497	5,829	8,161
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	933	0	0	0	933	3,805	4,737	5,670	5,670
2014	0	615	615	0	0	0	0	0	0	0	0	615
2015	0	6,015	6,015	0	0	273	820	0	0	0	1,094	7,109
2016	246	3,364	3,610	0	0	0	0	0	0	0	0	3,610

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Table 5.–Page 5 of 6.

	Females			Prerecruit males				Recruit	Postrecruit	Legal	Total	Total
Year	Juvenile	Adult	Total	IV	III	II	I	males	males	males	males	crab
Mitrofania Island												
2007	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	2,532	2,532	2,532	2,532
2011	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0
2014	1,282	0	1,282	0	0	0	0	0	0	0	0	1,282
2015	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0
Chignik Bay/Castle Bay												
2007	0	293	293	0	0	0	0	0	892	892	892	1,185
2008	0	0	0	0	0	0	586	0	3,942	3,942	4,528	4,528
2009	586	586	1,173	586	0	880	1,597	586	2,607	3,193	6,255	7,428
2010	10,554	29,646	40,200	0	5,277	8,795	8,795	0	7,659	7,659	30,526	70,726
2011	0	892	892	0	0	0	1,422	0	892	892	2,313	3,205
2012	892	0	892	0	0	0	1,316	0	0	0	1,316	2,207
2013	1,466	0	1,466	1,759	0	0	1,115	0	0	0	2,874	4,340
2014	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	3,091	3,091	0	0	0	366	0	3,408	3,408	3,774	6,865
Kujulik Bay												
2007	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0
2014	3,190	456	3,646	456	0	0	456	0	0	0	911	4,557
2015	28,299	208,639	236,939	0	13,671	53,532	13,671	13,671	57,418	71,089	151,963	388,902
2016	0	0	0	0	0	0	0	0	0	0	0	0

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Table 5.–Page 6 of 6.

	Females			Prerecruit males				Recruit	Postrecruit	Legal	Total	Total
Year	Juvenile	Adult	Total	IV	III	II	I	males	males	males	males	crab
ALASKA PENINSULA AREA TOTAL												
2007	2,572	986	3,558	2,223	0	881	705	0	1,841	1,841	5,650	9,207
2008	0	4,670	4,670	1,882	0	0	2,705	0	17,134	17,134	21,723	26,392
2009	586	2,015	2,602	586	161	1,041	1,597	586	15,997	16,583	19,967	22,569
2010	18,592	84,308	102,901	3,091	7,022	14,990	13,224	0	16,445	16,445	54,771	157,673
2011	397,661	429,508	827,169	46,433	335,528	605,936	270,693	85,891	74,717	160,607	1,419,195	2,246,364
2012	9,171	23,754	32,925	1,352	1,484	4,418	2,489	1,195	34,502	35,697	45,440	78,365
2013	18,819	85,970	104,789	11,408	4,830	37,436	73,571	41,110	58,579	99,689	226,934	331,723
2014	26,287	90,459	116,746	12,158	7,864	0	6,934	230	45,409	45,639	72,592	189,339
2015	52,709	276,751	329,461	15,664	32,708	61,061	21,973	22,829	98,483	121,312	252,719	582,180
2016	53,860	43,260	97,120	2,216	41,583	35,076	4,799	3,656	24,340	27,998	111,671	208,789

Note: Categories to distinguish juvenile and adult females; prerecruit IV, III, II, and I; recruit; and postrecruit males differ by management area; definitions are found in Appendix A1.

Table 6.–Dominant species by weight in the Kodiak Tanner crab District bottom trawl survey, 2016.

Common name	Species name	% of catch by weight
Arrowtooth flounder	*Atheresthes stomias*	23.8
Flathead sole	*Hippoglossoides elassodon*	21.1
Sunflower seastar	*Pycnopodia helianthoides*	7.1
Tanner crab	*Chionoecetes bairdi*	6.9
Pacific halibut	*Hippoglossus stenolepis*	5.4
Walleye pollock	*Gadus chalcogrammus*	5.3
Yellowfin sole	*Limanda aspera*	4.5
Big skate	*Raja binoculata*	3.6
Longnose skate	*Raja rhina*	2.5
Northern rock sole	*Lepidopsetta polyxystra*	2.4
Pacific cod	*Gadus macrocephalus*	1.5
Anemone	Order: Actinaria	1.4
Spiny dogfish shark	*Squalus acanthius*	1.1
Weathervane scallop	*Patinopectin caurinus*	0.9
Bering skate	*Bathyraja interrupta*	0.9
Alaska plaice	*Pleuronectes quadrituberculatus*	0.9
Red king crab	*Paralithodes camtschaticus*	0.8
Sablefish	*Anoplopoma fimbria*	0.7
Starry flounder	*Platichthys stellatus*	0.7
Great sculpin	*Myoxocephalus polyacanthocephalus*	0.6
All others	(122 species)	7.8
		100.0

Table 7.–Tanner crab abundance estimates from bottom trawl surveys in the South Peninsula and Chignik districts, 1988–2016.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
SOUTH PENINSULA DISTRICT													
Sanak Island													
1989	1,041,054	117,259	1,158,314	1,117,338	23,925	31,519	65,234	6,836	0	0	6,836	1,244,851	2,403,166
1990	603,210	102,533	705,742	456,464	82,684	53,495	22,785	0	0	0	0	615,427	1,321,169
1991	474,081	28,398	502,478	489,104	32,112	34,178	0	0	0	0	0	555,392	1,057,870
1992	373,197	41,014	414,210	285,671	44,645	46,627	3,798	0	0	0	0	380,738	794,947
1993	337,216	19,133	356,348	260,566	30,579	37,410	9,999	0	0	0	0	338,549	694,898
1994	87,848	69,013	156,859	112,056	13,414	18,801	19,824	0	0	0	0	164,093	320,950
1996	579,289	134,287	713,578	433,899	53,478	29,470	36,368	0	0	0	0	553,211	1,266,788
1997	104,892	53,409	158,299	79,646	75,564	38,237	17,180	0	0	0	0	210,623	368,921
1998	287,243	401,488	688,729	389,589	81,490	125,691	63,941	0	0	0	0	660,710	1,349,437
1999	88,145	94,727	182,873	55,777	5,043	44,697	20,518	0	0	0	0	126,035	308,906
2000	606,606	185,506	792,111	563,172	59,648	94,142	32,780	0	2,522	0	2,522	752,262	1,544,370
2001	914,269	131,632	1,045,901	790,961	56,567	82,328	116,972	5,043	0	0	5,043	1,051,871	2,097,771
2002	728,706	1,017,860	1,746,566	721,599	274,753	222,696	103,774	0	10,807	0	10,807	1,333,627	3,080,192
2003	249,807	392,738	642,545	207,329	84,100	222,323	124,490	0	10,086	0	10,086	648,325	1,290,869
2004	725,772	201,245	927,016	664,316	103,805	57,957	6,674	0	0	0	0	832,751	1,759,767
2005	264,849	129,560	394,408	219,764	85,954	61,175	0	0	0	0	0	366,889	761,297
2006	3,211,966	65,347	3,277,314	2,964,522	58,344	84,248	16,974	0	0	0	0	3,124,086	6,401,400
2007	4,421,280	1,978,615	6,399,895	3,724,236	686,412	245,645	98,712	0	0	0	0	4,755,004	11,154,900
2008	193,409	1,884,532	2,077,941	876,043	1,844,403	330,640	34,707	0	0	0	0	3,085,792	5,163,733
2009	77,342	669,415	746,758	97,965	194,977	236,212	61,374	17,075	2,563	0	19,639	610,166	1,356,923
2010	178,073	584,576	762,649	189,989	15,876	169,029	598,946	1,040,378	71,409	75,908	1,187,694	2,161,533	2,924,182
2011	146,395	473,044	619,438	169,003	9,285	44,693	273,099	5,767	303,962	7,690	317,418	813,498	1,432,936
2012	101,126	9,887	111,013	105,018	8,914	8,279	77,187	0	170,584	9,987	180,571	379,969	490,981
2013	668,704	17,463	686,166	622,576	27,665	12,646	14,748	0	23,117	0	23,117	700,754	1,386,919
2014	459,958	84,673	544,631	495,146	39,501	26,416	46,981	0	63,120	6,304	69,424	677,471	1,222,100
2015	545,609	4,883	550,491	489,857	59,726	29,322	1,631	0	816	0	816	581,350	1,131,843
2016	62,822	4,747	67,569	83,760	22,547	0	0	0	0	0	0	106,307	173,874
Morzhovoi Bay													
1988	443,271	427,488	870,759	250,021	243,798	226,440	245,730	83,203	40,178	16,427	139,809	1,105,797	1,976,556
1989	3,437,005	1,109,760	4,546,762	2,980,895	1,190,046	379,515	118,163	33,555	4,861	0	38,416	4,707,034	9,253,795
1990	2,137,938	1,047,227	3,185,166	1,504,270	663,567	552,543	197,011	26,108	24,592	1,116	51,816	2,969,207	6,154,372

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Table 7.–Page 2 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
1991	1,657,717	478,549	2,136,265	1,318,753	426,210	209,931	57,607	15,554	4,666	0	20,222	2,032,723	4,168,991
1992	364,692	886,270	1,250,961	193,850	455,384	278,844	207,282	35,947	21,470	949	58,367	1,193,726	2,444,686
1993	72,436	544,698	617,133	18,974	160,369	414,318	368,297	62,370	63,859	949	127,179	1,089,136	1,706,269
1994	43,583	284,888	328,470	9,921	62,598	132,027	214,543	7,298	49,193	0	56,491	475,580	804,051
1996	221,620	107,996	329,616	191,236	22,344	14,475	53,533	5,697	31,185	0	36,882	318,471	648,088
1997	142,087	103,607	245,694	93,088	79,526	63,074	38,078	6,646	10,622	0	17,267	291,032	536,723
1998	927,800	1,905,001	2,832,802	372,189	1,244,517	1,545,608	337,411	40,344	81,442	0	121,787	3,621,510	6,454,311
1999	162,720	506,161	668,880	51,457	287,843	555,624	767,631	66,609	59,158	1,899	127,663	1,790,219	2,459,099
2000	904,853	872,919	1,777,772	833,624	156,937	384,386	731,583	448,222	107,962	0	556,185	2,662,717	4,440,488
2001	1,087,232	331,894	1,419,125	664,348	960,195	226,770	237,689	183,362	114,032	11,371	308,764	2,397,768	3,816,893
2002	2,244,692	776,467	3,021,160	1,474,502	1,591,183	843,217	342,149	51,049	171,771	3,104	225,923	4,476,971	7,498,129
2003	581,889	1,727,722	2,309,610	131,908	1,224,831	865,697	442,380	41,603	114,404	0	156,008	2,820,821	5,130,433
2004	365,320	1,833,648	2,198,967	312,690	216,514	1,650,340	2,550,313	294,832	194,497	7,422	496,749	5,226,603	7,425,569
2005	566,624	4,274,817	4,841,442	405,310	158,006	400,612	1,340,751	479,938	229,744	2,848	712,531	3,017,213	7,858,654
2006	17,819,145	2,523,016	20,342,161	17,143,999	601,039	290,068	1,128,281	266,901	293,075	20,416	580,393	19,743,775	40,085,936
2007	11,336,243	2,253,163	13,589,409	7,540,331	6,519,311	1,823,835	2,269,793	533,570	256,958	13,482	804,009	18,957,280	32,546,687
2008	3,876,110	12,176,231	16,052,339	1,133,128	6,152,588	13,677,697	2,020,561	787,999	221,592	45,063	1,054,656	24,038,632	40,090,971
2009	311,582	2,598,751	2,910,333	184,644	543,978	4,494,013	8,839,156	407,590	14,726	16,511	438,828	14,500,615	17,410,946
2010	67,519	2,635,872	2,703,391	58,106	20,657	318,493	2,566,424	5,351,471	123,283	211,852	5,686,604	8,650,280	11,353,670
2011	261,078	1,295,373	1,556,451	278,183	6,447	94,044	890,206	1,527,764	1,842,749	330,040	3,700,552	4,969,432	6,525,884
2012	300,577	918,719	1,219,294	260,365	33,467	20,621	381,928	84,379	1,190,445	126,152	1,400,976	2,097,361	3,316,656
2013	5,608,259	138,871	5,747,128	6,096,428	272,696	49,896	92,885	2,484	536,142	46,928	585,554	7,097,463	12,844,590
2014	3,351,530	2,047,765	5,399,299	1,697,141	958,833	975,656	986,987	0	1,239,123	123,768	1,362,890	5,981,501	11,380,799
2015	1,661,302	2,512,130	4,173,430	229,677	2,403,265	3,754,844	1,308,403	172,371	152,552	0	324,924	8,021,114	12,194,546
2016	121,989	3,268,381	3,390,368	65,586	138,531	1,424,230	2,751,437	120,724	427,967	0	548,692	4,928,475	8,318,844
Cold Bay/Belkofski Bay													
1988	235,914	315,625	551,537	126,750	206,357	222,054	205,556	85,149	30,562	7,297	123,007	883,727	1,435,264
1989	465,620	55,255	520,876	408,726	54,811	29,721	16,589	3,880	488	0	4,368	514,216	1,035,095
1990	1,813,413	635,880	2,449,293	1,537,291	520,248	275,283	227,225	86,886	50,748	3,646	141,280	2,701,326	5,150,624
1991	603,047	616,997	1,220,045	669,067	135,592	236,400	437,850	76,766	132,755	161	209,682	1,688,596	2,908,642
1992	177,369	170,457	347,825	95,460	109,930	96,700	139,849	39,648	38,435	1,722	79,806	521,742	869,571
1993	100,303	269,849	370,152	68,373	87,199	156,298	137,852	35,906	18,607	434	54,949	504,671	874,823
1994	96,034	220,312	316,345	28,879	54,378	64,115	75,643	27,344	10,265	1,258	38,867	261,884	578,230

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Table 7.–Page 3 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
1996	339,067	15,338	354,404	266,415	62,717	40,124	30,565	24,165	2,530	201	26,896	426,718	781,121
1997	118,159	12,184	130,341	44,100	59,543	90,588	80,558	37,301	936	483	38,720	313,512	443,853
1998	374,298	149,168	523,466	116,353	270,327	322,267	168,189	49,039	17,618	5,616	72,274	949,415	1,472,881
1999	111,133	78,031	189,162	62,197	58,424	235,743	266,603	59,853	21,247	869	81,968	705,817	894,978
2000	453,965	220,395	674,361	548,118	105,008	264,499	297,586	181,329	16,470	2,811	200,610	1,415,824	2,090,183
2001	990,492	66,837	1,057,329	873,549	142,999	138,379	147,340	89,545	15,002	3,544	108,087	1,410,355	2,467,681
2002	944,644	243,043	1,187,690	501,063	461,919	301,545	194,739	53,613	86,248	2,980	142,841	1,602,107	2,789,799
2003	491,246	245,629	736,875	263,140	313,721	278,557	79,036	0	8,746	1,136	9,883	944,341	1,681,215
2004	621,394	132,352	753,748	419,168	334,351	399,993	193,441	22,926	2,296	0	25,222	1,372,173	2,125,921
2005	975,377	210,419	1,185,797	702,024	284,625	271,704	172,169	22,450	16,203	0	38,654	1,469,174	2,654,972
2006	2,695,898	377,805	3,073,706	2,143,122	447,400	532,736	220,695	25,939	11,424	0	37,363	3,381,315	6,455,019
2007	3,839,198	1,353,230	5,192,429	888,649	1,852,878	725,018	355,917	38,880	869	0	39,749	3,862,209	9,054,639
2008	981,613	3,704,527	4,686,141	187,850	2,031,135	3,731,339	998,148	88,372	69,315	838	158,525	7,106,994	11,793,135
2009	743,106	1,284,279	2,027,384	407,741	260,914	773,553	3,176,359	348,628	28,011	15,097	391,736	5,010,303	7,037,686
2010	265,654	2,623,096	2,888,751	232,437	74,727	340,065	1,407,576	1,366,763	268,720	75,803	1,715,009	3,769,814	6,658,566
2011	487,187	941,238	1,428,426	439,193	60,163	81,593	448,469	70,207	757,309	41,339	868,852	1,898,264	3,326,688
2012	347,973	172,826	520,802	404,294	87,884	160,511	177,551	20,280	189,340	6,096	215,720	1,045,959	1,566,760
2013	3,199,032	43,614	3,242,645	3,083,754	199,129	35,370	94,717	70,597	75,700	2,482	148,779	3,561,751	6,804,396
2014	863,922	108,803	972,725	830,932	471,467	195,952	82,214	3,471	71,295	4,925	79,691	1,660,251	2,632,976
2015	389,285	371,093	760,380	113,943	421,010	483,421	235,124	15,067	49,008	2,208	66,282	1,319,781	2,080,160
2016	32,370	678,831	711,199	35,696	80,725	506,025	639,993	10,191	86,755	1,025	97,972	1,360,409	2,071,609
Pavlof Bay/Volcano Bay													
1988	376,973	786,599	1,163,568	318,312	190,471	408,242	372,043	171,158	59,917	65,874	296,949	1,586,014	2,749,587
1989	893,932	1,655,486	2,549,415	562,769	440,202	367,365	441,276	121,330	80,944	17,669	219,941	2,031,560	4,580,977
1990	1,137,606	2,101,129	3,238,738	823,167	573,840	631,119	344,741	61,980	125,646	18,957	206,582	2,579,442	5,818,176
1991	518,066	567,070	1,085,136	473,436	86,044	282,775	278,425	39,282	89,006	3,039	131,329	1,252,012	2,337,143
1992	206,624	387,633	594,256	96,109	162,428	150,644	164,304	32,773	52,064	0	84,837	658,322	1,252,576
1993	115,627	201,552	317,178	71,678	168,723	494,231	230,545	44,417	27,416	1,925	73,756	1,038,931	1,356,106
1994	40,820	123,379	164,198	25,438	50,672	91,919	143,134	54,378	28,337	0	82,715	393,880	558,074
1996	391,490	55,285	446,777	367,494	40,122	31,041	52,308	14,841	9,518	992	25,351	516,312	963,090
1997	70,299	79,454	149,757	31,066	48,448	82,056	53,515	5,404	28,417	949	34,772	249,859	399,614
1998	107,726	176,994	284,719	33,534	150,680	314,200	381,825	8,179	51,664	0	59,844	940,076	1,224,799
1999	51,913	91,936	143,851	44,539	39,952	97,486	128,419	87,932	12,812	0	100,744	411,141	554,990

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Table 7.–Page 4 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2000	1,253,314	237,532	1,490,846	1,077,574	188,231	133,448	239,906	85,518	26,684	0	112,203	1,751,363	3,242,209
2001	620,598	220,624	841,220	354,209	300,667	221,047	168,521	49,439	29,570	0	79,010	1,123,456	1,964,674
2002	1,185,009	408,053	1,593,060	1,114,119	319,668	439,759	346,546	41,216	42,859	1,276	85,352	2,305,444	3,898,502
2003	214,279	359,451	573,730	139,469	207,452	486,692	462,063	81,055	92,200	921	174,174	1,469,851	2,043,584
2004	371,131	479,742	850,871	311,594	127,594	648,954	724,374	124,613	258,629	5,795	389,038	2,201,557	3,052,431
2005	1,225,852	335,581	1,561,431	1,164,657	320,170	352,533	443,665	34,456	86,297	0	120,751	2,401,776	3,963,209
2006	3,146,589	353,173	3,499,761	3,047,383	682,097	417,164	286,762	26,793	66,861	1,021	94,674	4,528,078	8,027,842
2007	1,739,492	1,351,581	3,091,074	1,184,516	1,718,846	2,220,531	1,241,244	66,805	122,325	0	189,131	6,554,267	9,645,340
2008	1,529,846	1,655,526	3,185,373	498,055	2,810,675	2,647,935	2,271,487	577,126	30,353	5,468	612,948	8,841,101	12,026,474
2009	1,242,537	2,757,321	3,999,859	939,973	845,010	3,142,344	5,248,535	1,455,859	200,754	31,204	1,687,817	11,863,678	15,863,536
2010	599,463	1,368,673	1,968,136	478,732	385,939	655,577	2,529,296	2,214,666	670,312	39,419	2,924,395	6,973,933	8,942,073
2011	353,509	727,044	1,080,554	362,114	169,661	243,418	1,419,897	169,942	1,444,593	35,341	1,649,874	3,844,968	4,925,520
2012	528,209	358,601	886,814	537,822	51,181	216,673	850,958	36,462	1,370,912	35,836	1,443,208	3,099,842	3,986,660
2013	5,378,895	283,767	5,662,661	5,960,091	762,083	116,195	178,720	36,942	125,238	661	162,841	7,179,926	12,842,588
2014	1,460,607	367,592	1,828,202	998,104	1,168,147	675,621	245,963	27,897	176,320	3,270	207,487	3,295,318	5,123,522
2015	151,608	407,191	558,799	100,725	498,843	1,137,068	663,428	36,455	37,871	1,035	75,361	2,475,419	3,034,218
2016	187,886	187,613	375,496	228,742	46,325	404,631	622,300	56,893	130,949	7,750	195,592	1,497,588	1,873,085
Beaver Bay/Balboa Bay/Unga Strait													
1988	169,806	150,200	320,005	133,180	70,128	70,525	46,150	13,193	27,038	0	40,231	360,216	680,224
1989	425,562	489,313	914,875	330,329	60,406	52,083	34,258	0	6,059	0	6,059	483,135	1,398,013
1990	374,061	479,216	853,275	384,766	40,078	155,650	89,422	16,442	6,616	0	23,057	692,975	1,546,251
1991	337,523	188,765	526,288	313,050	36,941	56,285	51,490	5,058	1,127	0	6,185	463,950	990,237
1992	73,138	128,906	202,041	80,581	30,327	47,470	20,585	564	2,027	0	2,591	181,556	383,599
1993	9,323	43,753	53,076	16,877	7,062	28,751	29,839	3,164	4,362	0	7,526	90,052	143,127
1994	10,119	29,294	39,414	9,240	4,362	11,328	25,119	2,254	5,938	0	8,192	58,243	97,656
1996	716,832	5,416	722,249	746,235	10,645	9,233	4,541	905	460	0	1,365	772,018	1,494,266
1997	107,308	23,354	130,663	57,536	34,558	4,218	6,682	0	0	0	0	102,995	233,658
1998	116,365	79,537	195,904	88,493	37,608	51,697	5,075	0	0	0	0	182,874	378,779
1999	30,113	59,467	89,578	78,640	10,903	35,551	22,833	685	0	0	685	148,613	238,190
2000	395,113	32,059	427,172	401,441	7,007	19,002	21,063	1,356	1,356	0	2,713	451,226	878,398
2001	795,671	78,698	874,370	856,993	65,118	32,117	16,721	0	0	0	0	970,950	1,845,319
2002	611,008	261,574	872,583	499,072	657,739	350,410	33,171	0	13,343	0	13,343	1,553,737	2,426,319
2003	60,835	238,017	298,853	12,620	108,980	223,498	129,934	7,972	9,746	0	17,717	492,746	791,598

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Table 7.–Page 5 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2004	212,229	171,614	383,840	256,112	87,019	170,666	132,602	31,546	1,370	685	33,601	679,997	1,063,837
2005	2,048,134	48,615	2,096,750	2,620,901	83,483	38,576	45,137	6,646	0	0	6,646	2,794,743	4,891,490
2006	3,164,401	1,064,115	4,228,516	2,119,653	1,974,847	790,466	382,300	4,029	42,734	0	46,763	5,314,027	9,542,539
2007	624,099	1,229,228	1,853,329	522,535	1,453,943	1,229,576	419,643	20,177	2,295	1,148	23,619	3,649,317	5,502,643
2008	777,292	2,560,319	3,337,611	367,734	1,896,414	2,201,529	1,012,410	105,951	2,855	0	108,806	5,586,895	8,924,505
2009	400,925	2,050,416	2,451,338	284,555	386,879	836,604	1,249,505	621,030	108,723	949	730,703	3,488,249	5,939,590
2010	63,693	754,381	818,074	34,435	67,375	213,381	379,420	85,243	120,499	1,715	207,456	902,066	1,720,139
2011	113,221	328,115	441,336	95,875	18,170	78,304	298,352	21,467	161,175	0	182,643	673,345	1,114,681
2012	46,272	130,668	176,939	32,533	1,634	42,697	390,550	8,928	261,823	0	270,751	738,167	915,105
2013	1,661,642	110,359	1,772,002	1,544,494	51,703	21,890	42,280	0	12,735	0	12,735	1,673,102	3,445,102
2014	375,651	92,747	468,398	214,341	430,448	164,949	96,219	0	50,398	955	51,353	957,316	1,425,712
2015	67,079	238,423	305,500	64,890	126,992	303,240	146,610	0	52,367	0	52,367	694,096	999,599
2016	54,484	100,776	155,260	61,211	12,914	65,757	33,830	5,296	1,599	0	6,895	180,612	335,871
West Nagai Strait													
1989	266,891	202,991	469,881	310,200	137,896	71,670	23,766	2,101	5,384	0	7,485	551,017	1,020,898
1990	223,997	36,745	260,741	228,844	17,172	17,328	5,914	0	908	0	908	270,167	530,907
1991	212,475	24,806	237,280	236,403	6,002	6,002	18,007	3,813	0	0	3,813	270,227	507,507
1992	24,726	33,234	57,961	13,307	8,516	19,136	8,256	0	3,165	0	3,165	52,379	110,340
1993	19,404	4,835	24,239	16,141	9,945	74,494	14,798	908	0	0	908	116,286	140,526
1994	20,348	24,860	45,209	8,616	24,859	29,969	27,773	8,469	0	0	8,469	99,682	144,891
1996	50,748	4,706	55,454	40,628	7,431	16,596	20,149	0	908	0	908	85,713	141,166
1997	334,024	263,782	597,804	180,259	292,165	173,398	25,182	0	4,706	0	4,706	675,708	1,273,510
1998	79,789	104,053	183,843	34,977	94,673	152,269	54,389	3,761	760	0	4,520	340,829	524,671
1999	59,602	24,684	84,286	46,816	34,194	28,481	46,396	5,615	0	0	5,615	161,501	245,786
2000	324,383	24,281	348,664	368,761	5,425	5,696	18,988	5,615	1,899	0	7,513	406,383	755,045
2001	509,223	69,773	578,994	349,814	126,647	65,816	33,598	908	0	0	908	576,783	1,155,776
2002	184,778	128,229	313,008	84,584	92,106	302,759	104,534	4,747	0	0	4,747	588,730	901,736
2003	40,103	57,642	97,744	7,611	60,133	37,806	11,146	3,798	0	0	3,798	120,492	218,233
2004	36,866	92,662	129,526	33,098	11,393	59,786	46,150	12,301	1,899	0	14,199	164,626	294,151
2005	411,853	47,535	459,387	476,009	14,241	38,507	70,970	11,106	0	0	11,106	610,831	1,070,218
2006	1,148,697	124,196	1,272,893	854,456	606,163	157,389	115,801	908	2,725	0	3,633	1,737,444	3,010,339
2007	1,118,132	2,410,737	3,528,868	405,215	1,713,276	1,257,497	435,630	27,634	41,115	0	68,749	3,880,362	7,409,230
2008	846,719	6,907,176	7,753,897	305,218	1,875,051	2,683,702	1,203,088	60,456	42,677	0	103,134	6,170,191	13,924,087

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Table 7.–Page 6 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2009	332,212	9,727,714	10,059,926	100,916	1,334,472	3,060,897	3,281,452	544,344	87,282	11,779	643,406	8,421,140	18,481,065
2010	191,580	3,329,836	3,521,417	149,959	169,021	1,027,531	2,135,083	1,355,030	192,369	26,083	1,573,480	5,055,073	8,576,492
2011	30,611	580,303	610,913	62,024	23,340	241,966	722,267	77,027	183,126	9,513	269,662	1,319,260	1,930,171
2012	66,031	191,917	257,947	134,778	9,128	55,834	527,604	39,306	584,623	17,486	641,414	1,368,757	1,626,704
2013	1,686,159	79,541	1,765,700	1,560,993	80,087	55,057	203,412	3,798	99,873	0	103,671	2,003,215	3,768,915
2014	711,571	205,164	916,735	264,403	460,041	159,894	144,464	0	47,845	0	47,845	1,076,646	1,993,380
2015	142,023	177,922	319,943	39,680	190,793	495,937	203,303	7,331	6,424	0	13,755	943,464	1,263,405
2016	15,001	2,698,516	2,713,517	0	48,449	467,286	477,941	5,467	23,855	0	29,323	1,022,997	3,736,512
Stepovak Bay													
1989	352,599	129,844	482,443	308,147	19,700	18,217	4,025	0	0	0	0	350,088	832,534
1990	842,468	138,655	981,124	940,262	7,256	28,930	19,636	8,266	6,158	0	14,424	1,010,509	1,991,629
1991	225,164	24,115	249,280	273,356	8,175	30,978	13,539	0	8,171	0	8,171	334,220	583,500
1992	286,230	26,900	313,131	255,298	7,249	31,206	7,801	2,013	0	0	2,013	303,568	616,698
1993	27,147	4,177	31,324	35,652	2,013	5,092	4,025	0	3,079	0	3,079	49,860	81,186
1994	30,461	2,013	32,474	32,303	0	0	0	0	0	0	0	32,303	64,776
1996	158,463	0	158,463	158,925	6,038	2,013	6,038	0	0	0	0	173,013	331,475
1997	25,774	18,114	43,888	67,372	40,254	14,089	0	0	2,013	0	2,013	123,727	167,616
1998	51,013	2,013	53,025	54,274	2,013	4,025	0	0	0	0	0	60,312	113,338
1999	40,454	8,051	48,505	58,559	0	4,025	8,051	0	0	0	0	70,635	119,140
2000	232,994	2,013	235,006	226,019	0	4,025	0	0	0	0	0	230,044	465,050
2001	479,137	0	479,137	466,342	29,292	0	0	0	0	0	0	495,636	974,772
2002	54,541	51,584	106,125	124,148	29,043	11,144	2,875	0	0	0	0	167,208	273,333
2003	57,982	6,038	64,020	65,336	10,063	14,089	4,955	0	0	0	0	94,444	158,465
2004	173,486	17,108	190,595	160,526	22,827	11,070	6,038	6,038	2,013	0	8,051	208,514	399,108
2005	419,167	101,564	520,730	515,631	11,022	13,083	20,127	6,038	0	0	6,038	565,901	1,086,631
2006	1,570,436	23,836	1,594,272	1,770,730	334,849	199,131	19,337	4,834	0	0	4,834	2,328,881	3,923,152
2007	370,600	203,449	574,048	478,146	348,853	192,724	59,862	5,701	0	0	5,701	1,085,283	1,659,333
2008	180,653	45,662	226,317	193,836	138,601	126,295	191,624	41,104	0	2,228	43,332	693,687	920,003
2009	55,241	20,290	75,532	60,636	164,796	312,245	141,401	105,943	835	0	106,778	785,858	861,391
2010	53,473	8,911	62,384	46,215	6,616	48,127	60,199	32,485	4,025	0	36,510	197,666	260,050
2011	121,056	5,790	126,846	138,324	4,337	3,272	7,578	0	4,531	0	4,531	158,042	284,887
2012	144,038	7,734	151,773	188,271	1,007	6,461	18,489	0	3,020	0	3,020	217,247	369,019
2013	542,681	7,045	549,726	533,981	9,213	2,701	6,038	0	0	0	0	551,934	1,101,659

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Table 7.–Page 7 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2014	113,734	5,425	119,160	78,087	32,427	4,934	11,220	0	688	835	1,523	128,192	247,351
2015	59,472	22,139	81,611	70,087	9,910	8,739	2,943	0	0	0	0	91,678	173,290
2016	12,883	0	12,883	21,106	0	1,600	0	0	0	0	0	22,707	35,590
WESTERN SECTION TOTALS[a]													
1988	679,185	743,113	1,422,296	376,771	450,155	448,494	451,286	168,352	70,740	23,724	262,816	1,989,522	3,411,820
1989	4,943,679	1,282,274	6,225,952	4,506,959	1,268,782	440,755	199,986	44,271	5,349	0	49,620	6,466,102	12,692,056
1990	4,554,561	1,785,640	6,340,201	3,498,025	1,266,499	881,321	447,021	112,994	75,340	4,762	193,096	6,285,962	12,626,165
1991	2,734,845	1,123,944	3,858,788	2,476,924	593,914	480,509	495,457	92,320	137,421	161	229,904	4,276,706	8,135,503
1992	915,258	1,097,741	2,012,996	574,981	609,959	422,171	350,929	75,595	59,905	2,671	138,173	2,096,211	4,109,204
1993	509,955	833,680	1,343,633	347,913	278,147	608,026	516,148	98,276	82,466	1,383	182,128	1,932,359	3,275,990
1994	227,465	574,213	801,674	150,856	130,390	214,943	310,010	34,642	59,458	1,258	95,358	901,557	1,703,231
1996	1,139,976	257,621	1,397,598	891,550	138,539	84,069	120,466	29,862	33,715	201	63,778	1,298,402	2,695,997
1997	365,138	169,200	534,334	216,834	214,633	191,899	135,816	43,947	11,558	483	55,987	815,167	1,349,497
1998	1,589,341	2,455,657	4,044,997	878,131	1,596,334	1,993,566	569,541	89,383	99,060	5,616	194,061	5,231,635	9,276,629
1999	361,998	678,919	1,040,915	169,431	351,310	836,064	1,054,752	126,462	80,405	2,768	209,631	2,622,071	3,662,983
2000	1,965,424	1,278,820	3,244,244	1,944,914	321,593	743,027	1,061,949	629,551	126,954	2,811	759,317	4,830,803	8,075,041
2001	2,991,993	530,363	3,522,355	2,328,858	1,159,761	447,477	502,001	277,950	129,034	14,915	421,894	4,859,994	8,382,345
2002	3,918,042	2,037,370	5,955,416	2,697,164	2,327,855	1,367,458	640,662	104,662	268,826	6,084	379,571	7,412,705	13,368,120
2003	1,322,942	2,366,089	3,689,030	602,377	1,622,652	1,366,577	645,906	41,603	133,236	1,136	175,977	4,413,487	8,102,517
2004	1,712,486	2,167,245	3,879,731	1,396,174	654,670	2,108,290	2,750,428	317,758	196,793	7,422	521,971	7,431,527	11,311,257
2005	1,806,850	4,614,796	6,421,647	1,327,098	528,585	733,491	1,512,920	502,388	245,947	2,848	751,185	4,853,276	11,274,923
2006	23,727,009	2,966,168	26,693,181	22,251,643	1,106,783	907,052	1,365,950	292,840	304,499	20,416	617,756	26,249,176	52,942,355
2007	19,596,721	5,585,008	25,181,733	12,153,216	9,058,601	2,794,498	2,724,422	572,450	257,827	13,482	843,758	27,574,493	52,756,226
2008	5,051,132	17,765,290	22,816,421	2,197,021	10,028,126	17,739,676	3,053,416	876,371	290,907	45,901	1,213,181	34,231,418	57,047,839
2009	1,132,030	4,552,445	5,684,475	690,350	999,869	5,503,778	12,076,889	773,293	45,300	31,608	850,203	20,121,084	25,805,555
2010	511,246	5,843,544	6,354,791	480,532	111,260	827,587	4,572,946	7,758,612	463,412	363,563	8,589,307	14,581,627	20,936,418
2011	894,660	2,709,655	3,604,315	886,379	75,895	220,330	1,611,774	1,603,738	2,904,020	379,069	4,886,822	7,681,194	11,285,508
2012	749,676	1,101,432	1,851,109	769,677	130,265	189,411	636,666	104,659	1,550,369	142,235	1,797,267	3,523,289	5,374,397
2013	9,475,995	199,948	9,675,939	9,802,758	499,490	97,912	202,350	73,081	634,959	49,410	757,450	11,359,968	21,035,905
2014	4,675,410	2,241,241	6,916,655	3,023,219	1,469,801	1,198,024	1,116,182	3,471	1,373,538	134,997	1,512,005	8,319,223	15,235,875
2015	2,596,196	2,888,106	5,484,301	833,477	2,884,001	4,267,587	1,545,158	187,438	202,376	2,208	392,022	9,922,245	15,406,549
2016	217,181	3,951,959	4,169,136	185,042	241,803	1,930,255	3,391,430	130,915	514,722	1,025	646,664	6,395,191	10,564,327

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Table 7.–Page 8 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
EASTERN SECTION TOTALS[b]													
1988	546,779	936,799	1,483,573	451,492	260,599	478,767	418,193	184,351	86,955	65,874	337,180	1,946,230	3,429,811
1989	1,938,984	2,477,634	4,416,614	1,511,445	658,204	509,335	503,325	123,431	92,387	17,669	233,485	3,415,800	7,832,422
1990	2,578,132	2,755,745	5,333,878	2,377,039	638,346	833,027	459,713	86,688	139,328	18,957	244,971	4,553,093	9,886,963
1991	1,293,228	804,756	2,097,984	1,296,245	137,162	376,040	361,461	48,153	98,304	3,039	149,498	2,320,409	4,418,387
1992	590,718	576,673	1,167,389	445,295	208,520	248,456	200,946	35,350	57,256	0	92,606	1,195,825	2,363,213
1993	171,501	254,317	425,817	140,348	187,743	602,568	279,207	48,489	34,857	1,925	85,269	1,295,129	1,720,945
1994	101,748	179,546	281,295	75,597	79,893	133,216	196,026	65,101	34,275	0	99,376	584,108	865,397
1996	1,317,533	65,407	1,382,943	1,313,282	64,236	58,883	83,036	15,746	10,886	992	27,624	1,547,056	2,929,997
1997	537,405	384,704	922,112	336,233	415,425	273,761	85,379	5,404	35,136	949	41,491	1,152,289	2,074,398
1998	354,893	362,597	717,491	211,278	284,974	522,191	441,289	11,940	52,424	0	64,364	1,524,091	2,241,587
1999	182,082	184,138	366,220	228,554	85,049	165,543	205,699	94,232	12,812	0	107,044	791,890	1,158,106
2000	2,205,804	295,885	2,501,688	2,073,795	200,663	162,171	279,957	92,489	29,939	0	122,429	2,839,016	5,340,702
2001	2,404,629	369,095	2,773,721	2,027,358	521,724	318,980	218,840	50,347	29,570	0	79,918	3,166,825	5,940,541
2002	2,035,336	849,440	2,884,776	1,821,923	1,098,556	1,104,072	487,126	45,963	56,202	1,276	103,442	4,615,119	7,499,890
2003	373,199	661,148	1,034,347	225,036	386,628	762,085	608,098	92,825	101,946	921	195,689	2,177,533	3,211,880
2004	793,712	761,126	1,554,832	761,330	248,833	890,476	909,164	174,498	263,911	6,480	444,889	3,254,694	4,809,527
2005	4,105,006	533,295	4,638,298	4,777,198	428,916	442,699	579,899	58,246	86,297	0	144,541	6,373,251	11,011,548
2006	9,030,123	1,565,320	10,595,442	7,792,222	3,597,956	1,564,150	804,200	36,564	112,320	1,021	149,904	13,908,430	24,503,872
2007	3,852,323	5,194,995	9,047,319	2,590,412	5,234,918	4,900,328	2,156,379	120,317	165,735	1,148	287,200	15,169,229	24,216,546
2008	3,334,510	11,168,683	14,503,198	1,364,843	6,720,741	7,659,461	4,678,609	784,637	75,885	7,696	868,220	21,291,874	35,795,069
2009	2,030,915	14,555,741	16,586,655	1,386,080	2,731,157	7,352,090	9,920,893	2,727,176	397,594	43,932	3,168,704	24,558,925	41,145,582
2010	908,209	5,461,801	6,370,011	709,341	628,951	1,944,616	5,103,998	3,687,424	987,205	67,217	4,741,841	13,128,738	19,498,754
2011	618,397	1,641,252	2,259,649	658,337	215,508	566,960	2,448,094	268,436	1,793,425	44,854	2,106,710	5,995,615	8,255,259
2012	784,550	688,920	1,473,473	893,404	62,950	321,665	1,787,601	84,696	2,220,378	53,322	2,358,393	5,424,013	6,897,488
2013	9,269,377	480,712	9,750,089	9,599,559	903,086	195,843	430,450	40,740	237,846	661	279,247	11,408,177	21,158,264
2014	2,661,563	670,928	3,332,495	1,554,935	2,091,063	1,005,398	497,866	27,897	275,251	5,060	308,208	5,457,472	8,789,965
2015	420,182	845,675	1,265,853	275,382	826,538	1,944,984	1,016,284	43,786	96,662	1,035	141,483	4,204,657	5,470,512
2016	270,254	2,986,905	3,257,156	311,059	107,688	939,274	1,134,071	67,656	156,403	7,750	231,810	2,723,904	5,981,058
SOUTH PENINSULA DISTRICT TOTALS													
1988	1,227,389	1,679,912	2,907,294	830,400	710,754	927,261	871,197	353,415	157,695	89,598	600,708	3,940,322	6,847,624
1989	6,882,663	3,759,908	10,642,566	6,018,404	1,926,986	950,090	703,311	167,702	97,736	17,669	283,105	9,881,901	20,524,478
1990	7,132,693	4,541,385	11,674,079	5,875,064	1,904,845	1,714,348	906,734	199,682	214,668	23,719	438,067	10,839,053	22,513,128
1991	4,028,073	1,928,700	5,956,772	3,773,169	731,076	856,549	856,918	140,473	235,725	3,200	379,402	6,597,120	12,553,890

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Table 7.–Page 9 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
SOUTH PENINSULA DISTRICT TOTALS (continued)													
1992	1,505,976	1,674,414	3,180,385	1,020,276	818,479	670,627	551,875	110,945	117,161	2,671	230,779	3,292,031	6,472,417
1993	681,456	1,087,997	1,769,450	488,261	465,890	1,210,594	795,355	146,765	117,323	3,308	267,397	3,227,485	4,996,935
1994	329,213	753,759	1,082,969	226,453	210,283	348,159	506,036	99,743	93,733	1,258	194,734	1,485,665	2,568,628
1996	2,457,509	323,028	2,780,541	2,204,832	202,775	142,952	203,502	45,608	44,601	1,193	91,402	2,845,456	5,625,994
1997	902,543	553,904	1,456,446	553,067	630,058	465,660	221,195	49,351	46,694	1,432	97,478	1,967,456	3,423,895
1998	1,944,234	2,818,254	4,762,488	1,089,409	1,881,308	2,515,757	1,010,830	101,323	151,484	5,616	258,425	6,755,726	11,518,216
1999	544,080	863,057	1,407,135	397,985	436,359	1,001,607	1,260,451	220,694	93,217	2,768	316,675	3,413,961	4,821,089
2000	4,171,228	1,574,705	5,745,932	4,018,709	522,256	905,198	1,341,906	722,040	156,893	2,811	881,746	7,669,819	13,415,743
2001	5,396,622	899,458	6,296,076	4,356,216	1,681,485	766,457	720,841	328,297	158,604	14,915	501,812	8,026,819	14,322,886
2002	5,953,378	2,886,810	8,840,192	4,519,087	3,426,411	2,471,530	1,127,788	150,625	325,028	7,360	483,013	12,027,824	20,868,010
2003	1,696,141	3,027,237	4,723,377	827,413	2,009,280	2,128,662	1,254,004	134,428	235,182	2,057	371,666	6,591,020	11,314,397
2004	2,506,198	2,928,371	5,434,563	2,157,504	903,503	2,998,766	3,659,592	492,256	460,704	13,902	966,860	10,686,221	16,120,784
2005	5,911,856	5,148,091	11,059,945	6,104,296	957,501	1,176,190	2,092,819	560,634	332,244	2,848	895,726	11,226,527	22,286,471
2006	32,757,132	4,531,488	37,288,623	30,043,865	4,704,739	2,471,202	2,170,150	329,404	416,819	21,437	767,660	40,157,606	77,446,227
2007	23,449,044	10,780,003	34,229,052	14,743,628	14,293,519	7,694,826	4,880,801	692,767	423,562	14,630	1,130,958	42,743,722	76,972,772
2008	8,385,642	28,933,973	37,319,619	3,561,864	16,748,867	25,399,137	7,732,025	1,661,008	366,792	53,597	2,081,401	55,523,292	92,842,908
2009	3,162,945	19,108,186	22,271,130	2,076,430	3,731,026	12,855,868	21,997,782	3,500,469	442,894	75,540	4,018,907	44,680,009	66,951,137
2010	1,419,455	11,305,345	12,724,802	1,189,873	740,211	2,772,203	9,676,944	11,446,036	1,450,617	430,780	13,331,148	27,710,365	40,435,172
2011	1,513,057	4,350,907	5,863,964	1,544,716	291,403	787,290	4,059,868	1,872,174	4,697,445	423,923	6,993,532	13,676,809	19,540,767
2012	1,534,226	1,790,352	3,324,582	1,663,081	193,215	511,076	2,424,267	189,355	3,770,747	195,557	4,155,660	8,947,302	12,271,885
2013	18,745,372	680,660	19,426,028	19,402,317	1,402,576	293,755	632,800	113,821	872,805	50,071	1,036,697	22,768,145	42,194,169
2014	7,336,973	2,912,169	10,249,150	4,578,154	3,560,864	2,203,422	1,614,048	31,368	1,648,789	140,057	1,820,213	13,776,695	24,025,840
2015	3,016,378	3,733,781	6,750,154	1,108,859	3,710,539	6,212,571	2,561,442	231,224	299,038	3,243	533,505	14,126,902	20,877,061
2016	487,435	6,938,864	7,426,292	496,101	349,491	2,869,529	4,525,501	198,571	671,125	8,775	878,474	9,119,095	16,545,385
CHIGNIK DISTRICT													
Ivanof Bay													
1989	375,317	142,361	517,678	402,553	74,048	403,346	380,328	175,484	6,289	6,289	188,062	1,448,335	1,966,013
1990	760,011	17,004	777,016	899,720	10,616	59,070	132,651	55,200	0	0	55,200	1,157,258	1,934,273
1991	361,655	1,476	363,131	350,368	0	0	1,723	7,136	0	738	7,874	359,965	723,096
1992	32,735	2,215	34,949	37,543	1,969	984	5,028	4,119	1,889	738	6,746	52,271	87,220
1993	55,400	1,929	57,329	28,729	41,776	9,880	3,055	0	699	0	699	84,139	141,467
1994	44,185	12,095	56,280	13,569	22,612	12,866	3,833	984	246	0	1,230	54,109	110,391

