

Fishery Management Report No. 16-16

Annual Management Report for Shellfish Fisheries in the Kodiak, Chignik, and Alaska Peninsula Areas, 2014

by

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May 2016

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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Weights and measures (metric)		General		Mathematics, statistics	
centimeter	cm	Alaska Administrative Code	AAC	<i>all standard mathematical signs, symbols and abbreviations</i>	
deciliter	dL	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	H_A
gram	g	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	base of natural logarithm	e
hectare	ha	at	@	catch per unit effort	CPUE
kilogram	kg	compass directions:		coefficient of variation	CV
kilometer	km	east	E	common test statistics	(F, t, χ^2 , etc.)
liter	L	north	N	confidence interval	CI
meter	m	south	S	correlation coefficient (multiple)	R
milliliter	mL	west	W	correlation coefficient (simple)	r
millimeter	mm	copyright	©	covariance	cov
		corporate suffixes:		degree (angular)	$^\circ$
Weights and measures (English)		Company	Co.	degrees of freedom	df
cubic feet per second	ft ³ /s	Corporation	Corp.	expected value	E
foot	ft	Incorporated	Inc.	greater than	>
gallon	gal	Limited	Ltd.	greater than or equal to	\geq
inch	in	District of Columbia	D.C.	harvest per unit effort	HPUE
mile	mi	et alii (and others)	et al.	less than	<
nautical mile	nmi	et cetera (and so forth)	etc.	less than or equal to	\leq
ounce	oz	exempli gratia (for example)	e.g.	logarithm (natural)	ln
pound	lb	Federal Information Code	FIC	logarithm (base 10)	log
quart	qt	id est (that is)	i.e.	logarithm (specify base)	\log_2 , etc.
yard	yd	latitude or longitude	lat or long	minute (angular)	'
		monetary symbols (U.S.)	\$, ¢	not significant	NS
Time and temperature		months (tables and figures): first three letters	Jan, ..., Dec	null hypothesis	H_0
day	d	registered trademark	®	percent	%
degrees Celsius	°C	trademark	™	probability	P
degrees Fahrenheit	°F	United States (adjective)	U.S.	probability of a type I error (rejection of the null hypothesis when true)	α
degrees kelvin	K	United States of America (noun)	USA	probability of a type II error (acceptance of the null hypothesis when false)	β
hour	h	U.S.C.	United States Code	second (angular)	"
minute	min	U.S. state	use two-letter abbreviations (e.g., AK, WA)	standard deviation	SD
second	s			standard error	SE
				variance	
Physics and chemistry				population	Var
all atomic symbols				sample	var
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				

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by

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May 2016

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This document should be cited as follows:

Stichert, M., N. W. Nichols, and K. Phillips. 2016. Annual management report for shellfish fisheries in the Kodiak, Chignik, and South Alaska Peninsula Management Areas, 2014. Alaska Department of Fish and Game, Fishery Management Report No. 16-16, Anchorage.

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ABSTRACT

This management report summarizes 2014 shellfish fisheries in the Kodiak, Chignik, and South Peninsula districts. During 2014, commercial fisheries occurred for Dungeness crab *Cancer magister*, giant Pacific octopus *Octopus dofleini*, and red sea cucumber *Parastichopus californicus*. Weathervane scallop *Patinopecten caurinus* fisheries are summarized in a separate report. Kodiak District supports annual golden king crab *Lithodes aequispinus* and Pandalid shrimp fisheries that have low effort and harvest. All districts have supported Tanner crab *Chionoecetes bairdi* fisheries in recent years, but no fishery occurred during 2014 due to low Tanner crab abundance.

Key words: Tanner crab, *Chionoecetes bairdi*, Dungeness crab, *Metacarcinus magister*, red sea cucumber, *Parastichopus californicus*, red king crab, *Paralithodes camtschaticus*, golden king crab, *Lithodes aequispinus* Pacific octopus, *Octopus dofleini*, Pandalid shrimp, historical harvest, catch per unit effort, CPUE, exclusive economic zone, EEZ, guideline harvest level, GHL, Board of Fisheries, BOF, Kodiak, Chignik, Alaska Peninsula

INTRODUCTION

This management report provides information on shellfish fisheries managed by the Alaska Department of Fish and Game (ADF&G) in the Gulf of Alaska south of Cape Douglas (lat 58°51.10' N), west of Cape Fairfield (long 149° W), and east of Scotch Cap Light (long 164°44.72' W; Figure 1). All shellfish fisheries are managed by ADF&G in both state waters (0–3 nmi) as well as the Exclusive Economic Zone (EEZ; 3–200 nmi), except for octopus which is managed by ADF&G only in state waters.

Shellfish fisheries are regulated using management areas, districts, and sections that vary by species. For example, Tanner crab management is defined by district (e.g., Kodiak, Chignik, and South Peninsula districts), king crab management is defined by area (e.g., Kodiak and Alaska Peninsula areas), whereas shrimp management is defined by area and section. The purpose of this report is to summarize current commercial shellfish fishery regulations and management actions as well as review fishery-specific harvest, effort, and value with emphasis on the 2013/14 season.

ADF&G issues emergency orders to enact regulatory action to open, close, and modify fishing periods or fishing areas. In total, 12 emergency orders were issued during 2013/14 for Kodiak, Chignik, and South Alaska Peninsula district shellfish fisheries (Table 1).

KODIAK

Management boundaries for most shellfish fisheries around Kodiak Island include Pacific Ocean waters south of Cape Douglas, east of Cape Kumlik (long 157°27' W), and west of Cape Fairfield (Figure 2). The management boundaries vary slightly for Dungeness crab *Metacarcinus magister* and Pandalid shrimp, which include waters south of Cape Douglas and west of Kilokak Rocks (long 156°20.22' W) on the Alaska Peninsula.

Historically, Kodiak waters supported substantial red king crab *Paralithodes camtschaticus*, Tanner crab *Chionoecetes bairdi*, and Pandalid shrimp fisheries. The Kodiak Area red king crab stock has not supported a commercial fishery since the early 1980s. Tanner crab stocks support a commercial fishery most years. Pandalid shrimp stocks currently support only negligible harvests. Minor harvests of green sea urchins *Strongylocentrotus droebachiensis*, golden king crab *Lithodes aequispinus*, and grooved Tanner crab *Chionoecetes tanneri* have also occurred. Various clam species, primarily razor clams *Siliqua sp.*, were historically harvested but are no longer targeted in commercial fisheries.

Commercial shellfish species harvested from Kodiak waters in 2013/14 were red sea cucumber *Parastichopus californicus*, Dungeness crab, giant Pacific octopus *Octopus dofleini*, and weathervane scallop *Patinopecten caurinus*. Weathervane scallop fisheries are summarized in a separate report.

ALASKA PENINSULA

Management boundaries for most shellfish fisheries along the Alaska Peninsula include Pacific Ocean waters west of Kilokak Rocks and east of Scotch Cap Light (Figure 3). However, for king crab fisheries the eastern boundary is located at the longitude of Cape Kumlik. Specific information on Alaska Peninsula management boundaries is described in detail in the fishery descriptions that follow.

Historically, commercial shellfish fisheries for red king crab, Tanner crab, grooved Tanner crab, Dungeness crab, Pandalid shrimp, red sea cucumber, and giant Pacific octopus have occurred along the Alaska Peninsula. Most shellfish stocks in the area are depressed and commercial fisheries for red king crab and shrimp have not occurred since 1982. During 2014, octopus and Dungeness crab were commercially harvested, whereas Tanner crab was not open.

TANNER CRAB

INTRODUCTION

Commercial regulatory harvest strategies specify mature male abundance and fishery management thresholds that must be achieved before commercial fishing may occur (Urban et al. 1999). Guideline harvest levels (GHL) are determined annually using stock abundance information collected during an ADF&G trawl survey on R/V *Resolution*. Tanner crab seasons in the Kodiak, Chignik, and South Peninsula districts may open by regulation on January 15 unless delayed by weather as specified in regulation (i.e., 5 AAC 35.510(a)(2), (b)(2), and (c)(2)).

KODIAK DISTRICT

Description of the District

The Kodiak District for Tanner crab includes Pacific Ocean waters south of the latitude of Cape Douglas, west of the longitude of Cape Fairfield, and east of the longitude of Cape Kumlik. The district is subdivided into eight sections: Northeast, Eastside, Southeast, Southwest, Semidi Island Overlap, Westside, North Mainland, and South Mainland (Figure 2).

Overview of Current Fishery Regulations

The Kodiak District is a limited entry, superexclusive registration district for Tanner crab. Criteria within the regulatory harvest strategy (5 AAC 35.507) specify at least 2 sections within the district must exceed the mature male abundance threshold to allow a commercial fishery. Additionally, the estimated abundance of legal-size male Tanner crab must provide for a district GHL of at least 400,000 pounds, and each section open to fishing must have a minimum GHL of at least 100,000 pounds.

The Kodiak District pot limit is based on a sliding scale, ranging from 20 to 60 pots per vessel depending on the district GHL. Crab pots may only be set or retrieved during daily fishing periods from 8:00 a.m. to 5:59 p.m., although daily fishing periods may be extended based on ADF&G's assessment of effort, fishery manageability, remaining GHL, and harvest rate.

Historical Background

The Tanner crab fishery in the Kodiak District began in 1967 when 110,961 pounds were landed (Table 2). Compared to the Kodiak king crab fishery, the Tanner crab fishery was slower to develop, because consumers did not readily accept Tanner crab compared to king crab, and processing facilities had yet to develop effective meat extraction techniques for canning.

Once developed, the Tanner crab fishery quickly expanded, and harvests averaged approximately 7 million pounds per year from 1968 through the 1971/72 season. ADF&G initiated pot surveys in 1973 to estimate crab abundance, predict recruitment trends, and establish annual harvest levels. Annual harvest increased to 30 million pounds by the early 1970s and peaked at over 33 million pounds in the 1977/78 season. During the 1970s, the Alaska Board of Fisheries (BOF) implemented an April 30 fishing season closure date to protect crab during mating and molting, and established a minimum legal retention carapace width (CW) of 5.5 inches.

Beginning December 1978, the federal government assumed responsibility of Tanner crab management in the EEZ. Under joint state and federal Tanner crab management, the state managed Tanner crab in waters from shore to 3 nautical miles (nmi) offshore and the federal government managed Tanner crab in waters 3 to 200 nmi offshore under a fishery management plan (FMP). Joint jurisdiction occurred until 1987, when the state again assumed full management authority for Tanner crab in the Kodiak District.

In the early 1980s, Tanner crab abundance and commercial harvests began to decline. Concerns about the effectiveness of pot surveys to predict recruitment of sublegal crab prompted ADF&G to test trawl gear as the primary survey platform. In 1988, trawl surveys became the preferred stock assessment method based on study results that indicated trawl surveys were more efficient and sampled a wider range of crab sizes and thus better represented the entire crab population (Jackson 1990).

The Kodiak District Tanner crab stock continued to decline, and by the early 1990s, annual harvests averaged less than 2 million pounds. Beginning with the 1994/95 season, the fishery was closed due to low Tanner crab abundance. The fishery did not reopen until the 2000/01 season. During the 6-year closure period a new regulatory harvest strategy was developed by ADF&G and adopted by BOF. The revised harvest strategy adopted conservative management measures aimed at preventing overharvest and localized depletion.

After ADF&G revised the harvest strategy, the Commercial Fisheries Entry Commission (CFEC) developed a limited entry program for the Kodiak District Tanner crab fishery using 1993/94, 1994/95, 2000/01, and 2001/02 as the qualifying seasons to determine eligibility; a total of 180 limited entry permits were initially allocated to the fishery.

The 2002/03 Kodiak District Tanner crab season was the first prosecuted under the limited entry program, and the fishery was prosecuted annually through the 2012/13 season. During 2002/03–2012/13, harvest ranged from approximately 360,000 to 2.1 million pounds and participation ranged from 31 to 80. This level of participation was a marked reduction from the average of 165 vessels that participated in the 10 seasons prior to limited entry (1986/87–1993/94, 2000/01, and 2001/02; Table 2).

Overview of the 2014 Kodiak District Tanner Crab Fishery

The 2013 Kodiak District crab survey estimate of mature male Tanner crab abundance was above the regulatory stock size threshold in Eastside and Southeast sections, but both sections were below the 100,000 pound minimum fishery GHL requirement. Therefore, the commercial fishery did not open for the 2014 season.

Status of Kodiak District Tanner Crab Stock

The 2013 Kodiak District total abundance estimate was 200 million Tanner crab, the highest estimate since the trawl survey was implemented as the primary assessment tool in 1988. Despite the high overall abundance estimate, the number of legal-size males was estimated at only 1.8 million crab, which was a decrease from the 5 million legal-size male crab observed during the 2012 survey and was the lowest estimate of legal-size male crab since 1998. The highest densities of crab were found in Ugak Bay (Figure 4; Spalinger 2014).

Egg clutches of 1,981 mature female Tanner crab from the 2013 Kodiak District trawl survey were examined; 56.7% were primiparous, an increase from 10.9% in 2012. Female egg clutches were more than half full in 41.2% of samples; this was lower than during the 2012 survey when 72.0% of mature females sampled had egg clutches that were more than half full (Spalinger 2014).

CHIGNIK DISTRICT

Description of the District

The Chignik District for Tanner crab includes Pacific Ocean waters east of a line from the southernmost tip of Kupreanof Point (lat 55°33.98' N, long 159°35.88' W) to the easternmost point of Castle Rock (lat 55°16.80' N, long 159°29.11' W), and extending southeast 135° from the easternmost point of Castle Rock, and west of the longitude of the easternmost tip of Cape Kumlik (Figure 3).

Overview of Current Fishery Regulations

The Chignik District is an open access, superexclusive registration district for Tanner crab. Criteria within the harvest strategy specify the district GHL must be at least 200,000 pounds for a commercial fishery to occur. Vessel size is limited to 58 feet or less in overall length and the pot limit varies depending on the district GHL. The number of pots per vessel is limited to no more than 30 pots when the district GHL is less than 2 million pounds. No more than 50 pots per vessel may be operated when the GHL exceeds 2 million pounds of Tanner crab. Crab pots may only be set or retrieved during daily fishing periods from 8:00 a.m. to 5:59 p.m.

Historical Background

The Chignik District Tanner crab fishery began in 1968 when 21,100 pounds were harvested (Table 4). The fishery peaked during the 1975/76 season when 35 vessels harvested approximately 11 million pounds. Annual harvests declined through the late 1970s until 1988, when a small increase in harvest occurred. Historically, most effort occurred during late March following the closure of the Tanner crab fisheries in the Kodiak and South Peninsula districts. The areas of highest production were offshore between Mitrofanina Island and Lighthouse Rocks.

ADF&G began Chignik District Tanner crab surveys in 1981. Surveys in the early 1980s predicted poor recruitment and subsequent fisheries had lower harvests. Catches declined first in

productive offshore areas, followed by declines inside bays and nearshore waters. The district was closed to commercial fishing following the 1989/90 season and remained closed through the 2003/04 season.

The Chignik District reopened to commercial Tanner crab fishing during the 2004/05 and 2005/06 seasons, closed for the 2006/07 through 2009/10 seasons, reopened for the 2010/11 and 2011/12 seasons, and closed again for the 2012/13 season (Table 4). During those 4 seasons, harvest ranged from approximately 143,000 to 698,000 pounds and participation ranged from 4 to 28 vessels (Table 4).

Overview of the 2014 Chignik District Tanner Crab Fishery

The 2013 Chignik District crab survey estimate of mature male Tanner crab abundance was above the regulatory stock size threshold but below the 200,000 pound minimum GHL requirement. Therefore, the commercial fishery did not open for the 2014 season.

Status of Chignik District Tanner Crab Stock

The 2013 Chignik District total abundance estimate of 31 million Tanner crab was an increase from 5.7 million crab estimated in 2012, and the second highest recorded since the start of the survey in 1988. The number of legal-sized males was estimated at 765,000, which was similar to the 785,000 observed in 2012 and the fifth highest estimate on record. The highest densities of crab were found in Castle Bay (Figure 5; Spalinger 2014).

Egg clutches of 209 mature female Tanner crab from the 2013 Chignik District trawl survey were examined; 90.4% were multiparous, a decrease from 96.0% observed in 2012. Female egg clutches were more than half full in 44.0% of samples (Spalinger 2014).

SOUTH PENINSULA DISTRICT

Description of the District

The South Peninsula District for Tanner crab includes Pacific Ocean waters west of a line from the southernmost tip of Kupreanof Point to the easternmost tip of Castle Rock, west of a line extending southeast 135° from the easternmost tip of Castle Rock, and east of a line extending south from Scotch Cap Light (Figure 3). The district is subdivided into 2 sections: Eastern and Western divided at long 162° W.

Overview of Current Fishery Regulations

The South Peninsula District is an open access, nonexclusive registration district for Tanner crab. Vessels are limited to 58 feet or less in overall length and the pot limit ranges from 30 to 50 pots per vessel depending on the GHL. Crab pots may only be set or retrieved during daily fishing periods from 8:00 a.m. to 5:59 p.m.

Historical Background

Harvest of Tanner crab in the South Peninsula District first occurred in 1967 when 3,100 pounds were landed (Table 5). The fishery expanded quickly and by the 1973/74 season, the annual harvest exceeded 8 million pounds. In response to increasing harvest levels, GHLs were established in 1974, fishing seasons were established in 1975, and a minimum crab size limit of 5.5 inches CW was established in 1976. During the 5 fishing seasons from 1974/75 through 1978/79, harvests averaged approximately 7 million pounds. From 1979/80 to 1983/84, harvest

and CPUE declined and in the 1983/84 season, the fleet landed a total 2 million pounds. Recruitment improved and harvest increased to almost 4 million pounds by 1985/86. At the conclusion of the 1988/89 season, ADF&G predicted a decline in recruitment based on analysis of ADF&G trawl survey data. The fishery was closed from 1990 through 2000 due to low abundance of legal-sized crab.

During the extended closure, a comprehensive harvest strategy was developed to guide commercial Tanner crab fisheries in the South Peninsula District. Similar to the harvest strategies implemented in Kodiak and Chignik, the South Peninsula District harvest strategy specified minimum mature male abundance (biological thresholds) and minimum GHs (management thresholds) must be achieved prior to opening a commercial fishery. Criteria in the harvest strategy were satisfied for a commercial fishery in 2000/01 and the South Peninsula District opened for the first time since 1989 with a 375,000-pound GH. Fifty-six vessels harvested 260,982 pounds from 69 landings. The fishery was open for 4 days.

The fishery was closed again for the 2001/02 through 2003/04 seasons due to low Tanner crab abundance but reopened for the 2004/05 season and was prosecuted annually through the 2012/13 season. During 2001/02 through 2012/13, harvest ranged from approximately 166,000 to 2.9 million pounds and participation ranged from 6 to 56 vessels (Table 5).

The South Peninsula District is large in comparison to the Kodiak and Chignik districts and historically was not separated into smaller management units (i.e., sections). Consequently, high concentrations of crab in a small number of bays or marginally commercial quantities spread across large areas allowed for districtwide commercial fisheries to occur, although certain portions of the district were likely not capable of sustaining commercial harvest (Urban and Vining 2005). Therefore, the district was divided into 2 sections at long 162° W in 2005 (Figure 3). This allowed for a fishery to occur in areas where stocks are capable of sustaining a harvest while protecting other areas where stocks are weak or rebuilding.

Overview of the 2014 South Peninsula District Tanner Crab Fishery

The 2013 South Peninsula District Tanner crab survey estimate of mature male Tanner crab abundance was below the regulatory stock size threshold in both the Eastern and Western sections. Therefore, the commercial fishery did not open for the 2014 season.

Status of South Peninsula District Tanner Crab Stock

The 2013 South Peninsula District total abundance estimate of 42 million Tanner crab was an increase from 12.3 million crab estimated in 2012. The number of legal-sized male crab was estimated at 1.0 million, which was a decrease from 4.2 million observed in 2012 and the lowest estimate since 2006. The highest densities of crab were found in Pavlof Bay (Figure 5; Spalinger 2014).

Egg clutches of 539 mature female Tanner crab from the 2013 South Peninsula District trawl survey were examined; 86.6% were multiparous, an increase from 82.5% observed in 2012. Female egg clutches were more than half full in 48.8% of samples (Spalinger 2014).