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Table 7.–Page 10 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
1995	60,450	3,833	64,283	72,814	2,848	492	2,461	2,707	492	0	3,199	81,814	146,097
1996	72,589	699	73,288	73,697	41,649	6,890	7,872	8,754	0	0	8,754	138,863	212,150
1997	40,248	4,675	44,923	56,022	4,595	7,770	4,183	3,691	492	246	4,429	77,000	121,924
1998	27,874	1,191	29,065	40,904	1,864	246	1,230	1,723	0	0	1,723	45,966	75,031
1999	58,134	3,652	61,784	61,575	492	1,476	9,919	10,089	945	0	11,034	84,495	146,280
2000	920,897	15,177	936,075	1,178,257	37,727	25,900	15,503	10,089	945	246	11,280	1,268,668	2,204,742
2001	783,211	97,341	880,550	620,710	325,720	73,445	43,541	2,848	15,299	0	18,147	1,081,562	1,962,112
2002	394,160	75,085	469,246	281,883	1,430,141	482,812	119,398	4,490	9,228	0	13,718	2,327,954	2,797,199
2003	39,742	243,170	282,912	14,904	50,330	98,784	111,788	28,954	7,990	0	36,945	312,751	595,663
2004	78,301	451,280	529,581	120,337	36,480	444,150	681,583	217,943	36,389	6,354	260,686	1,543,236	2,072,818
2005	663,287	907,178	1,570,465	947,259	55,244	86,930	225,662	56,910	51,450	1,182	109,541	1,424,638	2,995,105
2006	9,275,500	343,120	9,618,621	12,000,574	1,751,915	125,603	230,592	53,504	112,773	46,687	212,964	14,321,648	23,940,270
2007	2,590,248	186,057	2,776,306	2,619,492	1,693,768	325,392	70,091	16,935	25,403	3,629	45,967	4,754,711	7,531,016
2008	1,270,167	794,362	2,064,529	690,097	2,471,293	1,393,829	272,918	12,249	12,249	4,083	28,581	4,856,718	6,921,246
2009	167,512	1,812,620	1,980,132	99,103	731,233	2,266,419	1,362,266	94,708	31,535	2,515	128,759	4,587,782	6,567,914
2010	12,542	497,841	510,383	17,818	24,005	892,163	2,124,920	610,730	203,185	7,312	821,228	3,880,132	4,390,515
2011	147,210	158,875	306,083	170,043	0	40,008	525,781	437,307	248,170	39,561	725,036	1,460,866	1,766,948
2012	236,248	50,634	286,883	280,465	3,231	9,254	71,965	12,854	27,679	0	40,532	405,448	692,329
2013	3,891,387	150,543	4,041,930	4,723,851	28,213	29,844	504,305	0	441,530	19,189	460,719	5,746,931	9,788,861
2014	297,806	82,883	380,691	221,582	205,424	225,115	767,734	0	769,088	19,016	788,105	2,207,962	2,588,651
2015	823,312	1,257,279	2,080,592	402,097	573,402	467,547	513,631	21,702	249,167	3,709	274,579	2,231,254	4,311,845
2016	21,766	24,032	45,799	7,745	28,557	385,183	297,653	24,332	628	0	24,960	744,098	789,895
Mitrofania Island													
1989	170,450	510,311	680,761	163,434	152,639	637,889	315,908	42,526	17,719	21,263	81,508	1,351,378	2,032,138
1990	269,281	40,104	309,384	218,188	141,813	173,574	214,823	75,473	22,789	5,717	103,980	852,379	1,161,765
1991	440,867	42,474	483,341	409,897	107,657	67,876	52,191	46,473	5,064	2,532	54,071	691,692	1,175,034
1992	290,955	6,874	297,829	219,423	36,768	6,451	14,621	17,153	0	2,532	19,685	296,948	594,779
1993	133,718	17,869	151,588	76,189	68,542	37,635	15,337	18,459	9,048	653	28,160	225,862	377,448
1994	48,370	8,681	57,052	32,122	19,977	14,992	6,149	13,384	2,532	0	15,916	89,157	146,209
1995	221,670	39,309	260,980	258,696	13,476	46,293	32,346	27,261	0	2,532	29,793	380,603	641,581
1997	545,275	129,834	675,109	356,506	832,433	412,231	101,306	8,229	25,322	10,129	43,680	1,746,159	2,421,267
1998	235,431	283,845	519,277	161,546	177,977	230,585	88,287	25,342	31,019	0	56,360	714,757	1,234,033
1999	172,648	78,335	250,984	162,641	81,213	66,349	83,378	17,305	3,165	3,165	23,636	417,221	668,204

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Table 7.–Page 11 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2000	884,331	134,935	1,019,267	877,395	104,618	86,768	84,651	92,390	14,832	66,560	173,781	1,327,210	2,346,477
2001	536,782	326,224	863,006	515,856	258,191	308,027	118,323	43,225	36,561	8,441	88,228	1,288,625	2,151,633
2002	732,541	394,467	1,127,008	716,939	883,121	1,126,100	339,861	34,181	7,504	1,282	42,968	3,108,993	4,235,998
2003	225,828	242,297	468,123	118,906	644,742	615,597	341,453	22,552	46,724	7,597	76,872	1,797,573	2,265,697
2004	949,424	261,894	1,211,320	967,123	204,818	916,975	675,599	163,810	29,328	5,064	198,202	2,962,717	4,174,037
2005	2,039,144	136,680	2,175,825	2,016,881	346,413	172,248	237,391	75,021	20,845	3,284	99,152	2,872,089	5,047,914
2006	4,541,695	280,072	4,821,770	4,124,071	666,002	262,359	275,457	20,960	62,795	0	83,756	5,411,644	10,233,414
2007	2,200,793	631,391	2,832,184	1,979,957	2,151,128	702,542	128,026	5,758	20,059	3,798	29,616	4,991,268	7,823,453
2008	2,825,623	622,685	3,448,309	2,112,695	3,355,896	2,889,523	644,998	47,258	9,851	4,925	62,034	9,065,146	12,513,456
2009	580,893	1,266,391	1,847,284	580,035	3,767,888	4,985,349	1,928,330	196,679	8,336	0	205,015	11,466,620	13,313,905
2010	219,314	1,049,897	1,269,213	119,650	277,853	1,898,318	3,447,284	1,327,154	118,085	16,798	1,462,038	7,205,144	8,474,357
2011	237,140	536,031	773,174	178,188	18,517	188,252	1,697,853	1,160,577	465,170	57,646	1,683,393	3,766,204	4,539,375
2012	276,916	130,157	407,074	279,396	19,622	56,757	535,029	109,430	371,650	9,827	490,908	1,381,712	1,788,790
2013	3,411,503	17,056	3,428,559	3,683,568	157,361	33,359	312,343	10,781	199,302	16,500	226,583	4,413,213	7,841,770
2014	1,019,547	95,540	1,115,087	746,055	471,299	348,101	213,852	4,366	89,843	0	94,209	1,873,520	2,988,609
2015	539,435	271,206	810,642	445,376	257,064	341,179	287,514	22,703	33,653	4,549	60,906	1,392,040	2,202,680
2016	37,352	81,844	119,196	14,209	17,153	69,134	97,732	18,378	2,532	2,532	23,443	221,671	340,868
Chignik Bay													
1989	672,318	450,164	1,122,480	660,273	89,797	81,938	174,032	40,550	13,229	0	53,781	1,059,818	2,182,299
1990	1,650,409	423,975	2,074,381	1,330,659	111,829	133,701	444,782	83,477	77,931	1,387	162,795	2,183,761	4,258,145
1991	1,119,262	486,770	1,606,032	1,065,393	98,760	48,865	131,639	67,386	66,421	0	133,807	1,478,466	3,084,498
1992	1,150,084	323,333	1,473,417	1,307,665	91,362	69,122	34,071	0	14,828	0	14,828	1,517,049	2,990,466
1993	823,019	216,260	1,039,276	790,571	467,458	307,174	186,927	22,191	60,687	3,286	86,164	1,838,291	2,877,568
1994	235,449	135,863	371,312	72,103	520,863	514,183	143,524	28,567	32,315	949	61,831	1,312,506	1,683,817
1995	173,572	93,531	267,103	206,860	3,191	52,923	174,184	82,082	14,528	0	96,610	533,768	800,871
1996	1,007,658	128,777	1,136,437	995,236	34,926	44,796	249,658	263,871	72,615	0	336,486	1,661,101	2,797,540
1997	1,125,527	334,727	1,460,254	1,020,377	270,496	167,558	237,471	150,392	77,359	5,366	233,117	1,929,012	3,389,266
1998	427,674	626,554	1,054,229	292,560	187,095	243,304	230,117	45,704	91,685	1,213	138,602	1,091,676	2,145,904
1999	628,224	146,209	774,435	471,690	307,845	353,425	431,851	144,268	165,100	0	309,366	1,874,175	2,648,607
2000	3,145,891	433,733	3,579,623	2,800,331	1,657,007	793,849	546,024	224,130	182,700	10,414	417,246	6,214,459	9,794,079
2001	2,232,040	488,212	2,720,253	922,700	2,819,622	841,521	416,754	217,593	48,659	2,554	268,807	5,269,403	7,989,658
2002	274,304	697,209	971,510	112,370	434,936	1,001,961	641,173	86,382	361,373	7,856	455,612	2,646,050	3,617,564
2003	136,009	497,809	633,819	116,352	120,965	345,914	466,463	70,510	132,708	7,476	210,693	1,260,385	1,894,203

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Table 7.–Page 12 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2004	937,790	577,337	1,515,126	842,966	360,190	265,548	558,334	288,476	167,489	7,555	463,520	2,490,559	4,005,686
2005	1,020,682	440,895	1,461,578	1,040,778	375,038	638,701	514,913	112,435	84,155	1,618	198,208	2,767,634	4,229,208
2006	1,957,789	433,101	2,390,888	2,664,297	187,986	238,972	372,015	70,627	93,625	2,654	166,905	3,630,177	6,021,064
2007	776,439	768,987	1,545,426	775,260	439,435	585,328	468,728	105,851	39,291	1,898	147,042	2,415,789	3,961,215
2008	1,436,888	435,709	1,872,597	1,107,740	889,415	932,201	686,717	141,205	43,906	2,569	187,681	3,803,748	5,676,347
2009	1,560,769	602,988	2,163,756	961,854	1,050,025	1,097,366	1,024,446	332,197	43,429	9,522	385,148	4,518,836	6,682,593
2010	342,314	594,155	936,470	362,479	351,726	829,040	1,431,076	767,292	698,850	31,965	1,498,106	4,472,427	5,408,896
2011	787,519	131,274	918,795	949,541	17,135	162,285	594,740	137,255	483,314	47,611	668,181	2,391,880	3,310,673
2012	988,581	127,043	1,115,623	1,131,070	15,244	36,162	198,926	58,438	181,033	5,330	244,801	1,626,202	2,741,823
2013	4,845,806	64,622	4,910,427	6,564,328	110,315	30,560	65,224	1,941	72,173	0	74,114	6,844,538	11,754,968
2014	1,997,571	128,190	2,125,760	2,248,835	426,822	141,976	23,223	0	16,479	456	16,935	2,857,793	4,983,551
2015	646,949	290,813	937,762	322,177	550,008	239,820	71,806	0	9,115	698	9,814	1,193,627	2,131,388
2016	125,307	263,572	388,877	149,897	25,781	308,180	215,528	10,445	5,098	0	15,543	714,928	1,103,810
Kujulik Bay												0	
1989	82,372	13,089	95,460	77,913	772	9,150	11,387	931	0	0	931	100,154	195,613
1990	331,331	78,499	409,830	332,971	1,691	7,737	7,189	1,519	0	0	1,519	351,106	760,935
1991	8,256	949	9,205	14,470	0	0	0	0	0	0	0	14,470	23,675
1992	108,457	18,988	127,445	129,875	760	760	3,038	0	1,519	0	1,519	135,951	263,395
1993	107,647	16,184	123,831	100,150	81,074	29,658	1,367	0	0	0	0	212,249	336,080
1994	7,736	3,190	10,926	9,141	7,321	4,952	6,472	0	2,279	0	2,279	30,165	41,092
1995	851	28,922	29,772	2,772	0	911	456	0	0	0	0	4,139	33,911
1996	231,502	7,595	239,097	188,333	0	0	0	0	0	0	0	188,333	427,430
1997	49,589	61,537	111,127	63,018	456	3,711	14,105	0	5,425	0	5,425	86,714	197,841
1998	39,289	15,190	54,479	38,304	0	2,279	3,798	0	760	0	760	45,140	99,621
1999	92,824	0	92,824	88,526	456	0	0	0	456	0	456	89,438	182,262
2000	221,879	949	222,829	262,224	1,307	0	0	0	0	0	0	263,530	486,360
2001	188,570	0	188,570	213,511	760	2,640	0	931	0	0	931	217,843	406,411
2002	15,870	844	16,714	16,479	6,179	7,689	3,376	844	0	0	844	34,567	51,281
2003	374,933	0	374,933	451,837	949	0	0	0	0	0	0	452,786	827,719
2004	301,691	0	301,691	350,645	9,547	2,278	949	0	0	0	0	363,420	665,112
2005	159,269	0	159,269	150,081	4,093	2,318	0	0	0	0	0	156,492	315,762
2006	518,134	949	519,083	806,820	1,801	851	0	0	0	0	0	809,472	1,328,555
2007	136,283	0	136,283	161,879	2,157	0	0	0	0	0	0	164,036	300,316

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Table 7.–Page 13 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2008	423,344	3,209	426,554	447,326	9,874	8,240	26,431	9,661	0	456	10,117	501,987	928,541
2009	268,389	188,399	456,788	159,418	192,790	230,002	93,902	10,175	0	0	10,175	686,287	1,143,076
2010	45,087	122,319	167,405	30,116	83,769	290,322	307,962	33,108	1,519	0	34,627	746,797	914,202
2011	91,200	12,818	104,020	87,367	456	8,811	35,888	6,205	10,896	0	17,100	149,623	253,642
2012	168,540	32,523	201,063	200,264	3,038	7,383	25,155	0	9,114	0	9,114	244,954	446,017
2013	554,649	15,172	569,822	727,766	32,736	6,916	6,646	0	3,798	0	3,798	777,861	1,347,682
2014	300,039	4,297	304,335	247,674	15,054	4,342	2,642	0	1,519	0	1,519	271,230	575,564
2015	15,808	911	16,719	11,433	10,548	10,970	0	0	0	0	0	32,953	49,672
2016	0	3,646	3,646	1,800	911	1,367	456	0	0	0	0	4,534	8,180
CHIGNIK DISTRICT TOTALS													
1989	1,300,457	1,115,925	2,416,379	1,304,173	317,256	1,132,323	881,655	259,491	37,237	27,552	324,282	3,959,685	6,376,063
1990	3,011,032	559,582	3,570,611	2,781,538	265,949	374,082	799,445	215,669	100,720	7,104	323,494	4,544,504	8,115,118
1991	1,930,040	531,669	2,461,709	1,840,128	206,417	116,741	185,553	120,995	71,485	3,270	195,752	2,544,593	5,006,303
1992	1,582,231	351,410	1,933,640	1,694,506	130,859	77,317	56,758	21,272	18,236	3,270	42,778	2,002,219	3,935,860
1993	1,119,784	252,242	1,372,024	995,639	658,850	384,347	206,686	40,650	70,434	3,939	115,023	2,360,541	3,732,563
1994	335,740	159,829	495,570	126,935	570,773	546,993	159,978	42,935	37,372	949	81,256	1,485,937	1,981,509
1995	456,543	165,595	622,138	541,142	19,515	100,619	209,447	112,050	15,020	2,532	129,602	1,000,324	1,622,460
1996	1,311,749	137,071	1,448,822	1,257,266	76,575	51,686	257,530	272,625	72,615	0	345,240	1,988,297	3,437,120
1997	1,760,639	530,773	2,291,413	1,495,923	1,107,980	591,270	357,065	162,312	108,598	15,741	286,651	3,838,885	6,130,298
1998	730,268	926,780	1,657,050	533,314	366,936	476,414	323,432	72,769	123,464	1,213	197,445	1,897,539	3,554,589
1999	951,830	228,196	1,180,027	784,432	390,006	421,250	525,148	171,662	169,666	3,165	344,492	2,465,329	3,645,353
2000	5,172,998	584,794	5,757,794	5,118,207	1,800,659	906,517	646,178	326,609	198,477	77,220	602,307	9,073,867	14,831,658
2001	3,740,603	911,777	4,652,379	2,272,777	3,404,293	1,225,633	578,618	264,597	100,519	10,995	376,113	7,857,433	12,509,814
2002	1,416,875	1,167,605	2,584,478	1,127,671	2,754,377	2,618,562	1,103,808	125,897	378,105	9,138	513,142	8,117,564	10,702,042
2003	776,512	983,276	1,759,787	701,999	816,986	1,060,295	919,704	122,016	187,422	15,073	324,510	3,823,495	5,583,282
2004	2,267,206	1,290,511	3,557,718	2,281,071	611,035	1,628,951	1,916,465	670,229	233,206	18,973	922,408	7,359,932	10,917,653
2005	3,882,382	1,484,753	5,367,137	4,154,999	780,788	900,197	977,966	244,366	156,450	6,084	406,901	7,220,853	12,587,989
2006	16,293,118	1,057,242	17,350,362	19,595,762	2,607,704	627,785	878,064	145,091	269,193	49,341	463,625	24,172,941	41,523,303
2007	5,703,763	1,586,435	7,290,199	5,536,588	4,286,488	1,613,262	666,845	128,544	84,753	9,325	222,625	12,325,804	19,616,000
2008	5,956,022	1,855,965	7,811,989	4,357,858	6,726,478	5,223,793	1,631,064	210,373	66,006	12,033	288,413	18,227,599	26,039,590
2009	2,577,563	3,870,398	6,447,960	1,800,410	5,741,936	8,579,136	4,408,944	633,759	83,300	12,037	729,097	21,259,525	27,707,488
2010	619,257	2,264,212	2,883,471	530,063	737,353	3,909,843	7,311,242	2,738,284	1,021,639	56,075	3,815,999	16,304,500	19,187,970
2011	1,263,069	838,998	2,102,072	1,385,139	36,108	399,356	2,854,262	1,741,344	1,207,550	144,818	3,093,710	7,768,573	9,870,638

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Table 7.–Page 14 of 14.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
CHIGNIK DISTRICT TOTALS (continued)													
2012	1,670,285	340,357	2,010,643	1,891,195	41,135	109,556	831,075	180,722	589,476	15,157	785,355	3,658,316	5,668,959
2013	12,703,345	247,393	12,950,738	15,699,513	328,625	100,679	888,518	12,722	716,803	35,689	765,214	17,782,543	30,733,281
2014	3,614,963	310,910	3,925,873	3,464,146	1,118,599	719,534	1,007,451	4,366	876,929	19,472	900,768	7,210,505	11,136,375
2015	2,025,504	1,820,209	3,845,715	1,181,083	1,391,022	1,059,516	872,951	44,405	291,935	8,956	345,299	4,849,874	8,695,585
2016	184,425	373,094	557,518	173,651	72,402	763,864	611,369	53,155	8,258	2,532	63,946	1,685,231	2,242,753

[a] Western Section of the South Peninsula District includes Sanak Island, Morzhovoi Bay, and Cold Bay/Belkofski Bay.
[b] Eastern Section of the South Peninsula District includes Pavlof Bay/Volcano Bay, Beaver Bay/Balboa Bay/Unga Strait, West Nagai Strait, and Stepovak Bay.

Table 8.–Dominant species by weight in the South Peninsula and Chignik Tanner crab districts bottom trawl survey, 2016.

Common name	Species name	% of catch by weight
Flathead sole	*Hippoglossoides elassodon*	29.3
Arrowtooth flounder	*Atheresthes stomias*	21.3
Yellowfin sole	*Limanda aspera*	11.9
Pacific halibut	*Hippoglossus stenolepis*	4.1
Tanner crab	*Chionoecetes bairdi*	3.7
Sunflower seastar	*Pycnopodia helianthoides*	3.6
Walleye pollock	*Gadus chalcogrammus*	3.2
Anemone	Order: Actinaria	2.9
Big skate	*Raja binoculata*	2.7
Pacific cod	*Gadus macrocephalus*	2.3
Alaska plaice	*Pleuronectes quadrituberculatus*	1.4
Starry flounder	*Platichthys stellatus*	1.3
Northern rock sole	*Lepidopsetta polyxystra*	1.2
Mussel	Family: Mytilidae	1.2
Great sculpin	*Myoxocephalus polyacanthocephalus*	1.0
Jellyfish	Class: Schyphozoa	1.0
Hermit crab	Family: Paguridae	0.9
Red king crab	*Paralithodes camtschaticus*	0.7
Yellow Irish lord	*Hemilepidotus jordani*	0.7
Dungeness crab	*Metacarcinus magister*	0.7
All others	(106 species)	5.0
		100.0

Table 9.–Tanner crab abundance estimates from bottom trawl surveys in the Eastern Aleutian District, 1990–2016.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit Males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70-91 mm	92-114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
AKUTAN BAY SECTION													
1990	464,233	779,189	1,243,422	621,580	927,652	454,522	148,140	15,190	0	0	15,190	2,167,084	3,410,504
1991	745,793	580,770	1,326,560	812,713	355,129	533,276	374,345	13,291	13,291	0	26,583	2,102,046	3,428,606
1994	949	2,937	3,887	2,937	7,685	15,638	34,572	2,848	949	0	3,798	64,631	68,518
1995	19,077	5,696	24,774	12,521	8,294	32,137	100,690	949	8,903	0	9,852	163,493	188,267
1999	126,273	698,970	825,243	20,308	148,942	726,903	1,055,747	211,475	4,451	0	215,926	2,167,827	2,993,069
2000	9,124	251,383	260,506	8,077	12,322	168,099	327,390	86,955	17,651	0	104,606	620,494	881,001
2003	57,238	694,037	751,275	38,398	140,011	416,038	123,376	21,145	74,528	4,283	99,956	817,776	1,569,052
2004	132,586	1,022,595	1,155,182	73,127	228,628	293,052	225,319	10,372	24,006	2,078	36,455	856,583	2,011,764
2005	128,780	514,705	643,485	85,513	201,219	191,187	274,967	50,725	9,975	1,187	61,887	814,771	1,458,256
2006	60,461	209,923	270,383	56,504	105,933	262,401	351,972	7,992	93,661	0	101,653	878,462	1,148,847
2007	132,373	364,725	497,097	108,499	217,880	334,162	318,982	9,721	5,195	0	14,916	994,437	1,491,535
2008	13,220	156,340	169,560	5,875	32,584	122,379	223,506	33,743	44,074	0	77,817	462,161	631,721
2009	39,406	954,407	993,812	13,848	33,266	141,310	382,423	63,381	65,382	2,043	130,806	701,655	1,695,467
2010	173,821	237,064	410,886	86,744	80,077	132,415	321,401	30,849	68,018	0	98,867	719,506	1,130,392
2011	19,250	300,674	319,924	20,609	17,051	67,517	196,191	3,798	15,739	0	19,537	320,905	640,829
2012	27,138	392,030	419,167	34,861	37,249	122,481	126,843	14,330	8,312	0	22,642	344,077	763,244
2013	417,843	71,715	489,559	387,636	103,958	129,668	71,279	3,785	13,204	0	16,990	709,530	1,199,090
2014	343,444	1,715,652	2,059,097	256,152	176,298	285,699	426,441	17,412	43,531	0	60,943	1,205,533	3,264,629
2015	193,125	202,154	395,280	216,227	64,650	13,576	13,552	0	0	0	0	308,006	703,285
2016	56,962	430,029	486,990	29,283	180,722	295,153	74,168	0	1,039	0	1,039	580,365	1,067,352
UNALASKA/KALEKTA BAY SECTION													
1990	1,120,173	359,538	1,479,709	664,933	59,141	78,357	42,847	11,544	793	2,002	14,339	859,617	2,339,327
1991	981,240	137,467	1,118,707	920,709	167,932	41,207	25,026	8,906	0	1,001	9,907	1,164,780	2,283,487
1994	17,484	1,465	18,950	17,485	949	0	1,982	949	1,549	0	2,498	22,914	41,867
1995	23,706	7,595	31,300	17,863	3,387	10,847	1,899	1,309	0	0	1,309	35,306	66,607
1999	230,687	194,469	425,157	141,403	95,640	253,997	313,785	123,839	43,171	1,356	168,366	973,189	1,398,346
2000	248,548	952,496	1,201,044	31,132	195,166	243,495	148,668	35,059	12,573	738	48,370	666,834	1,867,878
2003	72,717	7,654	80,371	82,917	6,985	55,771	390,915	99,369	175,774	6,561	281,704	818,293	898,664
2004	347,648	136,331	483,979	338,119	127,521	52,962	26,311	68,737	5,855	8,008	82,600	627,510	1,111,488
2005	854,570	212,211	1,066,782	652,400	241,781	90,170	47,959	20,182	6,616	2,730	29,529	1,061,843	2,128,625
2006	152,412	372,418	524,829	133,520	262,003	138,544	185,052	42,346	460,626	35,311	538,282	1,257,405	1,782,234
2007	436,607	1,997,302	2,433,907	255,144	109,448	308,033	304,795	104,411	211,536	17,922	333,869	1,311,287	3,745,195

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Table 9.–Page 2 of 5.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit Males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70-91 mm	92-114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2008	324,108	1,990,322	2,314,430	210,497	217,649	246,376	554,496	98,765	64,243	1,254	164,262	1,393,282	3,707,713
2009	176,340	1,306,064	1,482,403	80,051	54,218	122,947	284,196	108,250	105,576	2,988	216,814	758,229	2,240,631
2010	200,948	386,350	587,298	131,427	27,374	30,870	7,382	1,973	1,187	0	3,160	200,215	787,512
2011	25,900	253,899	279,797	29,250	24,995	64,648	40,142	2,167	6,223	1,112	9,502	168,538	448,334
2012	170,447	503,998	674,444	123,914	64,170	169,250	380,612	20,623	215,057	9,546	245,225	983,169	1,657,611
2013	1,295,974	690,495	1,986,467	660,241	225,539	149,244	128,209	6,738	20,450	0	27,188	1,190,420	3,176,888
2014	290,482	157,233	447,717	313,882	771,861	718,719	186,156	8,170	1,786	0	9,955	2,000,572	2,448,287
2015	408,740	94,026	502,766	308,173	117,455	140,343	156,817	18,733	0	0	18,733	741,523	1,244,288
2016	33,078	8,843	41,922	23,949	9,495	51,148	13,270	1,595	0	0	1,595	99,458	141,378
MAKUSHIN/SKAN BAY SECTION													
1990	440,133	313,413	753,546	368,957	83,150	76,482	125,452	6,927	23,029	0	29,956	683,996	1,437,542
1991	89,388	149,173	238,561	76,314	85,035	51,894	70,212	5,911	29,134	2,576	37,622	321,077	559,638
1994	148,701	159,043	307,743	127,268	19,767	98,635	109,428	36,354	1,662	0	38,016	393,113	700,856
1995	125,736	85,759	211,496	93,308	25,608	38,406	51,872	2,837	8,622	0	11,459	220,653	432,149
1999	539,110	79,122	618,234	487,270	37,716	50,718	41,163	4,800	9,597	0	14,397	631,261	1,249,495
2000	570,431	152,224	722,656	451,979	122,785	42,701	17,963	2,349	0	0	2,349	637,776	1,360,431
2003	66,656	1,156,357	1,223,012	47,889	82,459	278,262	483,759	191,066	74,815	1,159	267,042	1,159,410	2,382,424
2004	119,053	695,345	814,398	124,526	44,029	218,811	371,854	363,797	51,149	7,816	422,760	1,181,979	1,996,378
2005	316,090	229,932	546,021	341,081	23,371	35,372	311,692	165,906	211,288	6,985	384,178	1,095,695	1,641,716
2006	621,330	142,464	763,795	566,017	39,258	35,231	104,047	23,421	118,105	6,863	148,390	892,942	1,656,737
2007	3,454,188	1,068,382	4,522,572	1,702,269	792,080	453,094	145,200	9,987	175,491	1,734	187,213	3,279,857	7,802,429
2008	402,869	1,427,783	1,830,654	286,764	317,850	329,249	172,011	3,381	162,514	4,650	170,544	1,276,421	3,107,074
2009	267,904	1,783,197	2,051,099	217,485	169,488	491,976	210,803	7,792	34,284	0	42,077	1,131,828	3,182,929
2010	159,194	167,098	326,292	114,578	21,375	85,156	215,744	50,636	17,095	0	67,731	504,584	830,875
2011	194,863	254,964	449,828	130,779	29,139	66,221	228,701	26,263	61,034	0	87,296	542,137	991,965
2012	178,868	295,408	474,274	120,983	98,499	58,526	104,356	7,880	20,761	2,316	30,958	413,321	887,594
2013	439,737	784,644	1,224,381	314,619	46,142	130,939	132,057	10,287	37,617	2,925	50,829	674,588	1,898,969
2014	291,119	695,399	986,518	147,035	164,850	170,460	186,947	11,831	72,997	2,000	86,829	756,123	1,742,641
2015	316,757	461,805	778,563	292,338	74,537	149,771	145,163	38,337	21,831	0	60,168	721,981	1,500,544
2016	176,837	1,016,125	1,192,962	92,250	52,069	62,183	113,841	4,685	32,838	819	38,341	358,684	1,551,646
Beaver Inlet													
1990	943,653	190,344	1,133,995	931,324	229,434	97,915	27,056	3,093	772	0	3,864	1,289,592	2,423,587
1991	468,821	136,295	605,114	446,024	178,136	72,435	21,868	2,123	0	0	2,123	720,587	1,325,702

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Table 9.–Page 3 of 5.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit Males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70-91 mm	92-114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
1994	38,944	51,618	90,563	33,996	6,696	41,034	47,663	17,028	772	0	17,800	147,188	237,751
1995	702,658	28,666	731,324	555,914	15,770	6,531	8,478	3,687	0	0	3,687	590,381	1,321,706
1999	159,654	14,615	174,269	145,897	7,207	5,860	1,543	0	1,543	0	1,543	162,050	336,320
2000	249,908	19,455	269,363	215,534	19,505	11,892	2,577	0	0	0	0	249,505	518,868
2003	70,900	95,139	166,037	135,175	109,282	51,368	5,414	0	0	0	0	301,238	467,277
2006	369,704	62,213	431,916	323,471	19,298	31,705	13,863	829	0	0	829	389,165	821,081
2009	228,492	70,051	298,543	208,012	35,525	87,541	15,011	1,003	0	0	1,003	347,089	645,633
2012	334,022	11,199	345,220	304,364	2,513	6,069	8,582	0	1,161	0	1,161	322,688	667,908
2015	30,262	66,104	96,365	27,473	17,211	32,784	7,725	0	0	0	0	85,192	181,558
Usof Bay													
1990	103,298	25,189	128,487	103,381	100,686	29,612	2,023	574	0	0	574	236,275	364,763
1991	89,209	70,803	160,012	232,477	259,878	66,540	26,990	4,497	2,625	0	7,122	593,006	753,019
1994	15,861	3,500	19,361	13,783	8,932	6,187	7,638	875	0	0	875	37,413	56,773
1995	33,624	3,343	36,966	42,260	10,195	6,931	4,375	0	2,625	0	2,625	66,386	103,353
1999	79,821	11,426	91,247	70,550	13,340	2,523	0	0	0	0	0	86,412	177,662
2000	52,026	7,968	59,995	48,176	4,710	4,710	0	0	0	0	0	57,596	117,592
2003	30,966	70,430	101,395	34,381	90,009	151,473	30,169	0	899	0	899	306,932	408,328
Akun Bay													
1990	2,123	1,063	3,187	0	0	0	0	0	0	0	0	0	3,187
1991	0	0	0	1,060	0	0	0	0	0	0	0	1,060	1,060
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	4,253	1,063	5,317	0	4,253	4,253	0	0	0	0	0	8,506	13,823
2000	3,305	5,317	8,621	6,495	3,190	0	0	0	0	0	0	9,684	18,306
2003	0	3,187	3,187	0	1,063	2,127	0	0	0	0	0	3,190	6,377
Pumicestone Bay													
1990	48,859	0	48,859	48,607	674	0	0	0	0	0	0	49,281	98,139
1991	24,251	235	24,486	19,207	5,865	1,173	0	0	235	0	235	26,480	50,967
1994	6,510	909	7,419	5,748	5,366	5,220	674	0	0	0	0	17,008	24,428
1995	10,299	3,543	13,841	9,495	3,965	3,754	1,349	0	0	0	0	18,563	32,403
1999	13,078	0	13,078	8,657	1,171	0	1,499	749	749	0	1,499	12,826	25,904
2000	3,304	1,499	4,803	352	749	0	2,997	749	0	0	749	4,848	9,651
2003	231,803	21,096	252,899	284,381	78,593	25,522	2,698	674	0	0	674	391,868	644,768

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Table 9.–Page 4 of 5.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit Males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70-91 mm	92-114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
2004	27,652	674	28,326	17,536	1,348	1,349	337	0	0	0	0	20,570	48,897
2005	46,067	19,559	65,626	42,050	19,559	49,234	7,419	1,349	674	0	2,023	120,285	185,910
2006	36,382	10,683	47,065	52,706	17,526	17,565	6,979	0	469	0	469	95,245	142,310
2007	233,042	2,600	235,642	226,435	30,282	2,600	0	0	0	0	0	259,317	494,959
2008	43,900	4,557	48,456	69,070	130,211	32,586	1,966	0	0	0	0	233,833	282,288
2009	10,439	1,202	11,642	9,326	5,161	9,501	1,466	0	0	0	0	25,453	37,095
2010	18,475	4,751	23,226	21,480	11,290	11,597	5,586	0	0	0	0	49,954	73,180
2011	254,240	528	254,768	233,779	2,639	0	0	1,394	0	0	1,394	237,813	492,581
2012	99,056	10,029	109,085	88,645	13,988	3,167	792	264	0	0	264	106,856	215,941
2013	60,906	15,806	76,712	34,193	14,692	8,944	2,053	1,378	0	0	1,378	61,258	137,971
2014	18,114	661	18,776	13,749	2,909	661	661	0	0	0	0	17,980	36,756
Cape Idak													
1990	3,255	3,662	6,917	0	2,713	0	2,713	0	3,255	0	3,255	8,680	15,597
1991	119,622	2,848	122,470	122,470	3,797	949	1,898	0	0	0	0	129,114	251,585
1994	0	949	949	2,848	5,697	0	0	0	0	0	0	8,545	9,494
1995	0	0	0	0	1,898	0	0	0	0	0	0	1,898	1,898
1999	949	2,848	3,798	3,798	3,798	1,898	0	0	0	0	0	9,494	13,292
2000	12,342	5,697	18,039	18,038	19,937	9,493	949	0	0	0	0	48,419	66,456
2003	0	6,646	6,646	1,898	9,493	18,038	0	0	0	0	0	29,431	36,076
Inanudak Bay													
1990	4,658	0	4,658	0	0	3,110	949	0	0	0	0	4,059	8,717
1994	3,390	0	3,390	1,695	0	0	0	0	0	0	0	1,695	5,086
EASTERN ALEUTIAN DISTRICT TOTALS													
1990	3,130,385	1,672,398	4,802,780	2,738,782	1,403,450	739,998	349,180	37,328	27,849	2,002	67,178	5,298,584	10,101,363
1991	2,518,324	1,077,591	3,595,910	2,630,974	1,055,772	767,474	520,339	34,728	45,285	3,577	83,592	5,058,150	8,654,064
1994	231,839	220,421	452,262	205,760	55,092	166,714	201,957	58,054	4,932	0	62,987	692,507	1,144,773
1995	915,100	134,602	1,049,701	731,361	69,117	98,606	168,663	8,782	20,150	0	28,932	1,096,680	2,146,383
1999	1,153,825	1,002,513	2,156,343	877,883	312,067	1,046,152	1,413,737	340,863	59,511	1,356	401,731	4,051,565	6,207,911
2000	1,148,988	1,396,039	2,545,027	779,783	378,364	480,390	500,544	125,112	30,224	738	156,074	2,295,156	4,840,183
2003	530,280	2,054,546	2,584,822	625,039	517,895	998,599	1,036,331	312,254	326,016	12,003	650,275	3,828,138	6,412,966
2004	626,939	1,854,945	2,481,885	553,308	401,526	566,174	623,821	442,906	81,010	17,902	541,815	2,686,642	5,168,527
2005	1,345,507	976,407	2,321,914	1,121,044	485,930	365,963	642,037	238,162	228,553	10,902	477,617	3,092,594	5,414,507
2006	1,240,289	797,701	2,037,988	1,132,218	444,018	485,446	661,913	74,588	672,861	42,174	789,623	3,513,219	5,551,209
2007	4,256,210	3,433,009	7,689,218	2,292,347	1,149,690	1,097,889	768,977	124,119	392,222	19,656	535,998	5,844,898	13,534,118

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Table 9.–Page 5 of 5.

	Females			Number sublegal males by size (CW)				Recruit	Postrecruit Males (CW)		Legal	Total	Total
Year	Juvenile	Adult	Total	<70 mm	70-91 mm	92-114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
EASTERN ALEUTIAN DISTRICT TOTALS (continued)													
2008	784,097	3,579,002	4,363,100	572,206	698,294	730,590	951,979	135,889	270,831	5,904	412,623	3,365,697	7,728,796
2009	722,581	4,114,921	4,837,499	528,722	297,658	853,275	893,899	180,426	205,242	5,031	390,700	2,964,254	7,801,755
2010	552,438	795,263	1,347,702	354,229	140,116	260,038	550,113	83,458	86,300	0	169,758	1,474,259	2,821,959
2011	494,253	810,065	1,304,317	414,417	73,824	198,386	465,034	33,622	82,996	1,112	117,729	1,269,393	2,573,709
2012	809,531	1,212,664	2,022,190	672,767	216,419	359,493	621,185	43,097	245,291	11,862	300,250	2,170,111	4,192,298
2013	2,214,460	1,562,660	3,777,119	1,396,689	390,331	418,795	333,598	22,188	71,271	2,925	96,385	2,635,796	6,412,918
2014	943,159	2,568,945	3,512,108	730,818	1,115,918	1,175,539	800,205	37,413	118,314	2,000	157,727	3,980,208	7,492,313
2015	948,884	824,089	1,772,974	844,211	273,853	336,474	323,257	57,070	21,831	0	78,901	1,856,702	3,629,675
2016	266,877	1,454,997	1,721,874	145,482	242,286	408,484	201,279	6,280	33,877	819	40,975	1,038,507	2,760,376

Note: Beaver Inlet, Usof Bay, Akun Bay, Pumicestone Bay, Cape Idak, and Inanudak Bay are part of the General Section of the Eastern Aleutian Tanner crab District. There are no mature male abundance threshold levels or minimum fishery GHLs established for the General Section.

Table 10.–Dominant species by weight in the Eastern Aleutian Tanner crab District bottom trawl survey, 2016.

Common name	Species name	% of catch by weight
Walleye pollock	*Gadus chalcogrammus*	24.7
Arrowtooth flounder	*Atheresthes stomias*	24.2
Flathead sole	*Hippoglossoides elassodon*	14.6
Rex sole	*Glyptocephalus zachirus*	6.0
Pacific cod	*Gadus macrocephalus*	4.5
Tanner crab	*Chionoecetes bairdi*	4.1
Anemone	Order: Actinaria	2.2
Yellow Irish lord	*Hemilepidotus jordani*	2.1
Sea Urchin	*Strongylocentrotus* spp.	2.1
Sponge	Phylum: Porifera	1.6
Pacific halibut	*Hippoglossus stenolepis*	1.3
Southern rock sole	*Lepidopsetta bilineata*	1.3
Hermit crab	Family: Paguridae	1.1
Giant Pacific octopus	*Octopus dofleini*	1.1
Basket star	*Gorgonocephalus* sp.	1.0
Great sculpin	*Myoxocephalus polyacanthocephalus*	0.8
Sunflower seastar	*Pycnopodia helianthoides*	0.8
Oregon triton	*Fusitriton oregonensis*	0.7
Swift's seastar	*Gephryseaster swifti*	0.7
Bering skate	*Bathyraja interrupta*	0.6
All others	(83 species)	4.3
		100.0

Table 11.–Near-bottom water temperature (°C) for warmest and coldest bays during the 2016 bottom trawl survey and the average water temperature in those bays from 2007–2016 surveys.

District	Location	Year									
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
KODIAK											
	Kukak Bay[a]	8.02	8.14	8.61	8.28	8.19	7.65	8.08	9.40	9.23	9.87
	Deadman Bay[b]	0.88	1.59	1.72	2.49	2.71	0.43	2.62	3.37	4.35	4.96
District Average		5.11	5.48	5.35	6.17	5.81	5.30	5.49	6.44	6.59	7.46
CHIGNIK											
	Kujulik Bay[c]	6.55	5.56	6.63	7.26	5.90	6.92	6.13	7.63	7.94	8.30
	Kuiukta Bay[d]	4.25	5.23	5.66	5.11	4.37	3.86	4.76	5.26	5.74	6.40
District Average		5.94	5.67	5.41	6.58	5.26	6.11	5.18	7.08	6.94	7.18
SOUTH PENINSULA											
	Cold Bay[a]	8.23	7.98	9.01	8.45	7.99	8.12	9.35	10.57	10.61	10.38
	Stepovak Bay[e]	4.91	3.96	3.73	5.62	4.55	5.11	4.30	7.39	5.95	6.30
District Average		5.34	5.21	5.52	6.12	5.42	5.38	5.82	6.66	7.17	7.13
EASTERN ALEUTIAN											
	Kalekta Bay[f]	6.01	5.96	5.47	6.42	6.42	5.90	8.35	7.92	7.32	8.50
	Makushin Bay[b]	4.31	4.35	4.31	4.57	4.71	4.13	4.72	4.92	5.44	5.75
District Average		5.10	4.90	5.06	5.34	5.17	5.06	5.83	6.03	6.57	6.64
Survey Average		5.27	5.40	5.38	6.16	5.61	5.40	5.56	6.55	6.78	7.30

Note: Temperatures presented are the average temperature of all hauls within the area of interest (bay, district, or entire survey).

[a] Kukak Bay and Cold Bay had the warmest average haul temperatures in their respective districts, 2007–2016.

[b] Deadman Bay and Makushin Bay had the coolest average haul temperatures in their respective districts, 2007–2016.

[c] Kujulik Bay had the warmest average haul temperatures in the Chignik District only in 2011, 2013, and 2016.

[d] Kuiukta Bay had the coolest average haul temperatures in the Chignik District except in 2009 and 2013.

[e] Stepovak Bay had the coolest average haul temperatures in the South Peninsula District except in 2007, 2010, 2012, 2014, and 2015.

[f] Kalekta Bay had the warmest average haul temperatures in the Eastern Aleutian District except in 2009 and 2015.

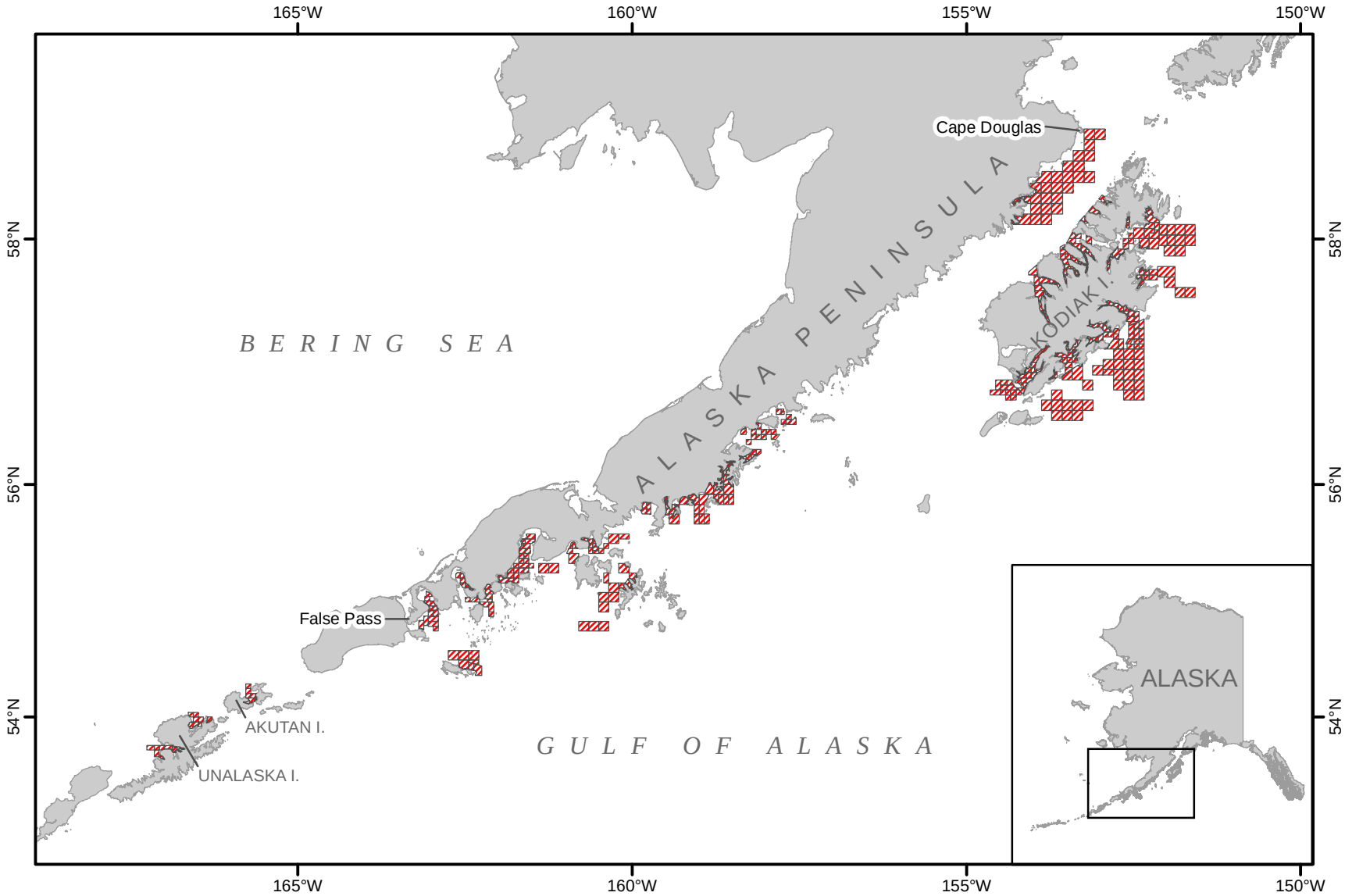

Figure 1.–Bottom trawl survey stations, 2016.

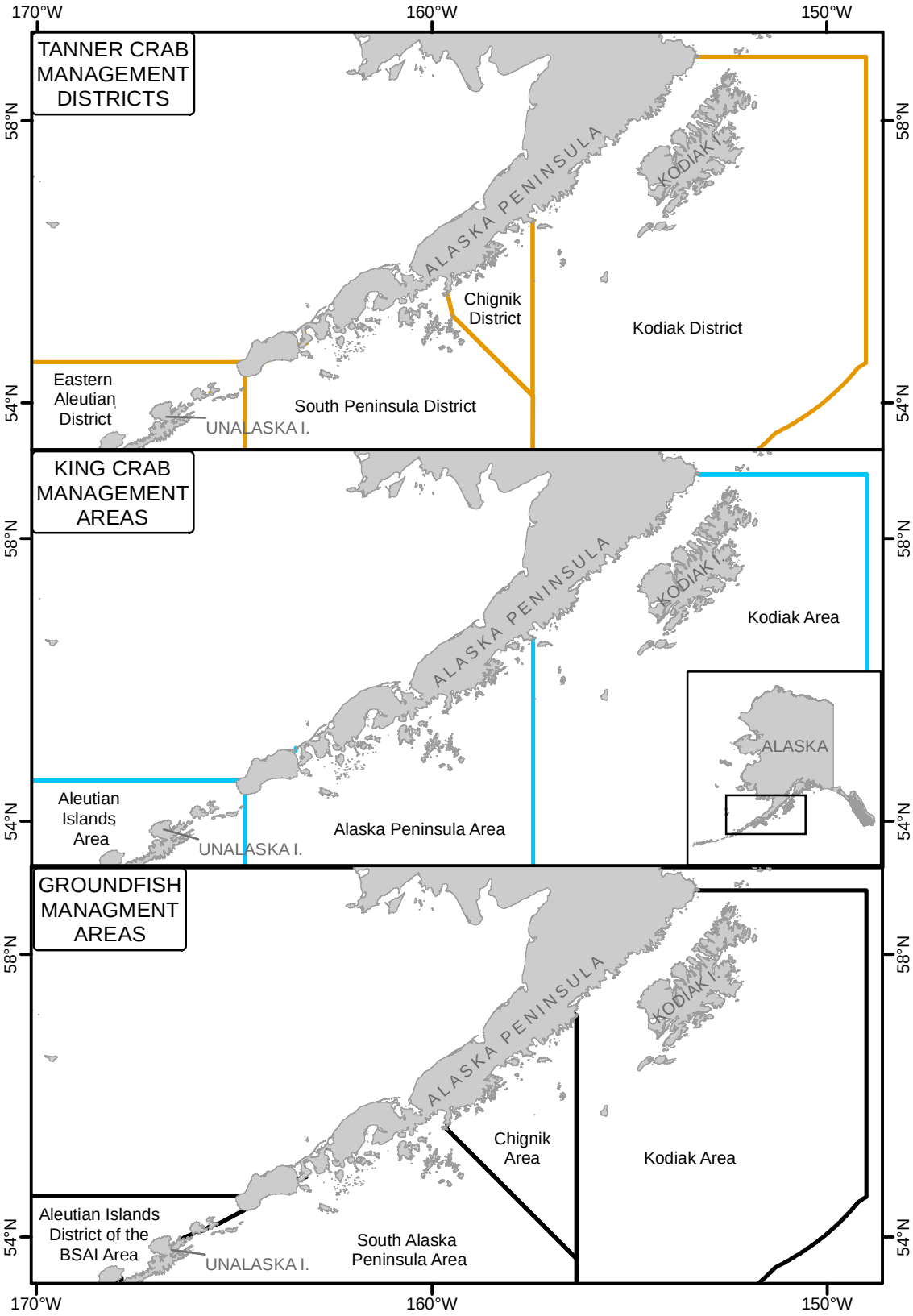

Figure 2.–Tanner crab, king crab, and groundfish management units in the bottom trawl survey area.