DUNGENESS CRAB

INTRODUCTION

Dungeness crab fisheries in the Kodiak, Chignik, and Alaska Peninsula districts are part of Registration Area J and are managed from the ADF&G Kodiak office. GHLS are not established for Dungeness crab in the registration area. The commercial fishery is managed by regulating sex, size, and season (“3-S” management). Under 3-S management, only male crab 6.5 inches CW or larger may be retained during the open fishing season. There are no pot limits or vessel size restrictions for Dungeness crab fisheries in the Kodiak, Chignik, or Alaska Peninsula districts. All Registration Area J Dungeness crab fisheries are open access fisheries. However, participants must hold a valid CFEC interim-use permit card and an ADF&G shellfish registration.

KODIAK DISTRICT

The Kodiak District for Dungeness crab includes waters south of the latitude of Cape Douglas, west of the longitude of Cape Fairfield and east of the longitude of Kilokak Rocks (Figure 6). The Kodiak District is an open access, superexclusive registration area for Dungeness crab. Dungeness crab may be taken from May 1 through December 30 in the northern portion of Kodiak District. The fishing season south of the line from the southernmost tip of Boot Point (lat 56°49.58' N; Eastside Kodiak Island) and Cape Ikolik (lat 57°17.40' N; Westside Kodiak Island), is June 15 through December 30 (Figure 6).

Historical Background

Dungeness crab were first commercially harvested in the Kodiak District beginning in 1962. Harvest peaked in the late 1960s then slowly declined through the late 1970s (Table 6). This trend was reversed starting in the early 1980s when declines of other commercially harvested Alaska shellfish created renewed interest in Kodiak Dungeness crab (Jackson 1997). As a result, effort and harvest rebounded considerably and remained relatively stable through the late 1980s. Beginning in 1991, Dungeness crab harvests again declined and remained depressed through the 2007 season. During the 2008 through 2010 seasons, approximately 1 million pounds of Dungeness crab were harvested, which were the highest reported harvests since the 1993 season. Annual harvests declined to record low harvest in 2013.

Due to paralytic shellfish poisoning (PSP) in Kodiak District Dungeness crab, the Alaska Department of Environmental Conservation (ADEC) placed restrictions on the sale of whole cooked crab starting in 1992.

2014 Kodiak District Dungeness Crab Fishery

The 2014 fishery opened May 1 except in the southern portion of Kodiak Island, which opened June 15 (Figure 6). Six vessels participated in the fishery. Vessels ranged in size from 24 to 65 feet in length. The number of pots ranged from 250 to 900 pots per vessel. By regulation (5 AAC 32.410) the fishery closed on December 30, 2014.

Total harvest was 222,438 pounds from 33 landings (Table 6). Due to the low number of participating vessels, most harvest by statistical area is confidential (Table 7). Historically, most Dungeness crab harvested in the Kodiak District were taken adjacent to Sitkinak and Tugidak Islands (Figure 6). The first delivery occurred on June 8. Harvest peaked during July then

declined through September, with little harvest in October and November (Figure 7). CPUE averaged 3 legal crab per pot for the season. Based on fish ticket information, the average weight of Dungeness crab harvested during the 2014 fishery was 2.1 pounds.

The average price per pound of Dungeness crab in 2014 was \$2.85 (Table 6). The estimated exvessel value for the 2014 fishery was approximately \$634,000, compared to approximately \$181,000 in 2013.

CHIGNIK DISTRICT

The Chignik District for Dungeness crab includes waters west of Kilokak Rocks and east of a line extending 135° southeast from Kupreanof Point (Figure 8). The Chignik District is an open access, superexclusive registration district for Dungeness crab. Only male Dungeness crab 6.5 inches CW or larger may be taken from May 1 to December 30.

Historical Background

Prior to 2001, the Chignik District was part of the Alaska Peninsula District. Effort and harvest in the Chignik District have been sporadic and generally low.

2014 Chignik District Dungeness Crab Fishery

The Chignik District was created by the BOF prior to the 2002 season and fewer than 3 vessels or processors have participated in the fishery annually since that time. Therefore, harvest and effort data is combined with the Alaska Peninsula District to ensure confidentiality. During the 2014 season, 6 vessels participated in either the Chignik or Alaska Peninsula districts, landing 89,343 pounds of Dungeness crab (Table 8).

ALASKA PENINSULA DISTRICT

The Alaska Peninsula District for Dungeness crab includes waters west of a line extending 135° southeast from Kupreanof Point and east of the longitude of Scotch Cap Light (Figure 8). The Alaska Peninsula District is an open access, superexclusive registration district for Dungeness crab. Only male Dungeness crab 6.5 inches CW or larger may be taken from May 1 to December 30.

Historical Background

Historically, annual Dungeness crab harvest levels in the Alaska Peninsula District were sporadic, ranging from a low of 11,000 pounds in 1971 to a high of approximately 1.3 million pounds in 1968 (Table 8). Overall, poor market conditions and better prospects in other crab fisheries generally limited the amount of commercial effort and harvest. During the early 1980s, the decline in king crab stocks and a stronger market for Dungeness crab generated renewed interest in the fishery and harvests rapidly increased. In response, in 1983 the BOF designated the Alaska Peninsula District as a superexclusive registration district. Since that time, effort in the district has declined and recent catches remain relatively small.

2014 Alaska Peninsula District Dungeness Crab Fishery

The 2014 Alaska Peninsula District Dungeness crab season opened May 1. Due to the limited number of participants, harvest data is combined with the Chignik District to maintain confidentiality (Table 8).

Status of Kodiak, Alaska Peninsula, and Chignik Districts Dungeness Crab Stocks

In the Kodiak, Chignik, and Alaska Peninsula districts, stock assessment activities are limited to monitoring and opportunistically sampling commercial fishery deliveries. Measures of stock size or status are not possible based on these limited data.

KING CRAB

GENERAL KING CRAB INFORMATION

Red King Crab

Red king crab fisheries in the Kodiak Area open by regulation on September 25 if biomass estimates meet or exceed threshold levels contained in the *Harvest Strategy for Kodiak and Bristol Bay Red King Crab and Saint Matthew Island and Pribilof Blue King Crab, Special Publication Number 7* (Pengilly and Schmidt 1995). In the Kodiak Area, a population threshold of 5.12 million mature females exists for the entire management area, which is further divided by individual management district. Additional harvest strategy criteria restricts harvest to only 20% of mature males and caps harvest on legal-sized males at 60% of the estimated legal-sized population. Stock size is estimated annually by a trawl survey conducted onboard the R/V *Resolution*. Trawl surveys indicate red king crab population levels remain below threshold for a commercial fishery in the Kodiak and Alaska Peninsula areas.

Golden King Crab

Minor harvests of golden king crab have occurred in the Kodiak Area. The Alaska Peninsula Area remains largely unexplored. Golden king crab in the Kodiak and Alaska Peninsula areas may be harvested from January 1 to December 31. GHLS are not established for either fishery; however, effort, reporting, harvest, and legal gear are regulated through a commissioner permit.

KODIAK AREA

Description of the Area

The Kodiak Area for king crab includes waters of the Gulf of Alaska south of Cape Douglas, west of long 149° W, and east of Cape Kumlik (Figure 9). The Kodiak Area is further subdivided into 5 districts for king crab management: the Northeast, Southeast, Southwest, Semidi Island, and Shelikof.

RED KING CRAB

Overview of Current Fishery Regulations

The Kodiak Area is an exclusive registration area for red king crab. The Kodiak Area pot limit ranges from 25 to 75 pots per vessel depending on the GHL. GHLS are established annually based on the surveyed king crab population when provisions of the harvest strategy are met (Pengilly and Schmidt 1995).

Historical Background

Beginning in 1936, small amounts of red king crab were landed in Kodiak, but catches were not officially recorded until 1950. During this time, the fishery was largely exploratory as fishermen were developing gear, locating commercially harvestable quantities of crab, and expanding

markets. Once established, the fishery grew rapidly and by 1960, 21 million pounds of red king crab were harvested during a year-long season (Table 9). Harvest peaked during the 1965/66 season, when over 94 million pounds of crab were landed during a 12-month fishing season. The fishing season was reduced to 10 months beginning with the 1966/67 season. From that time, catches ranged from approximately 11 to 74 million pounds through the 1981/82 season.

Harvest declined sharply during the 1982/83 season, totaling 8.7 million pounds, which was the lowest recorded catch in 23 years (Table 9). High effort and low catch resulted in an average CPUE of only 4 legal crab per pot for the season. These factors, combined with rapidly declining abundance estimates observed during annual assessment surveys, prompted ADF&G to close the commercial red king crab fishery prior to the start of the 1983/84 season; the red king crab fishery has not reopened.

Status of Kodiak Area Red King Crab Stocks

The Kodiak red king crab population remains at historically low levels. Annual fluctuation in population estimates occur when populations become depressed and unevenly distributed. A small increase or decrease in the absolute number of king crab encountered during the trawl survey can result in large fluctuations in the population estimate from year to year.

During 2013, the trawl survey completed 208 hauls in the Kodiak Management Area. The 2013 red king crab abundance estimate was 280,497 crab, up from an estimated 201,756 crab in 2012. Legal-size male red king crab abundance was estimated to be 21,050 crab, an increase from the 17,135 legal-size males estimated in 2012. Approximately 63.8% of all mature female crab sampled during the 2013 trawl survey had egg clutches at least half full, which is similar to the 2012 observation (63.4%). The majority of all red king crab observed during the survey were located in Alitak Bay (Spalinger 2014; Figure 10).

GOLDEN KING CRAB

Overview of Current Fishery Regulations

The Kodiak Area is a nonexclusive registration area for golden king crab. Under provisions of a commissioner permit, vessels are limited to a maximum of 75 pots, and only male crab 6.5 inches CW or larger may be retained. To minimize bycatch of red king crab, all golden king crab pots must be fished at a minimum depth of 100 fathoms. There is no closed season for golden king crab.

Historical Background

Interest in golden king crab increased after the collapse of regional red king crab stocks in the early 1980s. Although golden king crab were occasionally landed incidental to red king crab, the first targeted landings occurred in 1983. In that year, 12 vessels explored the Kodiak Area with limited success. The catch totaled 111,398 pounds from 36 landings (Table 10). Peak harvest occurred in 1986 when 146,679 pounds were landed.

Since 1990, due to the limited number of vessels that annually targeted golden king crab, most catch and effort information is confidential. One commissioner permit was issued for golden king crab during 2014.

Status of Kodiak Area Golden King Crab Stock

ADF&G does not assess the Kodiak Area golden king crab stock. The population is believed to be small compared to golden king crab stocks in the Bering Sea, Aleutian Islands, and inside waters of Southeast Alaska.

ALASKA PENINSULA AREA

Description of the Area

The Alaska Peninsula Area for king crab includes waters between Cape Kumlik and Scotch Cap Light (Figure 11). The Alaska Peninsula is further divided into the Unimak Bight, Central, and West Chignik districts.

RED KING CRAB

Overview of Current Fishery Regulations

The Alaska Peninsula Area is a superexclusive registration area for red king crab. The pot limit ranges from 40 to 75 pots per vessel depending on the GHL. If the area were to reopen to commercial fishing, GHLs would be established based on the surveyed king crab population (Pengilly and Schmidt 1995).

Historical Background

The red king crab fishery in the Alaska Peninsula Area began in 1947, when 141,000 pounds were landed. The fishery expanded through the early 1960s then increased substantially starting in 1964. The largest recorded catch of 23 million pounds occurred in 1966 (Table 11). Following peak harvest, catches diminished and averaged approximately 4 million pounds annually throughout 1970s. Most harvest occurred in the Central District near Pavlof Bay and in the Unimak Bight District. Catches in the West Chignik District varied depending on effort but did not exceed 386,000 pounds annually (Figure 11).

During the 1980/81 season, Alaska Peninsula Area harvest totaled just over 5 million pounds, which was the highest catch on record since the 1968/69 season. Recruitment of crab into the fishery declined after the 1980/81 season, resulting in an areawide closure prior to the 1983/84 season. The Alaska Peninsula Area has not reopened to commercial red king crab fishing since that time.

Status of Alaska Peninsula Area Red King Crab Stocks

Based on 2013 ADF&G trawl survey results, the red king crab stock remains at historically low levels. The 2013 estimated population was 331,723 crab, which was higher than the 2012 estimate of 78,365 crab. Legal-size male red king crab abundance was estimated to be 99,689 crab, an increase from the 35,697 legal-size males estimated in 2012. Similar to the Kodiak Area, annual fluctuations in population estimates are due to sampling variability associated with depressed and unevenly distributed crab populations. The highest density of red king crab observed during the survey was located in Volcano Bay (Spalinger 2014; Figure 10).

GOLDEN KING CRAB

Overview of Current Fishery Regulations

The Alaska Peninsula Area is a superexclusive registration area for golden king crab. Exploratory fishing for golden king crab may occur under guidelines of a commissioner permit. Male golden king crab 6.5 inches or greater in CW may be taken from January 1 through December 31.

Historical Background

Fishermen have occasionally expressed interest in exploring the Alaska Peninsula Area for golden king crab although little effort has occurred. No vessels registered to target golden king crab in the Alaska Peninsula Area during 2014. ADF&G does not assess the golden king crab stock in the Alaska Peninsula Area. Exploratory efforts by commercial fishermen have yet to locate quantities sufficient for a commercial fishery.

SHRIMP

TRAWL SHRIMP FISHERY INTRODUCTION

The trawl shrimp fisheries in the Kodiak, Chignik, and South Peninsula districts are part of Registration Area J. Registration Area J is a nonexclusive registration area for shrimp. Most shrimp sections within these districts have established management thresholds called Minimum Acceptable Biomass Indices (MABI). For a commercial fishery to occur in a section with an established threshold, the surveyed shrimp biomass must meet or exceed the MABI. Additional information on MABIs is found in the *Westward Region Shrimp Fishery Management Plan* (ADF&G 1982; Jackson 2005). Commercial shrimp fishing in sections with MABIs may open by emergency order between June 15 and February 28 in the Kodiak District and between May 15 and February 14 in the Chignik and South Peninsula districts. The remaining general section or undescribed waters within these districts open by regulation without threshold criteria or established GH/L. Shrimp abundance estimates are determined by trawl surveys conducted onboard the R/V *Resolution*.

POT SHRIMP FISHERY INTRODUCTION

Shrimp pot fisheries in the Kodiak, Chignik, and South Peninsula districts are part of Registration Area J. Registration Area J is a nonexclusive registration area for shrimp. With the exception of 6 sections located in the Kodiak and Chignik districts, fishing for shrimp with pots is open all year, and no GH/Ls are established.

KODIAK DISTRICT

Description of the District

The Kodiak District for shrimp includes waters south of the latitude of Cape Douglas, west of long 149° W, and east of the longitude of Kilokak Rocks. The Kodiak District is further divided into 15 sections: Inner Marmot Bay, Ugak Bay, Kiliuda Bay, Two Headed Island, Alitak Bay, Olga Bay, Uyak Bay, Uganik Bay, West Afognak, North Afognak, Mainland, Marmot Island, Chiniak Bay, Alitak Flats, and General (Figure 12).

Historical Background

The Kodiak District trawl shrimp fishery began in 1958 with a harvest of 31,886 pounds (Jackson and Ruccio 2003; Table 12). The fishery developed rapidly before the 1964 earthquake and tsunami destroyed most shore-based processing capacity. Once processors were reestablished, the shrimp fishery rebounded and a record 82 million pounds were harvested in 1971. Following the peak harvest, Kodiak District shrimp harvests declined through the 1970s and most effort shifted to the Chignik and South Peninsula districts (Jackson and Ruccio 2003). Stock abundance and harvests declined sharply thereafter. Throughout this time period, pink shrimp (*Pandalus borealis*) accounted for over 95% of the total harvest by weight. Other species landed included sidestriped (*Pandalopsis dispar*), coonstriped (*Pandalus hypsinotus*), spot (*Pandalus platyceros*), and humpy (*Pandalus goniurus*) shrimp.

ADF&G initiated a voluntary logbook program in 1967. Logbook information, in addition to data from trawl surveys conducted by ADF&G since the early 1970s, guided the process for establishing inseason harvest levels. In 1981, industry requested harvest levels be defined and adopted into regulation. Subsequently, the *Westward Region Shrimp Management Plan* (5 AAC 31.590) was approved by the BOF in 1982. The objectives of the management plan were to maintain shrimp stocks at a level termed Representative Biomass Index (RBI) as determined by trawl surveys, while allowing for a fishery during rebuilding periods. The management plan also has a minimum biomass level below which fishing would be prohibited (Table 13).

Concurrent with approval of the *Westward Region Shrimp Management Plan*, the BOF enacted the *Mainland Shrimp Management Plan* (5 AAC 31.530) as an economic alternative to the more comprehensive regional plan. The mainland plan allowed for shrimp fishing in some bays on the Alaska Peninsula and around Afognak Island regardless of survey results. In September of 1997, the BOF repealed the *Mainland Shrimp Management Plan* due to concerns regarding the lack of stock specific information and sustainability of the fishery. Currently, only the General Section, which is mostly composed of offshore waters surrounding Kodiak Island (Figure 12), remains open to trawl gear from June 15 through February 28. Overall, little commercial trawl effort has occurred in the General Section since the mid-1980s.

Pot fishing for shrimp in the Kodiak District began in 1969, although the pot fishery never developed into a large fishery (Jackson and Ruccio 2003; Table 14). The largest annual harvest of shrimp with pot gear was approximately 18,600 pounds in 1983. Although pot harvest was minor compared to trawl harvest, the North Afognak, West Afognak, and Mainland sections of the Kodiak District were closed to all commercial shrimp fishing in 1997 due to inadequate information on stock status of shrimp in the area. In March 2003, the BOF amended 5 AAC 31.590 *Westward Area Shrimp Fisheries Management Plan* and implemented management tools to allow some pot shrimp fishing opportunity. Under the plan, season dates, guideline harvest ranges (GHR), and mandatory logbook requirements were adopted. In areas outside of the management plan, shrimp may be taken year round with pots.

2013/14 Kodiak District Shrimp Pot and Trawl Fisheries

One vessel registered to target shrimp with pot gear and 1 vessel registered to target shrimp with trawl gear during the 2013/14 season. Harvest information is confidential due to limited participation. All historical catch information is located in Tables 12 and 14.

Status of Kodiak District Shrimp Stocks

ADF&G conducts trawl surveys to assess shrimp biomass. From 1989 to 2001, surveys were conducted triennially in the Kodiak District. Beginning in 2001, portions of the Kodiak District have been surveyed on an annual basis; however, most of the General Section is not surveyed. The highest survey catch of shrimp per kilometer towed in the Kodiak District during the 2013 trawl survey occurred in Marmot Bay. Shrimp abundance in all sections with established MABIs remain below levels necessary for a commercial fishery (Table 13). Trawl gear does not sample the rocky habitat typically associated with spot and coonstriped shrimp. Therefore, no inferences about these species are available from trawl survey data.

SOUTH PENINSULA AND CHIGNIK DISTRICTS

Description of the Districts

The Chignik District for shrimp includes all waters west of a line extending south from Kilokak Rocks, east of a line from Kupreanof Point to the easternmost point of Castle Rock, and east of a line extending 135° southeast from the easternmost point of Castle Rock. The Chignik District is divided into 9 sections: Kujulik Bay, Chignik Bay, Kuiukta Bay, Mitrofanina Island, Ivanof Bay, Chiginagak Bay, Seal Cape, Nakalilok Bay, and Aniakchak Bay (Figure 12).

The South Peninsula District for shrimp includes all waters west of a line from Kupreanof Point to the easternmost point of Castle Rock, west of a line extending 135° southeast from the easternmost point of Castle Rock, and Gulf of Alaska waters east of the longitude of Cape Sarichef. The South Peninsula District is divided into 8 sections: Stepovak Bay, Unga Straits, West Nagai, Beaver Bay, Kenoys Island, Pavlof Bay, Belkofski Bay, and Morzhovoi Bay (Figure 12).

Historical Background

Shrimp fishing in the South Peninsula and Chignik districts began in 1968. Harvest peaked at 27 million pounds in the Chignik District (1976/77) and 44 million pounds in the South Peninsula District (1977/78; Table 15). After peak harvest, the South Peninsula District fishery experienced a rapid decline then closed prior to the 1980/81 season. In the Chignik District, shrimp harvests declined steadily for several years after peak harvest then dropped to approximately 71,000 pounds during the 1981/82 season. Since that time, all inshore waters in the Chignik District have remained closed and no fishing has occurred in the offshore areas.