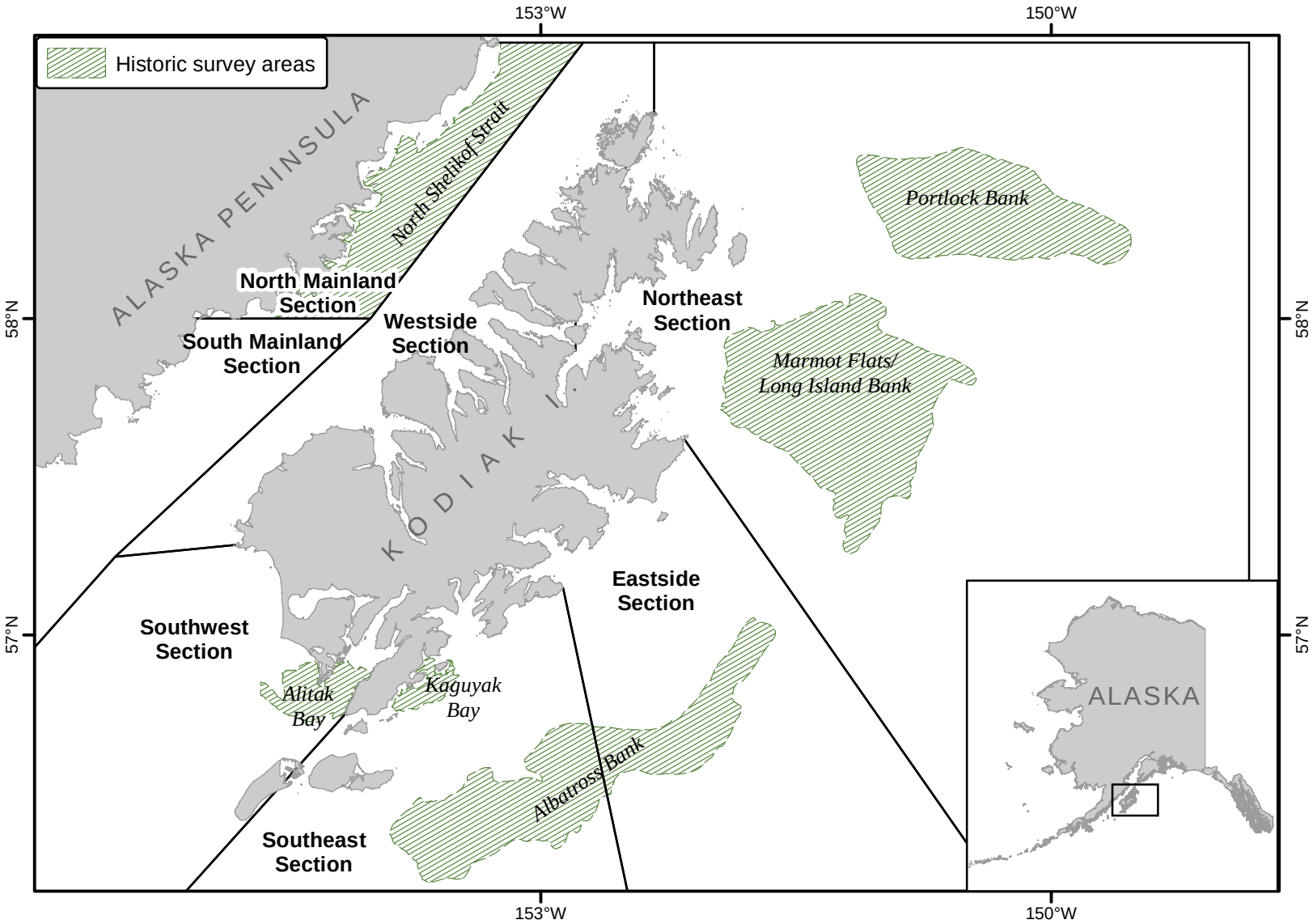

Figure 3.–Historic trawl survey areas and current Tanner crab management sections in the Kodiak District.

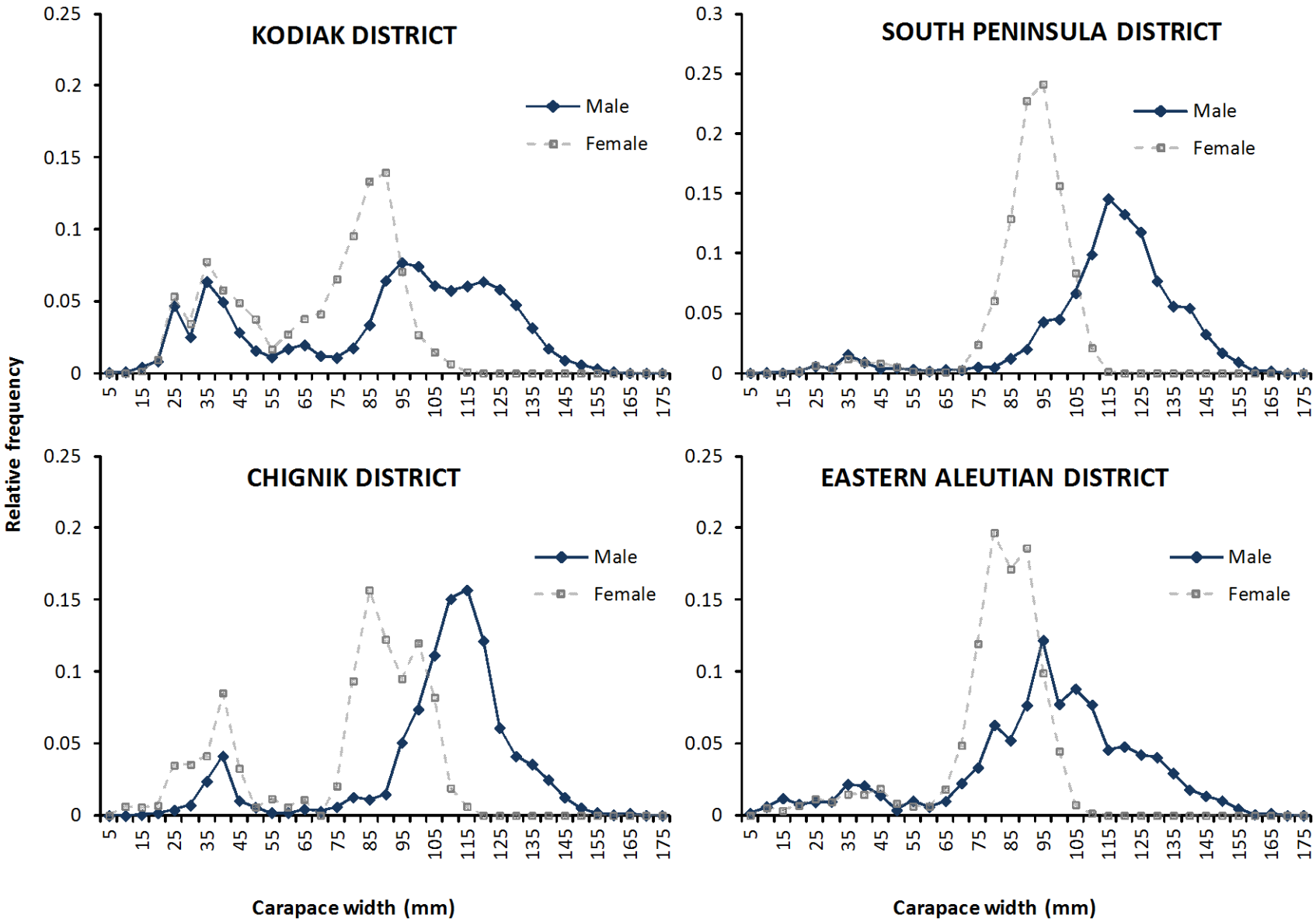

Figure 4.–Tanner crab relative size frequency by sex and district from the 2016 bottom trawl survey.

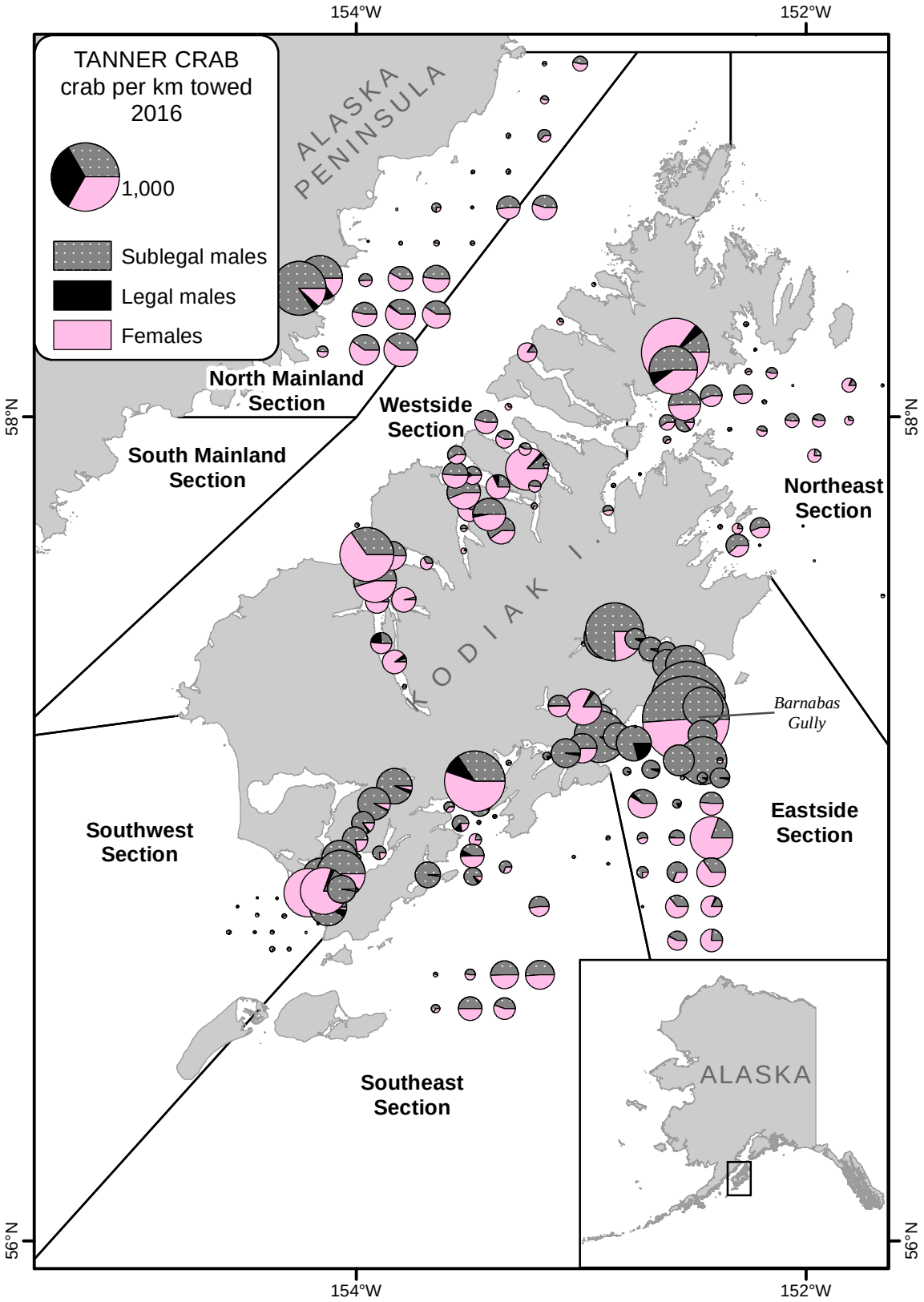

Figure 5.–Number of Tanner crab per kilometer towed in the 2016 Kodiak District bottom trawl survey.

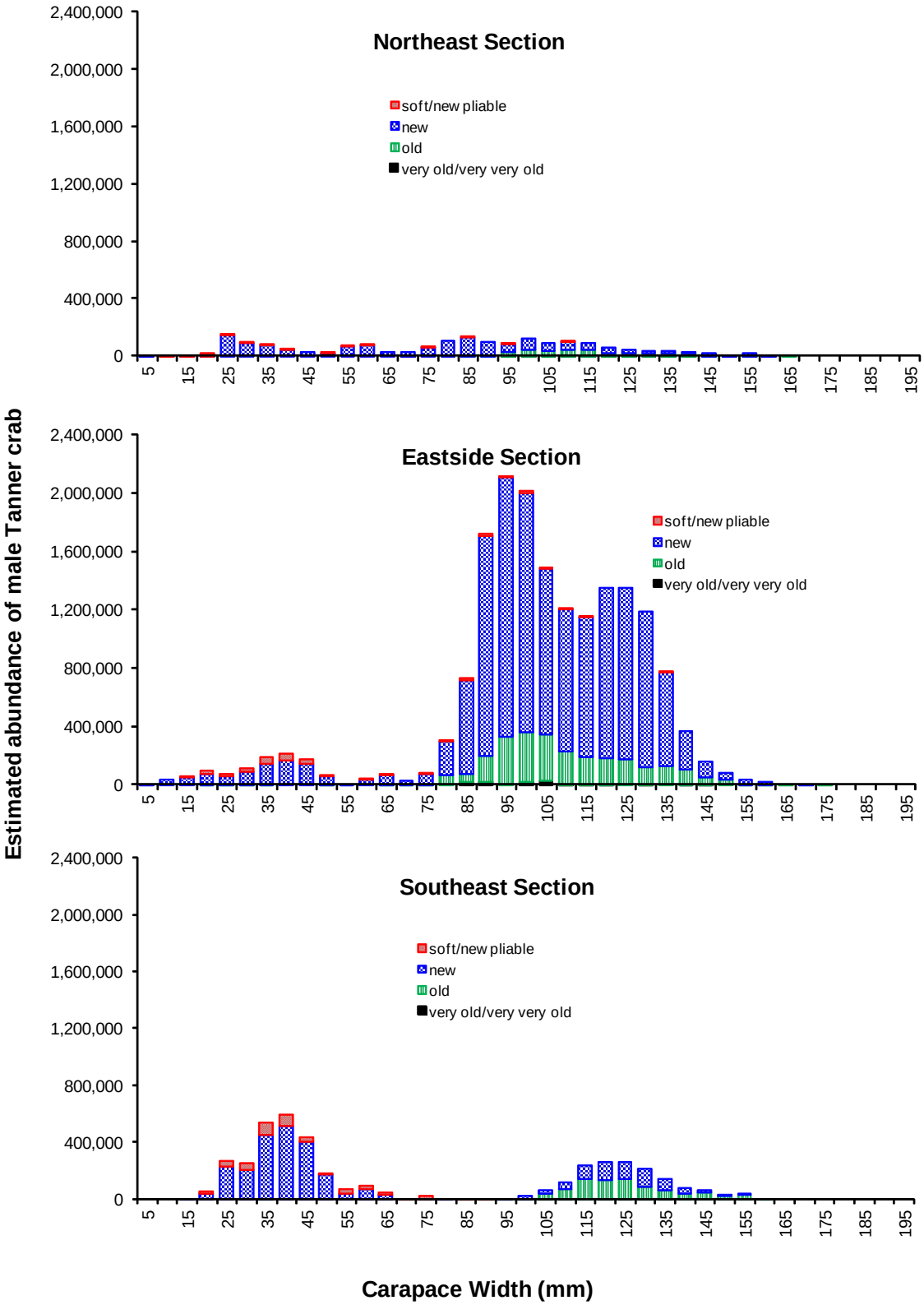

Figure 6.–Tanner crab male abundance estimate by carapace width and shell condition from the Northeast, Eastside, and Southeast sections of the 2016 Kodiak District bottom trawl survey.

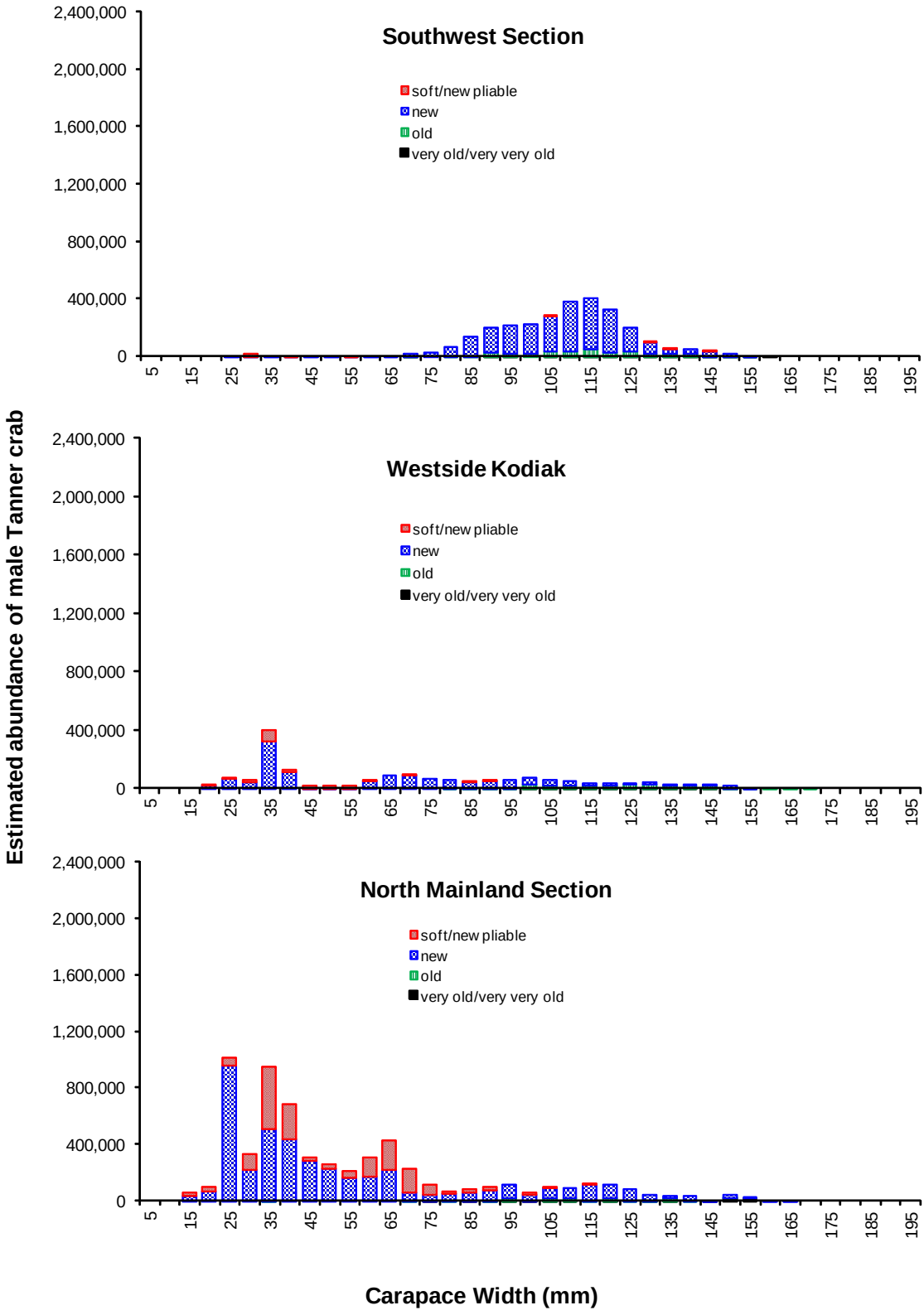

Figure 7.–Tanner crab male abundance estimate by carapace width and shell condition from the Southwest, Westside, and North Mainland sections of the 2016 Kodiak District bottom trawl survey.

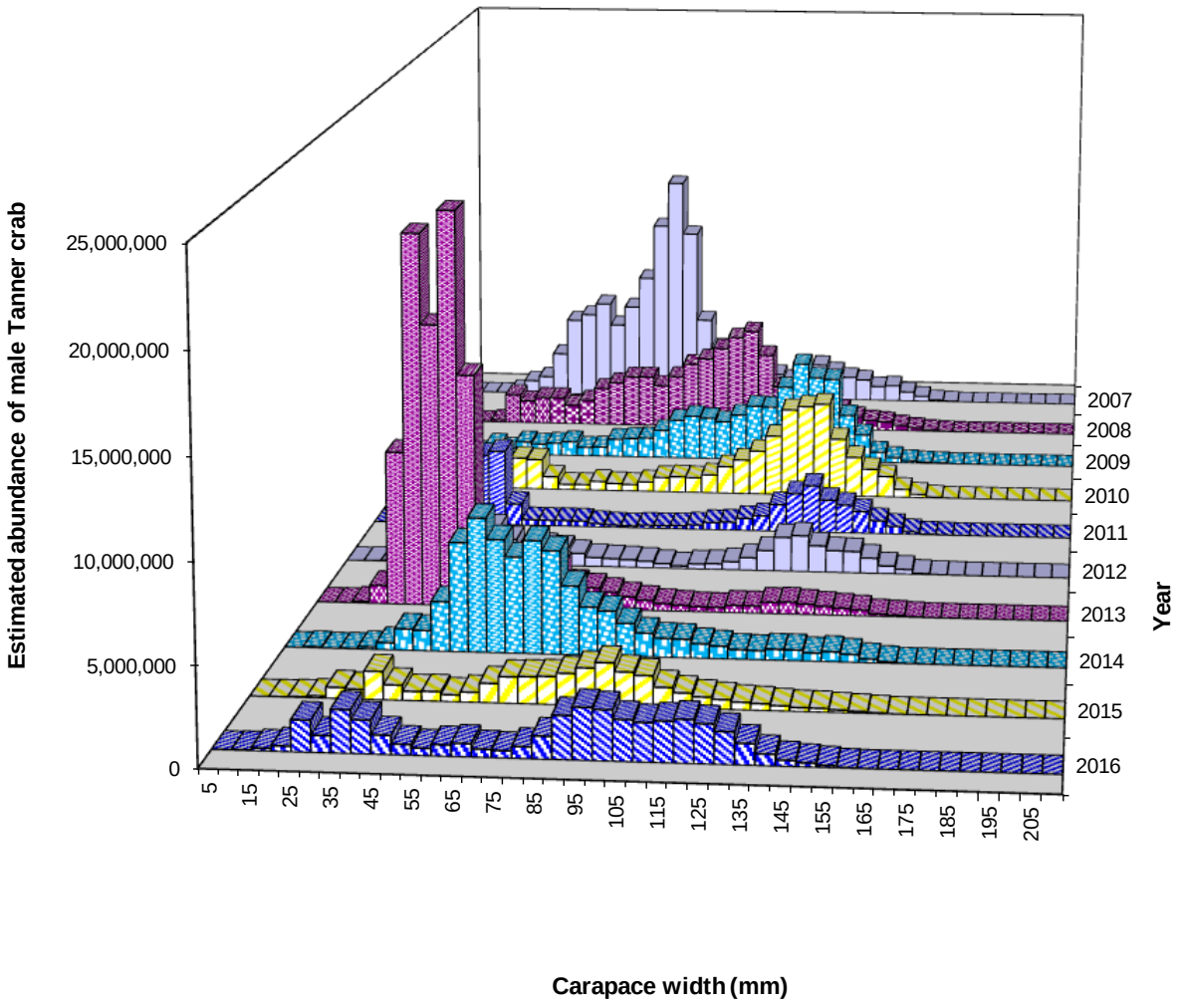

Figure 8.–Tanner crab male abundance estimate by carapace width in the Kodiak District bottom trawl surveys, 2007–2016.

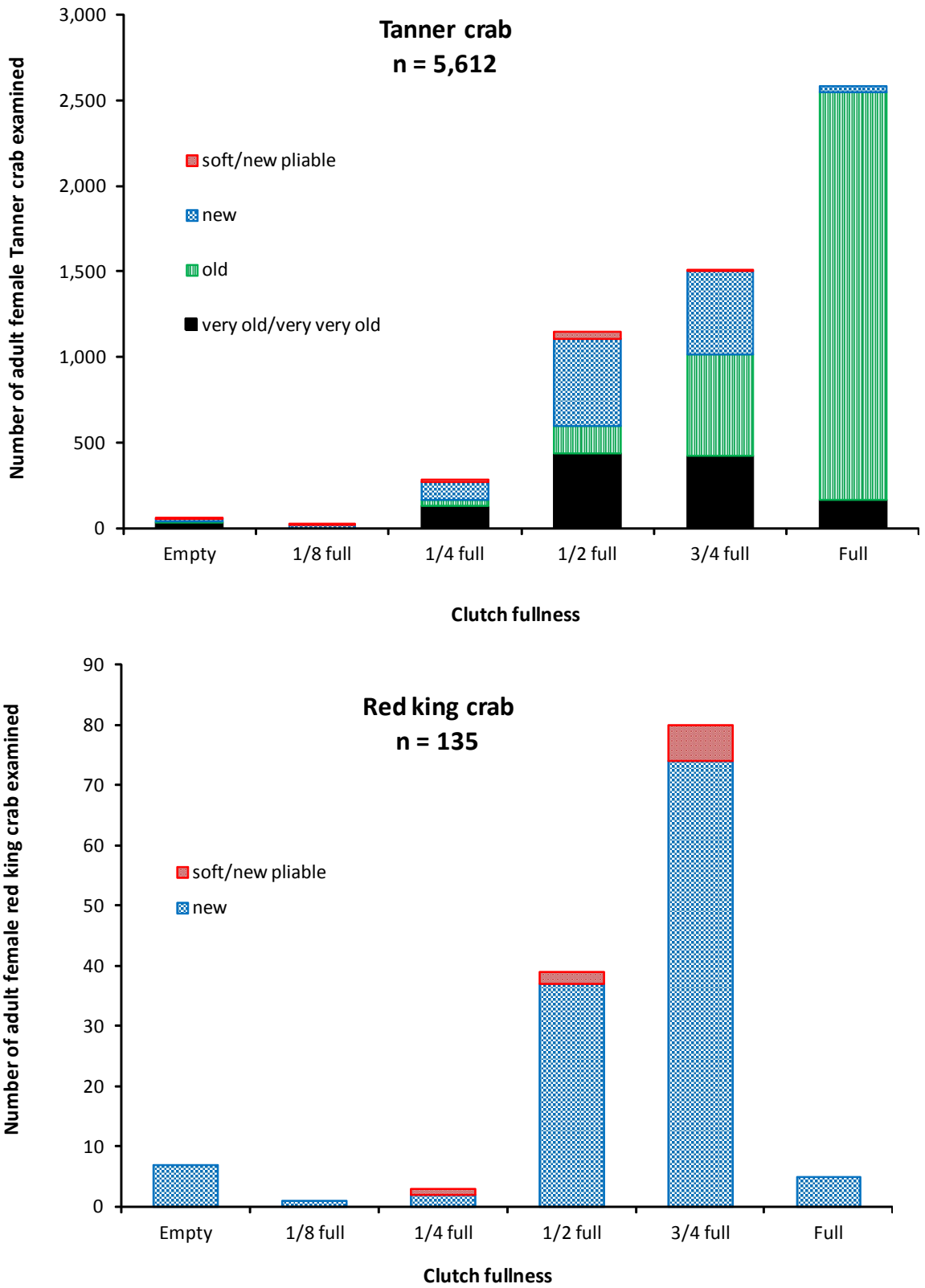

Figure 9.–Tanner crab and red king crab adult female egg clutch fullness by shell condition in the Kodiak District bottom trawl survey, 2016.

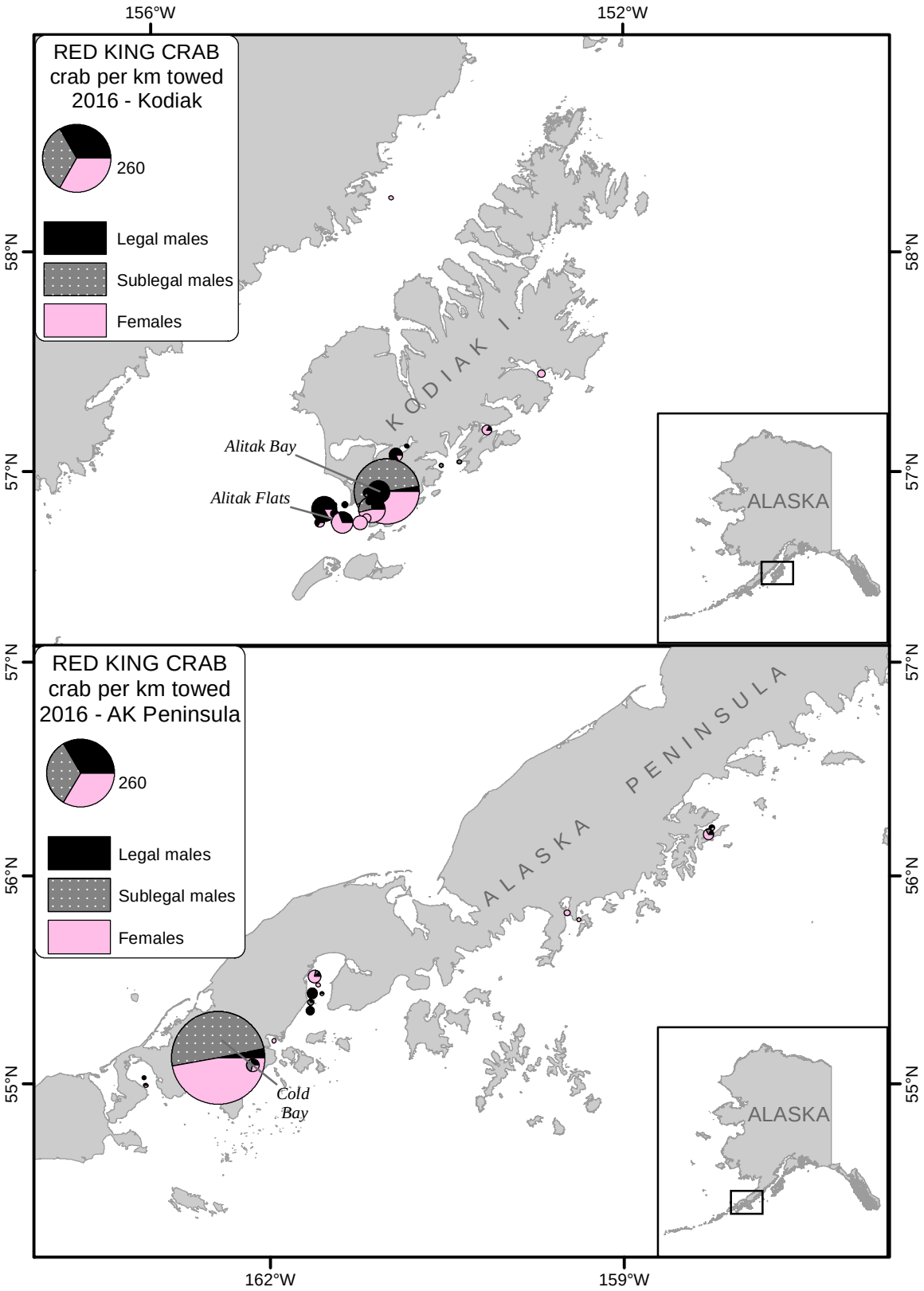

Figure 10.–Number of red king crab per kilometer towed in the 2016 Kodiak (upper) and Alaska Peninsula (lower) areas bottom trawl survey.

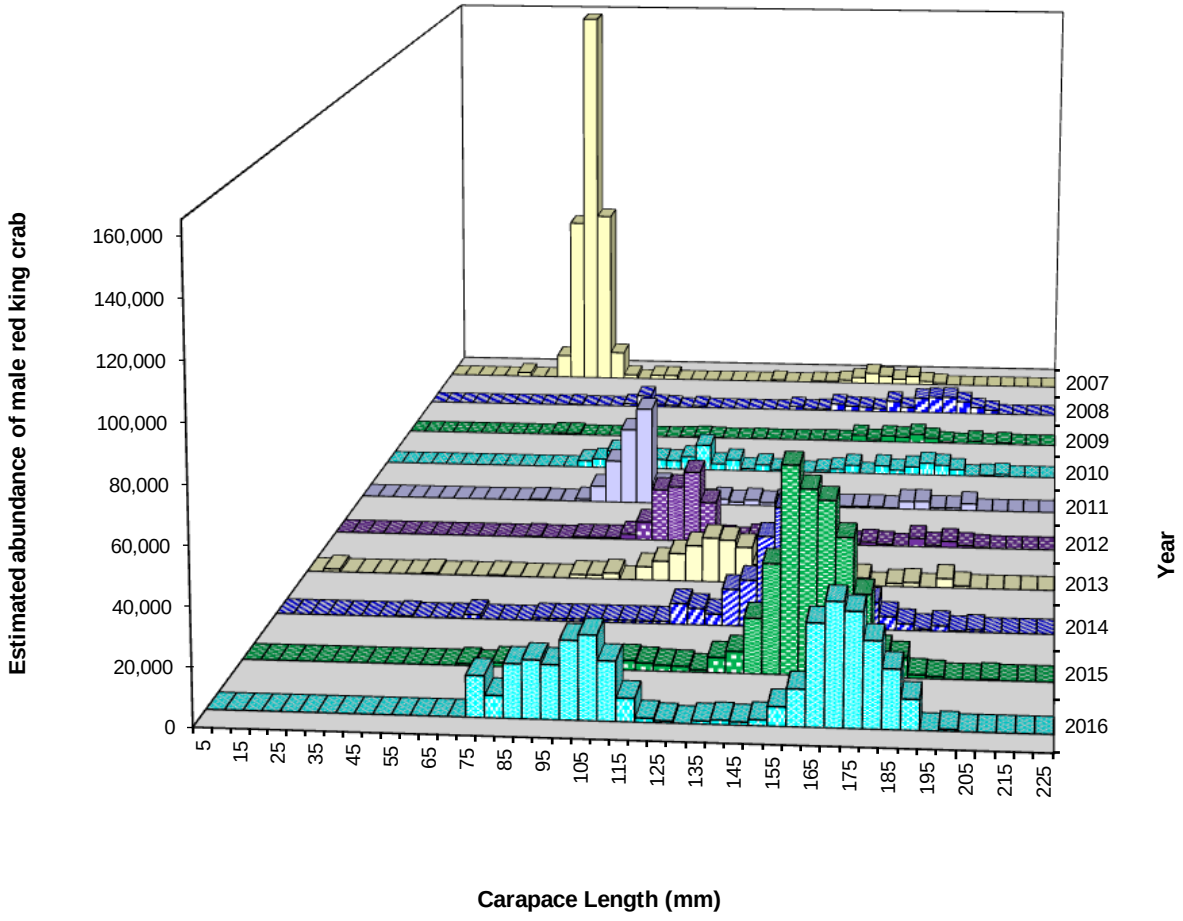

Figure 11.–Red king crab male abundance estimate by carapace length in the Kodiak Area bottom trawl surveys, 2007–2016.

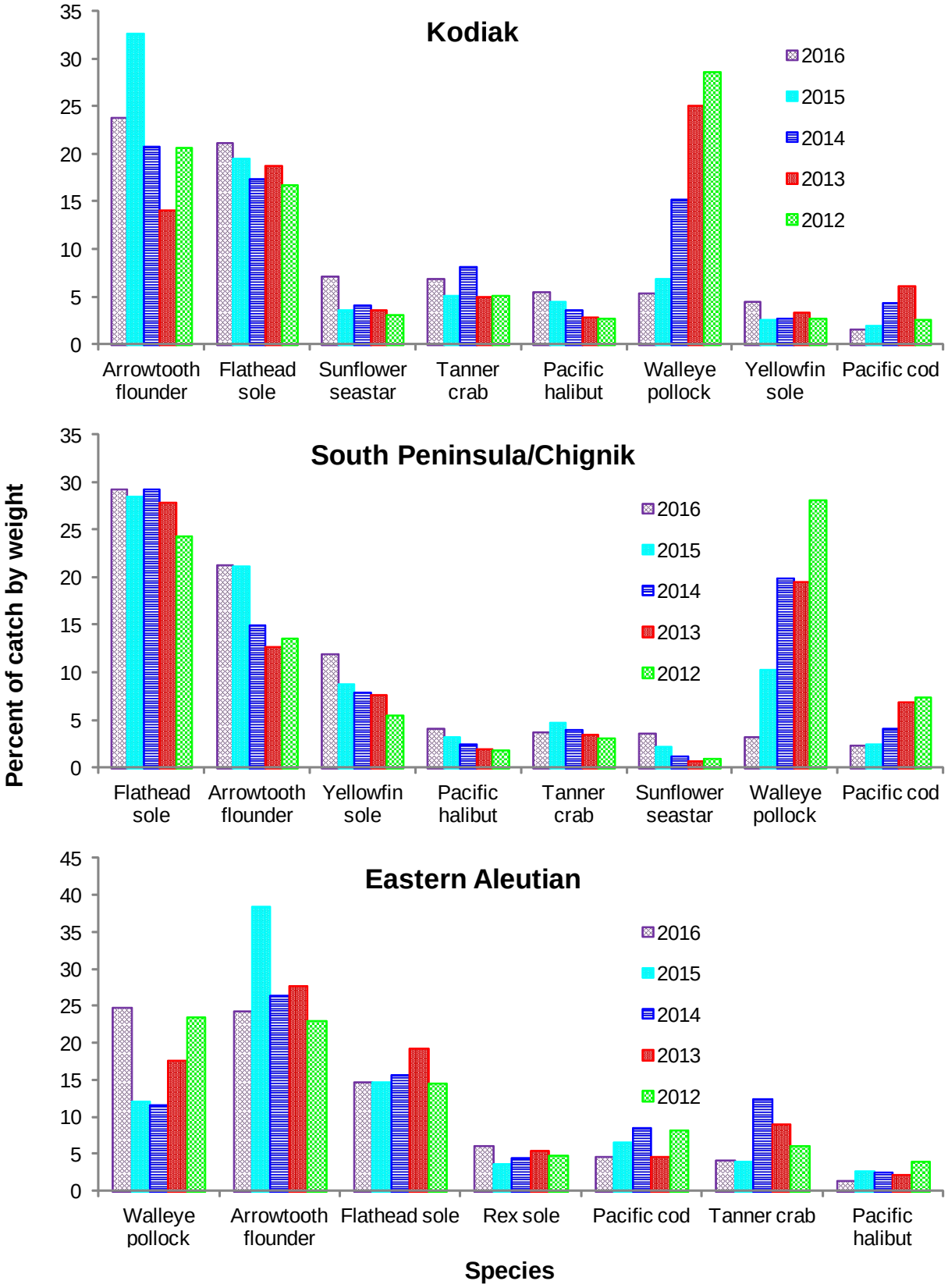

Figure 12.–Top species caught by weight in the bottom trawl surveys by district, 2012–2016.

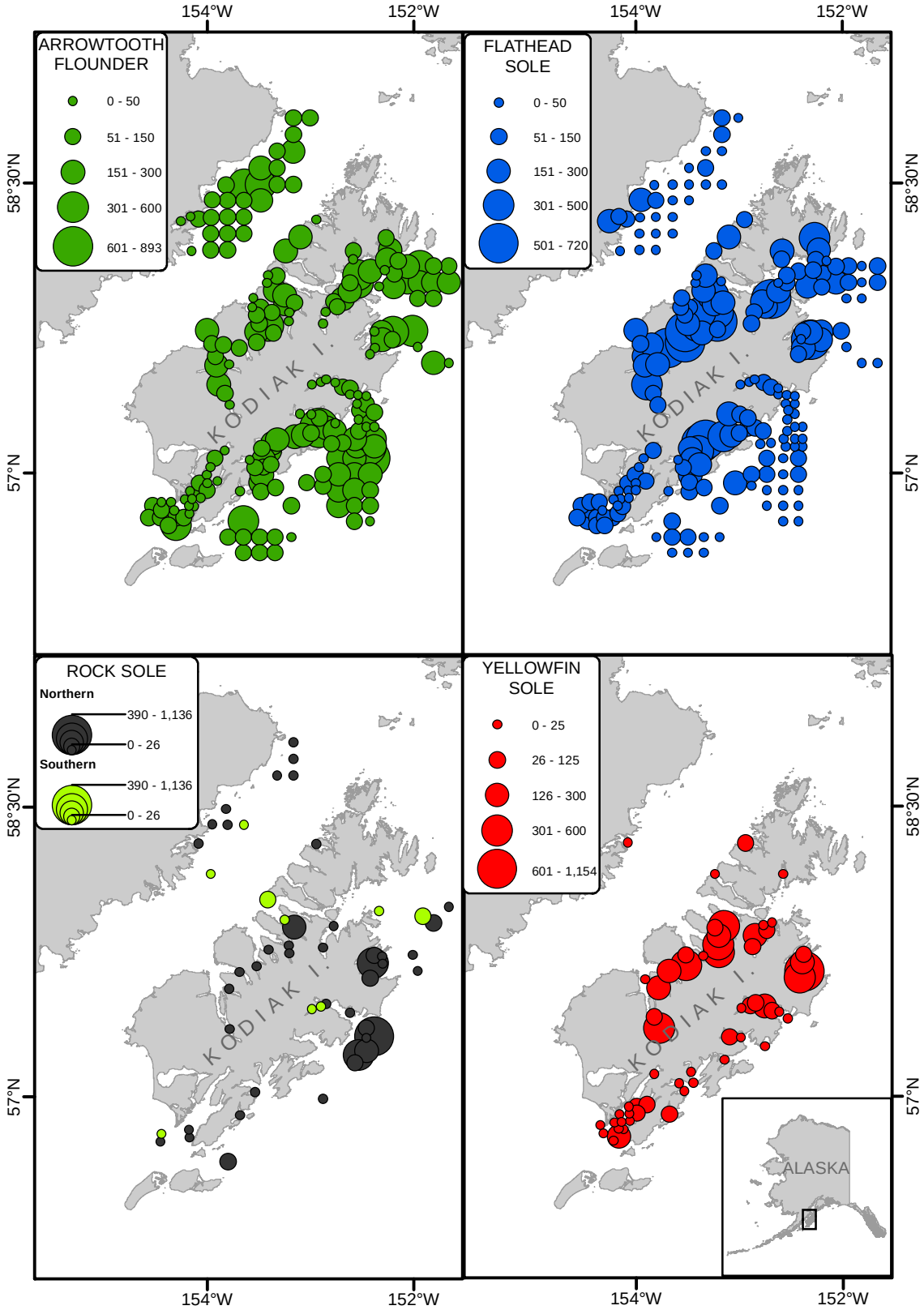

Figure 13.–Arrowtooth flounder, flathead sole, rock sole, and yellowfin sole catch in kilograms per kilometer towed from the 2016 Kodiak Area bottom trawl survey.

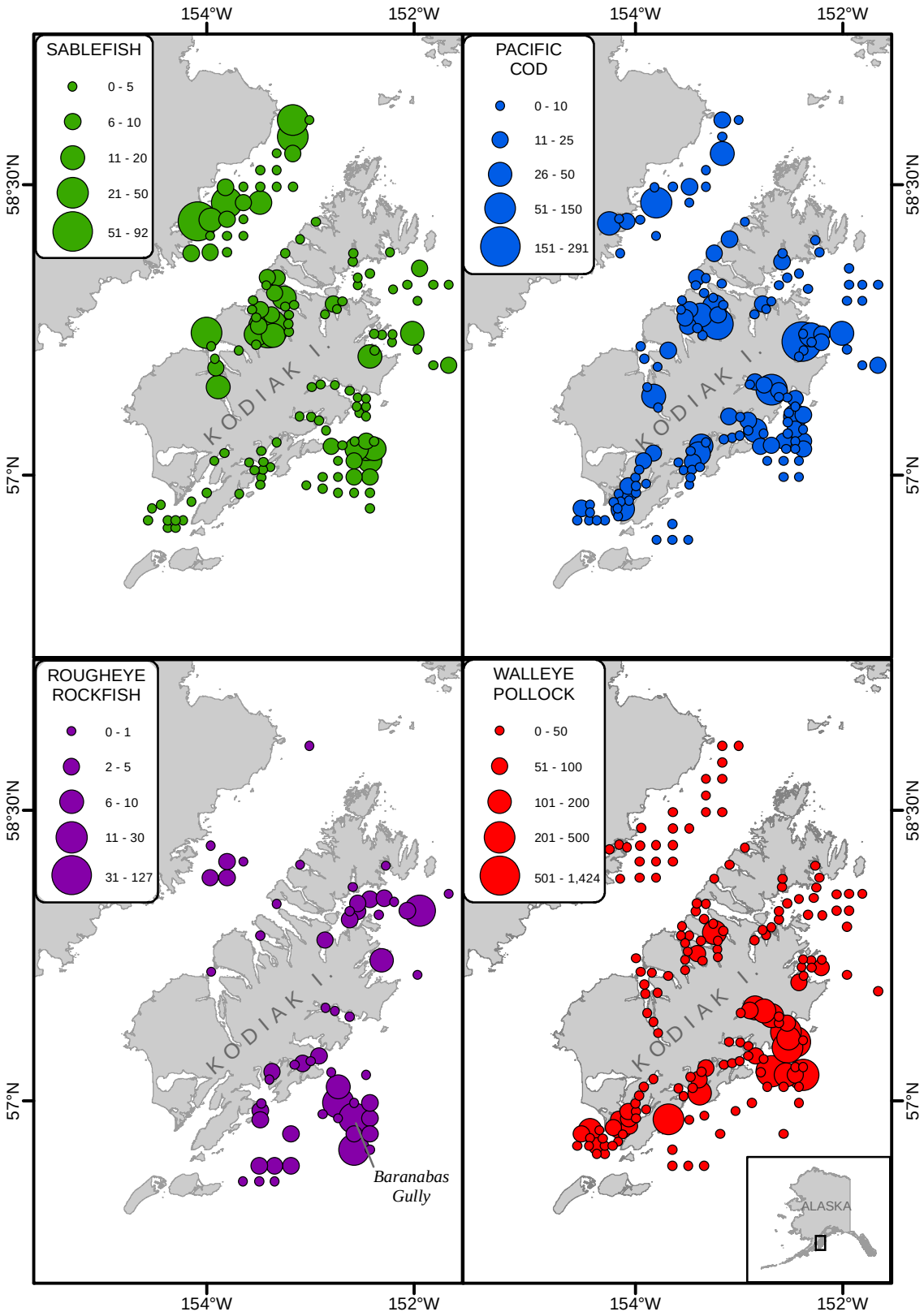

Figure 14.–Sablefish, Pacific cod, rougheye rockfish, and walleye pollock catch in kilograms per kilometer towed from the 2016 Kodiak Area bottom trawl survey.