The Chiginagak, Nakalilok, and Aniakchak sections of the Chignik District were closed to all commercial shrimp fishing in 1997. The BOF closed these sections due to concerns of shrimp stock status. In March 2003, the BOF created 5 AAC 31.592 *Chignik District Pot Shrimp Fisheries Management Plan* to guide pot fisheries in the Chiginagak, Nakalilok, and Aniakchak sections.

Overview of Current Fishery Regulations

Shrimp fisheries in the Chignik and South Peninsula districts are part of Registration Area J. Vessel operators are required to obtain an interim-use permit card from CFEC and a shellfish registration from ADF&G prior to fishing.

In the Chignik and South Peninsula districts, shrimp may be taken with trawl gear from May 15 through February 14 provided shrimp population estimates are above established MABIs.

Currently there is no closed season for shrimp fishing with pot gear in the Chignik District with the exception of Chiginagak, Nakalilok, and Aniakchak Bay sections, which have a fishing season of May 1 through February 28, unless closed earlier by emergency order. A GHR of zero to 40,000 pounds whole weight is established for these sections, and no more than 15,000 pounds may be harvested from any individual section during a calendar year. There is no closed season in the South Peninsula District for vessels using pot gear.

2013/14 South Peninsula and Chignik Districts Shrimp Pot and Trawl Fisheries

There was no fishing effort for shrimp with pot or trawl gear in the South Peninsula or Chignik districts during the 2013/14 season (Table 15).

Status of South Peninsula and Chignik Districts Shrimp Stocks

During 2013, only Pavlof Bay in the South Peninsula District was surveyed; no survey was conducted in the Chignik District. Survey data suggests that shrimp abundance in Pavlof Bay remains at historically low levels. The population estimate derived from 2013 survey data of 60,000 pounds of shrimp is well below the MABI established for Pavlof Bay (18.03 million pounds; Table 13).

RED SEA CUCUMBER

INTRODUCTION

Historically, dive gear has been the only method used to harvest sea cucumbers in the Kodiak, Chignik, and South Peninsula districts. Sea cucumber diving may occur from October 1 through April 30 under authority of a commissioner permit. Provisions of the commissioner permit specify sea cucumbers may only be taken during weekly fishing periods established by emergency order. Each management district is divided into multiple sections to distribute effort. GHLs are established for each section. Fisheries remain open until section GHLs are attained or the season closes. Fishing periods typically begin on or shortly after October 1. Most fishing periods are 24 to 48 hours in length.

KODIAK AND CHIGNIK DISTRICTS

Description of the Districts

The Kodiak District for sea cucumbers includes Pacific Ocean waters of miscellaneous shellfish Registration Area J south of the latitude of Cape Douglas, west of long 149° W, and east of the longitude of Cape Kumlik. The district is further subdivided into 8 sections: Northeast, Eastside, Southeast, Southwest, Semidi Island, Westside, North Mainland, and South Mainland (Figure 2).

The Chignik District includes the Pacific Ocean waters of Registration Area J west of the longitude of Cape Kumlik, and east of a line from the southernmost tip of Kupreanof Point to the easternmost point of Castle Rock, and east of a line extending 135° from the easternmost point of Castle Rock (Figure 3). The Chignik District is not further subdivided into sections for sea cucumber management.

Historical Background

Prior to 1991, red sea cucumbers were not commercially harvested in the Kodiak or Chignik districts (Table 16). During 1991 and 1992, processors recruited divers to gather small numbers

of sea cucumbers in the Kodiak and Chignik districts to test marketability. In the spring of 1993, processors enlisted 50 divers to prosecute a commercial fishery.

As the fishery developed, ADF&G implemented several management measures intended to prevent overharvest. A seasonal closure from May 1 through September 30 was established to protect spawning sea cucumbers, GHLS based on eviscerated weight were established for the Kodiak and Chignik districts, and fishing periods were implemented to allow ADF&G opportunity to accurately track harvest and assess inseason fishery performance. Additionally, management sections were established in the Kodiak District to distribute effort and prevent localized depletion.

Prior to the start of the 1994/95 season, GHLS were set for each newly established section based on production and fisheries performance from the 3 previous seasons. The combined Kodiak and Chignik district GHL was 225,000 pounds of eviscerated product for the 1994/95 season. Approximately 167,000 pounds of sea cucumber were harvested (Table 16). Most effort occurred in the Eastside, Southeast, Southwest, and Westside sections of the Kodiak District.

Due to low CPUE during the previous season, GHLS for the 1995/96 sea cucumber fishery were lowered to 135,000 pounds in the Kodiak District and 25,000 pounds in the Chignik District. GHLS have remained at similar levels since (Table 17). Since the 1995/96 season, harvest ranged from approximately 107,000 to 190,000 pounds and participation ranged from 20 to 42 divers (Table 16).

2013/14 Kodiak and Chignik Districts Red Sea Cucumber Fishery

The 2013/14 red sea cucumber fishery opened October 1, 2013. The GHLS was 140,000 pounds of eviscerated weight in the Kodiak District and 15,000 pounds of eviscerated weight in the Chignik District (Table 17). Twenty-two divers landed 107,320 pounds of eviscerated sea cucumbers with an exvessel value of approximately \$368,000 (Table 16). GHLS were attained in the Eastside, Southeast, Southwest, and Westside sections of the Kodiak District, and those sections were not reopened during subsequent fishing periods. The Northeast and Mainland sections remained open for the entire season. During the 2013/14 season, the majority of harvest in the Kodiak District occurred during 4 fishing periods which totaled 9 days of fishing. There was no effort in the Chignik District during the 2013/14 season.

Status of Kodiak and Chignik Districts Red Sea Cucumber Stocks

There are no population estimates for sea cucumber stocks in the Kodiak or Chignik districts. Catch data from commercial fishery logbooks suggests stable recruitment in areas where sea cucumbers are commercially targeted. Population levels, particularly at depths unavailable to divers, are unknown.

SOUTH PENINSULA DISTRICT

The South Peninsula District for red sea cucumbers includes Pacific Ocean waters west of a line from the southernmost tip of Kupreanof Point to the easternmost tip of Castle Rock, west of a line extending southeast 135° from the easternmost tip of Castle Rock, and east of the latitude of Scotch Cap Light (Figure 3). Waters on the south side of the Alaska Peninsula were initially explored for sea cucumber in 1993. Overall, little effort has occurred in the South Peninsula District and harvest data are confidential due to the limited number of participants. There was no effort in the South Peninsula District during the 2013/14 season.

STATUS OF SOUTH PENINSULA DISTRICT RED SEA CUCUMBER STOCKS

Biomass assessment is not conducted for sea cucumber stocks in the South Peninsula District; therefore, actual population levels are unknown. In addition, the western distributional limit of red sea cucumbers is not well documented. ADF&G trawl surveys have encountered red sea cucumbers as far west as Pavlof Bay.

OTHER MISCELLANEOUS SHELLFISH FISHERIES

Regulations governing other miscellaneous shellfish are found in Chapter 38 of the Alaska Administrative Code. Occasionally, ADF&G receives requests to harvest shellfish such as urchins, octopus, snails, squid, mollusks, and other crabs in the Kodiak, Chignik, and South Peninsula districts. Generally, fishing for these species occurs under conditions of ADF&G commissioner permit. Information on harvesting shellfish species not described in this report can be obtained by contacting ADF&G.

GREEN SEA URCHINS

Green sea urchins may be harvested under the provisions of a miscellaneous shellfish permit authorized in 5 AAC 38.062. Permit provisions allow for commercial fishing to occur from October 1 to January 31. Sea urchins may only be taken by hand picking aided by the use of diving gear, abalone iron, or sea urchin rake. A valid CFEC interim-use permit card and vessel registration is required. There are no minimum size limits for green sea urchins in regulation.

Green sea urchins were first commercially harvested in Registration Area J in 1980 when a small amount was taken in the Kodiak District to test marketability. Effort next occurred in 1985 when several thousand pounds were harvested. The fishery continued to expand and peak harvest occurred in 1988 at 158,969 pounds (Table 18). Effort declined through the 2001/02 season, which is the last season with reported harvest. Most green sea urchins harvested in Kodiak were shipped live to Japan for processing.

In 2000, ADF&G developed GHLs for green sea urchins based on historic harvest information. Similar to red sea cucumbers, management sections were adopted for green sea urchin management. Sections without historic harvest data were assigned a 5,000-pound exploratory GHL. Previously exploited sections were assigned a 10,000-pound GHL.

Green sea urchin stocks in the Kodiak, Chignik, and Alaska Peninsula districts are not assessed. Given low and variable effort, fishery performance data does not allow for inferences on stock status. However, past harvest data indicates biomass in the Kodiak District is small compared to other areas on the Pacific coast (Lourie and Sanders 2000).

OCTOPUS

INTRODUCTION

Giant Pacific octopus occur in the Kodiak, Chignik, and South Peninsula districts of Registration Area J (Figure 3). Octopus are managed by ADF&G in state waters (0–3 nmi) and by NMFS in federal waters (3–200 nmi). There is no closed season for octopus; however, directed fisheries may only occur under the provisions of a commissioner permit. A valid octopus permit card for the appropriate gear type must be obtained from CFEC prior to participating in a directed fishery. While targeting octopus, vessel operators may not participate in other directed fisheries such as

the state-waters Pacific cod fishery. However, vessel operators may retain octopus as bycatch up to 20% of the target species weight onboard a vessel. Vessel operators registered for directed harvest may only retain the permissible bycatch levels of other species. No GHs are established for octopus in Registration Area J.

HISTORICAL BACKGROUND

Octopus is considered a groundfish species by National Marine Fisheries Service (NMFS) and a shellfish species under BOF regulation. Prior to 1985, octopus harvests in state waters were negligible and most octopus were retained for bait or personal use. Octopus is commonly used as bait in the Pacific halibut *Hippoglossus stenolepis* longline and Pacific cod *Gadus macrocephalus* pot fisheries.

The decline of many crab stocks in the Gulf of Alaska resulted in reduced fishing opportunities for many pot vessels. In response, those vessels began to target Pacific cod in the Gulf of Alaska, which subsequently increased retention of octopus during the 1990s. ADF&G worked with industry to ensure that all octopus harvested, particularly octopus retained for bait, were documented on fish tickets. Historically, most octopus in the Kodiak, Chignik, and South Peninsula districts were harvested within state waters, although this trend has reversed since about 2004 (Tables 19 and 20).

2014 KODIAK DISTRICT OCTOPUS HARVEST

All octopus harvested in the Kodiak District during 2014 were taken subsequent to other commercial fisheries. The 2014 Kodiak District bycatch harvest totaled 907,273 pounds. All harvest occurred during state and federal Pacific cod pot fisheries. Forty-five vessels harvested 250,000 pounds in state waters (Table 19). A total of 657,273 pounds were harvested by 74 vessels in federal waters. Fish ticket information reported an average price of \$0.36 per pound for an estimated total exvessel value of \$324,345.

2014 CHIGNIK AND ALASKA PENINSULA DISTRICTS OCTOPUS HARVEST

Similar to Kodiak, all octopus harvested in the Chignik and Alaska Peninsula districts during 2014 were taken subsequent to other commercial fisheries. The 2014 bycatch harvest totaled 251,267 pounds from state and federal waters combined (Table 20). Thirty-seven vessels harvested 74,457 pounds in state waters, and 56 vessels harvested 176,810 pounds in federal waters. Fish ticket information listed an initial average of \$0.40 per pound for an estimated total exvessel value of \$100,507.

Octopus stocks in the Kodiak, Chignik, and Alaska Peninsula districts are not assessed; the population status is unknown.

RAZOR CLAMS

The commercial razor clam fisheries in the Kodiak, Chignik, and South Peninsula districts are part of Registration Area J. The Alaska razor clam *Siliqua alta* and the Pacific razor clam *S. patula* may only be harvested under authority of a commissioner permit. There are no established GHs for clam fisheries in Registration Area J.

Razor clams were harvested in the Kodiak District from the early 1920s through 1986 (Table 21). Although many Kodiak Island beaches were explored with some success, commercial harvest primarily occurred on the Pacific Ocean side of the Alaska Peninsula near

Kukak Bay, Hallo Bay, Big River, and Swikshak Beach. Digging continued on a regular basis until the mid-1970s when a combination of increasing federal and state clam processing regulations and poor market conditions precipitated harvest declines.

Many of the historical harvest areas in the Kodiak District are adjacent to the Katmai National Monument, which includes all the land above mean high water from Cape Douglas to Cape Kubugakli. Commercial activity within the monument is restricted: the U.S. Park Service imposes a ban on all camping in support of a business enterprise in the monument. In 1986, the BOF adopted a regulation prohibiting hydraulic mechanical dredges from harvesting clams in the Kodiak District east of Kilokak Rocks.

Commercial harvesting of clams for human consumption has not been reestablished, although some hand digging of clams occurs for use as bait in the Dungeness crab fishery. The certification program conducted by ADEC in support of clam fisheries ended in 1980. Currently, there are no clam beaches in the Kodiak District commercially certified as safe for human consumption. Clam stocks in Registration Area J are not assessed for population abundance.

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TABLES AND FIGURES

Table 1.—Kodiak, Chignik, and South Peninsula districts commercial shellfish emergency orders, 2013/14.

Emergency order	Effective date	Explanation
4-S-16-13	October 1, 2013	Establishes the first fishing period for the 2013/14 red sea cucumber season for all sections in the Kodiak District of Registration Area J.
4-S-20-13	October 2, 2013	Extends the first fishing period for the 2013/14 red sea cucumber season for all sections in the Kodiak District of Registration Area J.
4-S-21-13	October 2, 2013	Establishes the first fishing period for the 2013/14 red sea cucumber season for all sections in the South Peninsula District of Registration Area J.
4-S-22-13	October 10, 2013	Establishes the second fishing period for the 2013/14 red sea cucumber season for all sections in the Kodiak District of Registration Area J.
4-S-25-13	October 18, 2013	Establishes the third fishing period for the 2013/14 red sea cucumber season in the Northeast, Eastside, Southeast, Southwest, and Mainland sections of the Kodiak District of Registration Area J.
4-S-26-13	October 21, 2013	Establishes the fourth fishing period for the 2013/14 red sea cucumber season in the Northeast, Southeast, Southwest, and Mainland sections of the Kodiak District of Registration Area J.
4-S-27-13	November 10, 2013	Establishes the fifth fishing period for the 2013/14 red sea cucumber season in the Northeast, Southwest, and Mainland sections of the Kodiak District of Registration Area J.
4-S-28-13	November 12, 2013	Extends the fifth fishing period for the 2013/14 red sea cucumber season in the Northeast, Southwest, and Mainland sections of the Kodiak District of Registration Area J.
4-S-29-13	November 25, 2013	Establishes the sixth fishing period for the 2013/14 red sea cucumber season in the Northeast Section of the Kodiak District of Registration Area J.
4-S-30-13	December 9, 2013	Establishes the seventh fishing period for the 2013/14 red sea cucumber season in the Northeast Section of the Kodiak District of Registration Area J.
4-S-31-13	December 12, 2013	Establishes the eighth fishing period for the 2013/14 red sea cucumber season in the Northeast Section of the Kodiak District of Registration Area J.
4-S-32-13	December 19, 2013	Extends the eighth fishing period for the 2013/14 red sea cucumber season in the Northeast Section of the Kodiak District of Registration Area J.

Notes: Omitted emergency orders (e.g., 4-S-19-13) enacted for management areas outside of Kodiak, Chignik, and South Peninsula districts.

Table 2.—Kodiak District commercial Tanner crab guideline harvest level (GHL), effort, harvest, and value, 1967–2013/14.

Season	GHL	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
		Vessels	Landings	Crab ^a	Pounds ^a	Pots lifted					
1967	NA	NA	83	NA	110,961	NA	1,337	NA	NA	\$0.07	NA
1968	NA	NA	817	NA	2,560,687	NA	3,134	NA	NA	\$0.10	NA
1969	NA	85	955	NA	6,827,312	72,748	7,149	43	NA	\$0.11	NA
1969/70	NA	67	833	3,237,244	8,416,782	78,266	10,104	42	2.6	\$0.11	NA
1970/71	NA	82	453	2,686,067	6,744,163	60,967	14,888	44	2.5	\$0.11	NA
1971/72	NA	46	505	3,878,618	9,475,902	65,907	18,764	59	2.4	\$0.13	NA
1972/73	NA	105	1,466	13,609,688	30,699,777	188,158	20,941	72	2.3	\$0.17	NA
1973/74	NA	123	1,741	11,857,573	29,820,899	217,523	17,129	55	2.5	\$0.20	NA
1974/75	NA	74	471	5,459,940	13,649,966	73,826	28,981	74	2.5	\$0.17	NA
1975/76	NA	104	1,168	10,748,958	27,336,909	199,304	23,405	54	2.5	\$0.20	NA
1976/77	NA	102	998	7,830,727	20,720,079	164,213	20,762	48	2.6	\$0.33	NA
1977/78	NA	148	1,483	12,401,243	33,281,472	251,621	22,442	49	2.6	\$0.43	NA
1978/79	NA	218	1,225	10,702,829	29,173,807	275,455	23,815	38	2.7	\$0.55	NA
1979/80	NA	211	1,385	6,813,128	18,623,875	282,946	13,447	24	2.7	\$0.55	NA
1980/81	NA	188	771	4,398,631	11,748,629	174,351	15,238	25	2.7	\$0.65	NA
1981/82	NA	221	950	5,413,467	13,756,159	230,403	14,480	24	2.5	\$1.65	NA
1982/83	NA	348	1,439	7,744,812	18,927,061	377,562	13,153	21	2.4	\$1.25	NA
1983/84	NA	303	1,229	5,891,968	14,478,066	303,764	11,780	19	2.5	\$1.20	NA
1984/85	NA	216	710	4,540,114	11,947,696	176,215	16,828	26	2.6	\$1.46	\$17,443,636
1985/86	NA	233	602	3,454,957	8,990,612	160,220	14,935	22	2.6	\$1.78	\$16,003,289
1986/87	NA	190	506	1,832,962	4,839,446	111,198	9,564	16	2.6	\$2.24	\$10,840,359
1987/88	NA	178	560	1,648,064	3,959,504	103,391	7,071	16	2.4	\$2.27	\$8,988,074
1988/89	NA	171	566	2,096,540	5,185,563	86,056	9,162	24	2.5	\$2.84	\$14,726,999
1989/90	NA	232	547	1,437,905	3,446,937	96,956	6,302	15	2.4	\$2.36	\$8,134,771
1990/91	NA	135	445	764,357	1,917,713	54,110	4,309	14	2.5	\$1.56	\$2,991,632
1991/92	NA	143	434	982,391	2,400,213	47,384	5,530	21	2.4	\$2.23	\$5,352,475
1992/93	NA	140	353	518,982	1,318,446	43,528	3,735	12	2.5	\$2.11	\$2,781,921
1993/94	NA	130	379	511,131	1,253,462	41,587	3,307	12	2.5	\$2.25	\$2,820,290

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Table 2.–Page 2 of 2.

Season	GHL	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
		Vessels	Landings	Crab ^a	Pounds ^a	Pots lifted					
1994/95–1999/00											
No Commercial Fishery											
2000/01	500,000	145	192	193,138	510,407	7,233	2,658	27	2.6	\$2.29	\$1,168,832
2001/02	500,000	181	279	146,672	361,086	10,446	1,294	14	2.5	\$2.04	\$736,615
2002/03	510,000	72	276	215,924	511,324	11,108	1,853	19	2.4	\$2.32	\$1,186,272
2003/04	795,000	66	252	254,960	566,218	15,550	2,247	16	2.2	\$2.34	\$1,324,950
2004/05	1,750,000	76	291	779,041	1,806,416	21,429	6,338	36	2.3	\$1.73	\$3,065,256
2005/06	2,100,000	68	249	890,925	2,123,931	21,962	8,530	41	2.4	\$1.53	\$3,231,946
2006/07	800,000	50	96	318,815	765,092	7,834	7,970	41	2.4	\$1.77	\$1,354,213
2007/08	500,000	33	64	172,230	425,353	5,490	6,646	31	2.5	\$2.00	\$850,706
2008/09	400,000	31	48	148,882	359,056	5,835	7,480	26	2.4	\$1.80	\$646,301
2009/10	700,000	52	84	294,569	650,315	8,417	7,742	35	2.2	\$1.34	\$871,422
2010/11	1,490,000	80	131	638,959	1,537,384	11,213	11,736	57	2.4	\$2.70	\$4,150,937
2011/12	950,000	64	93	436,133	1,078,106	10,460	11,593	42	2.5	\$1.88	\$2,026,839
2012/13	660,000	59	115	263,213	658,194	13,084	5,723	20	2.5	\$1.49	\$980,709
2013/14											
No Commercial Fishery											

Notes: NA = not available; GHL = guideline harvest level, CPUE = legal crab per pot lift

^a Includes deadloss and personal use

Table 3.–Kodiak District commercial Tanner crab guideline harvest level (GHL), effort, and harvest, by section, 2006/07–2013/14.