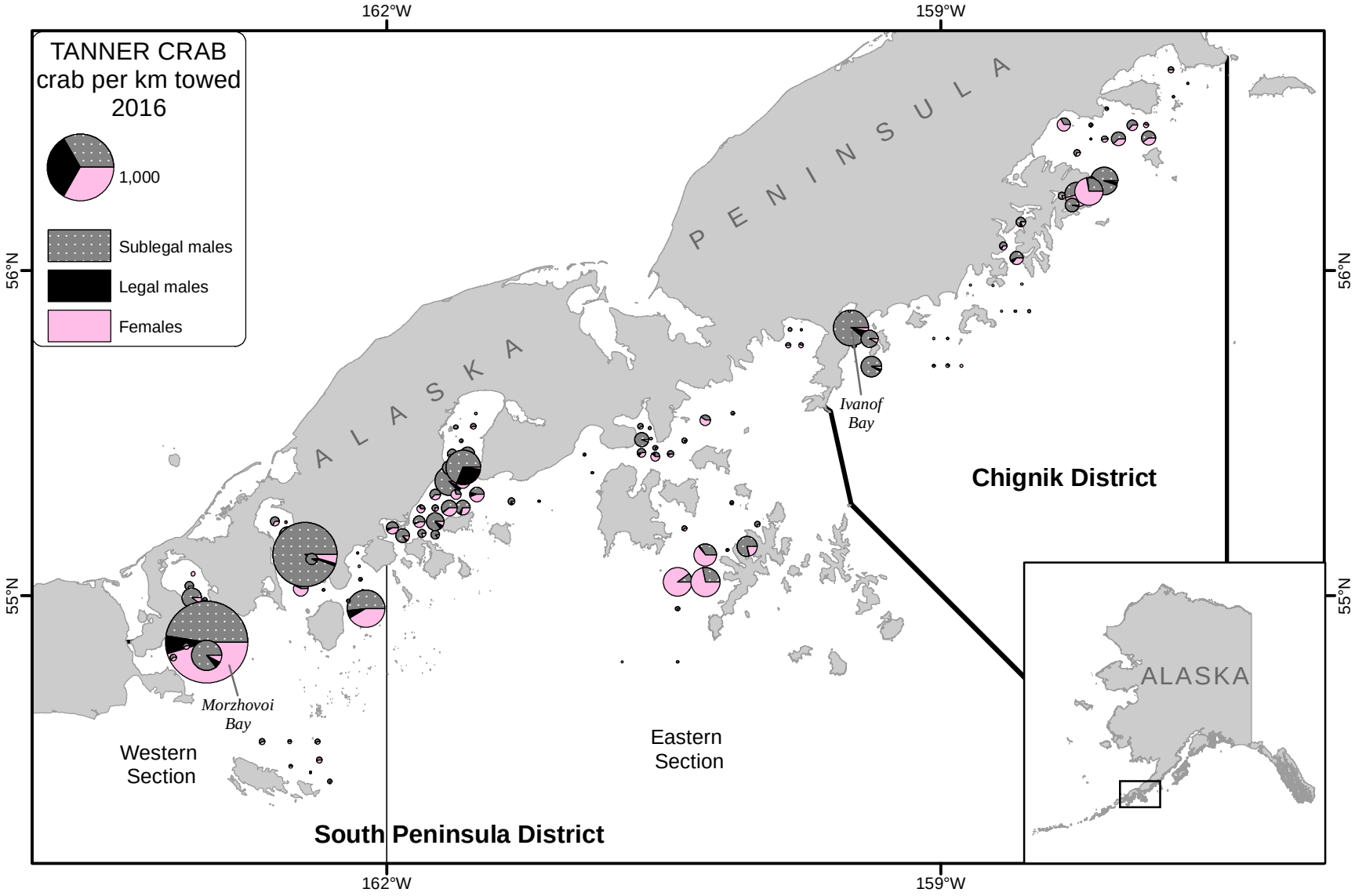

Figure 15.–Number of Tanner crab per kilometer towed in the 2016 South Peninsula and Chignik districts bottom trawl survey.

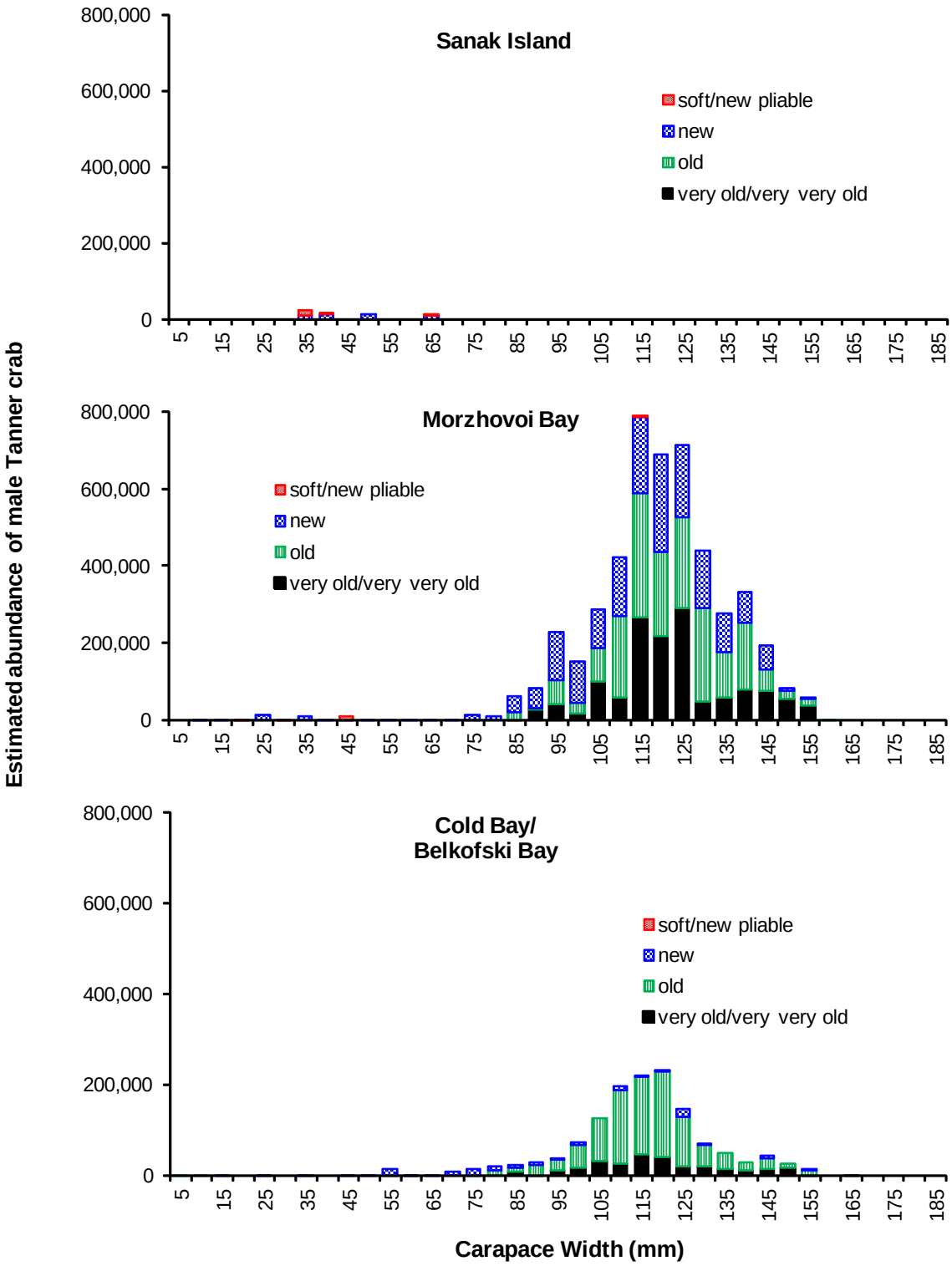

Figure 16.–Tanner crab male abundance estimate by carapace width and shell condition from Sanak Island, Morzhovoi Bay, and Cold Bay/Belkofski Bay in the Western Section of the 2016 South Peninsula District bottom trawl survey.

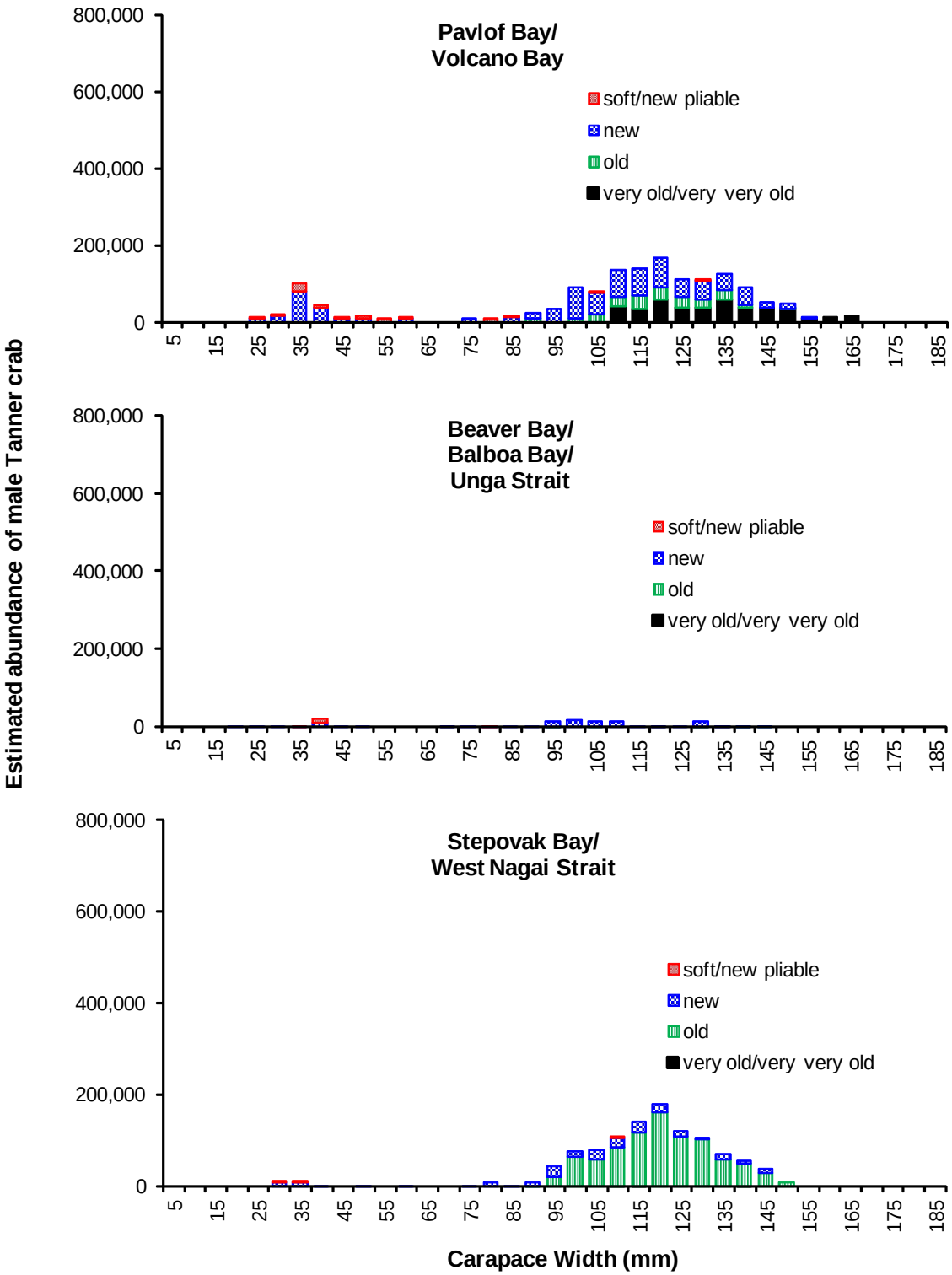

Figure 17.–Tanner crab male abundance estimate by carapace width and shell condition from Pavlof Bay/Volcano Bay, Beaver Bay/Balboa Bay/Unga Strait, and Stepovak Bay/West Nagai Strait in the Eastern Section of the 2016 South Peninsula District trawl survey.

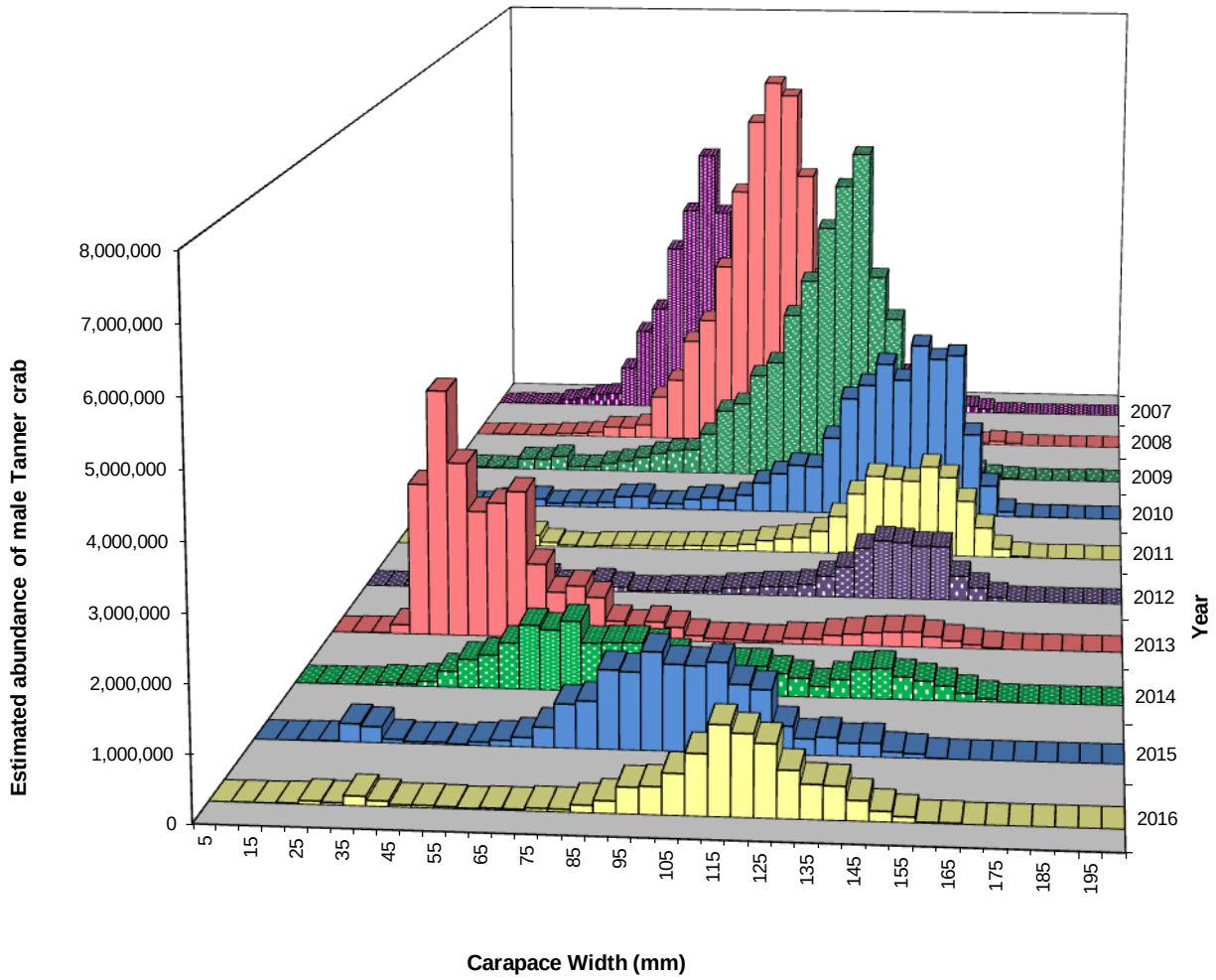

Figure 18.–Tanner crab male abundance estimate by carapace width in the South Peninsula District bottom trawl surveys, 2007–2016.

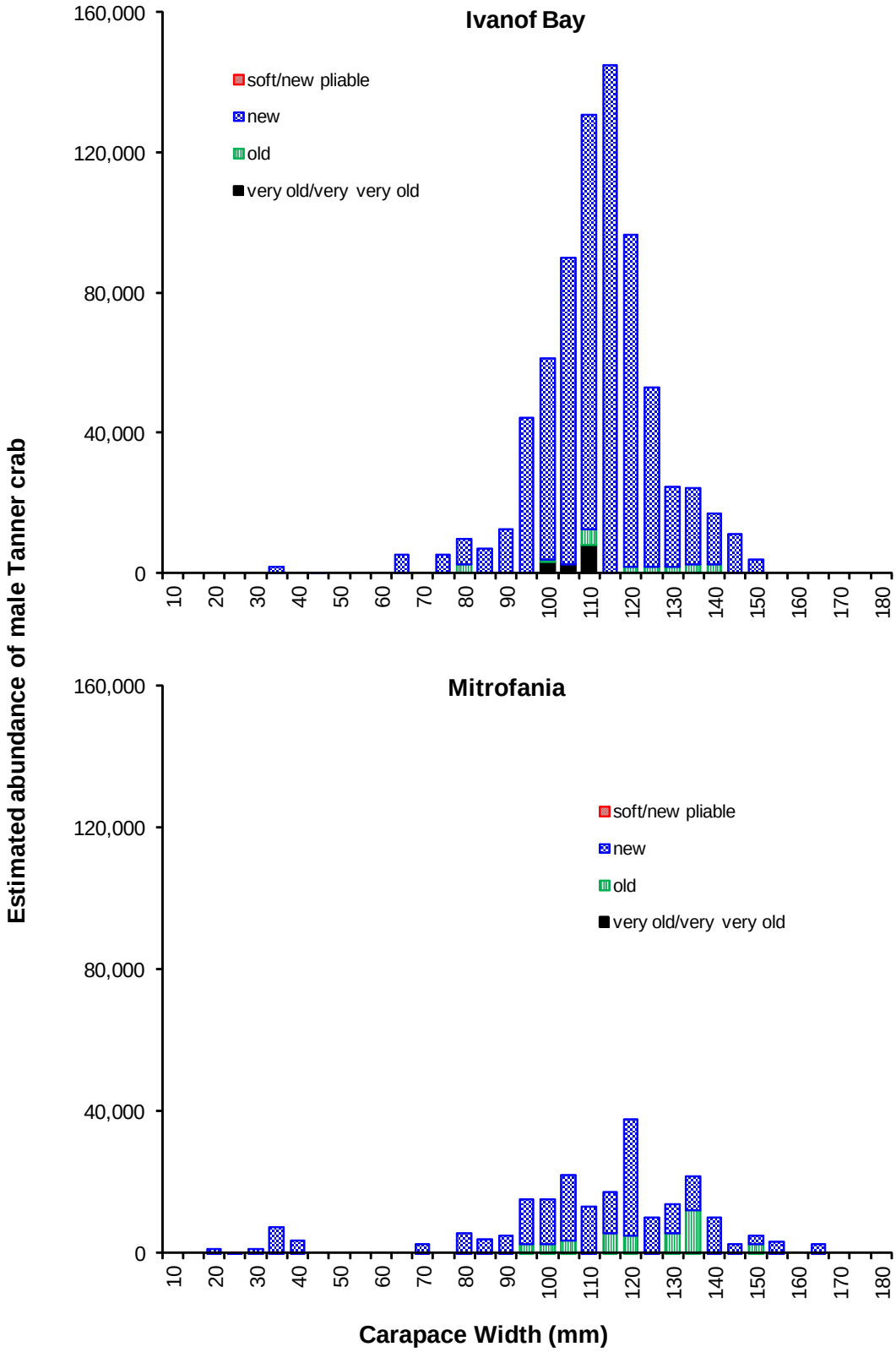

Figure 19.–Tanner crab male abundance estimate by carapace width and shell condition from Ivanof Bay and Mitrofania in the 2016 Chignik District bottom trawl survey.

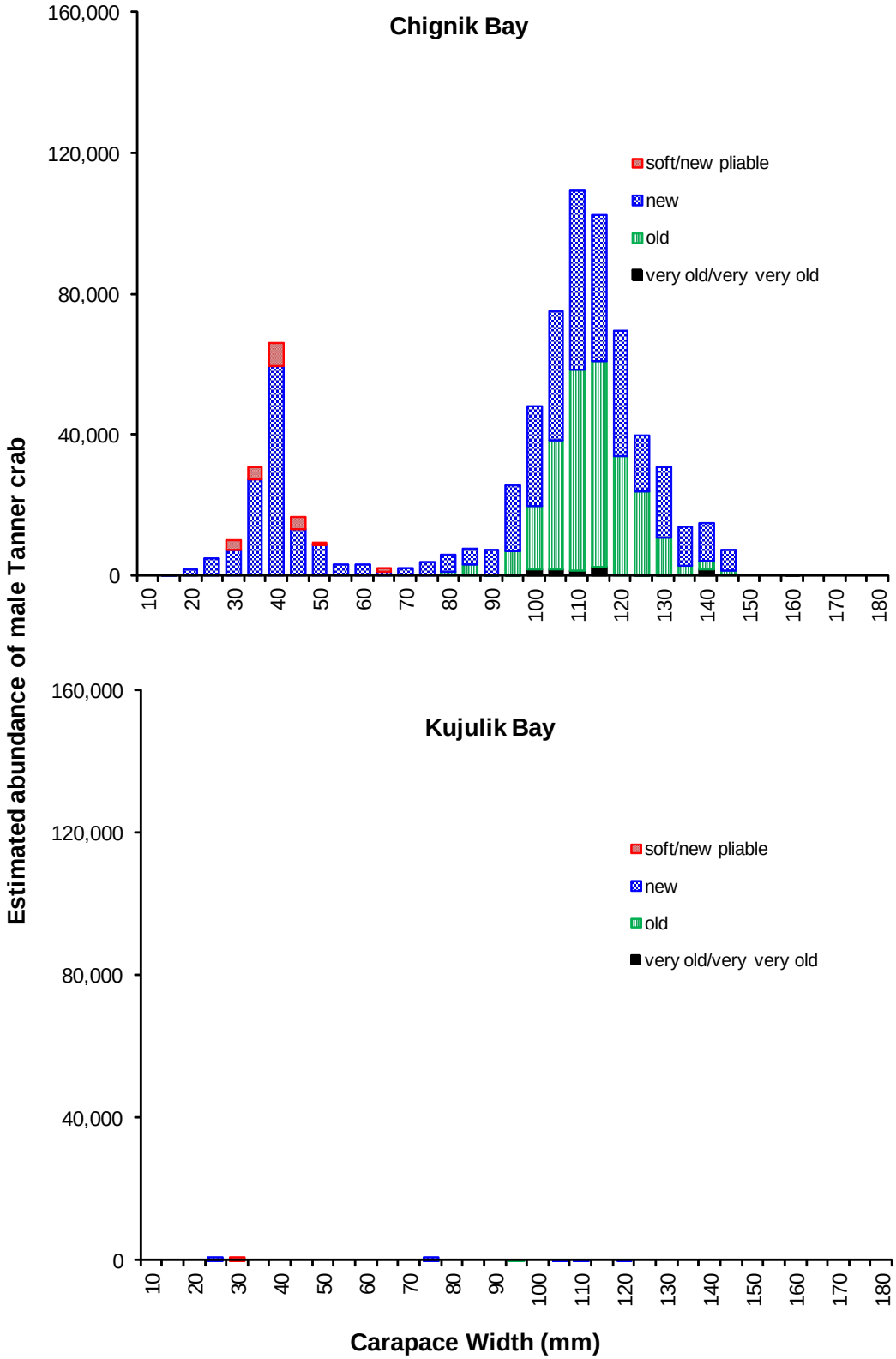

Figure 20.–Tanner crab male abundance estimate by carapace width and shell condition from Chignik Bay and Kujulik Bay in the 2016 Chignik District bottom trawl survey.

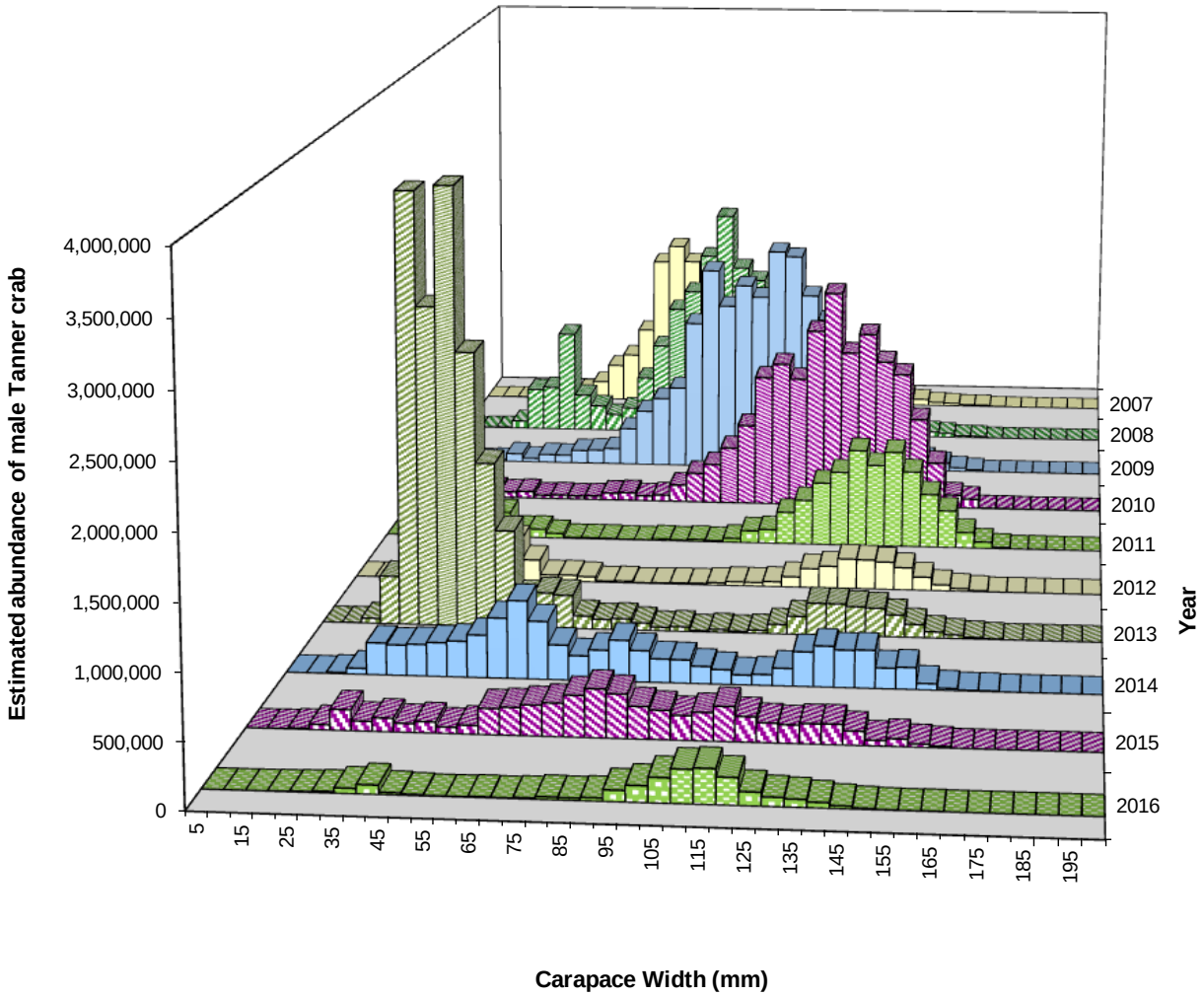

Figure 21.–Tanner crab male abundance estimate by carapace width in the Chignik District bottom trawl surveys, 2007–2016.

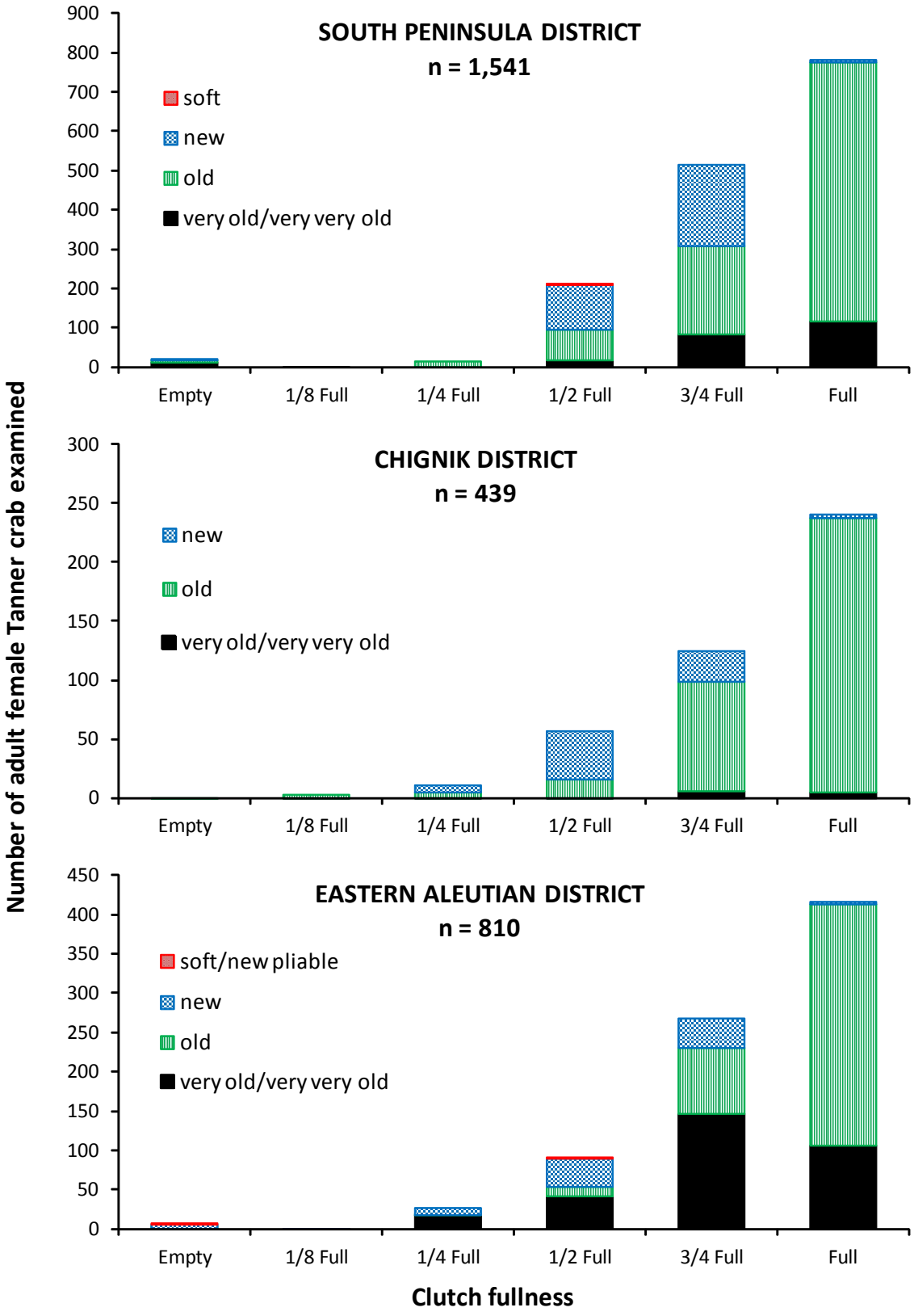

Figure 22.–Tanner crab adult female egg clutch fullness by shell condition in the South Peninsula, Chignik, and Eastern Aleutian districts bottom trawl survey, 2016.

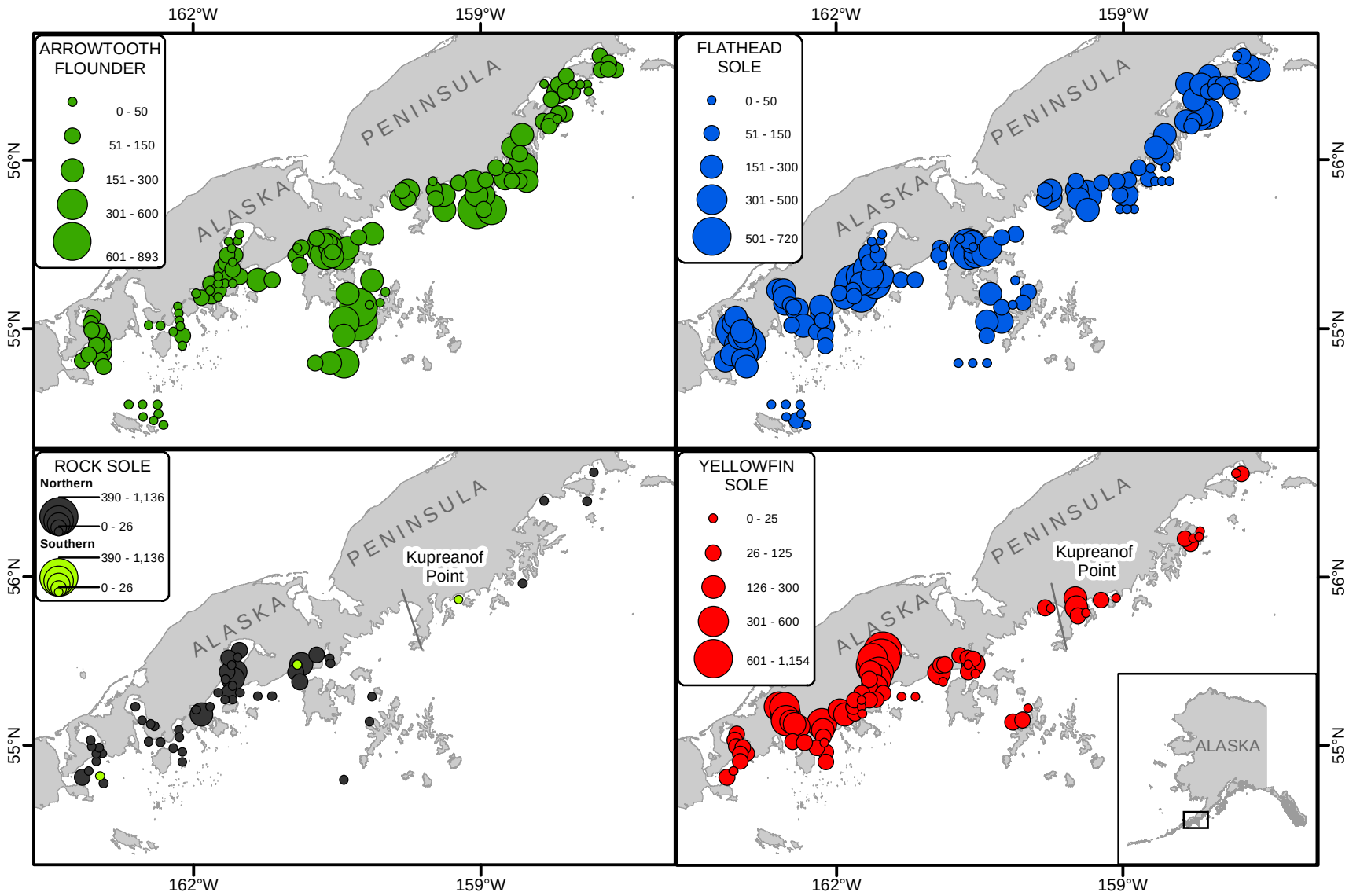

Figure 23.–Arrowtooth flounder, flathead sole, rock sole, and yellowfin sole catch in kilograms per kilometer towed from the 2016 Chignik and South Alaska Peninsula areas bottom trawl survey.

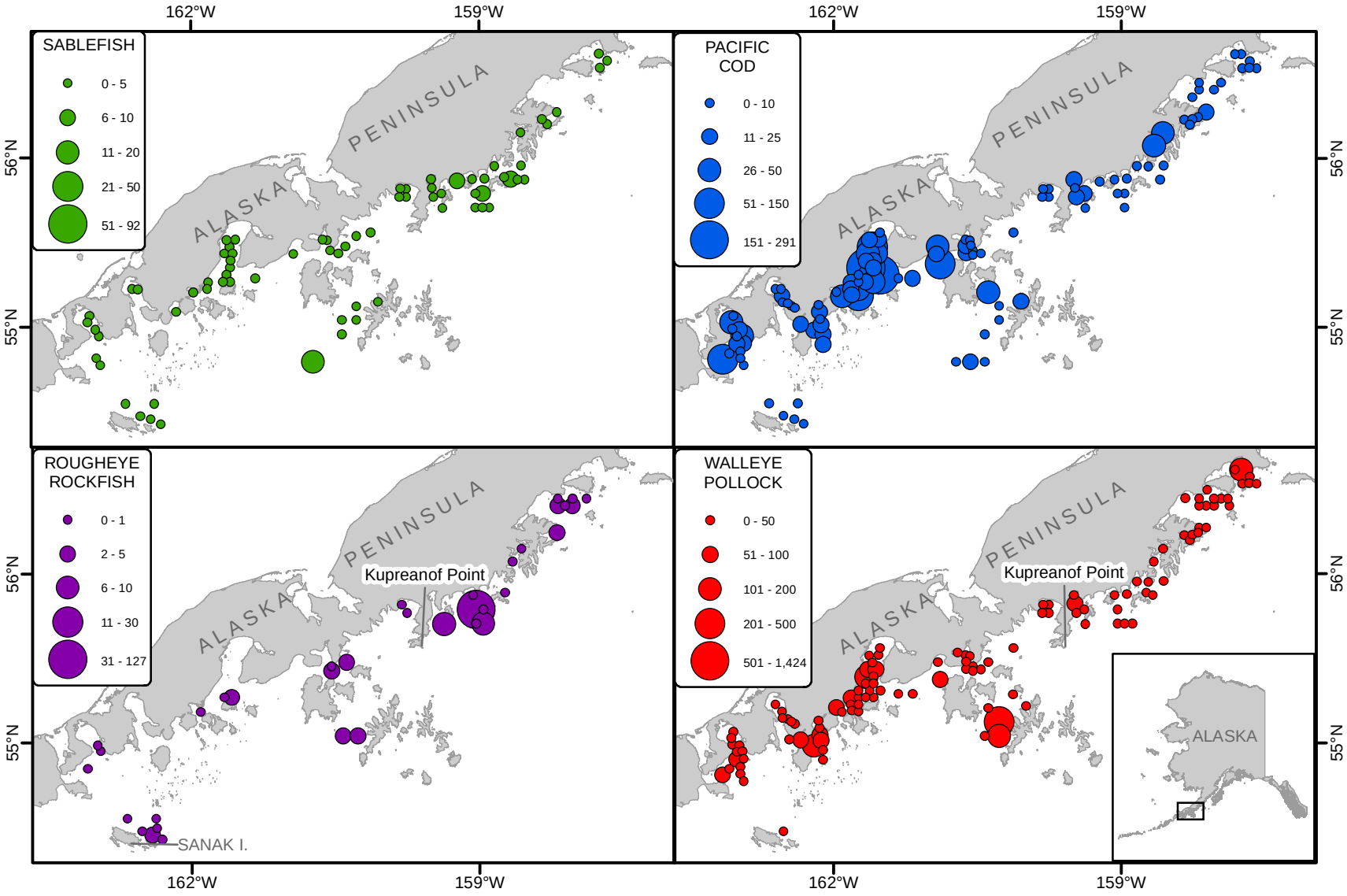

Figure 24.–Sablefish, Pacific cod, rougheye rockfish, and walleye pollock catch in kilograms per kilometer towed from the 2016 Chignik and South Alaska Peninsula areas bottom trawl survey.

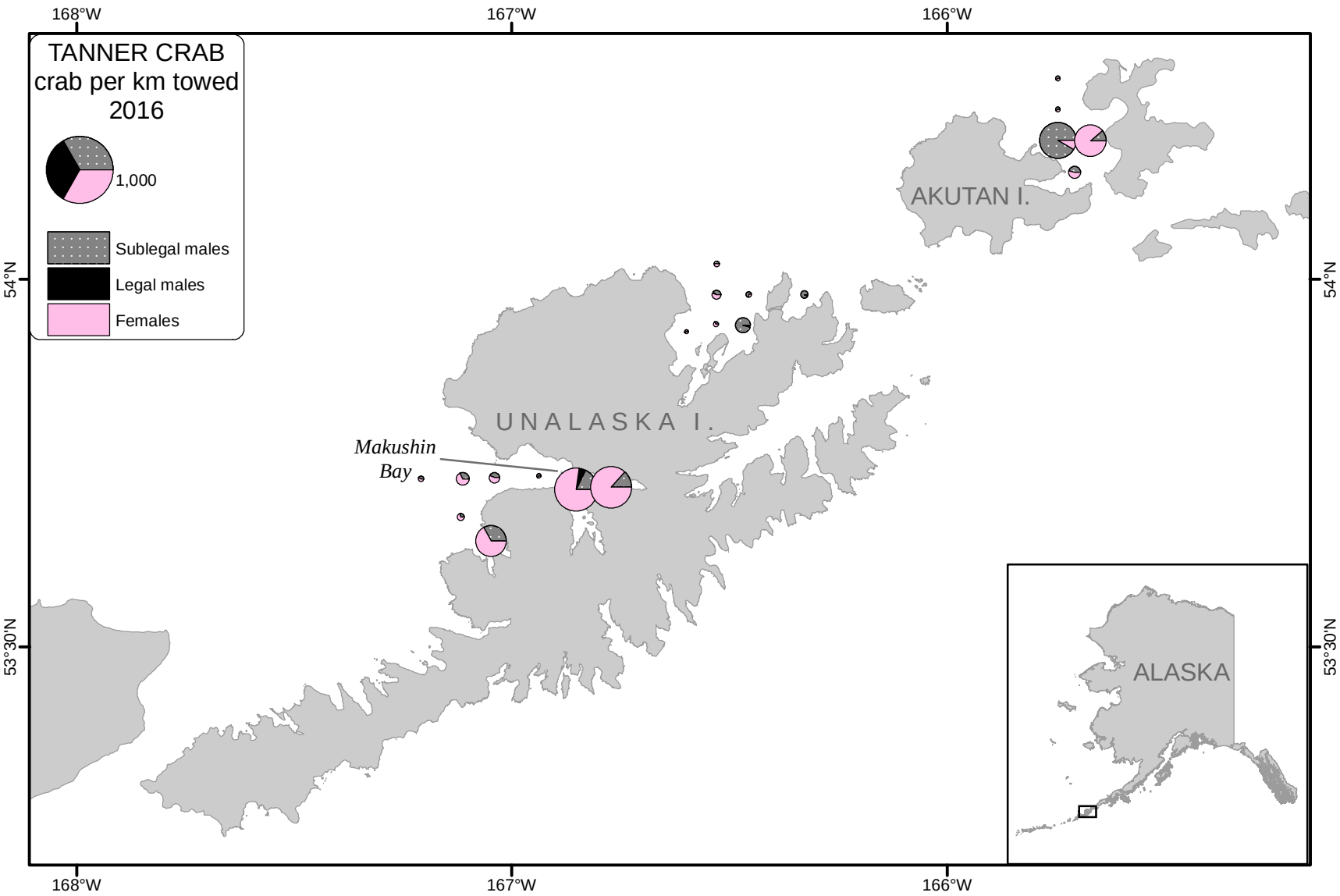

Figure 25.–Number of Tanner crab per kilometer towed in the 2016 Eastern Aleutian District bottom trawl survey.

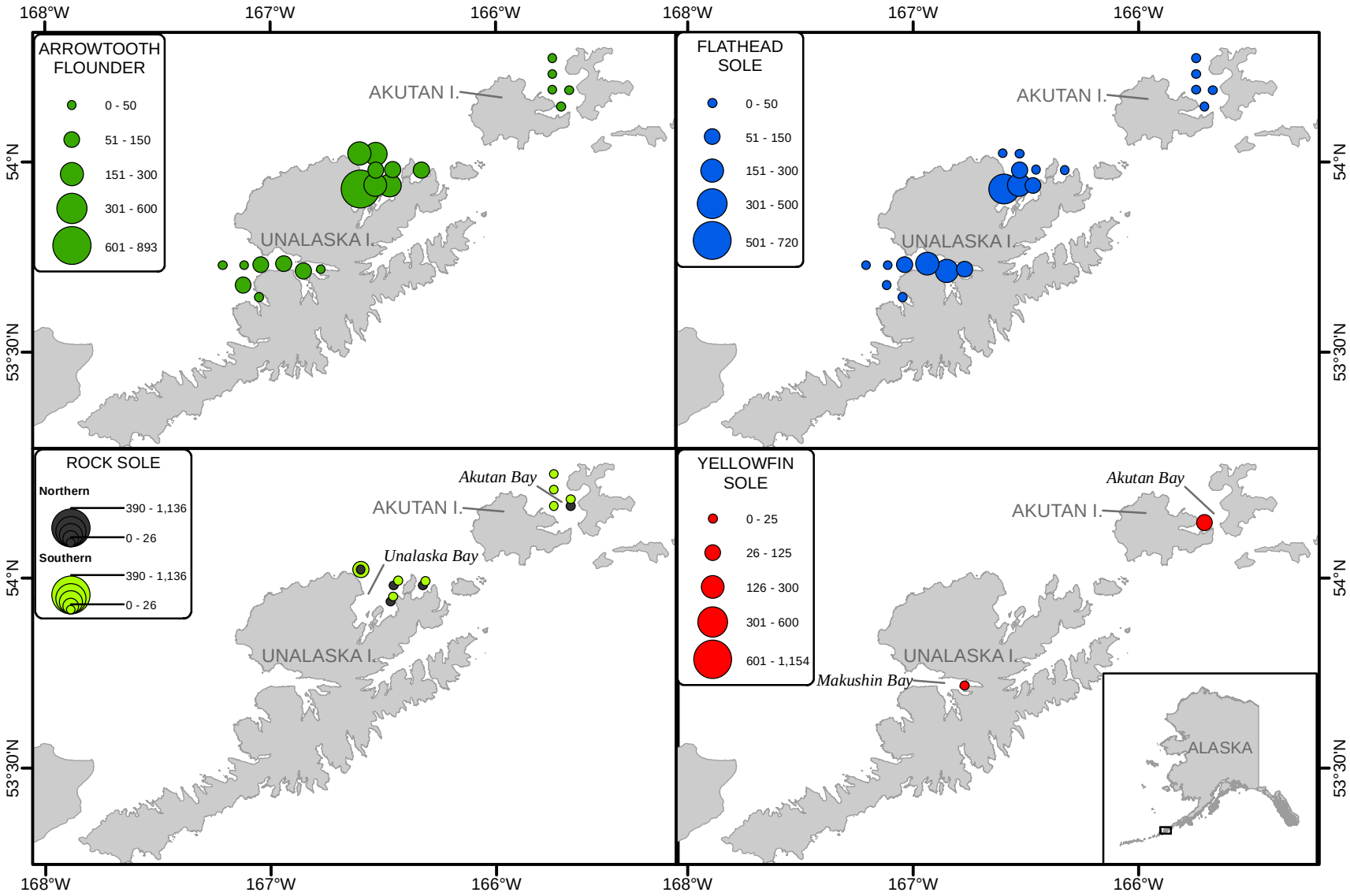

Figure 26.–Arrowtooth flounder, flathead sole, rock sole, and yellowfin sole catch in kilograms per kilometer towed from the 2016 Aleutian Islands District bottom trawl survey.