Season	Section ^a	GHL	Vessels ^b	Harvest (lbs)	Pots lifted	CPUE
2006/07	Northeast	100,000	21	88,584	1,651	24
	Eastside	700,000	40	676,508	6,181	45
	Total ^c	800,000	50	765,092	7,832	41
2007/08	Northeast	100,000	9	88,514	1,707	24
	Eastside	400,000	30	336,839	3,783	33
	Total ^c	500,000	33	425,353	5,490	31
2008/09	Northeast	100,000	11	60,370	1,467	18
	Eastside	300,000	24	298,686	4,368	28
	Total ^c	400,000	31	359,056	5,835	26
2009/10	Northeast	100,000	23	80,133	1,192	31
	Eastside	500,000	30	469,807	6,287	34
	Southeast	100,000	7	100,375	938	48
	Total ^c	700,000	52	650,315	8,417	35
2010/11	Northeast	100,000	16	130,317	985	55
	Eastside	1,000,000	52	983,028	6,976	58
	Southeast	240,000	16	229,781	1,501	62
	Southwest	150,000	10	179,680	1,264	64
	Semidi	NA	6	14,578	487	13
	Total ^c	1,490,000	80	1,537,384	11,213	57
2011/12	Eastside	550,000	39	618,543	5,159	48
	Southeast	300,000	23	321,031	3,337	39
	Southwest	100,000	5	110,336	934	50
	Semidi	NA	5	28,195	1,030	12
	Total ^c	950,000	64	1,078,106	10,460	42
2012/13	Eastside	520,000	47	535,653	10,150	21
	Southeast	140,000	18	122,541	2,934	17
	Total ^c	660,000	59	658,194	13,084	20
2013/14	No Commercial Fishery					

Notes: CPUE = legal crab per pot lift

^a The Semidi Island Overlap Section (abbreviated Semidi) is exploratory and does not have a GHL.

^b Total unique vessels; several vessels participated in multiple sections.

^c Totals do not include confidential data.

Table 4.–Chignik District commercial Tanner crab guideline harvest level (GHL), effort, harvest, and value, 1968–2013/14.

Season	GHL	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
		Vessels	Landings	Crab ^a	Pounds ^a	Pots lifted					
1968	NA	NA	NA	NA	21,100	NA	NA	NA	NA	NA	NA
1969	NA	NA	NA	NA	38,100	NA	NA	NA	NA	NA	NA
1969/70	NA	NA	NA	NA	2,800	NA	NA	NA	NA	NA	NA
1970/71	NA	NA	NA	NA	152,300	NA	NA	NA	NA	NA	NA
1971/72	NA	NA	NA	NA	26,500	NA	NA	NA	NA	NA	NA
1972/73	NA	15	56	297,363	747,788	8,080	13,353	51	2.5	\$0.16	NA
1973/74	NA	25	115	1,585,560	4,054,873	28,083	35,260	57	2.6	\$0.20	NA
1974/75	NA	25	91	1,438,508	3,649,444	22,675	40,104	63	2.5	\$0.14	NA
1975/76	NA	35	217	4,434,381	11,201,941	59,377	51,622	75	2.5	\$0.19	NA
1976/77	NA	21	141	2,098,226	5,672,919	40,604	40,233	52	2.7	\$0.33	NA
1977/78	NA	32	140	1,725,042	4,693,830	38,414	33,527	45	2.8	\$0.42	NA
1978/79	NA	39	126	926,253	2,536,105	28,378	20,128	33	2.7	\$0.55	NA
1979/80	NA	42	155	2,340,004	3,517,920	54,627	22,696	25	2.6	\$0.54	NA
1980/81	NA	24	112	1,534,847	3,653,723	44,022	32,623	35	2.4	\$0.64	NA
1981/82	NA	45	174	1,343,500	3,240,476	47,830	18,623	28	2.4	\$1.21	NA
1982/83	NA	48	136	1,432,029	3,497,370	60,210	25,716	24	2.4	\$1.12	NA
1983/84	NA	17	41	269,724	659,043	14,665	16,074	18	2.4	\$1.09	NA
1984/85	NA	15	30	148,232	343,579	14,162	11,453	10	2.3	\$1.66	\$553,185
1985/86	NA	7	14	91,008	199,452	8,246	14,247	11	2.2	\$2.10	\$407,423
1986/87	NA	9	18	86,732	189,087	6,819	10,505	13	2.2	\$2.30	\$434,194
1987/88	NA	5	10	53,958	112,513	4,641	11,251	12	2.1	\$2.22	\$241,762
1988/89	NA	6	35	152,250	346,556	10,345	9,902	15	2.3	NA	NA
1989/90–2003/04							No Commercial Fishery				
2004/05	400,000	22	59	184,706	410,741	7,456	6,962	25	2.2	\$1.66	\$675,349
2005/06	200,000	4	7	57,547	143,164	2,037	20,452	28	2.5	\$1.20	\$170,769
2006/07–2009/10							No Commercial Fishery				
2010/11	600,000	13	35	276,691	646,531	5,516	18,472	50	2.3	\$2.58	\$1,666,330
2011/12	700,000	28	43	296,310	698,043	8,141	16,234	36	2.4	\$2.21	\$1,532,089

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Table 4.–Page 2 of 2.

Season	GHL	Number			Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
		Vessels	Landings	Crab ^a					
2012/13					No Commercial Fishery				
2013/14					No Commercial Fishery				

Notes: NA = not available, GHL = guideline harvest level, CPUE = legal crab per pot lift

^a Includes deadloss and personal use.

Table 5.–South Peninsula District commercial Tanner crab guideline harvest level (GHL), effort, harvest, and value, 1967–2013/14.

Season	GHL	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
		Vessels	Landings	Crab ^a	Pounds ^a	Pots lifted					
1967	NA	NA	NA	NA	3,100	NA	NA	NA	NA	NA	NA
1968	NA	NA	155	36,835	110,610	NA	714	NA	3.0	NA	NA
1969	NA	NA	173	221,946	606,178	NA	3,504	NA	2.7	NA	NA
1969/70	NA	NA	NA	NA	2,093,600	NA	NA	NA	NA	NA	NA
1970/71	NA	17	242	813,610	2,140,585	NA	8,845	NA	2.6	\$0.10	NA
1971/72	NA	NA	NA	NA	3,618,900	NA	NA	NA	NA	NA	NA
1972/73	NA	36	390	2,213,006	5,615,563	53,573	14,399	41	2.5	NA	NA
1973/74	NA	44	386	3,504,668	8,300,578	58,444	21,504	60	2.4	NA	NA
1974/75	NA	44	131	2,053,530	5,195,800	38,153	39,663	54	2.5	\$0.14	NA
1975/76	NA	36	288	2,724,509	6,926,161	52,381	24,049	52	2.5	\$0.20	NA
1976/77	NA	28	289	2,524,565	6,773,838	63,143	23,439	40	2.7	\$0.32	NA
1977/78	NA	36	374	2,847,948	7,446,270	70,587	19,910	40	2.6	\$0.40	NA
1978/79	NA	48	332	3,267,122	8,684,408	82,374	26,158	40	2.7	\$0.51	NA
1979/80	NA	61	363	2,581,544	6,961,251	96,989	19,177	27	2.7	\$0.54	NA
1980/81	6,000,000	43	268	1,274,539	3,294,106	59,560	12,291	21	2.6	\$0.58	NA
1981/82	4,500,000	72	365	1,815,060	4,589,042	81,008	12,573	22	2.5	\$1.05	NA
1982/83	3,000,000	82	230	1,144,096	2,863,798	70,524	12,451	16	2.5	\$1.20	NA
1983/84	2,750,000	61	207	775,472	1,789,883	50,726	8,647	15	2.3	\$1.04	NA
1984/85	1,930,000	52	187	1,085,864	2,514,843	48,416	13,448	22	2.3	\$1.38	\$3,453,672
1985/86	3,900,000	75	187	1,589,757	3,781,950	65,078	20,224	24	2.4	\$1.67	\$6,285,481
1986/87	2,000,000	55	106	950,300	2,400,784	37,506	22,649	25	2.5	\$1.95	\$4,660,911
1987/88	3,431,000	73	148	1,360,367	3,328,799	52,516	22,492	26	2.4	\$2.17	\$7,211,292
1988/89	700,000	65	87	433,112	1,055,082	27,958		15	2.4	\$2.68	\$2,823,249
1989/90–1999/00							No Commercial Fishery				
2000/01	375,000	56	69	108,613	260,982	4,510		24	2.4	\$1.24	\$320,122
2001/02–2003/04							No Commercial Fishery				
2004/05	300,000	42	68	134,019	295,741	5,655		24	2.2	\$1.67	\$492,176
2005/06	290,000	15	47	127,061	287,749	3,703		34	2.3	\$1.21	\$348,092

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Table 5.–Page 2 of 2.

Season	GHL	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
		Vessels	Landings	Crab ^a	Pounds ^a	Pots lifted					
2006/07	200,000	6	15	74,187	165,811	1,959		38	2.2	\$0.79	\$130,330
2007/08	250,000	9	42	102,290	236,241	3,368		30	2.3	\$1.01	\$237,330
2008/09	275,000	12	66	122,441	265,560	5,311		23	2.2	\$1.31	\$346,455
2009/10	500,000	41	72	261,170	583,202	5,779		45	2.2	\$1.42	\$827,527
2010/11	2,300,000	51	134	1,135,050	2,866,041	15,816		72	2.5	\$2.31	\$6,622,701
2011/12	1,620,000	56	117	723,578	1,875,277	10,524		68	2.6	\$2.05	\$3,844,652
2012/13	230,000	24	44	141,912	343,293	3,596		39	2.4	\$2.20	\$751,588
2013/14							No Commercial Fishery				

Notes: NA = not available, GHL = guideline harvest level, CPUE = legal crab per pot lift.