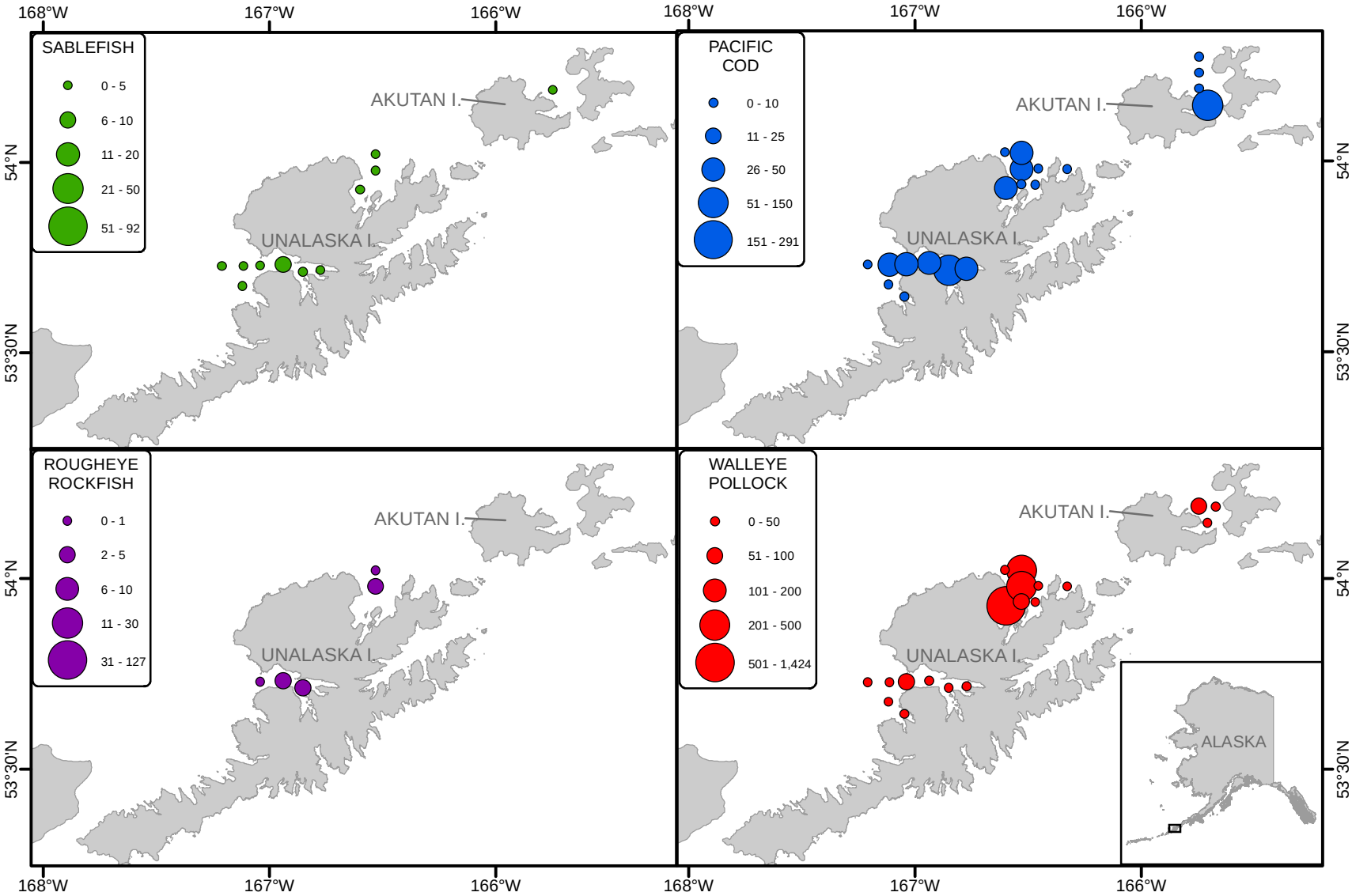

Figure 27.–Sablefish, Pacific cod, rougheye rockfish, and walleye pollock catch in kilograms per kilometer towed from the 2016 Aleutian Islands District bottom trawl survey.

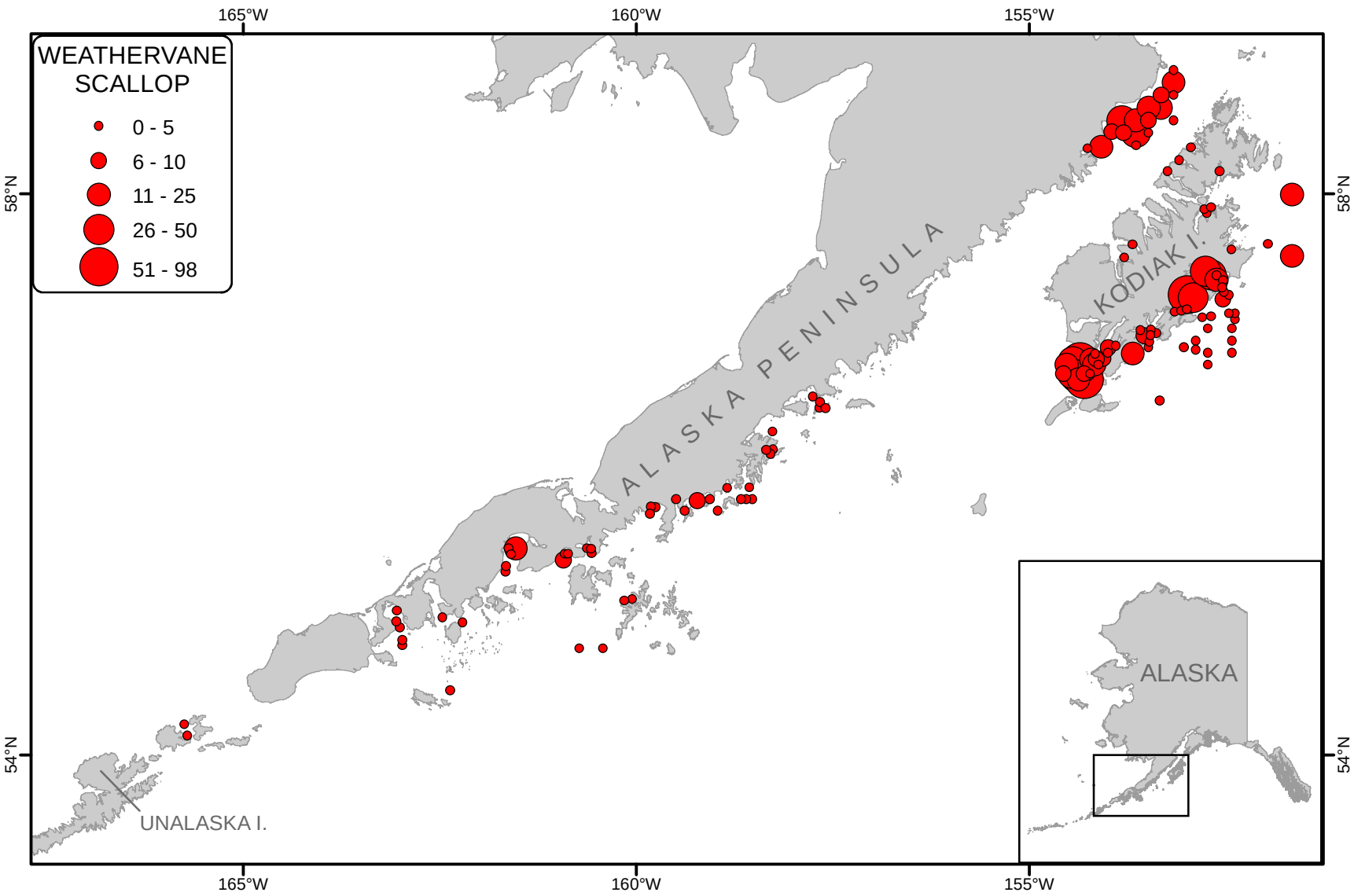

Figure 28.–Weathervane scallop catch in kilograms per kilometer towed from the 2016 bottom trawl survey.

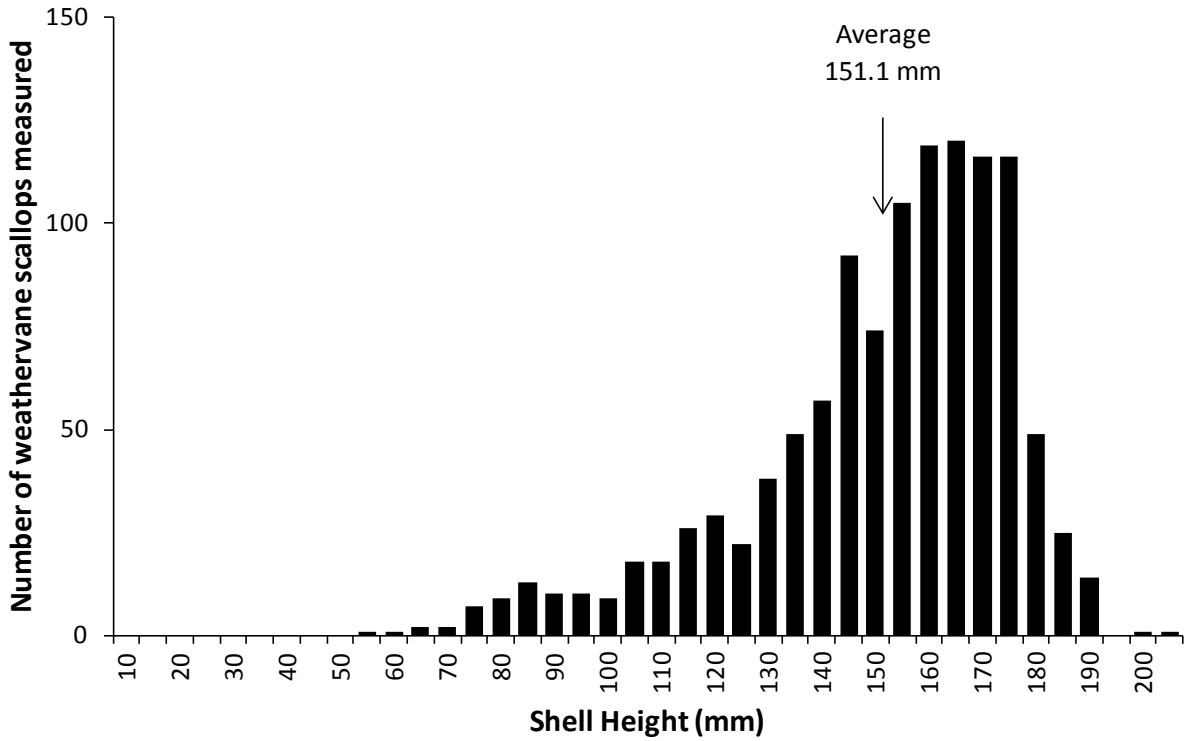

Figure 29.–Weathervane scallop shell height frequency from the 2016 bottom trawl survey.

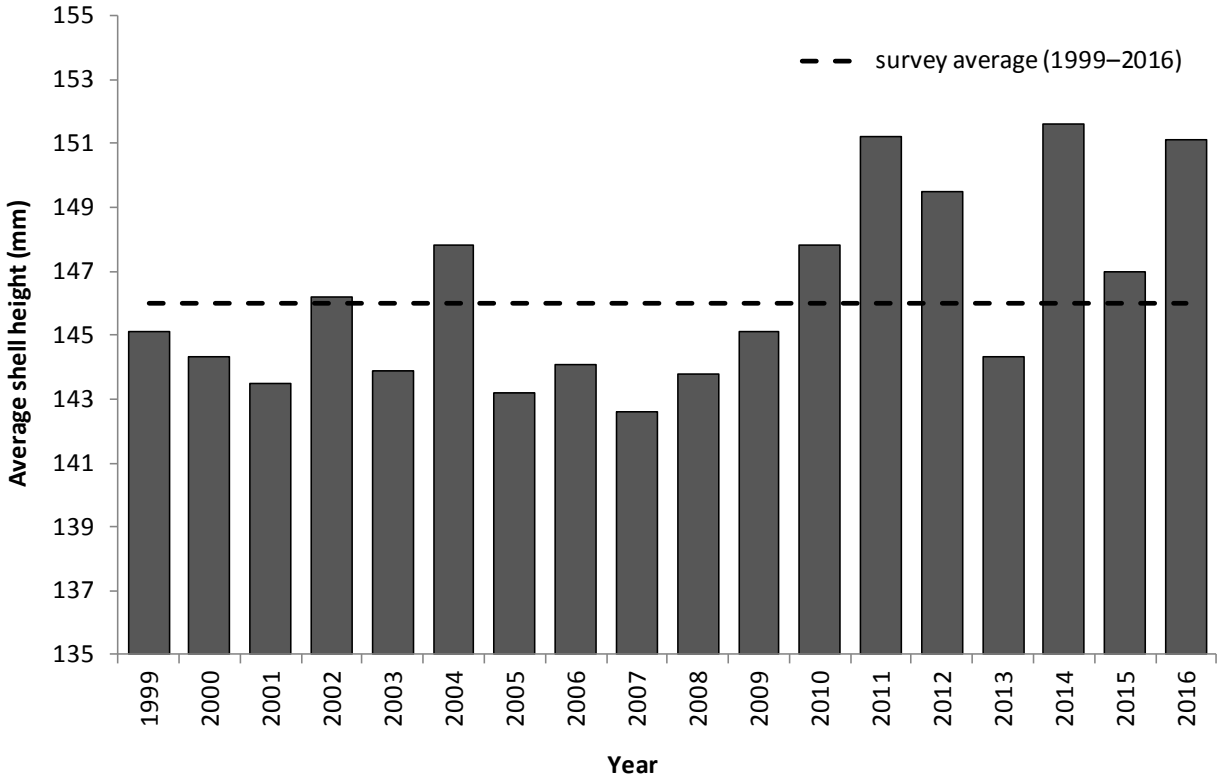

Figure 30.–Average weathervane scallop shell height from scallops measured on the bottom trawl surveys, 1999–2016.

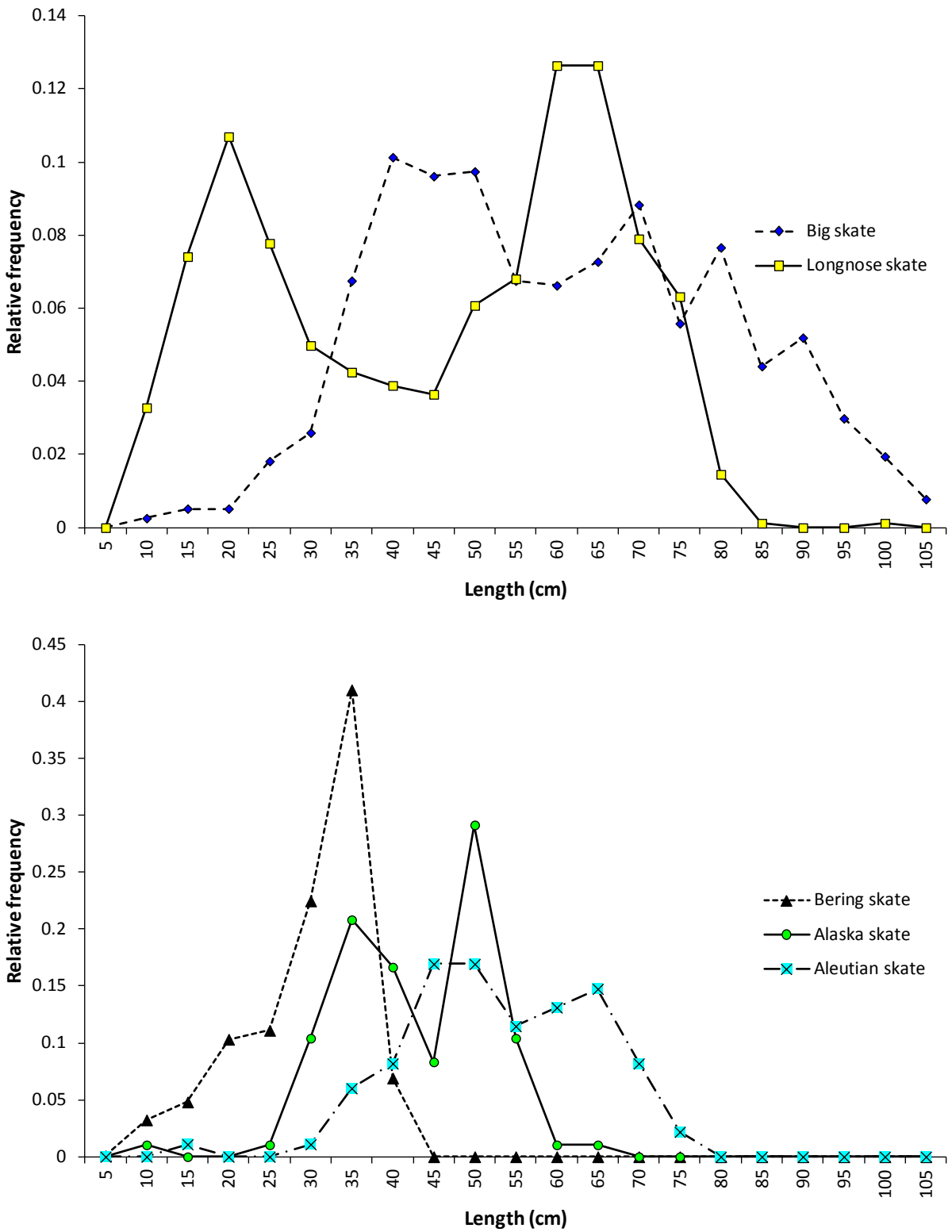

Figure 31.–Big, longnose, Bering, Alaska, and Aleutian skate relative size frequencies (snout to anterior notch of pectoral fin) from the 2016 bottom trawl survey.

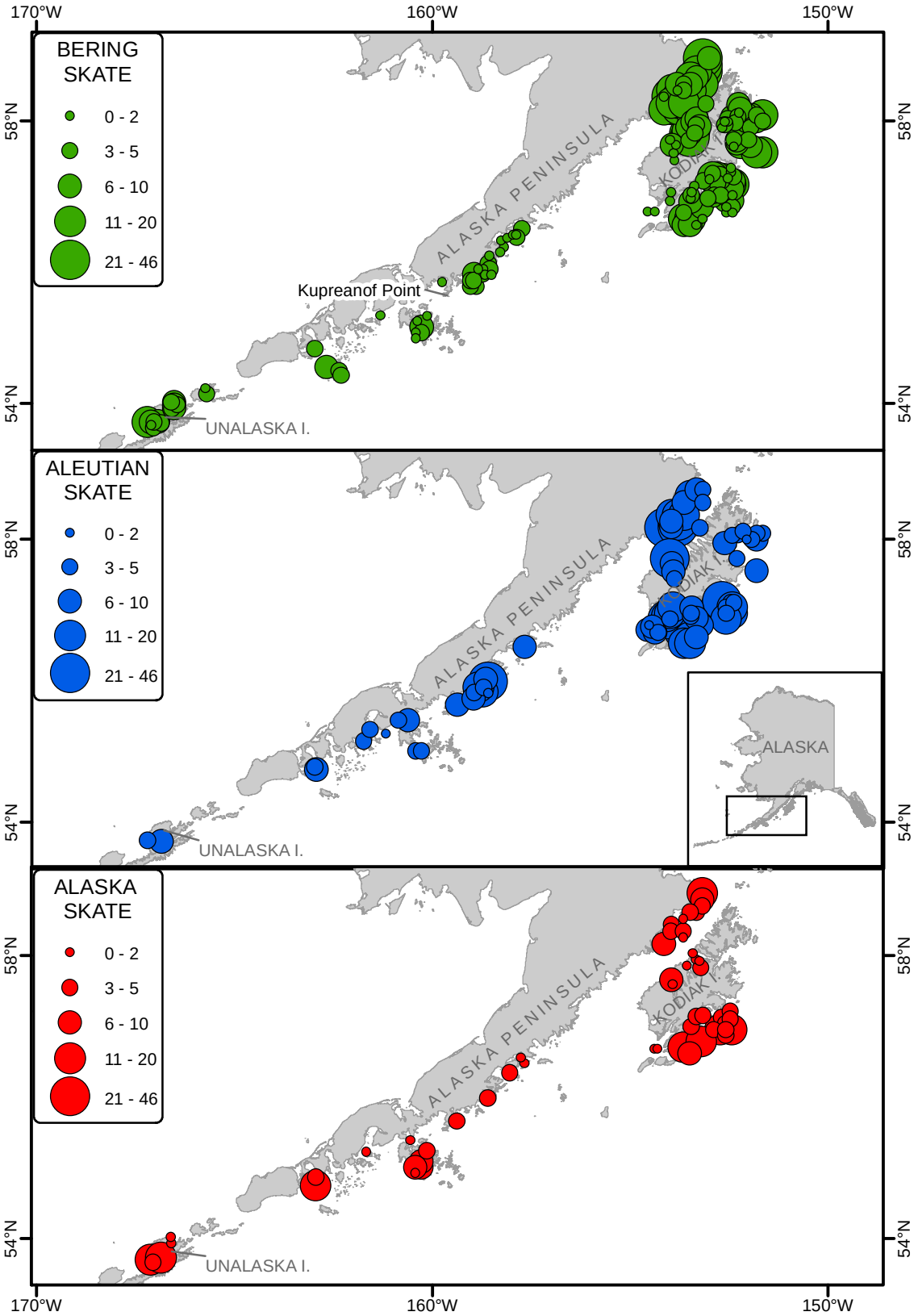

Figure 32.–Bering, Aleutian, and Alaska skate catch in kilograms per kilometer towed from the 2016 bottom trawl survey.

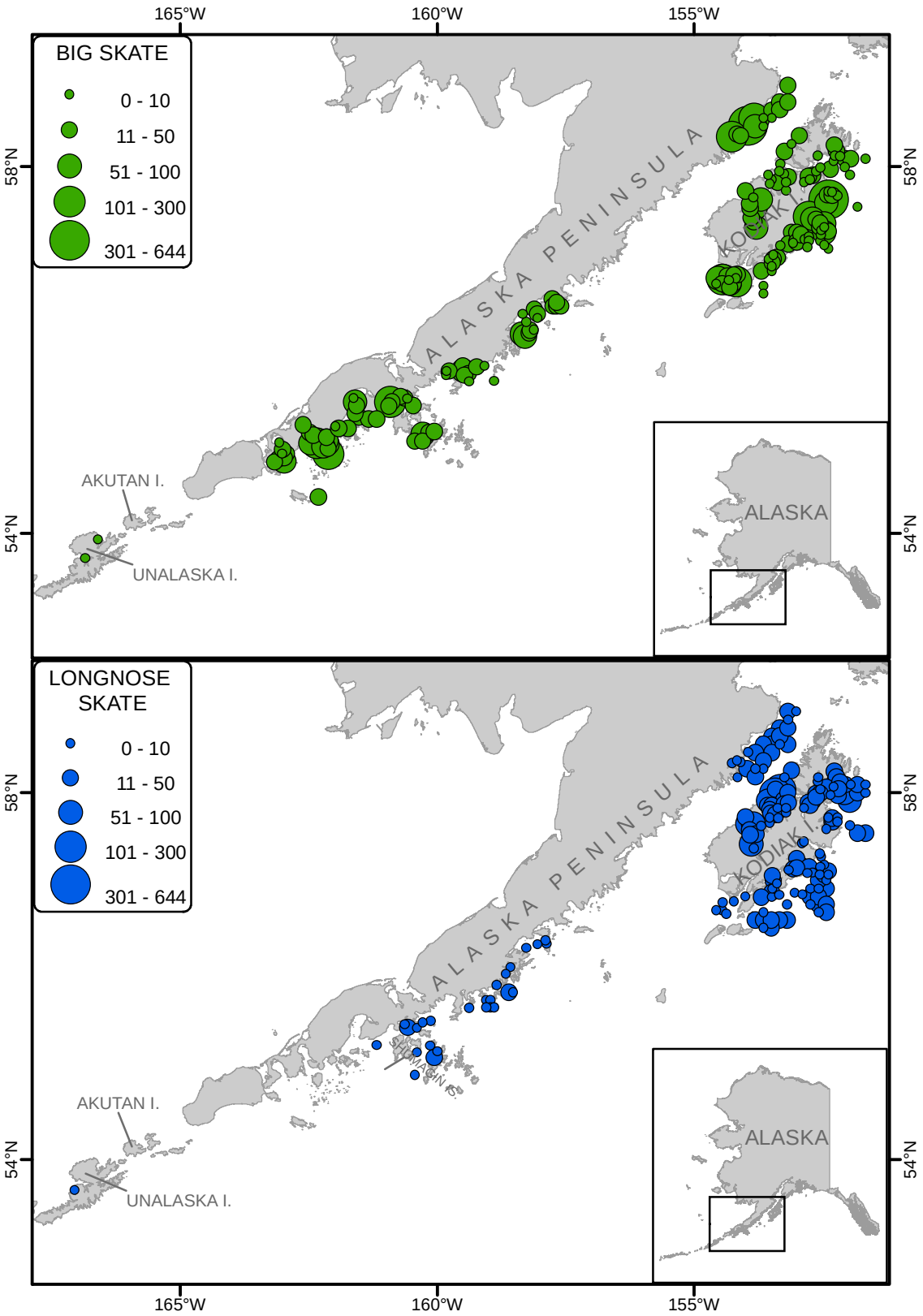

Figure 33.–Big and longnose skate catch in kilograms per kilometer towed from the 2016 bottom trawl survey.

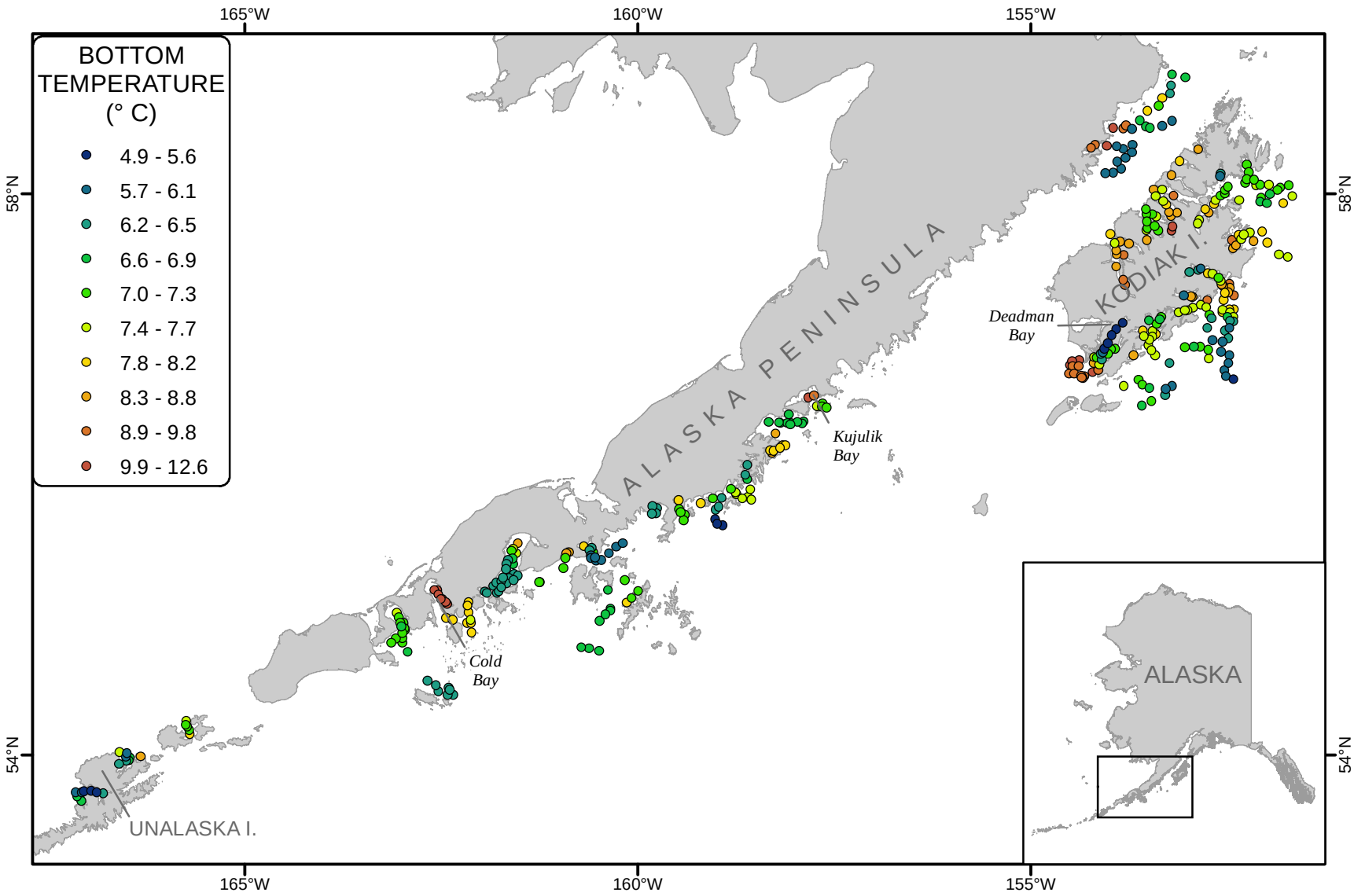

Figure 34.–Near-bottom water temperatures from the 2016 bottom trawl survey.

APPENDIX A. GLOSSARY

Appendix A1.–Definition of terms in large-mesh trawl survey report.

Large-mesh trawl survey: Definitions of terms	
Crab Terms	
abdominal flap	Crab abdomen folded underneath body. Can be lifted to reveal reproductive appendages. Shape of abdominal flap used to identify crab sex; males have a triangular shaped abdominal flap, females are more rounded.
anterolateral spines	Spines on the margin of anterior half of carapace.
bitter crab disease	Disease lethal to crabs caused by a parasitic dinoflagellate of the genus *Hematodinium* known to infect *Chionoecetes* spp. crabs. Live crab in later stages of infection have an exaggerated pink carapace or legs and white opaque hemolymph that can be observed if a leg is cracked. Crab infected with this parasite are unmarketable because of an astringent aspirin aftertaste.
black mat	A systemic fungal infection (*Trichomaris invadens*) that forms nondiscrete blotches of a black, tar-like mass on the carapace and legs. Black mat has a fibrous like texture when scraped.
carapace	Main part of crab shell which covers body of crab. It is divided into the gastric, branchial, and cardiac regions.
carapace length	The biological size measurement of all species of king crabs taken as the straight-line distance from the posterior margin of the right eye orbit to the medial-posterior carapace margin.
carapace width	Crab measurement taken as the greatest straight-line distance perpendicular to a line midway between the eyes to the medial-posterior margin. Biological measurements do not include spines.
chela height	Measurement of the right claw of a crab taken at the greatest height, excluding spines.
clutch	Eggs beneath a female abdominal flap.
eyed eggs	Stage of egg development when dark eyespots are present and visible to the human eye.
juvenile	An animal that has not reached sexual maturity.
lateral margin	The outer edge of the crab carapace.
legal size	The minimum size of an animal that may be retained by state regulation. For Tanner crab males in Kodiak, Chignik, South Peninsula, and Eastern Aleutian districts legal size is 5.5 inches (140 mm) carapace width including the lateral margin spines. For king crab males minimum legal size is 7.0 inches (177.8 mm) carapace width in the Kodiak Area and 6.5 inches (165.1 mm) carapace width in the Alaska Peninsula and Aleutian Islands areas, including the lateral margin spines. For Dungness crab the minimum legal size is 6.5 inches (165.1 mm) carapace width, immediately anterior to the tenth anterolateral spine.
mature female	A female animal that has reached sexual maturity. For Tanner crab mature females have a circular abdominal flap that covers most of the ventral surface of the crab, whereas a juvenile female abdominal flap covers only about ⅔ of the ventral surface. For red king crab mature females include ovigerous females of any size, all females >115 mm CL in the Kodiak area, and all females >99 mm CL in the Alaska Peninsula and Aleutian Islands areas.

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mature male	A male animal that has reached sexual maturity. For Tanner crab, mature males are considered to be all males that are >114 mm carapace width.
medial-posterior edge	The middle of the back edge of the carapace.
midline	The median plane of the body of an animal. For crabs this is an imaginary line running along the carapace from between the eyes to the medial-posterior edge.
multiparous female	A female crab that has produced more than one clutch of eggs. For Tanner crab they may be identified by the presence of discolored grasping marks on legs.
nemertean worms	Egg parasites in clutch of adult female crab that prey on developing embryos. Worms are small, red in color, often 's' shaped during early stages of development, and are most obvious in clutch with a high number of dead embryos.
new shell	Carapace and chela are hard and will crack when pressure is applied. Legs are not easily compressed when pinched and will break if bent. Colors are bright. Iridescence, particularly on the chelae, is often visible. Ventral surface can be any variation of white or pink. Spines, chela tips, chela teeth, and dactyl tips are sharp. Abdomen, coxae, and legs have little or no scratches and abrasions. Slight fouling may be present, including—but not limited to—leech egg cases, small barnacles, and encrusting bryozoans. On Tanner crab females, subtle grasping mark imprints may be present on the first 2 pairs of legs.
old shell	Colors are dull. Iridescence on the chelae may be visible. Ventral surface typically appears yellow to brown. Spines, chela tips, chela teeth, and dactyl tips may show wear. Abdomen, coxae, and legs have few to numerous scratches and abrasions, which may be slightly darker than the shell. Slight fouling may be present, including—but not limited to—leech egg cases, barnacles, bryozoans, tubeworm casings, and anemones. On Tanner crab females, grasping marks are often present and discolored on the first 2 pairs of legs.
ovigerous	Bearing eggs.
parasitic barnacle	The rhizocephalan barnacle *Briarosaccus callosus* exclusively parasitizes king crab species. The visible externa of the parasite is located in the abdominal flap of both sexes and varies in size from as small as a jellybean to as large as a chicken egg and in color from pale yellow to deep red. It causes castration in infected crabs and is uncommon around Kodiak and along the Alaska Peninsula.
postrecruit male	Male crab that have been legal size for more than 1 year. Tanner crab postrecruit males are 140–164 mm CW and old or very old/very very old shell and all males ≥165 mm CW. Red king crab postrecruit males are all legal-size crab that are old or very old/very very old and, in the Kodiak Area, all males ≥164 mm CL and, in the Alaska Peninsula and Aleutian Islands areas, all males ≥152 mm CL.
prerecruit male	Male crab not legal size. Prerecruit crab are often divided into size groups. For red king crab prerecruit IV are crab <95 mm CL in the Kodiak Area and <79 mm CL in the Alaska Peninsula and Aleutian Islands areas. Prerecruit III are crab 95–112 mm CL in the Kodiak Area and 79–95 mm CL in the Alaska Peninsula and Aleutian Islands areas. Prerecruit II are crab 113–130 mm CL in the Kodiak Area and 96–115 mm CL in the Alaska Peninsula and Aleutian Islands areas. Prerecruit I are crab >130 mm CL in the Kodiak Area and >115 mm CL in the Alaska Peninsula and Aleutian Islands areas.

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primiparous female	A female crab that is carrying its first clutch of eggs. For Tanner crab they may be identified by being soft/new pliable or new shell mature females.
recruit male	Male crab that became legal size in the last year. For Tanner crab a recruit is soft/new pliable and new shell, 140–164 mm CW. For red king crab in the Kodiak Area a recruit is legal-size, soft/new pliable, and ≤164 mm CL. For red king crab in the Alaska Peninsula and Aleutian Islands areas a recruit is legal-size, soft/new pliable, and ≤152 mm CL.
shell condition	A description of the appearance of a crab's exoskeleton, and is determined by examining characteristics that show wear with time. The ADF&G trawl survey program recognizes 4 shell condition categories: soft/new pliable, new, old, and very old/very very old.
soft/new pliable shell	1) The exoskeleton is soft, flaccid, similar in texture to skin, and loses shape out of water. No scratches, abrasions, or epibionts are present. OR 2) Carapace and chela are firm, but thin and flexible and can be easily indented with slight thumb pressure. Legs are easily compressed when pinched. Colors are bright. Iridescence is common. Abdominal flap may appear translucent. Spines, chela tips, chela teeth, and dactyl tips are sharp if not pliable. No scratches, abrasions, or epibionts are present.
spines	Pointed processes along the edge of a crab carapace.
very old/very very old shell	1) Colors are dull and often dark on the dorsal surface. Ventral surface typically appears yellow to brown with darker areas. Spines, chela tips, chela teeth, and dactyl tips are heavily worn. Legs are commonly damaged or missing. Abdomen, coxae, and legs have numerous scratches and abrasions, which are typically darker than the shell. Slight to moderate fouling is common, including—but not limited to—leech egg cases, large barnacles, bryozoans, hydroids, tubeworm casings, and anemones. On Tanner crab females, multiple grasping marks are often present and discolored on the first 2 pairs of legs. OR 2) Carapace may be soft and spongy because of decay. Colors are dark overall. Spines, chela tips, chela teeth, and dactyl tips are heavily worn. Legs are commonly damaged or missing. Moderate to extensive fouling is common.
<u>Trawl Net Terms</u>	
codend	The trailing end of a tapered trawl net where catch accumulates during towing.
dandylines	Also called bridles. Cables between trawl door and side of trawl net.
doors	Steel boards attached between vessel and trawl net, positioned to create hydrodynamic forces while towing that push them apart and spread the opening of the net.
footrope	The line running along lower mouth of net. Net used during large-mesh trawl survey has footrope weighted with chain to keep it on bottom.
headrope	The line running along upper mouth of net with floats attached to keep the net open.
mesh	An open fabric of line or cord, the intersections of which are looped or knotted into various sized spaces and sewn together to form a net.

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net performance	A rating given by the skipper describing problems encountered with the net during a haul.
sweep	The width net covers when towed over the seafloor.
wing	The portion of the trawl net forward of the main body of the net.
Sampling Terms	
catch	Quantity of animals caught in trawl net. Measured in numbers or weight of animals.
catch weight database	The onboard database used to enter weights of all species identified during the haul. All information is entered upon completion of catch sampling. Data from the shellfish and fish measurement databases are incorporated into the catch weight database after each haul.
cruise leader	Biologist in charge of coordinating biological sampling activities during the survey and responsible for the quality of collected data while on the vessel.
debris	Contents of the trawl net that are not identified or sampled, including rocks, empty shells, seaweed, previously dead organisms, or human made objects.
fish measurement database	The onboard database used to collect fish measurements. Measurements can be entered directly from the magnetic fish measuring board, or entered into the database manually using a networked input program from a network connected device.
haul	From the time trawl net reaches bottom and is towed in an attempt to fish to the time the vessel stops moving and begins retrieving the net.
haul database	The onboard database to store information associated with the fishing process for each haul. Data from skipper trawl record forms are manually entered at the end of each day
onboard databases	Databases in use during the trawl survey include: fish measurement database, shellfish measurement database, catch weight database, and haul database.
on-deck sorting bin	An area located on the back deck of the survey vessel contained by removable boards where the catch from the codend is emptied after every haul, prior to sorting and removal of the subsample.
shellfish measurement database	Onboard database used to enter crab measurements and biological information. Measurements and crab information are entered directly using electronic calipers and the crab keyboard, or by using a standard keyboard.
sorting table	Table located on the forward part of deck where the subsample is sorted for species composition, weighing, and measuring.
species composition sampling	Sorting, identification, and weighing of organisms in the catch to determine proportion and total weight of each species.
station	Survey area sampling unit. Each station is towed once during the annual survey.
subsample	A representative and random subset of the total haul catch.
subsampling net	The net used to obtain the subsample. This net is tied into the on-deck sorting bin and the haul catch is emptied into the bin. The subsampling net is then untied and lifted through the catch to capture a representative subsample that is sorted at the sorting table.

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whole-haul	When 100% of the trawl catch of a specific species is accounted for by weight, count, or measurement, or a combination. In instances when there is a small total catch, when 100% of the total trawl catch is sorted and weighed.
Management Terms	
abundance threshold	Level of mature male Tanner crab abundance described in state regulation that must be met in order to consider opening a commercial fishery.
GHL	Guideline Harvest Level. Catch quota established prior to the beginning of each fishing season. GHLs for Tanner crab are based on large-mesh trawl survey data.
legal male	Crab that may be retained by state regulation; only male crab of specific size are considered legal to retain.
long-term average abundance	Average abundance of mature male Tanner crab from 1967–1998 as determined using a combination of trawl survey data, commercial catch history, and pot survey catches, and used to establish regulatory abundance thresholds.
management district	Regulatory unit to facilitate resource management.
management section	Management districts are divided into sections to facilitate management of the Tanner crab fisheries and are based on local distributions and migration patterns. Each section has a separate GHL.
molting mature male crab	Estimated abundance of 100% newshell and 15% oldshell male Tanner crab that are >114 mm carapace width.
Other Biological Terms	
anterior	Toward the front, near the head, or rostral end of a crab.
caudal fin	The tail of a fish.
claspers	A paired organ of male sharks and skates. Assists transfer of spermatozoa into the body of a female during copulation.
dorsal	The back or part of an organism away from the ground. Refers to the hinge area of a scallop shell.
inclement weather	Severe, rough, harsh, or stormy.
pectoral fin	Either of a pair of fins situated behind the head, one on each side of the body.
posterior	The rear, away from the head.
shell height	The straight-line distance from the umbo the the outer scallop shell margin, perpendicular to the hinge. Scallop shell heights are measured on the left (top) valve.
umbo	Beak-like projections at the dorsal part of a shell; it is the oldest part of a bivalve shell.
valve	One of the 2 parts of a bivalve shell, 2 valves make up one shell.
Data Analysis Terms	
area swept	The sea floor area sampled by the trawl during a haul.
catchability	The relationship between the proportion of a population available to the survey gear and the proportion of the population in the trawl path retained by the survey net.

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density	The number or weight of a species present per unit of area.
distance towed/haul length	Distance the vessel travels between the time the trawl net footrope contacts bottom and the time the center of footrope leaves bottom.
escapement	The act of an organism in the trawl path evading capture by the trawl net.
relative abundance indices	Indices that track change in population size, but do not estimate actual population size.
size selectivity	The consequence of fishing gear capturing organisms of different sizes at different rates.
true abundance	The actual number of animals present in the area of interest.

APPENDIX B. FISHING LOG AND TRAWL STATIONS SAMPLED

Appendix B1.–2016 bottom trawl survey fishing log.

Haul	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Location	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.
Month/day/year	6/9/2016	6/9/2016	6/9/2016	6/9/2016	6/9/2016	6/10/2016	6/10/2016	6/10/2016	6/10/2016	6/14/2016	6/14/2016	6/14/2016	6/14/2016	6/14/2016
Station	CHJ	CHE	CHL	369X	CHG	CHK	CHB	CHA	CHF	KZG	KZE	KZC	KZA	KZB
Longitude start (°W)	152.3758	152.4528	152.2428	152.053	152.1513	152.318	152.4092	152.4403	152.3417	152.617	152.6772	152.7487	152.8783	152.8672
Latitude start (°N)	57.727	57.6763	57.7303	57.7322	57.6933	57.7275	57.6345	57.6122	57.6805	57.9525	57.912	57.8608	57.7892	57.812
Heading, degrees	138	44	73	11	203	97	42	38	46	270	10	40	11	27
Average depth (m)	95.09	14.62	201.1	111.5	137.1	162.7	73.14	43.88	137.1	128	100.5	60.34	43.88	53.03
Distance fished (km)	1.66	1.11	1.85	1.29	1.85	1.85	1.85	1.85	1.85	1.85	1.66	1.48	1.11	1.11
Bottom Temp. (°C)	7.81	8.85	7.67	8.08	8.3	7.52	8.52	8.64	7.56	7.36	7.9	8.32	7.41	7.46
Haul	15	17	18	19	20	21	22	23	24	25	26	27	28	29
Location	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.
Month/day/year	6/15/2016	6/15/2016	6/15/2016	6/15/2016	6/15/2016	6/15/2016	6/15/2016	6/16/2016	6/16/2016	6/16/2016	6/16/2016	6/16/2016	6/16/2016	6/16/2016
Station	KZD	MOEX	MOGX	313	314	285	257	MOX	255X	255	256	284	283	283X
Longitude start (°W)	152.7963	152.3745	152.1108	152.0288	151.8175	151.6803	151.6997	152.2505	152.0875	152.0028	151.8463	151.8342	151.932	152.0445
Latitude start (°N)	57.8787	57.9478	57.9388	57.9403	57.9337	57.9667	58.0422	58.2112	58.0758	58.0563	58.0512	58.0295	58.0042	57.9812
Heading, degrees	53	70	80	114	86	16	345	161	159	93	134	216	236	236
Average depth (m)	82.29	117	160.9	201.1	58.51	104.2	155.4	155.4	155.4	128	159	155.4	168.2	173.7
Distance fished (km)	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
Bottom Temp. (°C)	7.97	7.4	6.85	6.79	7.85	7.41	7.09	7.29	7.1	7.54	7.11	7	6.89	7.02
Haul	30	31	32	33	34	35	36	37	38	39	40	41	42	43
Location	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.	NE Kod.
Month/day/year	6/16/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/17/2016	6/18/2016	6/18/2016	6/22/2016	6/22/2016	6/22/2016
Station	MOQ	MOXX	MOLX	MOPX	MOT	MONX	KZO	KZS	KZR	KZK	KZJ	395	420	421
Longitude start (°W)	152.1292	152.2442	152.1775	152.235	152.2495	152.4838	152.5492	152.582	152.5897	152.5512	152.585	151.9597	151.8458	151.7267
Latitude start (°N)	58.0387	58.158	58.1087	58.1117	58.0855	58.0287	58.01	58.1487	58.132	57.987	58.0037	57.6637	57.5972	57.5797
Heading, degrees	352	145	148	212	222	0	39	180	184	65	183	299	175	179
Average depth (m)	151.7	164.5	202.9	168.2	168.2	195.6	201.1	91.43	115.2	179.2	149.9	204.8	160.9	133.4
Distance fished (km)	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.66	1.66	1.85	1.85	1.85	1.48	1.48
Bottom Temp. (°C)	7.3	7.09	6.99	7	7.07	6.99	7	6.23	6.07	7.01	7.15	7.77	7.59	7.55
Haul	44	45	46	47	48	49	50	51	52	53	54	55	56	57
Location	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.
Month/day/year	6/23/2016	6/23/2016	6/23/2016	6/23/2016	6/23/2016	6/23/2016	6/23/2016	6/23/2016	6/24/2016	6/24/2016	6/24/2016	6/24/2016	6/24/2016	6/24/2016
Station	UGAC	UGAB	UGAA	UGB	UGC	UGD	UGG	UGJ	UGE	UGM	UGI	UGF	486B	486A
Longitude start (°W)	152.9953	152.8953	152.8578	152.7562	152.7133	152.6363	152.5038	152.4567	152.6097	152.5338	152.5445	152.5508	152.4122	152.49
Latitude start (°N)	57.4578	57.4758	57.4978	57.4738	57.4622	57.4353	57.3855	57.3755	57.4183	57.3375	57.3533	57.3962	57.3217	57.3083
Heading, degrees	42	77	113	161	115	126	82	193	128	154	356	229	157	22
Average depth (m)	32.91	67.66	74.97	87.77	91.43	98.75	67.66	69.49	95.09	98.75	95.09	87.77	69.49	96.92
Distance fished (km)	1.11	1.66	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
Bottom Temp. (°C)	6.45	6.2	6.11	7.88	7.59	7.15	8.92	8.7	7.54	8.07	8.44	8.32	8.92	8.38

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Haul	58	59	60	61	62	63	64	65	66	67	68	69	70	71
Location	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.
Month/day/year	6/24/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/25/2016	6/26/2016	6/26/2016	6/26/2016	6/26/2016	6/26/2016
Station	510B	KLI	KLD	510C	511A	511B	535B	535A	534B	KLL	534D	535C	535D	561
Longitude start (°W)	152.5295	152.8617	152.7467	152.547	152.4887	152.4167	152.4153	152.4522	152.5338	152.7908	152.5055	152.4703	152.4137	152.4447
Latitude start (°N)	57.2897	57.245	57.2808	57.2192	57.2222	57.2263	57.1747	57.1713	57.1937	57.2295	57.1413	57.1458	57.1417	57.0897
Heading, degrees	213	124	198	208	131	157	157	356	242	126	47	146	173	223
Average depth (m)	102.4	124.3	25.6	91.43	100.5	78.63	133.4	135.3	102.4	135.3	128	149.9	146.2	149.9
Distance fished (km)	1.85	1.85	1.29	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
Bottom Temp. (°C)	8.18	7.49	9.44	7.66	7.79	7.93	7.51	7.61	7.82	7.49	6.8	6.25	6.47	6.12

Haul	72	73	74	75	76	77	78	79	80	81	82	83	84	85
Location	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.
Month/day/year	6/26/2016	6/26/2016	6/26/2016	6/27/2016	6/27/2016	6/27/2016	6/27/2016	6/27/2016	6/27/2016	6/27/2016	6/27/2016	6/28/2016	6/28/2016	6/28/2016
Station	560	589	588	533A	KLH	KLG	KLE	KLF	KLC	KLA	KLB	533B	559	587
Longitude start (°W)	152.5045	152.4733	152.5358	152.7483	152.9088	152.98	153.1428	153.0728	152.9213	153.0758	152.9845	152.7247	152.73	152.6942
Latitude start (°N)	57.0733	57.0258	56.9955	57.1833	57.2233	57.2113	57.1753	57.1962	57.2813	57.3055	57.3112	57.1567	57.0938	57.012
Heading, degrees	221	202	222	137	268	241	49	66	320	84	136	110	217	163
Average depth (m)	140.8	142.6	151.7	140.8	131.6	118.8	115.2	122.5	91.43	93.26	84.12	146.2	155.4	148.1
Distance fished (km)	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.29	1.85	1.85	1.85	1.85
Bottom Temp. (°C)	6.32	6.15	6.12	7.04	7.57	7.53	7.62	7.51	8.32	5.89	8.32	6.34	6.29	6.14

Haul	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Location	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	E Kod.	SE Kod.	SE Kod.	E Kod.	E Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.
Month/day/year	6/28/2016	6/28/2016	6/28/2016	6/28/2016	6/28/2016	6/28/2016	6/29/2016	6/29/2016	6/29/2016	6/29/2016	6/29/2016	6/29/2016	6/29/2016	6/30/2016
Station	620	621	656	655	695	696	615	651	654	619	618A	586	585X	688
Longitude start (°W)	152.6033	152.4955	152.4655	152.5228	152.5253	152.4505	153.4128	153.2497	152.7147	152.7363	152.8138	152.9028	153.0122	153.6613
Latitude start (°N)	56.9262	56.8975	56.8492	56.8008	56.7583	56.7283	56.9058	56.8475	56.8545	56.913	56.945	56.9617	56.9495	56.7222
Heading, degrees	123	111	203	200	155	114	173	132	319	0	292	242	260	118
Average depth (m)	155.4	170	170	153.6	153.6	184.6	144.4	175.5	100.5	133.4	128	128	135.3	149.9
Distance fished (km)	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.66	1.85	1.85	1.85	1.66	1.85
Bottom Temp. (°C)	6.01	5.81	5.71	6.09	6.08	5.58	7.41	6.18	7.55	6.99	7.05	6.87	7.21	7.21

Haul	100	101	102	103	104	105	106	107	108	109	110	111	112	113
Location	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.
Month/day/year	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016	7/1/2016
Station	726	727	759	760	761	728	729	THA	614	THC	THD	THG	THH	THL
Longitude start (°W)	153.5917	153.507	153.5703	153.4833	153.3167	153.2855	153.2292	153.717	153.4603	153.498	153.4933	153.4755	153.415	153.3895
Latitude start (°N)	56.7	56.6747	56.552	56.5587	56.6078	56.6383	56.6722	56.8863	56.9078	56.9453	56.9817	57.0117	57.0213	57.1233
Heading, degrees	153	125	192	51	69	11	74	68	354	4	14	62	0	214
Average depth (m)	153.6	151.7	146.2	131.6	140.8	144.4	146.2	49.37	140.8	131.6	126.1	120.6	107.8	122.5
Distance fished (km)	1.85	1.85	1.66	1.85	1.85	1.85	1.85	1.48	1.85	1.85	1.85	1.85	1.85	1.66
Bottom Temp. (°C)	7.21	6.86	6.84	7.03	6.32	6.05	6.07	8.46	7.33	7.41	7.41	7.42	7.81	7.25

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Haul	114	115	116	117	118	119	120	121	122	123	124	125	126	127
Location	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SE Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.
Month/day/year	7/1/2016	7/1/2016	7/2/2016	7/2/2016	7/2/2016	7/2/2016	7/2/2016	7/3/2016	7/3/2016	7/3/2016	7/3/2016	7/3/2016	7/3/2016	7/3/2016
Station	THM	THN	THK	THJ	THI	THF	725	ALF	ALI	ALH	ALG	ALK	ALJ	ALM
Longitude start (°W)	153.3522	153.3345	153.4938	153.4612	153.5908	153.583	153.8308	154.1653	154.1022	154.1247	154.0733	153.9522	154.0005	153.9963
Latitude start (°N)	57.1537	57.1688	57.1458	57.075	57.0687	57.0212	56.6667	56.857	56.8983	56.8853	56.8713	56.9267	56.9153	56.922
Heading, degrees	203	188	189	175	124	68	60	12	32	32	230	64	226	38
Average depth (m)	120.6	106	102.4	113.3	91.43	76.8	98.75	53.03	76.8	67.66	56.69	71.31	74.97	67.66
Distance fished (km)	1.66	1.48	1.48	1.85	1.29	1.48	1.48	1.85	1.85	1.85	1.85	1.85	1.85	1.85
Bottom Temp. (°C)	6.88	7.21	6.64	7.55	7.93	7.32	7.63	7.1	5.64	6.35	6.37	7.17	7.07	7.1
Haul	128	129	130	131	132	133	134	135	136	137	138	139	140	141
Location	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.
Month/day/year	7/3/2016	7/4/2016	7/4/2016	7/4/2016	7/4/2016	7/4/2016	7/4/2016	7/4/2016	7/4/2016	7/5/2016	7/5/2016	7/5/2016	7/5/2016	7/5/2016
Station	ALL	ALR	ALQ	ALP	ALO	ALC	ALA	ALB	ALD	646D	646B	646A	645B	646C
Longitude start (°W)	154.0875	153.8047	153.8925	153.9555	154.005	154.1167	154.1303	154.2278	154.1938	154.3622	154.3892	154.4442	154.5005	154.4812
Latitude start (°N)	56.9237	57.1275	57.087	57.0442	56.9903	56.842	56.8	56.8428	56.8612	56.8133	56.8383	56.8528	56.8378	56.7975
Heading, degrees	26	225	223	217	210	225	210	121	15	276	13	261	182	23
Average depth (m)	87.77	115.2	171.8	153.6	135.3	71.31	58.51	42.06	58.51	53.03	56.69	64	62.17	64
Distance fished (km)	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
Bottom Temp. (°C)	5.48	4.99	4.94	4.94	4.96	7.35	9.76	8.51	7.64	9.08	10.2	9.97	9.98	9.36
Haul	142	143	144	145	146	147	148	149	150	151	152	153	154	155
Location	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	SW Kod.	Kujulik	Kujulik	Kujulik	Kujulik	Kujulik	Kujulik	Chignik
Month/day/year	7/5/2016	7/5/2016	7/5/2016	7/5/2016	7/6/2016	7/6/2016	7/6/2016	7/17/2016	7/17/2016	7/17/2016	7/17/2016	7/17/2016	7/17/2016	7/17/2016
Station	682B	683A	683B	683D	684B	684A	684C	4308	4302	4301	4298	4290	4296	4286
Longitude start (°W)	154.5047	154.4772	154.3905	154.3847	154.2372	154.287	154.3067	157.6133	157.6787	157.6733	157.7483	157.8192	157.7755	157.915
Latitude start (°N)	56.7788	56.7638	56.7522	56.7322	56.7608	56.7458	56.738	56.5403	56.5412	56.5613	56.5347	56.5872	56.6233	56.4263
Heading, degrees	195	108	120	76	48	265	243	154	128	134	94	334	143	100
Average depth (m)	71.31	64	67.66	73.14	73.14	58.51	69.49	131.6	98.75	102.4	85.94	29.25	73.14	166.4
Distance fished (km)	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.11	1.85	1.85
Bottom Temp. (°C)	9.02	9	8.9	8.89	10	9	9	7.09	7.14	7.25	7.36	11.6	9.38	6.78
Haul	156	157	158	159	160	161	162	163	164	165	166	167	168	169
Location	Chignik	Chignik	Chignik	Chignik	Chignik	Chignik	Chignik	Chignik	Chignik	Chignik	Chignik	Chignik	Chignik	Chignik
Month/day/year	7/18/2016	7/18/2016	7/18/2016	7/18/2016	7/18/2016	7/18/2016	7/18/2016	7/18/2016	7/19/2016	7/19/2016	7/19/2016	7/19/2016	7/19/2016	7/19/2016
Station	4278	4287	4282	4272	4277	4274	4266	4256	4262	4267	4312	4270	4271	4264
Longitude start (°W)	158.0345	157.935	158.0012	158.093	158.0588	158.0737	158.1708	158.3058	158.2687	158.1625	158.1525	158.1825	158.2162	158.2588
Latitude start (°N)	56.3925	56.403	56.4217	56.487	56.4303	56.407	56.4188	56.4208	56.3472	56.4028	56.2542	56.2513	56.2325	56.235
Heading, degrees	311	66	100	150	161	288	282	278	140	321	79	65	72	230
Average depth (m)	190.1	193.8	197.5	113.3	179.2	197.5	159	93.26	73.14	137.1	128	104.2	93.26	76.8
Distance fished (km)	1.85	1.85	1.85	1.48	1.85	1.85	1.85	1.85	1.66	1.85	1.85	1.85	1.85	1.85
Bottom Temp. (°C)	6.64	6.72	6.68	6.81	6.71	6.67	6.66	6.71	8.26	6.71	7.78	7.79	7.78	7.94

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Haul	170	171	172	173	174	175	176	177	178	179	180	181	182	183
Location	Chignik	Chignik	Mitro.	Mitro.	Mitro.	Mitro.	Mitro.	Mitro.	Mitro.	Mitro.	Mitro.	Mitro.	Mitro.	Mitro.
Month/day/year	7/19/2016	7/19/2016	7/20/2016	7/20/2016	7/20/2016	7/20/2016	7/20/2016	7/20/2016	7/20/2016	7/21/2016	7/21/2016	7/21/2016	7/21/2016	7/21/2016
Station	4964	4265	4068	4067	4066	4095	4035	4049	4065	4063	4048	4064	4043	4038
Longitude start (°W)	158.3467	158.3	158.5567	158.5965	158.6488	158.721	158.8423	158.7813	158.5662	158.5818	158.634	158.5948	158.9117	158.9623
Latitude start (°N)	56.2245	56.1942	55.8862	55.8718	55.8913	55.8968	55.9518	55.9285	55.928	56.1327	56.0622	55.999	55.7035	55.6895
Heading, degrees	91	33	178	357	208	313	120	133	6	229	184	350	209	283
Average depth (m)	73.14	62.17	120.6	117	115.2	146.2	142.6	144.4	106	149.9	166.4	162.7	142.6	148.1
Distance fished (km)	1.85	1.48	1.85	1.85	1.85	1.85	1.85	1.66	1.85	1.85	1.85	1.85	1.85	1.85
Bottom Temp. (°C)	8.17	8.78	7.4	7.45	7.38	7.4	7.08	7.37	7.43	6.18	6.22	6.62	5.37	5.31

Haul	184	185	186	187	188	189	190	191	192	193	194	195	196	197
Location	Mitro.	Mitro.	Mitro.	Ivanof	Ivanof	Ivanof	Ivanof	Ivanof	Ivanof	Ivanof	Ivanof	Stepovak	Stepovak	Stepovak
Month/day/year	7/21/2016	7/21/2016	7/21/2016	7/22/2016	7/22/2016	7/22/2016	7/22/2016	7/22/2016	7/22/2016	7/22/2016	7/22/2016	7/23/2016	7/23/2016	7/23/2016
Station	4026	4025	4037	4036	4024	4915	4007	4008	4000	400X	4900	STD	STA	STB
Longitude start (°W)	159.0268	159.0075	158.9848	158.943	159.0678	159.1798	159.3923	159.4203	159.4773	159.489	159.4943	159.8245	159.8133	159.7713
Latitude start (°N)	55.7162	55.7843	55.8067	55.867	55.8905	55.8618	55.7782	55.7398	55.7883	55.8193	55.8632	55.7547	55.8085	55.8257
Heading, degrees	22	349	23	22	143	221	203	174	117	148	69	19	358	163
Average depth (m)	142.6	124.3	128	129.8	98.75	64	85.94	100.5	84.12	71.31	40.23	118.8	96.92	109.7
Distance fished (km)	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	0.92	1.85	1.85	1.85
Bottom Temp. (°C)	5.58	6.19	6.18	6.34	7.11	7.75	7.1	7.03	6.97	7.25	8.12	6.22	6.28	6.35

Haul	198	199	200	201	202	203	204	205	206	207	208	209	210	211
Location	Stepovak	Stepovak	Beaver	Beaver	Beaver	Beaver	Beaver	Beaver	Beaver	Beaver	Beaver	Beaver	Beaver	W. Nagai
Month/day/year	7/23/2016	7/23/2016	7/23/2016	7/23/2016	7/24/2016	7/24/2016	7/24/2016	7/24/2016	7/24/2016	7/24/2016	7/24/2016	7/24/2016	7/24/2016	7/25/2016
Station	STE	368A	348	329B	311C	329C	311B	BAF	BAD	BAA	BAC	BAE	311A	332B
Longitude start (°W)	159.7657	160.1792	160.2978	160.3512	160.5012	160.487	160.5197	160.5528	160.5722	160.7008	160.6167	160.6017	160.5933	160.375
Latitude start (°N)	55.7903	55.571	55.5235	55.4967	55.4333	55.4293	55.4457	55.4778	55.5095	55.5393	55.5208	55.4868	55.468	55.2032
Heading, degrees	192	229	58	230	280	64	303	335	337	117	164	186	184	356
Average depth (m)	120.6	181	201.1	149.9	135.3	131.6	142.6	80.46	91.43	29.25	100.5	118.8	124.3	179.2
Distance fished (km)	1.66	1.85	1.85	1.48	1.85	1.85	1.85	1.85	1.85	1.11	1.85	1.85	1.85	1.85
Bottom Temp. (°C)	6.33	5.79	5.94	6.02	6.08	6.07	6.07	6.99	6.41	7.85	6.18	6.1	6.09	6.81

Haul	212	213	214	215	216	217	218	219	220	221	222	223	224	225
Location	W. Nagai	W. Nagai	W. Nagai	W. Nagai	W. Nagai	W. Nagai	W. Nagai	W. Nagai	W. Nagai	W. Nagai	W. Nagai	Beaver	Beaver	Beaver
Month/day/year	7/25/2016	7/25/2016	7/25/2016	7/25/2016	7/25/2016	7/25/2016	7/25/2016	7/26/2016	7/26/2016	7/26/2016	7/26/2016	7/27/2016	7/27/2016	7/27/2016
Station	353	354	334	335	337	318	301	373A	373B	393	371	BVC	BVB	BVA
Longitude start (°W)	160.3218	160.3325	160.3858	160.4888	160.4782	160.5938	160.6865	160.126	160.0563	159.98	160.1532	160.8917	160.874	160.9073
Latitude start (°N)	55.0953	55.0827	55.053	54.9777	54.7875	54.786	54.796	55.119	55.15	55.1988	55.2788	55.4585	55.5022	55.4955
Heading, degrees	215	216	241	334	206	282	275	324	330	337	328	247	199	182
Average depth (m)	151.7	140.8	149.9	115.2	106	109.7	111.5	29.25	76.8	74.97	135.3	89.6	36.57	42.06
Distance fished (km)	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.29	1.66	1.48	1.48	1.85	1.11	1.29
Bottom Temp. (°C)	6.82	6.81	6.77	6.86	6.73	6.67	6.67	8	7.13	6.94	7.26	7.24	8.52	8.32

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Haul	226	227	228	229	230	231	232	233	234	235	236	237	238	239
Location	Beaver	Pavlof	Pavlof	Pavlof	Pavlof	Cold B.	Sanak I.	Sanak I.	Sanak I.	Sanak I.	Sanak I.	Sanak I.	Sanak I.	Akutan
Month/day/year	7/27/2016	7/27/2016	7/27/2016	7/28/2016	7/28/2016	7/28/2016	7/28/2016	7/28/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/29/2016	7/30/2016
Station	278	245	228	VOLX	VOP	BEF	113	125	126	138B	138C	138A	137	AKL
Longitude start (°W)	160.945	161.2217	161.2822	161.97	161.9393	162.113	162.676	162.587	162.5552	162.4397	162.3373	162.3847	162.4188	165.7473
Latitude start (°N)	55.397	55.2702	55.2793	55.214	55.1832	55.0187	54.5637	54.5282	54.4837	54.4552	54.4402	54.4765	54.5122	54.2722
Heading, degrees	189	298	104	112	40	209	168	114	117	116	326	335	145	184
Average depth (m)	109.7	84.12	84.12	73.14	82.29	95.09	133.4	153.6	138.9	155.4	148.1	142.6	148.1	100.5
Distance fished (km)	1.85	1.85	1.85	1.85	1.85	1.85	1.29	1.48	1.48	1.48	1.48	1.48	1.48	1.85
Bottom Temp. (°C)	6.95	7.17	7.15	6.46	6.4	7.58	6.38	6.49	6.54	6.47	6.49	6.45	6.46	7.44

Haul	240	241	242	243	244	245	246	247	248	249	250	251	252	253
Location	Akutan	Akutan	Akutan	Akutan	Unalaska	Unalaska	Unalaska	Unalaska	Unalaska	Unalaska	Unalaska	Unalaska	Makush.	Makush.
Month/day/year	7/30/2016	7/30/2016	7/31/2016	7/31/2016	7/31/2016	8/1/2016	8/1/2016	8/1/2016	8/1/2016	8/2/2016	8/2/2016	8/2/2016	8/3/2016	8/3/2016
Station	AKG	AKD	AKA	AKC	KAA	UND	UNG	UNI	UNJ	UNE	UNF	UNC	MKK	MKN
Longitude start (°W)	165.7563	165.7055	165.6992	165.7245	166.3297	166.479	166.4432	166.6167	166.497	166.5032	166.5242	166.6027	167.1762	167.1117
Latitude start (°N)	54.2417	54.206	54.146	54.1982	53.973	53.945	53.9898	54.0282	54.0312	53.9442	53.969	53.9165	53.7272	53.6758
Heading, degrees	171	170	32	343	24	12	232	142	182	357	30	352	142	324
Average depth (m)	98.75	87.77	69.49	91.43	82.29	82.29	91.43	95.09	166.4	109.7	151.7	133.4	120.6	135.3
Distance fished (km)	1.85	1.85	1.48	1.85	1.66	1.48	1.66	1.85	1.85	1.11	1.85	1.85	1.85	1.85
Bottom Temp. (°C)	7.03	7.28	8.1	7.14	8.5	6.6	6.69	7.6	6.03	6.44	6.11	6.39	6.02	6.76

Haul	254	255	256	257	258	259	267	268	269	270	271	272	273	274
Location	Makush.	Makush.	Makush.	Makush.	Makush.	Makush.	Morzhov.	Morzhov.	Morzhov.	Morzhov.	Morzhov.	Morzhov.	Morzhov.	Morzhov.
Month/day/year	8/3/2016	8/3/2016	8/3/2016	8/4/2016	8/4/2016	8/4/2016	8/8/2016	8/8/2016	8/8/2016	8/8/2016	8/8/2016	8/8/2016	8/8/2016	8/8/2016
Station	MKP	MKJ	MKF	MKB	MKC	MKE	87D	87AX	MOOX	MORX	MOSX	MOK	MOL	MOI
Longitude start (°W)	167.0603	167.1013	167.074	166.784	166.8532	166.9243	162.9452	163.0038	162.9872	163.1672	163.0993	162.9967	162.9563	162.9695
Latitude start (°N)	53.6463	53.7187	53.7212	53.7002	53.716	53.731	54.7772	54.8163	54.8528	54.832	54.8537	54.8903	54.9105	54.9552
Heading, degrees	301	90	77	310	286	272	127	45	354	105	47	12	352	164
Average depth (m)	142.6	142.6	193.8	100.5	182.8	199.3	87.77	85.94	96.92	91.43	96.92	117	137.1	104.2
Distance fished (km)	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.66	1.85	1.85	1.85
Bottom Temp. (°C)	6.87	5.83	5.54	6.31	5.37	5.43	6.91	7.13	7.12	7.04	7.07	6.98	7.03	7.02

Haul	275	276	277	278	279	280	281	282	283	284	285	286	287	288
Location	Morzhov.	Morzhov.	Morzhov.	Morzhov.	Morzhov.	Cold B.	Cold B.	Cold B.	Cold B.	Cold B.	Cold B.	Cold B.	Cold B.	Cold B.
Month/day/year	8/8/2016	8/9/2016	8/9/2016	8/9/2016	8/9/2016	8/9/2016	8/9/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016	8/10/2016
Station	MOH	MOB	MOD	MOF	MOG	COO	COM	COB	COC	COE	COF	COH	COGB	COGA
Longitude start (°W)	162.9973	163.0688	163.0505	163.0318	162.9957	162.3825	162.463	162.595	162.5552	162.544	162.5255	162.3962	162.4282	162.4745
Latitude start (°N)	54.9397	55.0627	55.0358	54.9958	54.9913	55.0012	55.0155	55.2267	55.2283	55.197	55.1617	55.1097	55.1155	55.1427
Heading, degrees	336	180	159	166	134	95	85	150	168	162	128	290	330	329
Average depth (m)	96.92	73.14	93.26	82.29	91.43	104.2	78.63	54.86	47.54	67.66	106	45.71	54.86	87.77
Distance fished (km)	1.85	1.11	1.85	1.85	1.85	1.66	1.48	1.29	1.29	1.29	1.85	1.85	1.85	1.29
Bottom Temp. (°C)	6.88	7.36	7.08	6.99	7.03	7.95	8.15	10.3	10.5	10.2	10.2	10.4	10.3	10.4

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Haul	289	290	291	292	293	294	295	296	297	298	299	300	301	302
Location	Cold B.	Cold B.	Cold B.	Cold B.	Cold B.	Cold B.	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof
Month/day/year	8/11/2016	8/11/2016	8/11/2016	8/11/2016	8/11/2016	8/11/2016	8/12/2016	8/12/2016	8/12/2016	8/12/2016	8/12/2016	8/12/2016	8/12/2016	8/12/2016
Station	BEG	157A	156A	BEE	BECX	BEBX	VOQ	VOR	VON	VOH	VOI	VOD	PARB	PAV
Longitude start (°W)	162.1713	162.1243	162.1072	162.149	162.1593	162.1493	161.8227	161.7477	161.7592	161.6935	161.6088	161.5468	161.575	161.5752
Latitude start (°N)	54.9895	54.9197	54.9655	55.0708	55.1137	55.1407	55.1988	55.1972	55.2272	55.257	55.2822	55.3158	55.393	55.3522
Heading, degrees	172	151	350	188	186	202	109	316	54	55	60	77	344	185
Average depth (m)	82.29	76.8	87.77	82.29	78.63	67.66	91.43	118.8	120.6	109.7	106	118.8	82.29	98.75
Distance fished (km)	1.29	1.48	1.85	1.66	1.11	1.11	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85
Bottom Temp. (°C)	7.9	7.87	7.81	7.83	7.79	7.97	6.37	6.25	6.23	6.24	6.23	6.37	6.86	6.45
Haul	303	304	305	306	307	308	309	310	311	312	313	314	315	316
Location	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	Pavlof	W Kod.
Month/day/year	8/12/2016	8/12/2016	8/13/2016	8/13/2016	8/13/2016	8/13/2016	8/13/2016	8/13/2016	8/13/2016	8/13/2016	8/13/2016	8/14/2016	8/14/2016	8/25/2016
Station	VOBX	VOG	VOMB	VOFB	VOA	PAU	PARA	PAOA	PAP	PALX	PAEX	PAIX	PAH	KUD
Longitude start (°W)	161.6077	161.7072	161.8373	161.8183	161.7217	161.6738	161.6718	161.645	161.5707	161.5423	161.5302	161.5842	161.603	153.1653
Latitude start (°N)	55.3097	55.2922	55.2317	55.2612	55.294	55.3547	55.3927	55.4515	55.4558	55.5	55.547	55.5307	55.515	57.9852
Heading, degrees	262	252	357	51	28	8	20	192	240	183	10	188	184	268
Average depth (m)	98.75	106	89.6	98.75	113.3	128	106	91.43	76.8	54.86	31.08	51.2	54.86	36.57
Distance fished (km)	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.85	1.11	1.48	1.48	0.92
Bottom Temp. (°C)	6.3	6.24	6.51	6.48	6.24	6.24	6.35	6.51	6.84	7.59	8.59	7.55	7.28	9.42
Haul	317	318	319	320	321	322	323	324	325	326	327	328	329	330
Location	W Kod.	W Kod.	W Kod.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.
Month/day/year	8/25/2016	8/25/2016	8/25/2016	8/26/2016	8/26/2016	8/26/2016	8/26/2016	8/26/2016	8/26/2016	8/26/2016	8/26/2016	8/26/2016	8/27/2016	8/27/2016
Station	KUF	KUG	KUI	222	223	224	198	199	200	174	173	172	171	171X
Longitude start (°W)	153.3025	153.4318	153.3852	154.0657	153.9737	153.8655	153.899	153.8143	153.7118	153.695	153.8023	153.9088	154.2612	154.2062
Latitude start (°N)	58.0287	58.0418	57.9732	58.127	58.138	58.1607	58.2013	58.2317	58.2645	58.316	58.3078	58.3003	58.3033	58.3248
Heading, degrees	280	187	292	33	68	53	8	55	9	350	247	10	73	84
Average depth (m)	149.9	76.8	237.7	252.3	210.3	199.3	208.4	197.5	186.5	179.2	204.8	256	111.5	107.8
Distance fished (km)	1.85	1.85	1.85	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.85	1.85	1.48
Bottom Temp. (°C)	7.66	8.26	7.5	5.71	5.8	5.87	5.81	5.85	5.9	5.91	5.82	5.72	9.37	9.48
Haul	331	332	333	334	335	336	337	338	339	340	341	342	343	344
Location	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.	N Main.
Month/day/year	8/27/2016	8/27/2016	8/27/2016	8/27/2016	8/27/2016	8/27/2016	8/27/2016	8/28/2016	8/28/2016	8/28/2016	8/28/2016	8/28/2016	8/28/2016	8/28/2016
Station	171Y	145	146	119	147	120	121	144	117	118	90	91	60	61
Longitude start (°W)	154.0532	153.8352	153.7123	153.5562	153.5037	153.3553	153.218	153.9717	153.8132	153.629	153.5283	153.3868	153.348	153.2438
Latitude start (°N)	58.3283	58.4288	58.4463	58.4528	58.441	58.4517	58.477	58.4372	58.4513	58.484	58.5448	58.576	58.6275	58.6593
Heading, degrees	131	45	184	81	101	84	48	82	47	59	61	36	49	38
Average depth (m)	73.14	100.5	155.4	140.8	142.6	175.5	171.8	87.77	91.43	135.3	118.8	138.9	120.6	159
Distance fished (km)	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48
Bottom Temp. (°C)	10.7	9.42	5.87	6.71	6.7	5.91	5.97	9.93	8.95	6.64	7.77	6.95	7.7	6.36

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Haul	345	346	347	348	349	350	351	352	353	354	355	356	357	358
Location	N Main.	N Main.	N Main.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.
Month/day/year	8/28/2016	8/28/2016	8/29/2016	8/29/2016	8/30/2016	8/30/2016	8/30/2016	8/30/2016	8/30/2016	8/30/2016	8/31/2016	8/31/2016	8/31/2016	8/31/2016
Station	31	2	3	PAA	MAA	RAA	KUJ	KUK	KUM	KULX	UYT	UYSS	UYQX	UYMX
Longitude start (°W)	153.2238	153.2047	153.0428	152.8842	153.0747	153.224	153.2892	153.2498	153.1192	153.224	153.796	153.8163	153.9057	153.8998
Latitude start (°N)	58.7105	58.7833	58.786	58.2985	58.2162	58.1397	57.936	57.9173	57.8633	57.8623	57.3688	57.4227	57.487	57.5688
Heading, degrees	27	6	148	105	289	147	322	295	295	324	345	182	339	355
Average depth (m)	151.7	144.4	144.4	96.92	133.4	117	159	144.4	65.83	106	40.23	73.14	144.4	107.8
Distance fished (km)	1.48	1.48	1.48	1.11	1.85	1.85	1.85	1.85	1.11	1.48	1.11	1.29	1.85	1.85
Bottom Temp. (°C)	6.54	6.79	6.69	8.48	7.8	8.61	7.67	7.73	8.5	8.43	9.34	9.11	8.46	8.51

Haul	359	360	361	362	363	364	365	366	367	368	369	370	371	372
Location	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.
Month/day/year	8/31/2016	8/31/2016	8/31/2016	8/31/2016	9/1/2016	9/1/2016	9/1/2016	9/1/2016	9/1/2016	9/1/2016	9/1/2016	9/2/2016	9/2/2016	9/2/2016
Station	UYO	UYKX	UYEX	UYFX	UYHX	UYBX	KUQ	KUS	KUT	KUU	KUW	KUV	KUX	KUXX
Longitude start (°W)	153.7943	153.8868	153.9282	153.8263	153.7215	153.9987	153.5218	153.5472	153.5223	153.5008	153.526	153.5295	153.3792	153.4085
Latitude start (°N)	57.5678	57.6005	57.6465	57.6732	57.6618	57.7423	57.8842	57.8733	57.828	57.7835	57.6943	57.7417	57.735	57.7693
Heading, degrees	321	307	347	267	265	144	316	150	177	199	165	356	354	316
Average depth (m)	82.29	142.6	190.1	142.6	91.43	137.1	193.8	190.1	184.6	160.9	67.66	95.09	100.5	115.2
Distance fished (km)	1.85	1.85	1.85	1.85	1.66	1.85	1.11	1.85	1.85	1.85	1.11	1.48	1.85	1.48
Bottom Temp. (°C)	9.16	8.35	7.69	8.48	8.7	7.99	7.19	7.2	7.19	7.2	8.6	7.41	7.16	7.11

Haul	373	374	375	376	377
Location	W Kod.	W Kod.	W Kod.	W Kod.	W Kod.
Month/day/year	9/2/2016	9/2/2016	9/2/2016	9/2/2016	9/2/2016
Station	KUP	KUNX	KUY	KUYX	KUL
Longitude start (°W)	153.4792	153.3788	153.1952	153.2143	153.2068
Latitude start (°N)	57.8645	57.8365	57.7882	57.7418	57.8337
Heading, degrees	121	304	190	25	5
Average depth (m)	155.4	131.6	71.31	25.6	82.29
Distance fished (km)	1.85	1.85	1.29	1.11	1.85
Bottom Temp. (°C)	7.24	7.37	10	12.6	8.53

Appendix B2.–2016 bottom trawl survey locations, stations, and station areas by district and section.

KODIAK DISTRICT

Northeast Section

Chiniak Gully

Station	KM^2	NM^2
369X	150.9	44.0
395	85.8	25.0
420	85.8	25.0
421	85.8	25.0
Total	408.2	119.0

Marmot Bay

Station	KM^2	NM^2
MOEX	36.2	10.6
MOGX	65.9	19.2
MOLX	27.4	8.0
MONX	75.5	22.0
MOPX	27.8	8.1
MOQ	21.4	6.3
MOT	19.9	5.8
MOX	13.0	3.8
MOXX	29.5	8.6
255	68.6	20.0
256	85.8	25.0
257	85.8	25.0
283	65.2	19.0
284	85.8	25.0
285	85.8	25.0
313	85.8	25.0
314	85.8	25.0
255X	60.0	17.5
283X	63.5	18.5
Total	1,088.4	298.8

Chiniak Bay

Station	KM^2	NM^2
CHA	5.5	1.6
CHB	7.9	2.3
CHE	20.6	6.0
CHF	12.7	3.7
CHG	34.6	10.1
CHJ	11.3	3.3
CHK	8.6	2.5
CHL	14.1	4.1
Total	115.2	33.6

Kizhuyak Bay

Station	KM^2	NM^2
KZA	11.7	3.4
KZB	2.7	0.8
KZC	12.3	3.6
KZD	23.7	6.9
KZE	27.4	8.0
KZG	21.3	6.2
KZJ	21.4	6.3
KZK	21.4	6.3
KZO	21.4	6.3
KZR	13.7	4.0
KZS	3.1	0.9
Total	180.2	52.6

Eastside Section

Ugak Bay

Station	KM^2	NM^2
UGAA	16.0	4.7
UGAB	4.7	1.4
UGAC	3.2	0.9
UGB	5.8	1.7
UGC	17.5	5.1
UGD	11.0	3.2
UGE	12.7	3.7
UGF	15.8	4.6
UGG	11.0	3.2
UGI	21.4	6.3
UGJ	21.4	6.3
UGM	16.8	4.9
Total	157.3	45.9

Kiliuda Bay

Station	KM^2	NM^2
KLA	20.9	6.1
KLB	9.3	2.7
KLC	19.6	5.7
KLD	18.2	5.3
KLE	8.2	2.4
KLF	15.1	4.4
KLG	16.5	4.8
KLH	16.8	4.9
KLI	21.4	6.25
KLL	21.4	6.25
Total	167.4	48.8

Barnabas Gully

Station	KM^2	NM^2
486A	27.9	8.1
486B	29.4	8.6
510B	63.0	18.4
510C	40.7	11.9
511A	42.9	12.5
511B	42.9	12.5
533A	42.9	12.5
533B	42.9	12.5
534B	21.6	6.3
534D	28.3	8.3
535A	21.4	6.3
535B	21.4	6.3
535C	21.4	6.3
535D	21.4	6.3
559	85.8	25.0
560	85.8	25.0
561	85.8	25.0
587	85.8	25.0
588	85.8	25.0
589	85.8	25.0
619	85.8	25.0
620	85.8	25.0
621	85.8	25.0
654	85.8	25.0
655	85.8	25.0
656	85.8	25.0
695	85.8	25.0
696	85.8	25.0
Total	1,668.6	486.5

Southeast Section

South Sitkalidak Strait

Station	KM^2	NM^2
THA	15.1	4.4
THC	19.6	5.7
THD	28.6	8.3
THF	22.3	6.5
THG	21.4	6.3
THH	19.2	5.6
THI	21.6	6.3
THJ	17.8	5.2
THK	16.5	4.8
THL	9.3	2.7
THM	10.6	3.1
THN	5.1	1.5
Total	207.1	60.4

Offshore Twoheaded

Station	KM^2	NM^2
618A	42.9	12.5
585X	94.3	27.5
614	64.1	18.7
615	99.5	29.0
651	85.8	25.0
Total	386.6	112.7

Horse's Head

Station	KM^2	NM^2
586	85.8	25.0
688	85.8	25.0
725	85.8	25.0
726	85.8	25.0
727	85.8	25.0
728	85.8	25.0
729	85.8	25.0
759	85.8	25.0
760	85.8	25.0
761	85.8	25.0
Total	857.5	250.0

Southwest Section

Alitak Flats

Station	KM^2	NM^2
645B	34.3	10.0
646A	27.1	7.9
646B	16.5	4.8
646C	29.2	8.5
646D	37.4	10.9
682B	23.0	6.7
683A	23.0	6.7
683B	20.9	6.1
683D	9.3	2.7
684A	23.0	6.7
684B	10.3	3.0
684C	8.6	2.5
Total	262.4	76.5

Alitak Bay

Station	KM^2	NM^2
ALA	3.1	0.9
ALB	17.8	5.2
ALC	8.1	2.4
ALD	13.0	3.8
ALF	21.4	6.3
ALG	19.9	5.8
ALH	16.1	4.7
ALI	16.6	4.9
ALJ	15.1	4.4
ALK	9.9	2.9
ALL	8.2	2.4
ALM	16.1	4.7
ALO	16.8	4.9
ALP	19.2	5.6
ALQ	14.4	4.2
ALR	13.4	3.9
Total	229.3	66.9

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KODIAK DISTRICT (Continued)

Westside Section

Uganik Bay

Station	KM^2	NM^2
KUNX	10.6	3.1
KUP	13.3	3.9
KUQ	20.6	6.0
KUS	12.1	3.5
KUT	9.4	2.7
KUU	13.7	4.0
KUV	4.1	1.2
KUW	5.2	1.5
KUX	4.1	1.2
KUXX	5.6	1.6
Total	98.6	28.8

Uyak Bay

Station	KM^2	NM^2
UYBX	21.5	6.3
UYEX	29.9	8.7
UYFX	22.1	6.4
UYHX	4.1	1.2
UYKX	13.9	4.0
UYMX	20.8	6.1
UYO	3.4	1.0
UYQX	7.7	2.2
UYSS	6.0	1.8
UYT	2.7	0.8
Total	132.0	38.5

Kupreanof-Viekoda

Station	KM^2	NM^2
KUD	27.1	7.9
KUF	11.3	3.3
KUG	15.4	4.5
KUI	6.4	1.9
KUJ	17.0	5.0
KUK	14.1	4.1
KUL	2.7	0.8
KUM	10.5	3.1
KUY	4.1	1.2
KULX	2.1	0.6
KUYX	2.6	0.8
Total	113.2	33.0

West Afognak

Station	KM^2	NM^2
RAA	6.7	2.0
PAA	15.1	4.4
MAA	10.6	3.1
Total	32.4	9.5

North Mainland Section

Station	KM^2	NM^2
2	85.8	25.0
3	85.8	25.0
31	83.7	24.4
60	85.8	25.0
61	85.8	25.0
90	80.3	23.4
91	85.8	25.0
117	97.8	28.5
118	85.8	25.0
119	85.8	25.0
120	85.8	25.0
121	85.8	25.0
144	60.7	17.7
145	85.8	25.0
146	85.8	25.0
147	85.8	25.0
171	11.4	3.3
171X	8.1	2.4
171Y	29.1	8.5
172	89.2	26.0
173	85.8	25.0
174	85.8	25.0
198	85.8	25.0
199	85.8	25.0
200	85.8	25.0
222	113.2	33.0
223	85.8	25.0
224	85.8	25.0
Total	2,202.6	642.2

KODIAK DISTRICT TOTALS

	KM^2	NM^2
Northeast	1,728.6	504.0
Eastside	1,993.3	581.2
Southeast	1,451.2	423.1
Southwest	491.7	143.4
Westside	376.3	109.7
North Mainland	2,202.6	642.2
Kodiak District	8,243.8	2,403.4

CHIGNIK DISTRICT

Chignik Bay

Station	KM^2	NM^2
4256	24.0	7.0
4262	21.4	6.3
4264	20.1	5.9
4265	6.6	1.9
4266	19.6	5.7
4267	21.4	6.3
4270	17.1	5.0
4271	10.3	3.0
4272	15.9	4.6
4274	21.4	6.3
4277	21.4	6.3
4278	21.4	6.3
4282	21.4	6.3
4286	21.4	6.3
4287	29.7	8.7
4312	21.9	6.4
4964	9.6	2.8
Total	325.0	94.7

Ivanof Bay

Station	KM^2	NM^2
400X	5.6	1.6
4000	15.8	4.6
4007	59.3	17.3
4008	42.1	12.3
4024	65.7	19.2
4900	10.7	3.1
4915	51.7	15.1
Total	250.8	73.1

Kujulik Bay

Station	KM^2	NM^2
4290	21.4	6.3
4296	10.3	3.0
4298	19.2	5.6
4301	21.4	6.3
4302	21.0	6.1
4308	17.2	5.0
Total	110.5	32.2

Mitrofania Island

Station	KM^2	NM^2
4025	37.6	11.0
4026	40.1	11.7
4035	68.6	20.0
4036	67.9	19.8
4037	45.2	13.2
4038	41.0	12.0
4043	32.6	9.5
4048	14.7	4.3
4049	57.2	16.7
4063	57.2	16.7
4064	57.2	16.7
4065	80.0	23.3
4066	28.9	8.4
4067	28.9	8.4
4068	28.9	8.4
4095	36.1	10.5
Total	722.1	210.5

CHIGNIK DISTRICT TOTALS

	KM^2	NM^2
Chignik Bay	325.0	94.7
Ivanof Bay	250.8	73.1
Kujulik Bay	110.5	32.2
Mitrofania Island	722.1	210.5
Chignik District	1,408.4	410.6

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Appendix B2.–Page 3 of 3.

SOUTH PENINSULA DISTRICT

Sanak Island

Station	KM^2	NM^2
113	77.2	22.5
125	77.2	22.5
126	83.9	24.5
137	85.8	25.0
138A	46.3	13.5
138B	18.4	5.4
138C	56.9	16.6
Total	445.6	129.9

Morzhovoi Bay

Station	KM^2	NM^2
87AX	42.9	12.5
87D	22.3	6.5
MOB	19.9	5.8
MOD	16.1	4.7
MOF	21.4	6.25
MOG	21.4	6.25
MOH	16.8	4.9
MOI	21.4	6.25
MOK	21.4	6.25
MOL	21.4	6.25
MOOX	56.1	16.35
MORX	58.7	17.1
MOSX	37.7	11.0
Total	377.6	110.1

Pavlof/Volcano Bay

Station	KM^2	NM^2
228	93.5	27.3
245	87.7	25.6
PAEX	41.6	12.1
PAIX	38.3	11.2
PAH	15.1	4.4
PALX	42.9	12.5
PAOA	6.7	2.0
PAP	20.8	6.1
PARA	19.1	5.6
PARB	21.1	6.1
PAU	21.4	6.3
PAV	20.6	6.0
VOA	22.4	6.5
VOBX	43.8	12.8
VOD	20.8	6.1
VOFB	15.5	4.5
VOG	23.0	6.7
VOH	21.7	6.3
VOI	22.1	6.4
VOLX	27.3	8.0
VOMB	16.8	4.9
VON	22.4	6.5
VOP	21.4	6.3
VOQ	15.9	4.6
VOR	21.1	6.2
Total	723.1	210.8

Cold/Belkofski Bay

Station	KM^2	NM^2
157A	21.0	6.1
156A	44.2	12.9
BEBX	15.9	4.6
BECX	25.7	7.5
BEE	21.4	6.3
BEF	15.7	4.6
BEG	20.3	5.9
COB	21.1	6.2
COC	15.3	4.5
COE	21.1	6.2
COF	11.5	3.4
COGA	9.8	2.9
COGB	3.6	1.1
COH	7.8	2.3
COM	18.5	5.4
COO	22.4	6.5
Total	295.5	86.1

West Nagai Strait

Station	KM^2	NM^2
301	85.8	25.0
318	85.8	25.0
337	85.8	25.0
332B	42.9	12.5
334	85.8	25.0
335	85.8	25.0
353	86.1	25.1
354	85.8	25.0
371	80.6	23.5
373A	41.8	12.2
373B	20.5	6.0
393	47.4	13.8
Total	833.9	243.1

Stepovak Bay

Station	KM^2	NM^2
368A	45.6	13.3
STA	21.0	6.1
STB	18.9	5.5
STD	22.7	6.6
STE	15.5	4.5
Total	123.8	36.1

Beaver/Balboa/Unga

Station	KM^2	NM^2
278	71.4	20.8
311A	15.5	4.5
311B	20.4	6.0
311C	17.3	5.0
329B	21.4	6.3
329C	21.4	6.3
348	85.8	25.0
BAA	12.0	3.5
BAC	16.9	4.9
BAD	10.4	3.0
BAE	12.7	3.7
BAF	10.8	3.2
BVA	15.3	4.5
BVB	14.0	4.1
BVC	18.9	5.5
Total	364.2	106.2

S PENINSULA DISTRICT TOTALS

	KM^2	NM^2
Sanak Island	445.6	129.9
Morzhovoi Bay	377.6	110.1
Cold/Belkofski Bay	295.5	86.1
Pavlof/Volcano Bay	723.1	210.8
West Nagai Strait	833.9	243.1
Beaver/Balboa/Unga	364.2	106.2
Stepovak Bay	123.8	36.1
S Peninsula District	3,163.7	922.4

EASTERN ALEUTIAN DISTRICT

Unalaska/Kalekta Bay Section

Station	KM^2	NM^2
KAA	19.6	5.7
UNC	22.6	6.6
UND	11.7	3.4
UNE	17.8	5.2
UNF	21.6	6.3
UNG	21.6	6.3
UNI	19.9	5.8
UNJ	21.6	6.3
Total	156.4	45.6

Makushin Bay Section

Station	KM^2	NM^2
MKB	15.8	4.6
MKC	18.5	5.4
MKE	29.2	8.5
MKK	37.4	10.9
MKF	20.9	6.1
MKJ	23.7	6.9
MKN	26.1	7.6
MKP	12.3	3.6
Total	183.8	53.6

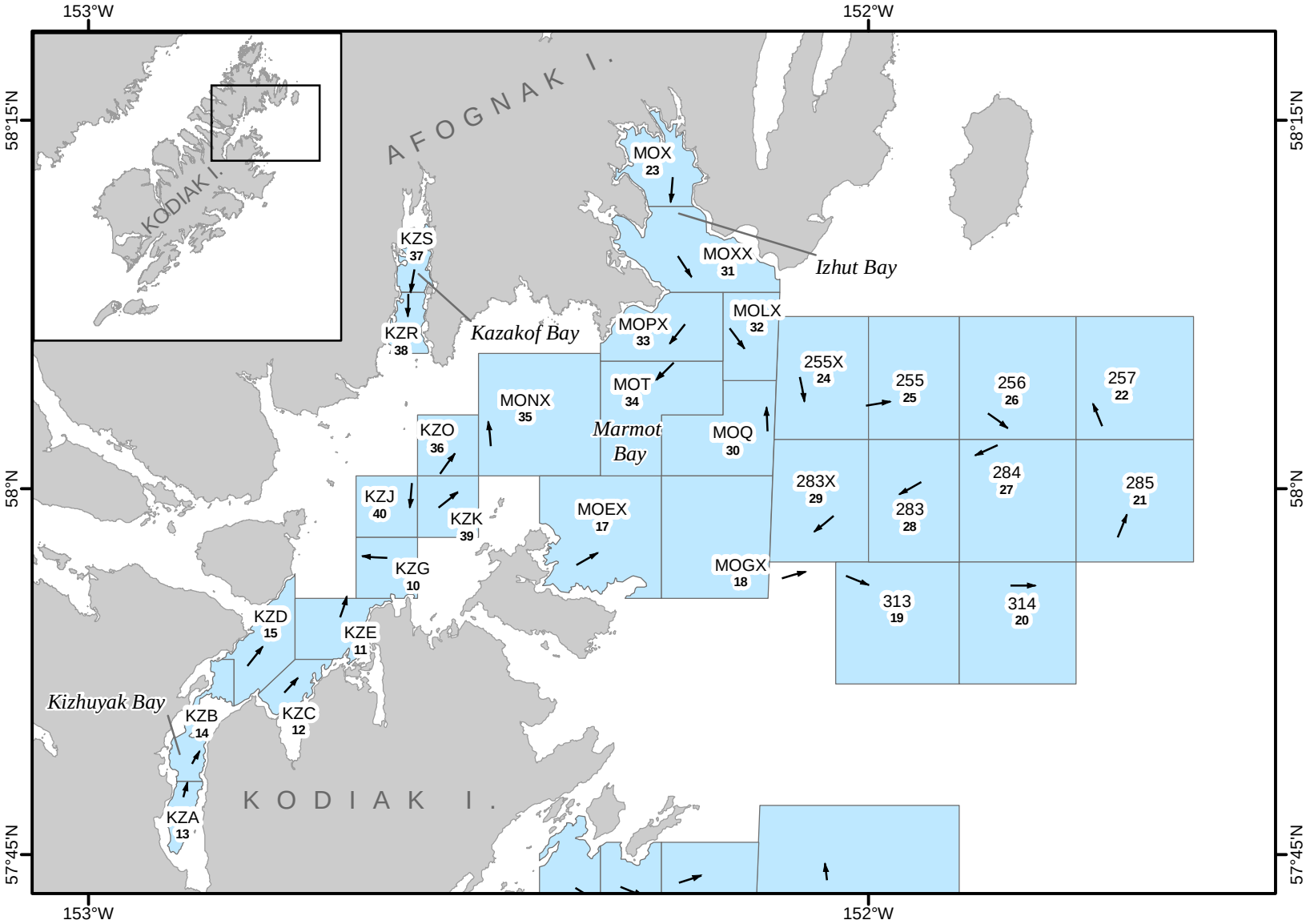
Akutan Bay Section

Station	KM^2	NM^2
AKA	33.3	9.7
AKC	21.3	6.2
AKD	23.3	6.8
AKG	21.6	6.3
AKL	21.6	6.3
Total	121.1	35.3

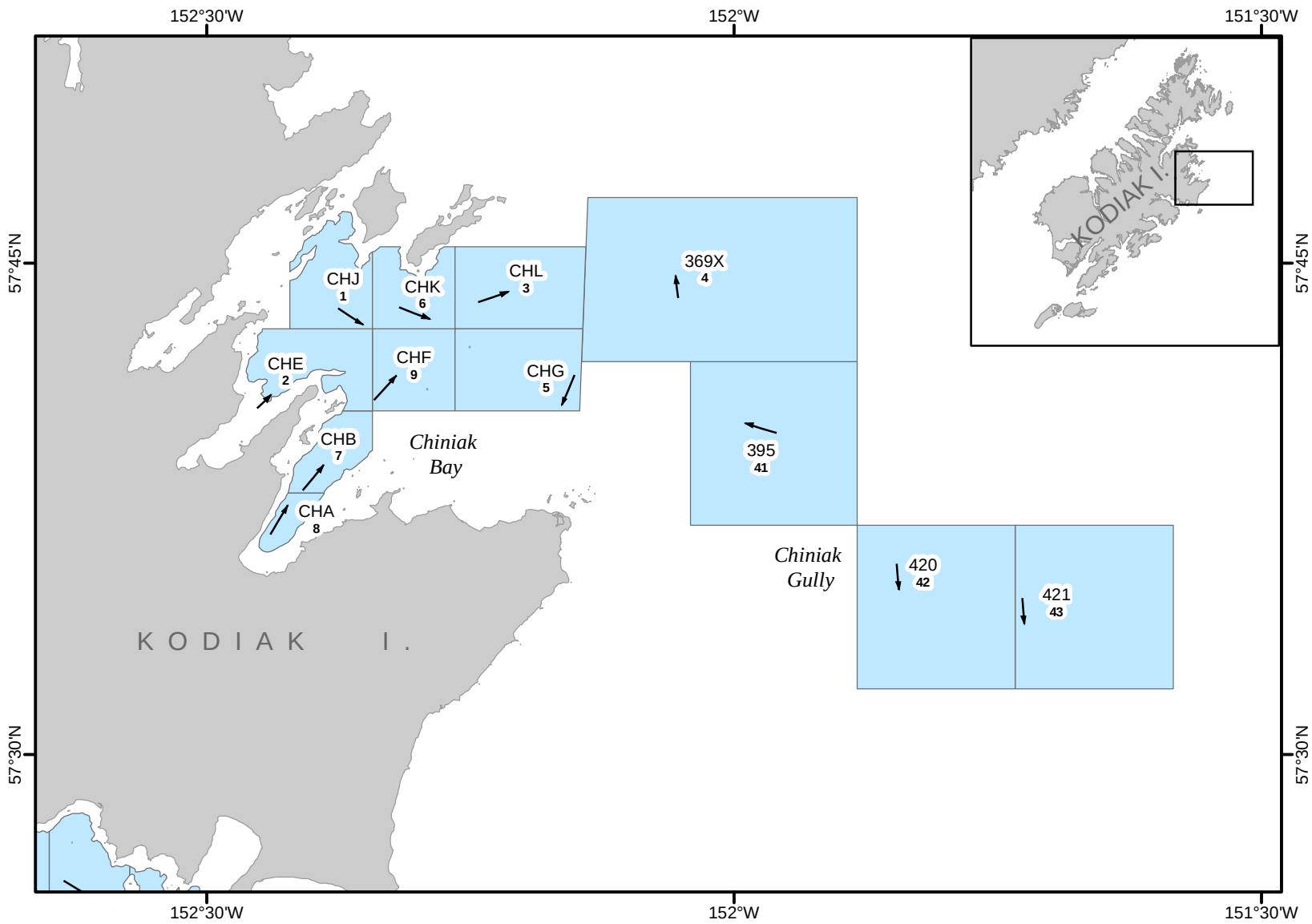
E ALEUTIAN DISTRICT TOTALS

Section	KM^2	NM^2
Akutan Bay	121.1	35.3
Unalaska/Kalekta Bay	156.4	45.6
Makushin Bay	183.8	53.6
E Aleutian District	461.3	134.5

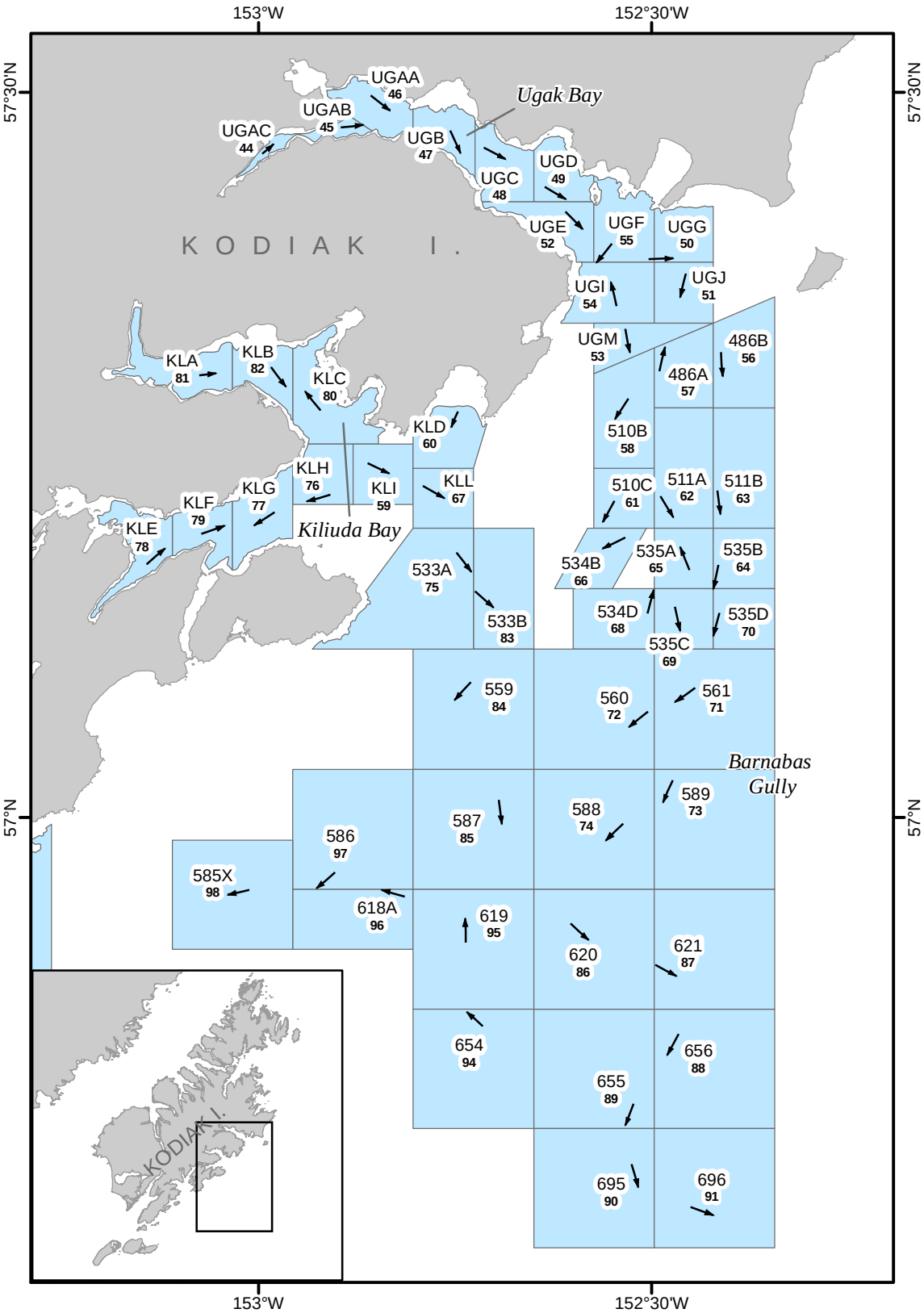
APPENDIX C. TRAWL MAPS



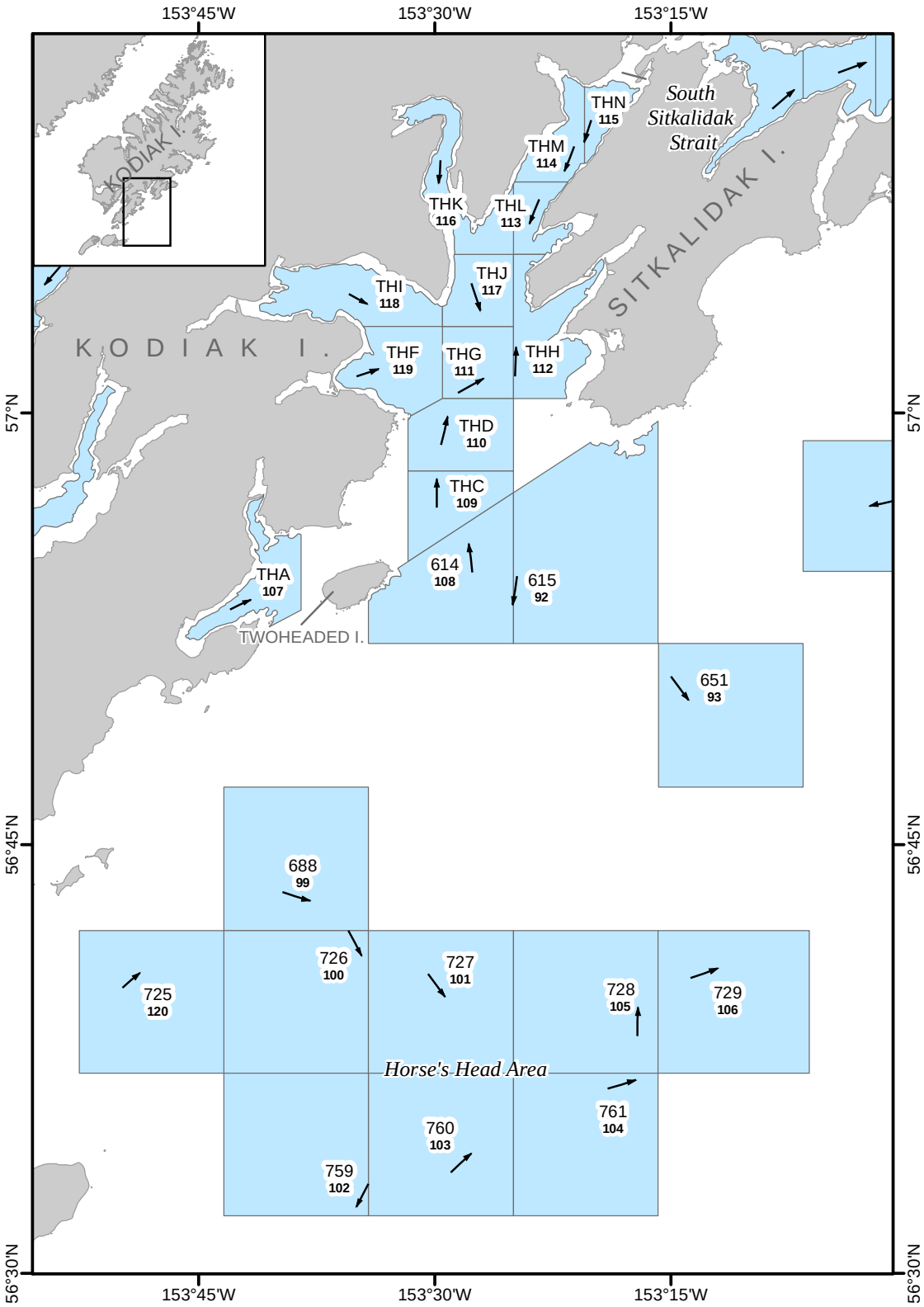
Appendix C1.–Izhut Bay, Kazakof Bay, Kizhuyak Bay, and Marmot Bay station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), June 2016.



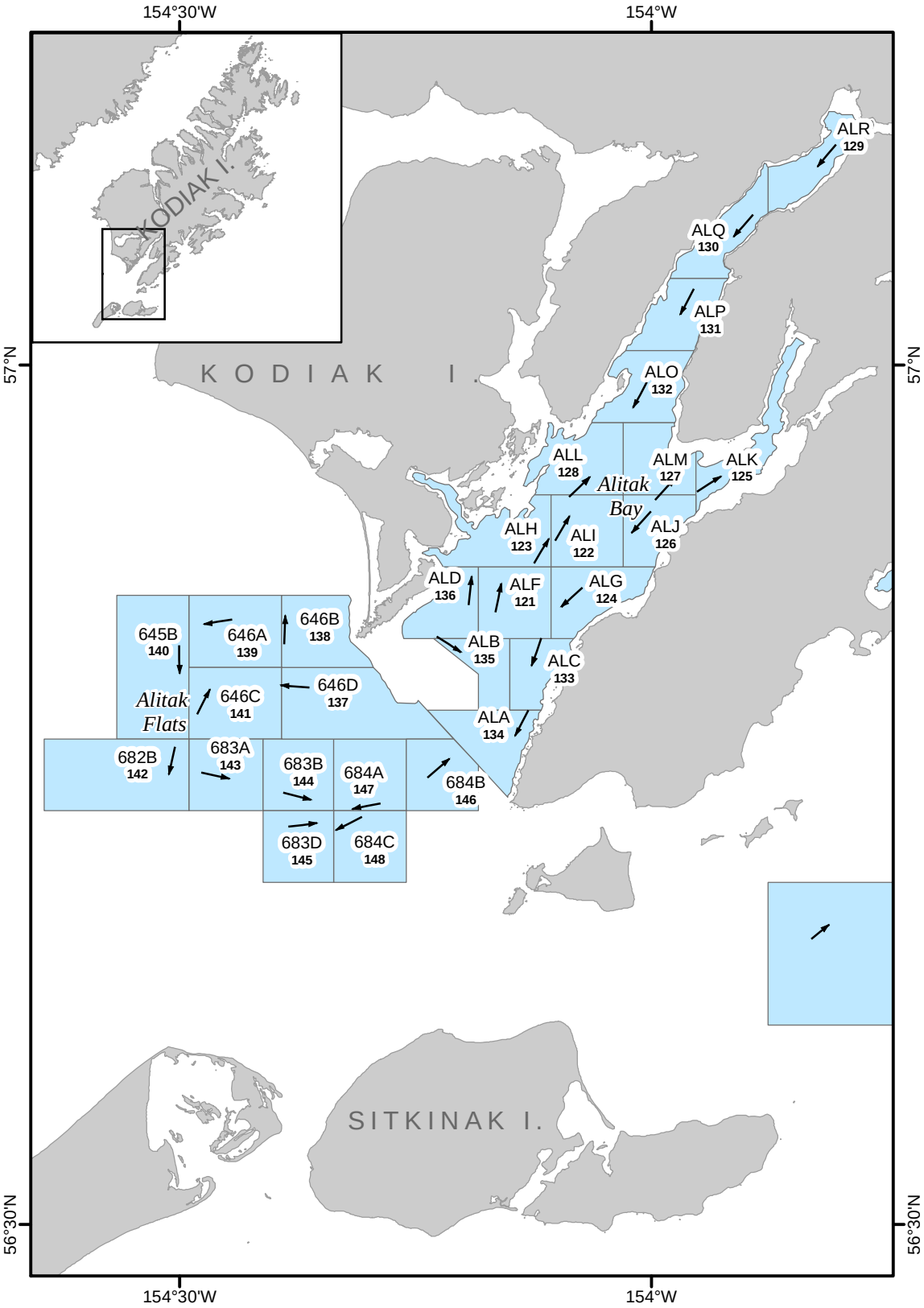
Appendix C2.–Chiniak Bay and Chiniak Gully station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), June 2016.



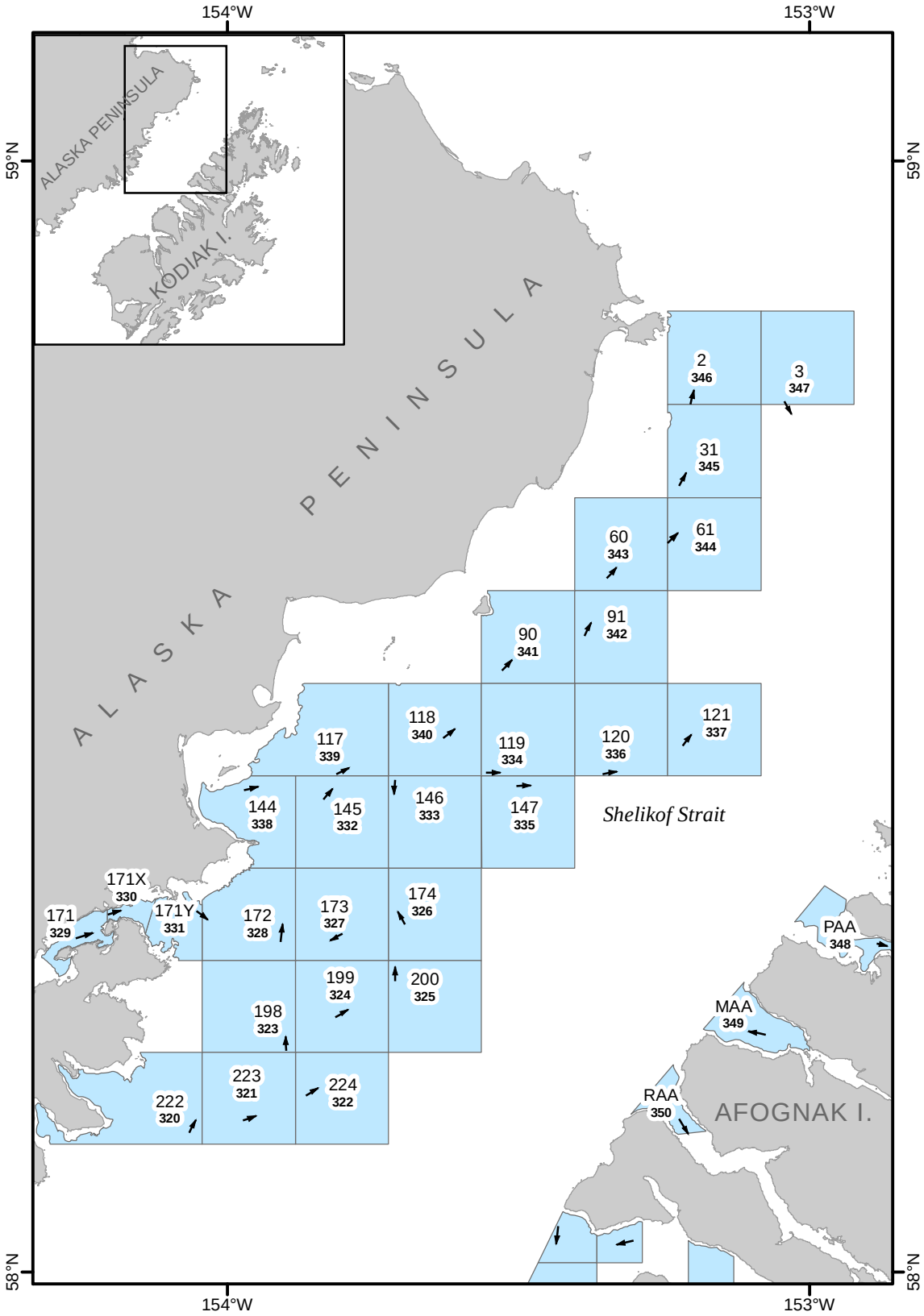
Appendix C3.–Ugak Bay, Kiliuda Bay, and Barnabas Gully station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), June 2016.



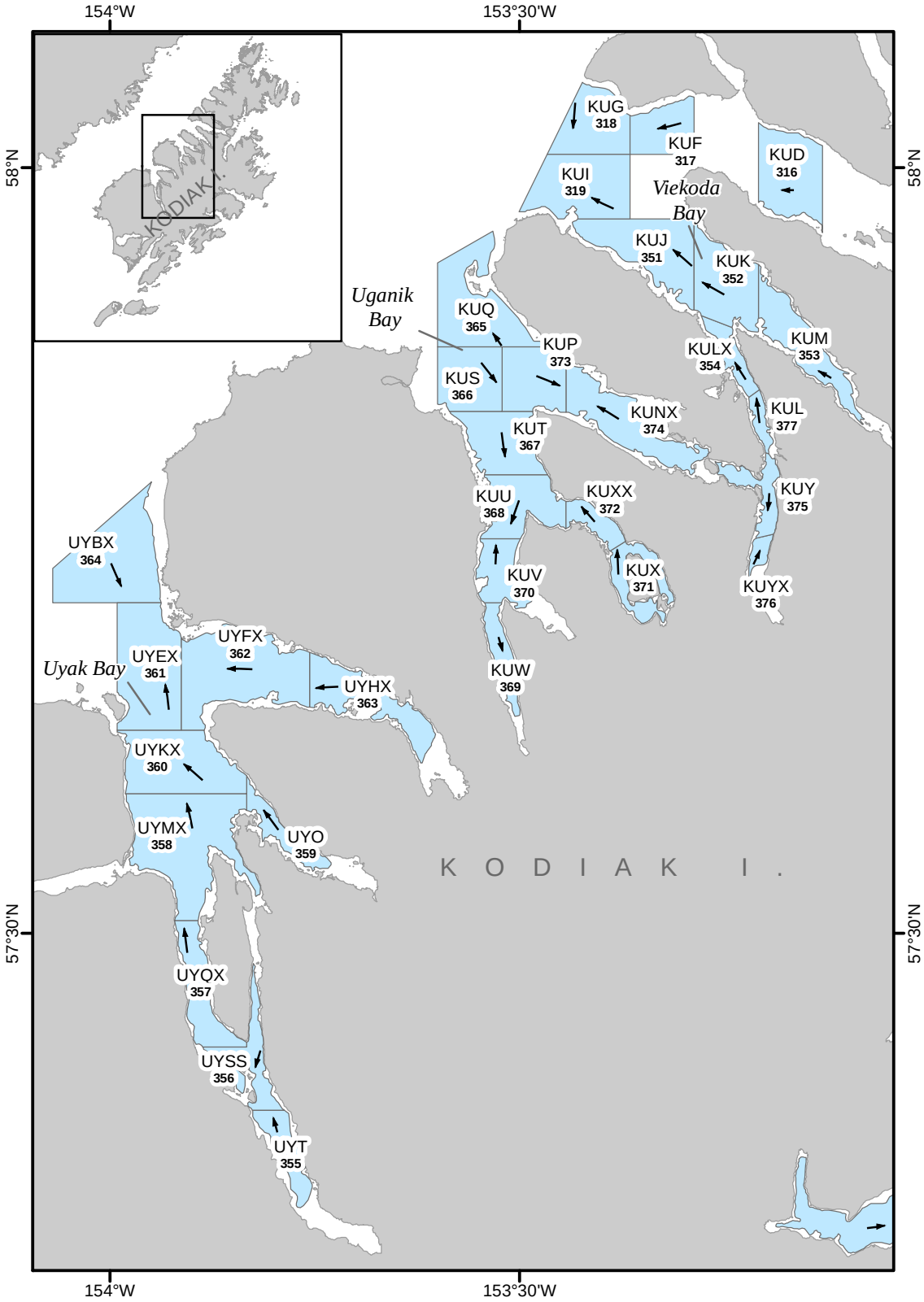
Appendix C4.–South Sitkalidak Strait, Twoheaded Island, and Horse's Head area station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), June and July 2016.



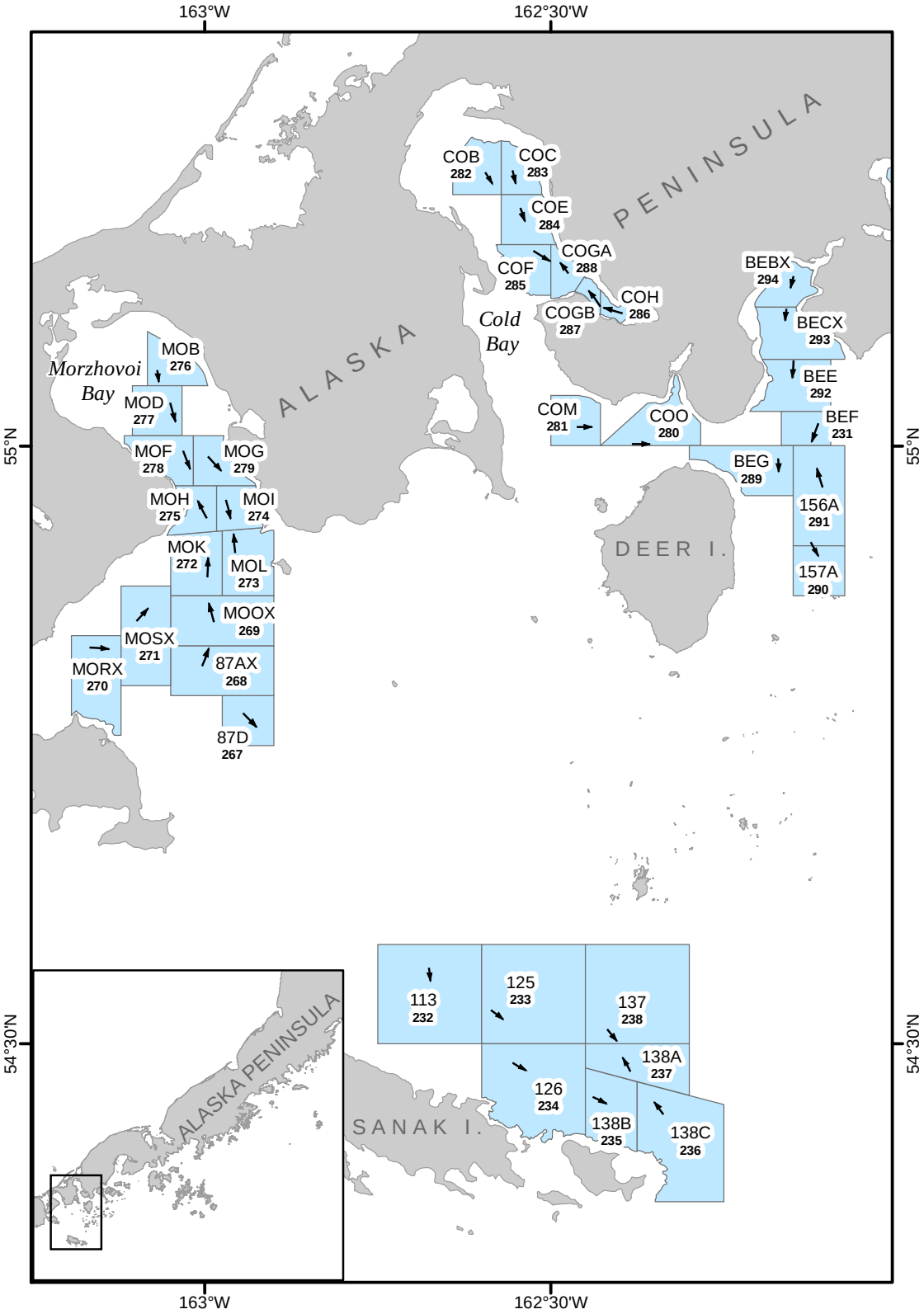
Appendix C5.–Alitak Bay and Alitak Flats station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), July 2016.



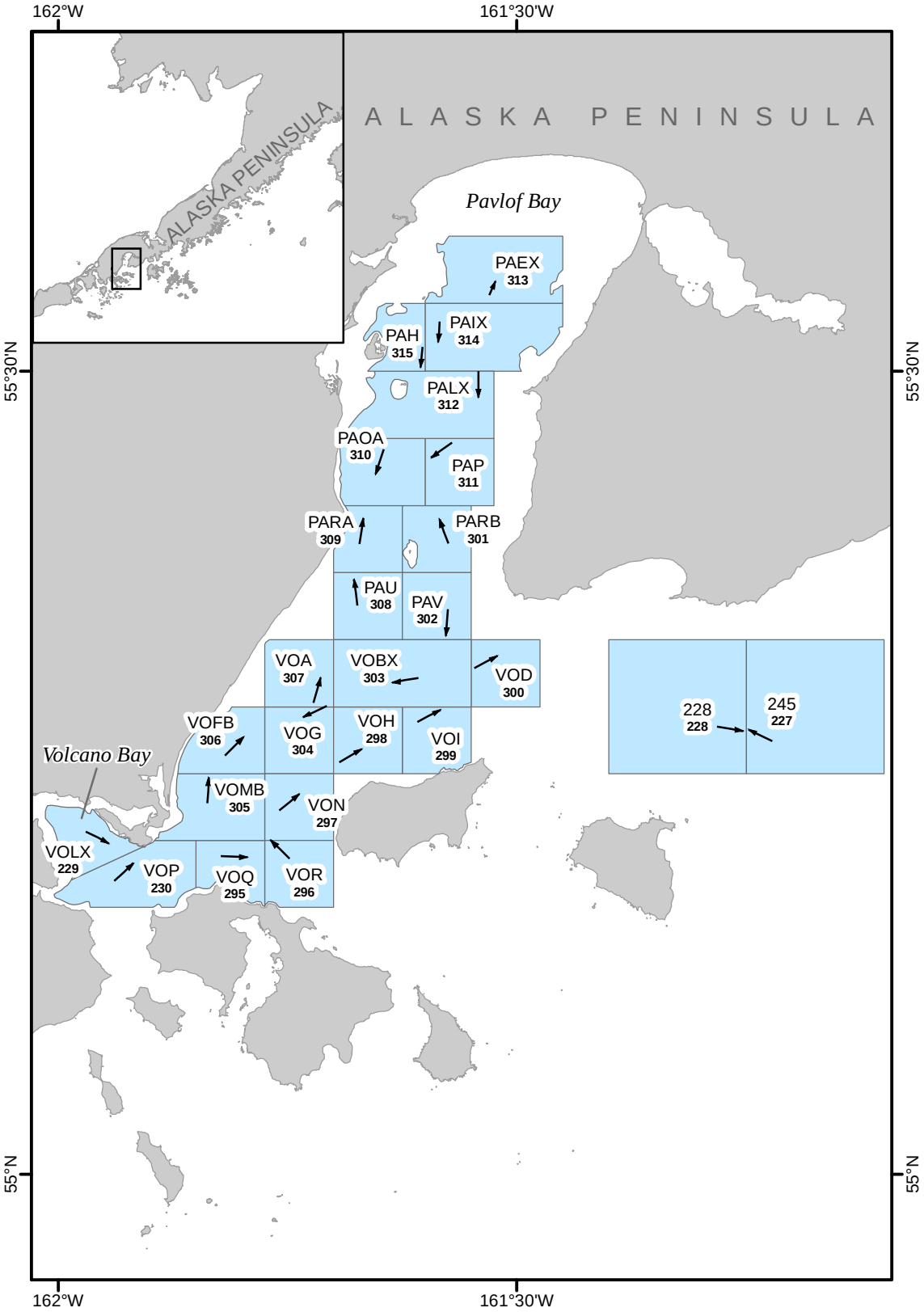
Appendix C6.–Shelikof Strait and Afognak Island station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), August 2016.



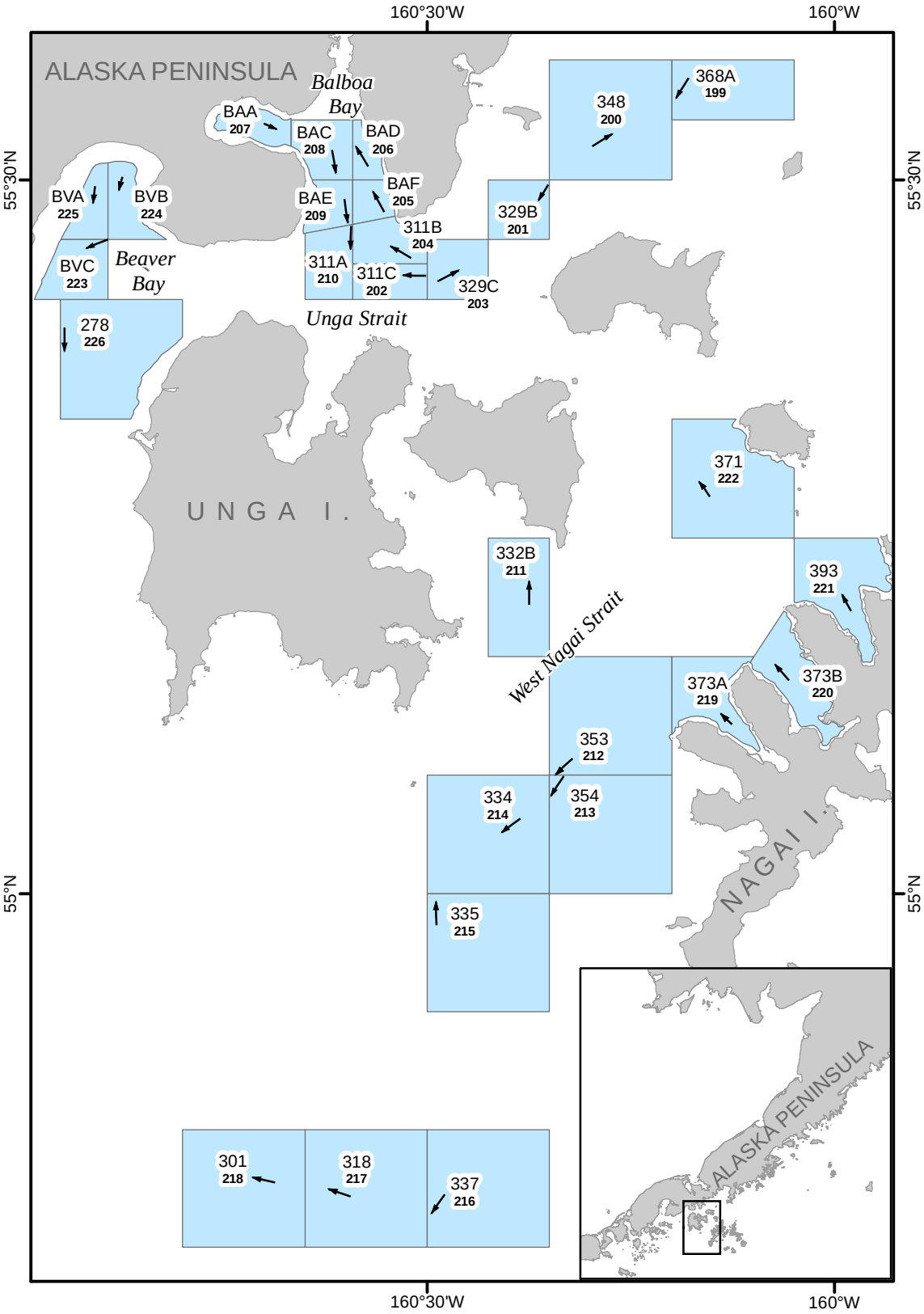
Appendix C7.–Uyak Bay, Uganik Bay, and Viekoda Bay station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), August and September 2016.



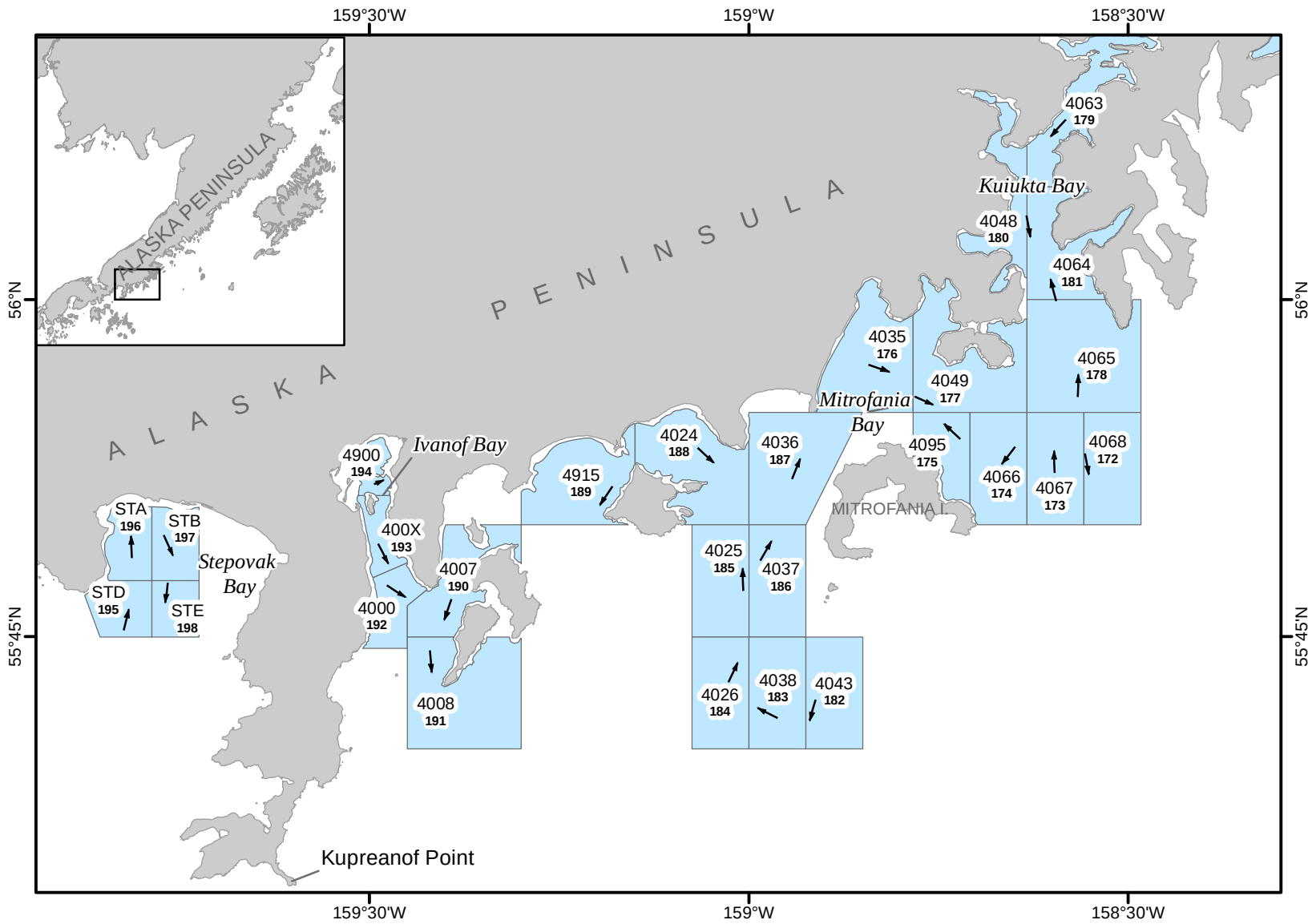
Appendix C8.–Morzhovoi Bay, Cold Bay, Belkofski Bay, Deer Island, and Sanak Island station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), July and August 2016.



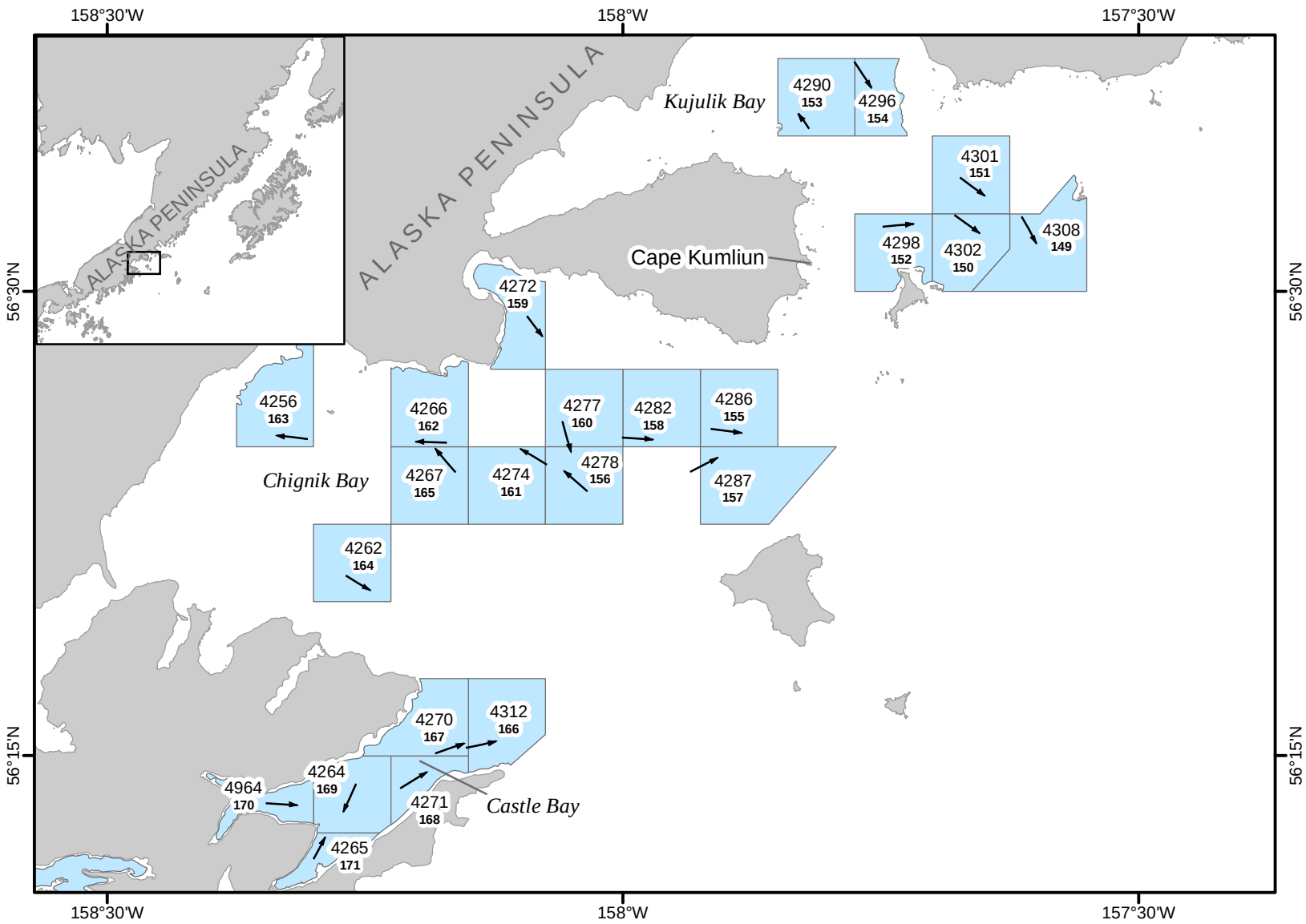
Appendix C9.–Pavlof Bay and Volcano Bay station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), July and August 2016.



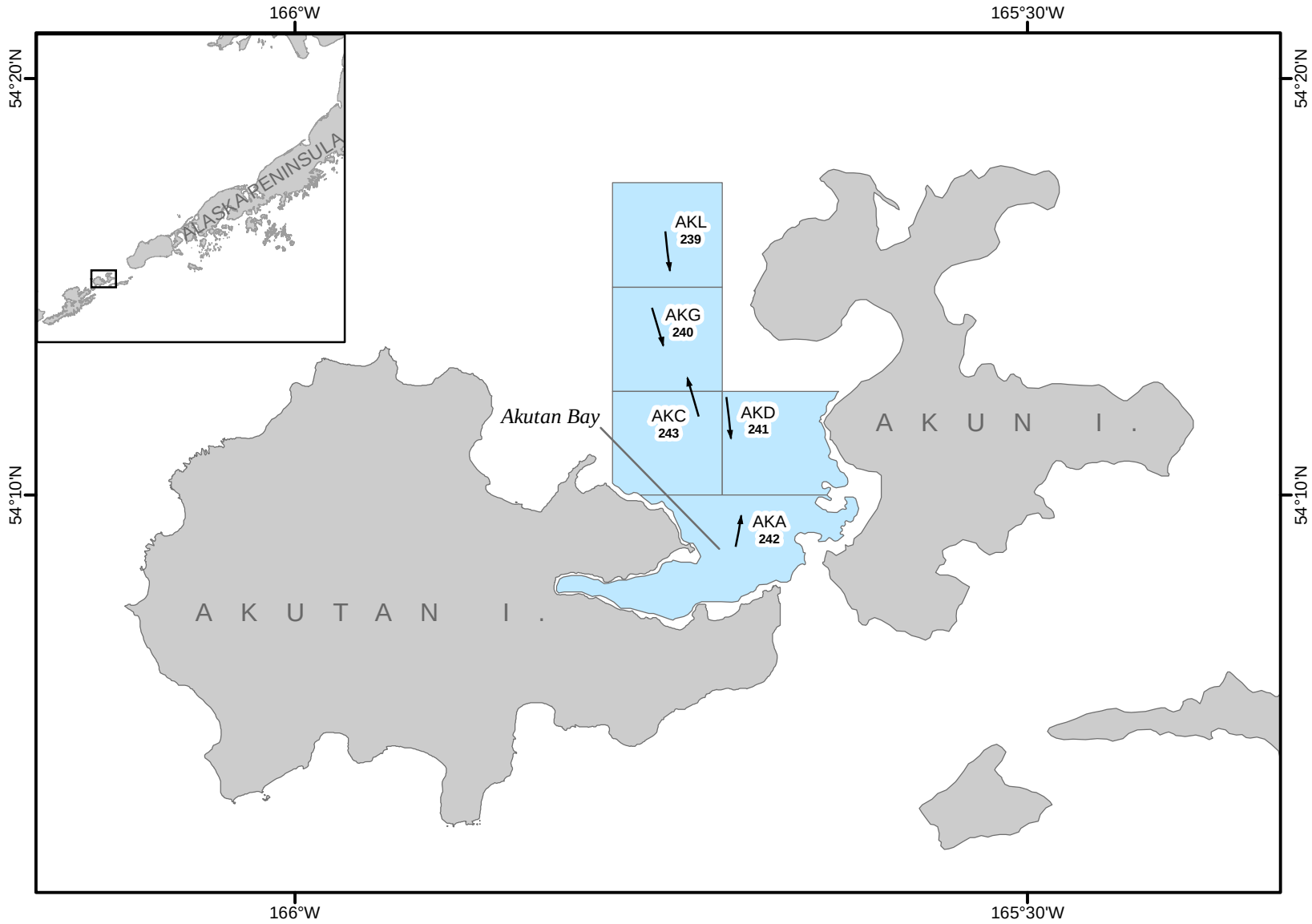
Appendix C10.–Unga Strait, Beaver Bay, Balboa Bay, and West Nagai Strait station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), July 2016.



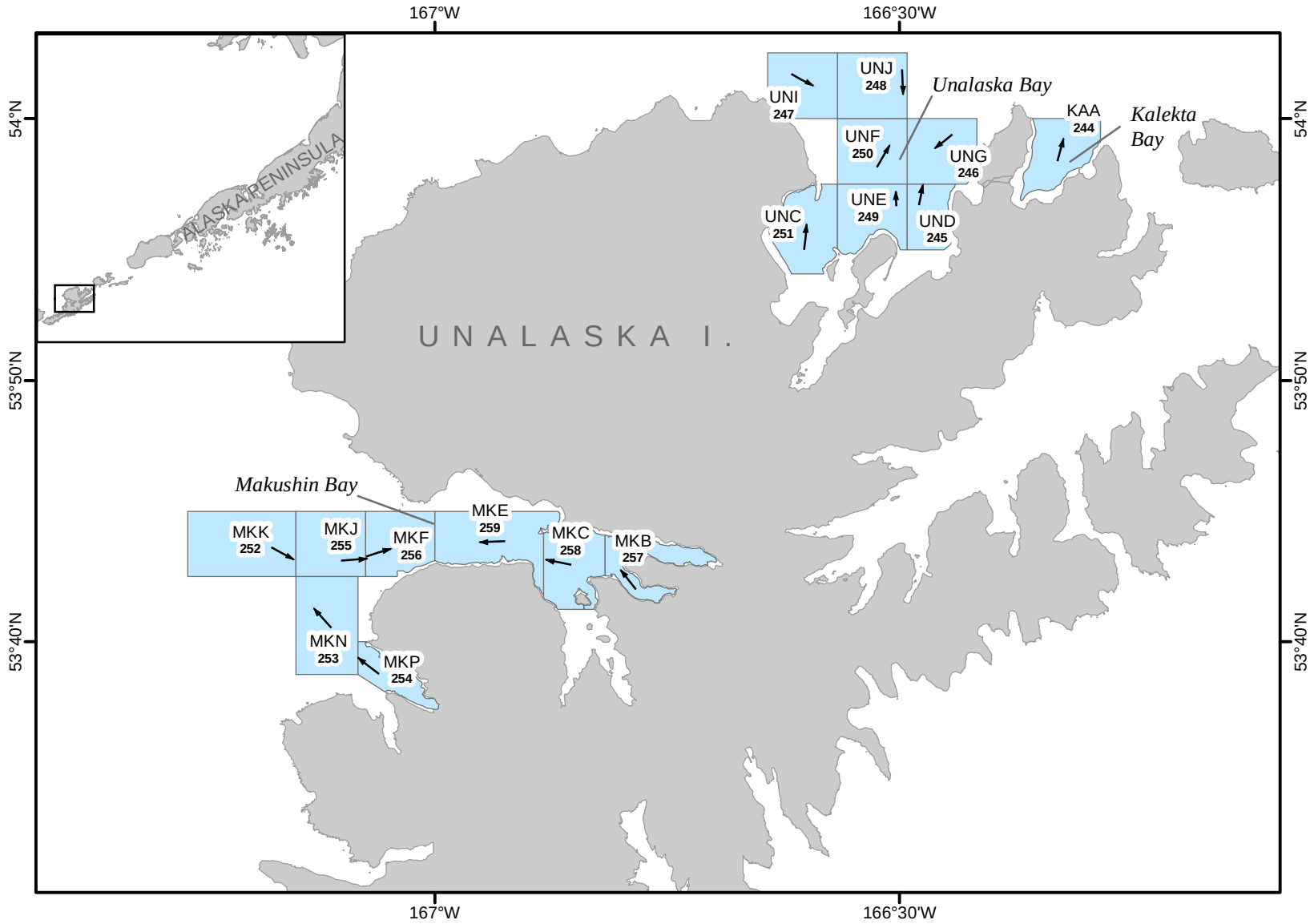
Appendix C11.–Stepovak Bay, Ivanof Bay, Kuiukta Bay, and Mitrofania Bay station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), July 2016.



Appendix C12.–Kujulik Bay, Chignik Bay, and Castle Bay station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), July 2016.



Appendix C13.–Akutan Bay station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), July 2016.



Appendix C14.–Unalaska Bay, Kalekta Bay, and Makushin Bay station boundaries with station name, trawl haul number (bold), and location and direction of haul (arrow), August 2016.

APPENDIX D. TANNER CRAB ABUNDANCE ESTIMATES BY STATION

Appendix D1.–Tanner crab abundance estimates in the Kodiak District by station and section, 2016.

	Haul	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Station	no.	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
NORTHEAST Section														
255X	24	2,658	2,658	5,317	0	0	0	0	0	0	0	0	0	5,317
256	26	0	262,028	262,028	0	0	26,583	18,988	0	3,798	0	3,798	49,368	311,395
257	22	0	11,393	11,393	3,798	0	0	0	0	0	0	0	3,798	15,190
283	28	5,772	95,241	101,014	0	5,772	54,836	25,975	0	2,886	0	2,886	89,469	190,483
283X	29	33,722	81,494	115,216	8,430	22,481	50,583	22,481	0	0	0	0	103,976	219,192
284	27	3,798	91,140	94,938	7,595	11,393	3,798	7,595	0	0	0	0	30,380	125,318
313	19	83,545	121,520	205,065	18,988	7,595	18,988	11,393	0	0	0	0	56,963	262,028
369X	4	0	0	0	0	9,548	0	0	0	0	0	0	9,548	9,548
395	41	3,798	0	3,798	0	0	0	0	0	0	0	0	0	3,798
421	43	14,241	0	14,241	4,747	0	0	0	0	0	0	0	4,747	18,988
CHF	9	5,058	38,780	43,838	2,810	6,744	29,788	32,036	0	562	0	562	71,940	115,778
CHG	5	0	0	0	1,534	0	0	0	0	0	0	0	1,534	1,534
CHJ	1	1,114	0	1,114	3,899	0	0	0	0	0	0	0	3,899	5,013
CHK	6	380	12,532	12,912	1,139	760	1,519	0	0	0	0	0	3,418	16,329
CHL	3	44,218	0	44,218	52,937	0	623	623	0	0	0	0	54,183	98,401
KZA	13	6,025	3,443	9,468	2,582	6,886	1,722	0	0	0	0	0	11,190	20,658
KZB	14	203	0	203	405	0	203	0	0	0	0	0	608	810
KZC	12	684	0	684	1,367	0	0	0	0	0	0	0	1,367	2,051
KZG	10	6,592	942	7,534	13,185	0	0	0	0	0	0	0	13,185	20,719
KZJ	40	37,975	0	37,975	54,114	949	0	0	0	0	0	0	55,064	93,039
KZK	39	18,038	1,899	19,937	20,886	10,443	59,811	25,633	1,899	0	0	1,899	118,672	138,609
KZO	36	180,381	10,443	190,824	179,432	15,190	1,899	1,899	0	0	0	0	198,419	389,244
KZR	38	39,925	191,638	231,563	1,698	178,259	62,815	57,722	15,279	30,559	0	45,838	346,332	577,895
KZS	37	9,576	207,489	217,065	1,275	6,557	7,832	11,292	2,368	8,196	0	10,564	37,519	254,584
MOEX	17	3,208	0	3,208	3,208	0	1,604	0	0	0	0	0	4,812	8,020
MOGX	18	72,912	0	72,912	52,497	0	0	0	0	0	0	0	52,497	125,409
MOLX	32	32,810	1,215	34,026	27,950	0	1,215	0	0	0	0	0	29,165	63,190
MONX	35	83,545	187,141	270,686	96,912	106,938	123,647	26,734	0	0	0	0	354,231	624,917
MOPX	33	8,613	0	8,613	12,304	0	0	0	0	0	0	0	12,304	20,917
MOQ	30	2,848	0	2,848	4,747	0	0	0	0	0	0	0	4,747	7,595
MOT	34	58,147	0	58,147	64,314	0	0	0	0	0	0	0	64,314	122,462
MOX	23	1,154	0	1,154	3,463	577	0	0	0	0	0	0	4,041	5,195

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Appendix D1.–Page 2 of 7.

Station	Haul no.	Females Juvenile	Females Adult	Females Total	Number sublegal males by size (CW) <70 mm	70–91 mm	92–114 mm	>114 mm	Recruit males	Postrecruit males (CW) <165 mm	≥165 mm	Legal males	Total males	Total crab
MOXX	31	1,306	0	1,306	1,306	0	1,306	0	0	0	0	0	2,613	3,919
Abundance Estimate		762,246	1,320,996	2,083,245	647,522	390,092	448,772	242,371	19,546	46,001	0	65,547	1,794,303	3,877,545
EASTSIDE Section														
486A	57	0	6,182	6,182	0	51,310	576,254	169,719	3,947	0	0	3,947	801,230	807,412
510B	58	0	4,113,604	4,113,604	22,485	1,394,093	2,473,391	404,737	0	22,485	0	22,485	4,317,192	8,430,796
510C	61	0	0	0	0	0	3,606	1,803	0	0	0	0	5,409	5,409
511A	62	0	3,798	3,798	0	6,581	250,078	368,536	3,291	0	0	3,291	628,486	632,284
533A	75	0	0	0	0	0	9,494	34,178	3,798	0	0	3,798	47,469	47,469
533B	83	0	3,798	3,798	1,899	0	32,279	201,268	7,595	1,899	0	9,494	244,939	248,736
534B	66	0	0	0	0	0	64,261	298,725	3,474	0	0	3,474	366,459	366,459
534D	68	0	0	0	0	0	0	10,025	0	0	0	0	10,025	10,025
535A	65	0	2,848	2,848	0	8,625	379,486	474,357	4,312	0	0	4,312	866,779	869,628
535B	64	6,646	0	6,646	3,798	1,899	949	0	0	0	0	0	6,646	13,291
535C	69	0	0	0	0	0	6,646	30,380	2,848	0	0	2,848	39,874	39,874
535D	70	949	949	1,899	2,848	949	19,937	117,723	2,848	0	0	2,848	144,305	146,204
559	84	0	729,120	729,120	0	0	56,963	406,333	45,570	7,595	0	53,165	516,460	1,245,580
560	72	3,798	0	3,798	7,595	3,798	11,393	75,950	11,393	0	0	11,393	110,128	113,925
561	71	0	413,928	413,928	3,798	30,380	136,710	227,850	3,798	0	0	3,798	402,535	816,463
587	85	72,153	3,798	75,950	94,938	0	0	0	0	0	0	0	94,938	170,888
588	74	178,483	7,595	186,078	121,520	15,190	22,785	18,988	3,798	0	0	3,798	182,280	368,358
589	73	11,204	2,240,714	2,251,917	0	79,748	322,788	151,900	0	7,595	0	7,595	562,030	2,813,947
619	95	41,773	7,595	49,368	87,343	15,190	45,570	7,595	0	0	0	0	155,698	205,065
620	86	182,280	15,190	197,470	193,673	102,533	83,545	41,773	3,798	0	0	3,798	425,320	622,790
621	87	184,356	647,296	831,652	205,065	37,975	98,735	106,330	0	0	0	0	448,105	1,279,757
654	94	0	0	0	4,219	0	4,219	0	0	0	0	0	8,439	8,439
655	89	110,128	391,143	501,270	64,558	72,153	121,520	26,583	0	0	0	0	284,813	786,083
656	88	87,343	459,498	546,840	49,368	7,595	30,380	30,380	0	15,190	0	15,190	132,913	679,753
695	90	91,140	235,445	326,585	68,355	18,988	106,330	34,178	0	3,798	0	3,798	231,648	558,233
696	91	113,925	478,485	592,410	68,355	34,178	72,153	7,595	0	0	0	0	182,280	774,690
KLA	81	84,717	0	84,717	80,746	0	0	2,647	1,324	0	0	1,324	84,717	169,434
KLB	82	2,990	175,417	178,407	410	4,101	11,074	15,995	0	6,152	0	6,152	37,732	216,139
KLC	80	0	41,560	41,560	866	5,195	33,767	64,071	866	34,633	866	36,365	140,264	181,824

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Appendix D1.–Page 3 of 7.

Station	Haul no.	Females Juvenile	Females Adult	Females Total	Number sublegal males by size (CW) <70 mm	70–91 mm	92–114 mm	>114 mm	Recruit males	Postrecruit males (CW) <165 mm	≥165 mm	Legal males	Total males	Total crab
KLD	60	0	0	0	0	0	1,150	0	0	0	0	0	1,150	1,150
KLE	78	365	0	365	1,094	0	1,094	5,104	1,458	0	0	1,458	8,749	9,114
KLF	79	668	668	1,337	0	1,131	59,920	159,409	6,783	0	0	6,783	227,242	228,579
KLG	77	0	112,284	112,284	0	9,479	36,456	89,682	3,646	4,375	0	8,020	143,637	255,921
KLH	76	0	0	0	0	0	149,480	562,516	31,469	43,270	0	74,740	786,736	786,736
KLI	59	0	3,798	3,798	0	4,184	19,526	221,757	20,921	4,184	0	25,105	270,572	274,369
KLL	67	0	0	0	0	2,395	9,580	361,664	93,410	4,790	0	98,200	471,839	471,839
UGAA	46	4,653	228,021	232,674	0	126,240	497,747	93,778	7,214	0	0	7,214	724,979	957,654
UGAB	45	1,156	3,006	4,162	643	16,085	71,419	41,178	3,860	0	0	3,860	133,186	137,348
UGAC	44	0	706	706	0	0	706	0	0	0	0	0	706	1,413
UGB	47	0	0	0	258	1,033	13,686	25,048	3,615	0	258	3,873	43,899	43,899
UGC	48	0	6,972	6,972	0	18,569	85,251	62,461	3,376	0	0	3,376	169,657	176,629
UGD	49	0	2,430	2,430	486	1,458	42,775	15,555	972	0	0	972	61,246	63,676
UGE	52	1,124	9,555	10,679	0	25,915	109,916	41,107	894	894	0	1,787	178,726	189,404
UGF	55	699	56,598	57,297	0	36,642	185,138	136,925	21,214	5,786	0	26,999	385,704	443,001
UGI	54	0	18,760	18,760	46,850	46,850	404,085	158,120	8,784	14,641	2,928	26,353	682,259	701,019
UGM	53	0	90,806	90,806	15,377	284,483	1,037,978	192,218	0	7,689	0	7,689	1,537,744	1,628,550
Abundance Estimate		1,180,550	10,511,567	11,692,115	1,146,547	2,464,945	7,700,220	5,496,141	310,276	184,976	4,052	499,302	17,307,144	28,999,256
SOUTHEAST Section														
585X	98	0	0	0	13,924	0	0	0	0	0	0	0	13,924	13,924
586	97	11,393	0	11,393	18,988	0	0	0	0	0	0	0	18,988	30,380
614	108	5,681	31,246	36,927	17,043	2,841	56,811	227,242	5,681	14,203	0	19,884	323,820	360,747
615	92	66,077	17,620	83,697	48,456	0	48,456	96,912	0	0	0	0	193,824	277,521
618A	96	0	0	0	5,696	0	0	0	0	0	0	0	5,696	5,696
651	93	296,205	0	296,205	326,585	0	0	3,798	0	0	0	0	330,383	626,588
726	100	18,988	0	18,988	15,190	0	0	0	0	0	0	0	15,190	34,178
727	101	87,343	7,595	94,938	83,545	0	0	0	0	0	0	0	83,545	178,483
728	105	588,613	0	588,613	581,018	22,785	3,798	0	0	0	0	0	607,600	1,196,213
729	106	634,183	0	634,183	622,790	18,988	3,798	7,595	0	0	0	0	653,170	1,287,353
759	102	37,975	0	37,975	71,731	0	0	0	0	0	0	0	71,731	109,706
760	103	429,118	0	429,118	425,320	0	0	3,798	0	0	0	0	429,118	858,235
761	104	402,535	0	402,535	300,003	7,595	7,595	3,798	0	0	0	0	318,990	721,525

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Station	Haul no.	Females Juvenile	Females Adult	Females Total	Number sublegal males by size (CW) <70 mm	70–91 mm	92–114 mm	>114 mm	Recruit males	Postrecruit males (CW) <165 mm	≥165 mm	Legal males	Total males	Total crab
THA	107	4,177	0	4,177	0	0	45,114	122,811	1,671	0	0	1,671	169,596	173,774
THC	109	6,061	91,778	97,839	2,597	3,463	21,646	55,413	866	14,719	0	15,585	98,705	196,543
THD	110	5,061	54,409	59,470	6,327	0	5,061	5,061	0	0	0	0	16,449	75,920
THF	119	0	24,684	24,684	2,468	0	24,684	43,197	0	17,279	0	17,279	87,627	112,311
THG	111	0	1,899	1,899	949	0	949	2,848	0	0	0	0	4,747	6,646
THH	112	851	0	851	0	0	0	2,552	1,701	0	0	1,701	4,253	5,104
THI	118	15,038	0	15,038	20,507	0	0	4,101	0	0	0	0	24,608	39,646
THJ	117	0	1,580	1,580	0	0	16,587	120,062	11,058	0	0	11,058	147,708	149,287
THK	116	0	604,258	604,258	0	2,429	36,433	335,186	24,289	87,440	0	111,729	485,776	1,090,034
THL	113	0	6,380	6,380	0	0	8,658	47,849	4,101	2,279	0	6,380	62,887	69,266
THM	114	523	0	523	1,046	0	0	1,570	0	0	0	0	2,616	3,139
THN	115	570	285	854	854	0	0	854	0	0	0	0	1,709	2,563
Abundance Estimate		2,610,392	841,734	3,452,125	2,565,037	58,101	279,590	1,084,647	49,367	135,920	0	185,287	4,172,660	7,624,782
SOUTHWEST Section														
645B	140	1,519	0	1,519	0	1,519	0	1,519	0	0	0	0	3,038	4,557
646B	138	1,458	0	1,458	1,458	0	0	0	0	0	0	0	1,458	2,916
646C	141	3,873	0	3,873	2,582	0	0	0	0	0	0	0	2,582	6,456
646D	137	4,967	1,656	6,623	6,623	0	0	1,656	0	0	0	0	8,279	14,901
682B	142	2,035	0	2,035	3,053	0	2,035	1,018	0	0	0	0	6,106	8,142
683A	143	0	1,018	1,018	0	0	1,018	1,018	0	0	0	0	2,035	3,053
683B	144	4,633	0	4,633	1,853	0	927	0	0	0	0	0	2,780	7,413
683D	145	410	410	820	2,461	0	410	0	0	0	0	0	2,871	3,691
684B	146	456	0	456	0	0	0	0	0	0	0	0	0	456
684C	148	1,519	0	1,519	1,139	0	0	0	0	0	0	0	1,139	2,658
ALA	134	0	0	0	0	0	0	273	273	0	0	273	547	547
ALB	135	0	0	0	0	787	2,361	3,934	1,574	0	0	1,574	8,655	8,655
ALC	133	360	4,680	5,040	0	2,945	43,200	136,474	9,818	1,964	0	11,782	194,402	199,442
ALD	136	2,135	429,049	431,183	0	1,732	24,243	63,494	10,390	10,967	0	21,357	110,826	542,010
ALF	121	0	674,056	674,056	0	6,646	57,912	82,596	4,747	14,241	0	18,988	166,141	840,197
ALG	124	2,643	3,524	6,167	0	24,416	143,781	104,444	1,356	0	0	1,356	273,997	280,164
ALH	123	2,142	40,694	42,836	0	18,287	171,612	91,433	2,813	0	0	2,813	284,144	326,980
ALI	122	5,894	69,988	75,882	3,068	141,119	337,459	125,780	6,136	3,068	0	9,203	616,630	692,512

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Appendix D1.–Page 5 of 7.

Station	Haul no.	Females Juvenile	Females Adult	Females Total	Number sublegal males by size (CW) <70 mm	70–91 mm	92–114 mm	>114 mm	Recruit males	Postrecruit males (CW) <165 mm	≥165 mm	Legal males	Total males	Total crab
ALJ	126	1,337	668	2,005	2,673	8,689	9,357	8,020	0	0	0	0	28,739	30,745
ALK	125	1,762	5,286	7,048	0	9,251	12,775	3,084	0	0	0	0	25,109	32,157
ALL	128	1,458	10,208	11,666	0	30,386	98,754	40,515	1,688	0	0	1,688	171,343	183,009
ALM	127	2,142	0	2,142	4,998	0	7,139	2,856	0	0	0	0	14,993	17,134
ALO	132	3,722	37,960	41,681	744	34,238	85,596	26,795	1,489	0	0	1,489	148,862	190,543
ALP	131	6,805	17,863	24,669	3,403	47,636	54,441	41,681	5,104	0	0	5,104	152,265	176,933
ALQ	130	2,552	14,674	17,225	5,053	30,317	127,583	85,898	3,790	0	0	3,790	252,640	269,866
ALR	129	1,185	11,256	12,441	1,445	36,137	128,648	114,193	8,673	0	0	8,673	289,096	301,537
Abundance Estimate		56,207	1,322,990	1,379,195	41,753	394,105	1,309,251	936,681	57,851	30,240	0	88,090	2,769,877	4,149,074
WESTSIDE Section														
KUF	317	5,497	0	5,497	2,999	0	0	0	0	0	0	0	2,999	8,496
KUI	319	32,382	568	32,950	26,701	852	0	0	0	0	0	0	27,553	60,503
KUJ	351	51,130	2,256	53,385	34,588	752	752	752	0	0	0	0	36,843	90,229
KUK	352	16,815	6,228	23,043	14,324	623	623	0	0	623	0	623	16,193	39,236
KUL	377	3,480	120	3,600	3,240	0	0	0	0	0	0	0	3,240	6,840
KULX	354	583	58,024	58,607	232	695	2,780	4,285	347	1,042	0	1,390	9,382	67,989
KUM	353	2,324	1,549	3,873	3,873	0	0	0	0	0	0	0	3,873	7,747
KUNX	374	4,709	70,163	74,872	5,651	471	3,767	16,481	471	8,476	0	8,947	35,317	110,188
KUP	373	3,536	29,469	33,005	2,947	0	9,430	17,092	0	12,966	589	13,556	43,024	76,029
KUQ	365	45,570	3,038	48,608	53,165	13,671	1,519	1,519	0	0	0	0	69,874	118,482
KUS	366	71,518	2,689	74,206	68,291	1,075	538	1,075	0	538	0	538	71,518	145,724
KUT	367	73,668	9,989	83,657	72,393	25,364	3,699	5,284	528	528	0	1,057	107,797	191,455
KUU	368	12,696	73,757	86,452	9,673	1,814	6,650	19,951	0	8,464	0	8,464	46,551	133,004
KUV	370	1,595	0	1,595	1,823	0	0	0	0	0	0	0	1,823	3,418
KUW	369	2,294	382	2,676	382	0	0	0	0	0	0	0	382	3,058
KUX	371	19,703	1,988	21,691	28,379	3,254	542	723	0	0	0	0	32,899	54,590
KUXX	372	25,223	25,223	50,446	19,071	20,301	5,229	7,998	3,076	308	0	3,384	55,983	106,429
KUY	375	775	258	1,033	775	775	516	0	0	0	0	0	2,066	3,099
MAA	349	933	5,130	6,062	933	0	466	933	0	0	0	0	2,332	8,394
PAA	348	0	3,342	3,342	1,114	0	0	0	0	0	0	0	1,114	4,456
RAA	350	298	37,513	37,811	0	0	1,786	4,466	0	893	0	893	7,145	44,956
UYBX	364	4,754	0	4,754	1,902	0	0	0	0	0	0	0	1,902	6,656

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Appendix D1.–Page 6 of 7.

Station	Haul no.	Females Juvenile	Females Adult	Females Total	Number sublegal males by size (CW) <70 mm	70–91 mm	92–114 mm	>114 mm	Recruit males	Postrecruit males (CW) <165 mm	≥165 mm	Legal males	Total males	Total crab
UYEX	361	461,122	552,333	1,013,456	117,196	188,058	182,607	51,784	2,725	2,725	0	5,451	545,096	1,558,552
UYFX	362	109,052	114,616	223,668	67,393	9,767	18,558	7,814	977	1,953	0	2,930	106,462	330,130
UYHX	363	3,646	4,253	7,899	3,443	0	0	203	0	0	0	0	3,646	11,544
UYKX	360	207,031	1,005	208,036	250,380	0	0	0	0	0	0	0	250,380	458,416
UYMX	358	71,919	47,024	118,942	68,230	922	1,844	4,610	0	922	0	922	76,529	195,471
UYO	359	686	34,297	34,983	298	0	149	893	0	149	0	149	1,489	36,471
UYQX	357	1,361	29,943	31,304	681	340	4,423	10,548	7,145	6,125	340	13,610	29,602	60,906
UYSS	356	382	54,996	55,378	0	0	764	2,673	1,528	1,528	0	3,055	6,493	61,871
UYT	355	210	210	420	420	0	0	0	0	0	0	0	420	841
Abundance Estimate		1,234,892	1,170,363	2,405,251	860,497	268,734	246,642	159,084	16,797	47,240	929	64,969	1,599,927	4,005,180
NORTH MAINLAND Section														
117	339	10,823	0	10,823	0	0	0	0	0	0	0	0	0	10,823
118	340	33,228	0	33,228	85,444	4,747	9,494	0	0	0	0	0	99,684	132,913
119	334	0	4,747	4,747	9,494	0	0	0	0	0	0	0	9,494	14,241
120	336	389,244	0	389,244	417,725	4,747	0	0	0	0	0	0	422,472	811,716
121	337	474,688	37,975	512,663	408,231	4,747	4,747	0	0	0	0	0	417,725	930,388
144	338	3,361	0	3,361	3,361	0	0	0	0	0	0	0	3,361	6,722
145	332	0	0	0	18,988	0	0	0	0	0	0	0	18,988	18,988
146	333	28,481	0	28,481	14,241	0	4,747	0	0	0	0	0	18,988	47,469
147	335	14,241	0	14,241	14,241	4,747	0	0	0	0	0	0	18,988	33,228
171	329	68,287	3,035	71,322	19,179	82,197	210,972	191,793	21,919	0	0	21,919	526,060	597,382
171X	330	32,712	9,858	42,570	0	15,766	98,235	100,661	27,894	0	1,213	29,107	243,769	286,339
171Y	331	0	0	0	1,610	1,610	4,830	1,610	0	0	0	0	9,661	9,661
172	328	134,280	3,949	138,229	138,229	3,949	0	0	0	0	0	0	142,178	280,407
173	327	517,409	9,494	526,903	375,003	4,747	0	0	0	4,747	0	4,747	384,497	911,400
174	326	545,891	14,241	560,131	493,675	23,734	4,747	0	0	0	0	0	522,156	1,082,288
198	323	446,206	42,722	488,928	384,497	9,494	9,494	18,988	0	4,747	0	4,747	427,219	916,147
199	324	569,625	246,838	816,463	479,434	28,481	14,241	14,241	0	28,481	0	28,481	564,878	1,381,341
2	346	14,241	0	14,241	14,241	0	0	0	0	0	0	0	14,241	28,481
200	325	631,334	56,963	688,297	436,713	37,975	4,747	0	0	0	0	0	479,434	1,167,731
222	320	125,318	0	125,318	93,988	12,532	6,266	0	0	0	0	0	112,786	238,103
223	321	806,969	33,228	840,197	541,144	9,494	4,747	4,747	0	0	0	0	560,131	1,400,328

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Appendix D1.–Page 7 of 7.

Station	Haul no.	Females			Number sublegal males by size (CW)				Recruit males	Postrecruit males (CW)		Legal males	Total males	Total crab
		Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm		<165 mm	≥165 mm			
224	322	722,706	293,125	1,015,831	403,484	213,609	28,481	28,481	0	4,747	0	4,747	678,803	1,694,634
3	347	189,875	0	189,875	161,394	0	0	0	0	0	0	0	161,394	351,269
31	345	55,595	0	55,595	41,697	0	0	0	0	0	0	0	41,697	97,292
60	343	9,494	0	9,494	23,734	0	0	0	0	0	0	0	23,734	33,228
61	344	0	0	94,938	151,900	0	0	0	0	0	0	0	151,900	246,838
90	341	4,443	0	4,443	8,886	0	4,443	0	0	0	0	0	13,329	17,772
91	342	9,494	0	9,494	28,481	0	0	0	0	0	0	0	28,481	37,975
Abundance Estimate		5,837,945	756,175	6,689,057	4,769,014	462,576	410,191	360,521	49,813	42,722	1,213	93,748	6,096,048	12,785,104
Kodiak District Total		11,682,232	15,923,825	27,700,988	10,030,370	4,038,553	10,394,666	8,279,445	503,650	487,099	6,194	996,943	33,739,959	61,440,941

Appendix D2.–Tanner crab abundance estimates in the South Peninsula District by station, sampling locale, and section, 2016.

	Haul	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Station	no.	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
SANAK ISLAND														
113	232	19,530	0	19,530	19,530	14,648	0	0	0	0	0	0	34,178	53,708
125	233	8,544	0	8,544	8,544	0	0	0	0	0	0	0	8,544	17,089
126	234	9,285	0	9,285	9,285	0	0	0	0	0	0	0	9,285	18,570
137	238	9,494	4,747	14,241	14,241	4,747	0	0	0	0	0	0	18,988	33,228
138A	237	12,817	0	12,817	15,380	0	0	0	0	0	0	0	15,380	28,196
138B	235	0	0	0	1,020	0	0	0	0	0	0	0	1,020	1,020
138C	236	3,152	0	3,152	15,760	3,152	0	0	0	0	0	0	18,912	22,063
Abundance Estimate		62,822	4,747	67,569	83,760	22,547	0	0	0	0	0	0	106,307	173,874
MORZHOVOI BAY														
87AX	268	7,595	49,368	56,963	5,753	5,753	198,489	411,361	43,150	5,753	0	48,903	670,259	727,221
87D	267	987	10,861	11,848	0	2,962	22,709	9,874	987	987	0	1,975	37,519	49,368
MOB	276	5,873	0	5,873	0	0	0	0	0	0	0	0	0	5,873
MOD	277	7,139	0	7,139	6,425	1,428	3,570	2,142	0	0	0	0	13,565	20,704
MOF	278	12,342	3,798	16,139	2,848	57,912	72,153	8,544	0	0	0	0	141,457	157,596
MOG	279	4,747	0	4,747	1,899	949	1,899	0	0	0	0	0	4,747	9,494
MOH	275	14,142	8,187	22,329	10,420	1,489	43,914	16,375	0	0	0	0	72,198	94,527
MOI	274	1,899	949	2,848	3,798	949	949	0	0	0	0	0	5,696	8,544
MOK	272	4,747	0	4,747	2,848	0	0	0	0	0	0	0	2,848	7,595
MOL	273	1,899	2,848	4,747	1,899	0	17,089	24,684	0	0	0	0	43,671	48,418
MOOX	269	31,298	3,192,370	3,223,667	0	57,440	1,053,068	2,278,457	76,587	421,227	0	497,814	3,886,779	7,110,447
MORX	270	18,182	0	18,182	12,987	7,792	10,390	0	0	0	0	0	31,170	49,352
MOSX	271	11,139	0	11,139	16,709	1,857	0	0	0	0	0	0	18,566	29,705
Abundance Estimate		121,989	3,268,381	3,390,368	65,586	138,531	1,424,230	2,751,437	120,724	427,967	0	548,692	4,928,475	8,318,844
COLD BAY/BELKOFSKI BAY														
156A	291	0	489,118	489,118	0	13,588	200,426	390,662	10,191	67,941	0	78,132	682,809	1,171,927
BEBX	294	0	0	0	0	0	0	1,175	0	0	0	0	1,175	1,175
BECX	293	1,894	0	1,894	0	0	0	0	0	0	0	0	0	1,894
BEE	292	0	1,055	1,055	1,055	1,055	1,055	1,055	0	0	0	0	4,219	5,274
BEF	231	0	0	0	696	0	0	0	0	0	0	0	696	696

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Appendix D2.–Page 2 of 4.

Station	Haul no.	Females Juvenile	Females Adult	Females Total	Number sublegal males by size (CW) <70 mm	70–91 mm	92–114 mm	>114 mm	Recruit males	Postrecruit males (CW) <165 mm	≥165 mm	Legal males	Total males	Total crab
BEG	289	1,285	1,285	2,569	1,285	0	0	1,285	0	0	0	0	2,569	5,139
COB	282	9,357	1,337	10,694	17,377	4,010	0	1,337	0	0	0	0	22,724	33,418
COC	283	0	0	0	0	0	0	966	0	0	0	0	966	966
COE	284	9,357	13,367	22,724	5,347	34,755	33,418	12,030	0	0	0	0	85,550	108,274
COF	285	1,527	1,018	2,544	509	1,018	1,527	509	0	0	0	0	3,562	6,106
COGA	288	6,206	117,918	124,124	0	19,526	104,524	99,929	0	6,892	0	6,892	230,871	354,995
COGB	287	0	12,720	12,720	4,052	5,402	144,514	113,450	0	4,052	0	4,052	271,470	284,190
COH	286	693	0	693	1,039	346	4,156	12,468	0	693	0	693	18,702	19,395
COM	281	2,051	41,013	43,064	1,025	1,025	16,405	5,127	0	7,177	1,025	8,203	31,785	74,849
COO	280	0	0	0	3,311	0	0	0	0	0	0	0	3,311	3,311
Abundance Estimate		32,370	678,831	711,199	35,696	80,725	506,025	639,993	10,191	86,755	1,025	97,972	1,360,409	2,071,609
PAVLOF BAY/VOLCANO BAY														
228	228	1,133	567	1,700	567	0	2,833	5,099	567	0	0	567	9,065	10,765
245	227	0	931	931	0	0	931	0	0	0	0	0	931	1,862
PAEX	313	0	0	0	3,068	0	0	0	0	0	0	0	3,068	3,068
PAH	315	0	0	0	3,311	1,656	0	0	0	0	0	0	4,967	4,967
PAIX	314	8,484	0	8,484	10,605	2,121	0	0	0	0	0	0	12,725	21,209
PALX	312	1,899	0	1,899	0	1,899	5,696	0	0	0	0	0	7,595	9,494
PAOA	310	2,680	2,382	5,061	1,191	1,191	2,382	1,489	0	0	0	0	6,252	11,314
PAP	311	2,762	7,364	10,126	921	3,682	37,741	20,251	921	0	0	921	63,515	73,641
PARA	309	3,378	6,757	10,135	1,689	6,757	34,627	15,202	1,689	0	0	1,689	59,964	70,099
PARB	301	0	9,327	9,327	0	0	52,354	268,599	11,381	120,642	6,829	138,852	459,804	469,131
PAU	308	12,342	14,241	26,583	4,370	21,850	120,901	134,011	16,023	0	0	16,023	297,154	323,737
PAV	302	30,076	6,380	36,456	35,545	0	7,291	1,823	1,823	0	0	1,823	46,481	82,937
VOA	307	14,879	1,984	16,862	10,911	0	6,943	8,927	0	0	0	0	26,781	43,644
VOBX	303	19,413	36,884	56,297	11,648	0	1,941	7,765	1,941	0	0	1,941	23,295	79,593
VOD	300	2,762	32,218	34,980	5,523	0	9,205	22,092	6,444	1,841	921	9,205	46,026	81,005
VOFB	306	2,064	9,633	11,698	3,441	0	0	1,376	0	1,376	0	1,376	6,193	17,891
VOG	304	5,104	1,021	6,125	9,187	1,021	1,021	1,021	0	0	0	0	12,249	18,374
VOH	298	31,781	6,741	38,522	51,041	0	0	6,741	0	963	0	963	58,746	97,268
VOI	299	14,674	10,761	25,434	8,804	1,956	12,717	35,216	1,956	978	0	2,935	61,629	87,063
VOLX	229	7,246	22,944	30,190	10,868	0	10,868	14,491	2,415	2,415	0	4,830	41,059	71,249

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Station	Haul no.	Females Juvenile	Females Adult	Females Total	Number sublegal males by size (CW) <70 mm	70–91 mm	92–114 mm	>114 mm	Recruit males	Postrecruit males (CW) <165 mm	≥165 mm	Legal males	Total males	Total crab
VOMB	305	7,504	9,755	17,259	3,752	2,251	8,254	7,504	0	750	0	750	22,512	39,770
VON	297	7,935	2,976	10,911	20,830	992	50,587	39,676	7,935	1,984	0	9,919	122,005	132,916
VOP	230	3,798	4,747	8,544	5,696	949	29,431	25,633	3,798	0	0	3,798	65,507	74,051
VOQ	295	4,229	0	4,229	9,867	0	4,229	705	0	0	0	0	14,801	19,030
VOR	296	3,743	0	3,743	15,907	0	4,679	4,679	0	0	0	0	25,264	29,007
Abundance Estimate		187,886	187,613	375,496	228,742	46,325	404,631	622,300	56,893	130,949	7,750	195,592	1,497,588	1,873,085
BEAVER BAY/BALBOA BAY/UNGA STRAIT														
278	226	0	0	0	0	0	3,164	0	0	0	0	0	3,164	3,164
311A	210	2,055	5,481	7,536	0	685	5,481	5,481	2,055	0	0	2,055	13,701	21,237
311B	204	0	905	905	905	0	2,716	3,621	0	0	0	0	7,243	8,148
311C	202	0	16,045	16,045	0	0	3,056	3,820	2,292	764	0	3,056	9,933	25,978
329B	201	1,187	0	1,187	1,187	0	3,560	4,747	0	0	0	0	9,494	10,680
329C	203	0	8,544	8,544	949	949	949	5,696	949	0	0	949	9,494	18,038
348	200	49,368	64,558	113,925	56,963	3,798	7,595	3,798	0	0	0	0	72,153	186,078
BAC	208	747	2,989	3,737	747	2,242	747	2,242	0	0	0	0	5,979	9,716
BAD	206	0	0	0	460	460	460	0	0	0	0	0	1,381	1,381
BAE	209	1,127	2,254	3,381	0	3,945	37,194	3,945	0	0	0	0	45,084	48,465
BAF	205	0	0	0	0	0	0	480	0	0	0	0	480	480
BVC	223	0	0	0	0	835	835	0	0	835	0	835	2,506	2,506
Abundance Estimate		54,484	100,776	155,260	61,211	12,914	65,757	33,830	5,296	1,599	0	6,895	180,612	335,871
STEPOVAK BAY														
368A	199	4,025	0	4,025	8,051	0	0	0	0	0	0	0	8,051	12,076
STA	196	0	0	0	4,648	0	0	0	0	0	0	0	4,648	4,648
STB	197	0	0	0	835	0	835	0	0	0	0	0	1,671	1,671
STD	195	5,035	0	5,035	6,043	0	0	0	0	0	0	0	6,043	11,078
STE	198	3,823	0	3,823	1,529	0	765	0	0	0	0	0	2,294	6,117
Abundance Estimate		12,883	0	12,883	21,106	0	1,600	0	0	0	0	0	22,707	35,590

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Station	Haul no.	Females			Number sublegal males by size (CW)				Recruit males	Postrecruit males (CW)		Legal males	Total males	Total crab
		Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm		<165 mm	≥165 mm			
WEST NAGAI STRAIT														
301	218	3,798	0	3,798	0	0	0	0	0	0	0	0	0	3,798
332B	211	1,899	5,696	7,595	0	0	7,595	7,595	0	0	0	0	15,190	22,785
334	214	0	1,158,238	1,158,238	0	7,595	53,165	72,153	0	0	0	0	132,913	1,291,150
335	215	0	3,798	3,798	0	7,595	15,190	3,798	0	0	0	0	26,583	30,380
337	216	0	0	0	0	0	3,798	0	0	0	0	0	3,798	3,798
353	212	0	518,526	518,526	0	7,625	91,505	171,571	0	15,251	0	15,251	285,952	804,478
354	213	0	979,755	979,755	0	3,798	197,470	186,078	0	7,595	0	7,595	394,940	1,374,695
371	222	0	0	0	0	4,458	8,917	0	4,458	0	0	4,458	17,833	17,833
373A	219	2,641	0	2,641	0	2,641	2,641	0	0	0	0	0	5,282	7,923
373B	220	4,037	27,251	31,288	0	12,111	81,753	26,242	1,009	1,009	0	2,019	122,124	153,412
393	221	2,626	5,252	7,878	0	2,626	5,252	10,504	0	0	0	0	18,382	26,260
Abundance Estimate		15,001	2,698,516	2,713,517	0	48,449	467,286	477,941	5,467	23,855	0	29,323	1,022,997	3,736,512
Western Section[a]		217,181	3,951,959	4,169,136	185,042	241,803	1,930,255	3,391,430	130,915	514,722	1,025	646,664	6,395,191	10,564,327
Eastern Section[b]		270,254	2,986,905	3,257,156	311,059	107,688	939,274	1,134,071	67,656	156,403	7,750	231,810	2,723,904	5,981,058
South Peninsula District Total		487,435	6,938,864	7,426,292	496,101	349,491	2,869,529	4,525,501	198,571	671,125	8,775	878,474	9,119,095	16,545,385

[a] Western Section of the South Peninsula District includes Sanak Island, Morzhovoi Bay, and Cold Bay/Belkofski Bay.
[b] Eastern Section of the South Peninsula District includes Pavlof Bay/Volcano Bay, Beaver Bay/Balboa Bay/Unga Strait, West Nagai Strait, and Stepovak Bay.

Appendix D3.–Tanner crab abundance estimates in the Chignik District by station and sampling locale, 2016.

	Haul	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Station	no.	Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
IVANOF BAY														
4000	192	0	0	0	0	699	4,192	3,494	0	0	0	0	8,385	8,385
4007	190	13,132	13,132	26,264	5,253	21,011	189,097	73,538	0	0	0	0	288,899	315,162
4008	191	7,455	7,455	14,911	1,864	5,591	141,650	156,560	14,911	0	0	14,911	320,576	335,486
400X	193	246	3,445	3,691	628	1,256	50,244	64,061	9,421	628	0	10,049	126,238	129,929
4900	194	933	0	933	0	0	0	0	0	0	0	0	0	933
Abundance Estimate		21,766	24,032	45,799	7,745	28,557	385,183	297,653	24,332	628	0	24,960	744,098	789,895
MITROFANIA ISLAND														
4025	185	1,663	0	1,663	0	0	0	0	0	0	0	0	0	1,663
4026	184	1,774	0	1,774	3,548	0	0	0	0	0	0	0	3,548	5,323
4035	176	6,073	0	6,073	0	0	0	0	0	0	0	0	0	6,073
4037	186	0	0	0	0	0	0	2,002	0	0	0	0	2,002	2,002
4038	183	5,446	0	5,446	3,630	0	0	0	0	0	0	0	3,630	9,076
4043	182	4,347	0	4,347	0	0	0	0	0	0	0	0	0	4,347
4048	180	0	5,879	5,879	653	1,960	3,266	4,572	653	0	0	653	11,104	16,982
4049	177	5,627	0	5,627	0	0	0	0	0	0	0	0	0	5,627
4063	179	5,064	12,661	17,725	2,532	12,661	35,450	17,725	5,064	0	2,532	7,597	75,965	93,690
4064	181	2,532	63,304	65,836	0	2,532	27,854	73,433	12,661	2,532	0	15,193	119,012	184,849
4065	178	3,544	0	3,544	0	0	0	0	0	0	0	0	0	3,544
4066	174	1,282	0	1,282	0	0	0	0	0	0	0	0	0	1,282
4067	173	0	0	0	0	0	1,282	0	0	0	0	0	1,282	1,282
4068	172	0	0	0	3,846	0	1,282	0	0	0	0	0	5,128	5,128
Abundance Estimate		37,352	81,844	119,196	14,209	17,153	69,134	97,732	18,378	2,532	2,532	23,443	221,671	340,868
CHIGNIK BAY														
4256	163	3,190	47,849	51,038	0	7,443	18,076	0	0	0	0	0	25,519	76,558
4262	164	3,165	2,110	5,274	1,055	2,110	5,274	3,165	0	0	0	0	11,603	16,878
4264	169	12,483	92,732	105,215	8,917	9,808	62,416	42,799	0	1,783	0	1,783	125,723	230,938

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Station	Haul no.	Females			Number sublegal males by size (CW)				Recruit males	Postrecruit males (CW)		Legal males	Total males	Total crab
		Juvenile	Adult	Total	<70 mm	70–91 mm	92–114 mm	>114 mm		<165 mm	≥165 mm			
4265	171	0	366	366	733	733	14,658	5,863	0	0	0	0	21,988	22,354
4266	162	869	0	869	5,213	0	0	0	0	0	0	0	5,213	6,082
4267	165	949	0	949	949	0	0	0	0	0	0	0	949	1,899
4270	167	0	5,306	5,306	0	758	9,096	12,886	0	0	0	0	22,739	28,045
4271	168	0	108,457	108,457	456	911	20,051	17,317	0	1,823	0	1,823	40,557	149,014
4272	159	2,643	0	2,643	1,762	0	0	0	0	0	0	0	1,762	4,405
4274	161	5,696	1,899	7,595	949	0	4,747	1,899	0	0	0	0	7,595	15,190
4278	156	28,481	0	28,481	32,279	1,899	9,494	2,848	0	0	0	0	46,519	75,001
4282	158	16,139	0	16,139	28,481	0	0	0	0	0	0	0	28,481	44,621
4286	155	5,696	0	5,696	3,798	0	0	0	0	0	0	0	3,798	9,494
4287	157	44,725	0	44,725	64,457	0	1,315	0	0	0	0	0	65,773	110,498
4312	166	0	4,853	4,853	0	0	159,663	128,327	10,445	1,492	0	11,937	299,928	304,781
4964	170	1,271	0	1,271	848	2,119	3,390	424	0	0	0	0	6,781	8,052
Abundance Estimate		125,307	263,572	388,877	149,897	25,781	308,180	215,528	10,445	5,098	0	15,543	714,928	1,103,810
KUJULIK BAY														
4296	154	0	3,646	3,646	0	911	1,367	456	0	0	0	0	2,734	6,380
4298	152	0	0	0	851	0	0	0	0	0	0	0	851	851
4301	151	0	0	0	949	0	0	0	0	0	0	0	949	949
Abundance Estimate		0	3,646	3,646	1,800	911	1,367	456	0	0	0	0	4,534	8,180
Chignik District Total		184,425	373,094	557,518	173,651	72,402	763,864	611,369	53,155	8,258	2,532	63,946	1,685,231	2,242,753

Appendix D4.–Tanner crab abundance estimates in the Eastern Aleutian District by station and sampling locale, 2016.

	Haul	Females			No. sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
Station	no.	Juvenile	Adult	Total	<70 mm	70-91 mm	92-114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
AKUTAN BAY SECTION														
AKA	242	11,017	36,722	47,738	3,672	23,869	14,689	0	0	0	0	0	42,230	89,968
AKC	243	22,530	22,530	45,060	4,778	143,346	262,801	66,895	0	0	0	0	477,820	522,879
AKD	241	16,769	370,777	387,546	10,390	13,507	17,663	7,273	0	1,039	0	1,039	49,872	437,417
AKG	240	3,798	0	3,798	4,747	0	0	0	0	0	0	0	4,747	8,544
AKL	239	2,848	0	2,848	5,696	0	0	0	0	0	0	0	5,696	8,544
Totals:		56,962	430,029	486,990	29,283	180,722	295,153	74,168	0	1,039	0	1,039	580,365	1,067,352
UNALASKA/KALEKTA BAY SECTION														
KAA	244	0	1,917	1,917	0	1,917	12,463	2,876	0	0	0	0	17,256	19,173
UNC	251	3,003	0	3,003	2,002	0	1,001	2,002	0	0	0	0	5,005	8,008
UND	245	0	646	646	0	4,519	33,570	8,392	646	0	0	646	47,127	47,773
UNE	249	5,286	1,322	6,608	2,643	0	0	0	0	0	0	0	2,643	9,251
UNF	250	18,038	949	18,988	13,291	0	0	0	949	0	0	949	14,241	33,228
UNG	246	1,055	2,110	3,165	3,165	2,110	3,165	0	0	0	0	0	8,439	11,603
UNJ	248	5,696	1,899	7,595	2,848	949	949	0	0	0	0	0	4,747	12,342
Totals:		33,078	8,843	41,922	23,949	9,495	51,148	13,270	1,595	0	0	1,595	99,458	141,378
MAKUSHIN BAY SECTION														
MKB	257	67,939	372,571	440,510	24,669	14,096	9,163	19,735	1,410	2,819	0	4,229	71,891	512,401
MKC	258	2,468	493,689	496,157	3,275	2,456	27,837	81,055	3,275	29,475	819	33,568	148,192	644,349
MKE	259	5,152	0	5,152	6,441	0	1,288	0	0	0	0	0	7,729	12,881
MKF	256	15,726	9,251	24,977	10,176	4,625	2,775	0	0	0	0	0	17,576	42,553
MKJ	255	18,784	29,219	48,003	16,697	4,174	2,087	0	0	0	0	0	22,958	70,962
MKK	252	11,633	0	11,633	9,971	0	0	0	0	0	0	0	9,971	21,603
MKN	253	16,226	3,477	19,703	5,795	1,159	0	0	0	0	0	0	6,954	26,657
MKP	254	38,909	107,918	146,827	15,226	25,559	19,033	13,051	0	544	0	544	73,413	220,240
Totals:		176,837	1,016,125	1,192,962	92,250	52,069	62,183	113,841	4,685	32,838	819	38,341	358,684	1,551,646
Eastern Aleutian District Total		266,877	1,454,997	1,721,874	145,482	242,286	408,484	201,279	6,280	33,877	819	40,975	1,038,507	2,760,376