^a Includes deadloss and personal use.

Table 6.—Kodiak District commercial Dungeness crab effort, harvest, and value, 1962–2014.

Year	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
	Vessels	Landings	Crab ^a	Pounds ^a	Pots lifted					
1962	NA	149	NA	1,904,567	NA	12,782	NA	NA	\$0.09	\$171,000
1963	NA	354	NA	2,487,512	NA	7,026	NA	NA	\$0.09	\$224,000
1964	29	395	NA	4,254,565	NA	10,537	NA	NA	\$0.09	\$375,000
1965	25	351	NA	3,311,571	NA	9,434	NA	NA	\$0.12	\$397,000
1966	12	144	NA	1,416,174	NA	7,976	NA	NA	\$0.13	\$149,000
1967	18	439	NA	6,663,668	NA	15,179	NA	NA	\$0.13	\$866,000
1968	43	536	NA	6,829,061	NA	12,741	NA	NA	\$0.14	\$956,000
1969	29	455	NA	5,834,628	190,967	12,823	NA	NA	\$0.16	\$934,000
1970	33	318	NA	5,741,438	249,800	18,005	NA	NA	\$0.14	\$804,000
1971	24	173	515,653	1,445,864	90,913	8,358	5.7	2.8	\$0.18	\$260,000
1972	34	316	766,960	2,059,536	140,921	6,517	5.4	2.7	\$0.40	\$824,000
1973	42	487	879,484	2,000,526	251,467	4,108	3.5	2.3	\$0.50	\$1,000,000
1974	23	172	337,839	750,057	104,062	4,361	3.2	2.2	\$0.47	\$353,000
1975	15	154	307,272	639,813	76,411	4,154	4.0	2.1	\$0.61	\$390,000
1976	4	6	38,072	87,110	4,410	14,518	8.6	2.3	\$0.15	\$13,000
1977	2	16	46,333	113,026	3,805	7,875	12.2	2.4	\$0.30	\$40,000
1978	20	173	618,357	1,362,306	93,633	7,875	6.6	2.2	\$0.75	\$1,022,000
1979	28	237	595,850	1,311,275	137,951	5,543	4.3	2.2	\$0.75	\$943,000
1980	21	197	968,829	2,011,736	107,261	10,212	9.0	2.1	\$0.45	\$905,000
1981	50	466	2,614,545	5,566,463	295,138	11,945	8.9	2.1	\$0.70	\$3,897,000
1982	111	991	2,004,075	4,546,311	481,542	4,588	4.2	2.3	\$0.75	\$3,410,000
1983	103	1,079	2,044,505	4,752,148	503,464	4,408	4.1	2.3	\$1.05	\$4,989,000
1984	106	1,163	2,393,974	5,303,052	627,441	4,564	3.8	2.2	\$1.45	\$7,689,000
1985	126	1,240	1,786,305	4,146,897	598,027	3,344	3.0	2.3	\$1.48	\$6,127,241
1986	82	577	441,007	967,423	199,356	1,667	2.2	2.2	\$1.21	\$1,167,765
1987	45	379	747,193	1,450,983	150,067	3,828	5.0	1.9	\$1.26	\$1,828,000
1988	50	364	1,064,427	2,125,114	203,237	5,838	5.2	2.0	\$1.06	\$2,243,032
1989	47	359	1,428,973	3,077,937	185,242	8,574	7.7	2.2	\$1.10	\$3,378,229

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Table 6.–Page 2 of 2.

Year			Number			Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
	Vessels	Landings	Crab ^a	Pounds ^a	Pots lifted					
1990	62	519	1,301,465	2,937,168	296,168	5,659	4.4	2.3	\$1.54	\$4,497,344
1991	62	732	695,470	1,414,499	279,872	1,932	2.5	2.0	\$1.37	\$1,931,178
1992	46	501	805,215	1,656,793	218,602	3,306	3.7	2.1	\$0.86	\$1,424,814
1993	42	263	647,736	1,369,889	180,534	5,209	3.6	2.1	\$0.92	\$1,258,325
1994	31	162	426,848	948,461	151,888	5,855	2.8	2.2	\$1.20	\$1,138,139
1995	24	106	257,677	527,434	107,506	4,976	2.4	2.0	\$1.72	\$906,670
1996	21	113	334,237	668,772	88,682	5,918	3.8	2.0	\$1.00	\$668,772
1997	21	123	257,697	529,550	95,066	4,305	2.7	2.1	\$2.04	\$1,069,892
1998	12	60	185,249	371,241	63,926	6,187	2.9	2.0	\$1.45	\$534,055
1999	13	72	269,277	551,183	65,721	7,655	4.1	2.0	\$1.57	\$861,957
2000	12	69	114,038	238,955	57,037	3,463	2.0	2.1	\$1.65	\$394,173
2001	21	57	101,371	208,265	41,760	3,654	2.4	2.1	\$1.95	\$399,341
2002	18	74	181,698	355,943	71,096	4,810	2.6	2.0	\$1.46	\$516,325
2003	17	89	228,309	467,623	48,715	5,254	4.7	2.0	\$1.50	\$695,031
2004	11	57	169,899	352,216	42,990	6,175	4.0	2.1	\$1.50	\$526,644
2005	14	75	185,358	390,995	38,422	5,213	4.8	2.1	\$1.25	\$479,726
2006	12	62	74,044	148,583	31,670	2,397	2.3	2.0	\$1.45	\$215,147
2007	12	86	323,489	663,077	65,071	7,710	5.0	2.0	\$2.19	\$1,370,292
2008	15	86	517,567	1,030,498	93,414	11,983	5.5	2.0	\$2.20	\$2,263,001
2009	17	108	614,793	1,335,503	129,003	12,366	4.8	2.2	\$1.58	\$2,096,810
2010	19	100	473,708	1,002,576	101,341	10,026	4.7	2.1	\$1.86	\$1,852,300
2011	11	57	186,179	389,270	60,248	6,829	3.1	2.1	\$2.29	\$891,428
2012	7	23	46,101	97,001	24,645	4,217	1.9	2.1	\$2.65	\$255,995
2013	3	17	33,226	69,001	19,597	4,059	1.7	2.1	\$2.65	\$181,115
2014	6	33	107,666	222,438	35,710	6,741	3.0	2.1	\$2.85	\$633,756

Notes: The western boundary of the Kodiak District for Dungeness crab fishing is the longitude located at Kilokak Rocks (long 156°20.22' W). Prior to 2001, the western boundary was located at the longitude of Cape Kumlik (long 157°27' W). CPUE = legal crab per pot lift. NA = not available.

^a Includes deadloss and personal use.

Table 7.—Kodiak District commercial Dungeness crab effort and harvest, by statistical area, 2010–2014.

Statistical area	2010			2011			2012			2013			2014		
	Vessels	Landings	Pounds	Vessels	Landings	Pounds	Vessels	Landings	Pounds	Vessels	Landings	Pounds	Vessels	Landings	Pounds
525701	9	47	156,165	3	21	69,259	3	11	14,412	Confidential			Confidential		
525703	6	34	71,240	3	9	21,367	Confidential			Confidential			Confidential		
525733	3	7	3,219	0	0	0	0	0	0	Confidential			Confidential		
535635	Confidential			Confidential			0	0	0	Confidential			Confidential		
535701	3	18	73,073	4	8	13,591	Confidential			Confidential			0	0	0
535703	3	15	18,605	Confidential			0	0	0	Confidential			Confidential		
535705	4	14	26,740	Confidential			Confidential			Confidential			Confidential		
535706	4	17	21,292	Confidential			Confidential			Confidential			Confidential		
545601	5	18	458,915	4	17	208,228	Confidential			Confidential			3	9	28,258
545602	0	0	0	Confidential			0	0	0	Confidential			0	0	0
545632	6	22	133,029	3	10	28,176	3	5	13,410	Confidential			Confidential		
Other	4	26	40,299 ^a	5	19	48,649 ^b	4	16	69,180 ^c	Confidential			Confidential		
Total ^d	19	100	1,002,576	11	57	389,270	7	23	97,001	3	17	69,001	6	33	222,438

^a Total of 4 statistical areas.

^b Total of 10 statistical areas.

^c Total of 7 statistical areas.

^d Some vessels made landings from more than 1 statistical area.

Table 8.—Alaska Peninsula and Chignik districts combined commercial Dungeness crab effort, harvest, and value, 1968–2014.

Year	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
	Vessels	Landings	Crab ^a	Pounds ^a	Pots lifted					
1968	NA	NA	434,142	1,259,013	NA	NA	NA	2.9	NA	NA
1969	NA	NA	411,000	1,056,000	NA	NA	NA	2.6	NA	NA
1970	NA	NA	4,200	13,000	NA	NA	NA	3.1	NA	NA
1971	NA	NA	3,900	11,000	NA	NA	NA	2.8	NA	NA
1972	NA	NA	29,400	65,000	NA	NA	NA	2.2	NA	NA
1973	NA	NA	86,700	194,500	NA	NA	NA	2.2	NA	NA
1974–1978					No Commercial Fishing Effort					
1979	NA	NA	42,816	102,320	NA	NA	NA	2.4	\$0.68	NA
1980					No Commercial Fishing Effort					
1981	NA	NA	22,995	42,296	NA	NA	NA	1.8	NA	NA
1982	16	79	357,955	779,600	59,265	9,868	6.0	2.2	\$0.75	NA
1983	18	132	565,430	1,207,128	113,061	9,145	5.0	2.1	\$0.97	NA
1984	13	99	294,191	647,497	106,056	6,540	2.8	2.2	\$1.38	NA
1985	7	31	243,203	497,367	52,717	16,044	4.6	2.0	\$1.29	\$642,811
1986	7	28	87,988	180,261	30,280	6,438	2.9	2.0	\$1.05	\$187,921
1987	5	21	88,744	182,706	22,588	8,700	3.9	2.1	\$1.09	\$196,983
1988	2	12	87,517	179,022	10,108	14,919	8.7	2.0	\$1.08	\$193,290
1989	1	9	62,364	132,447	13,400	14,716	4.7	2.1	NA	NA
1990	4	10	31,074	65,806	5,225	6,581	5.9	2.1	\$1.53	\$95,543
1991	7	18	39,069	80,248	12,813	4,458	3.0	2.1	\$1.24	\$73,924
1992	2	9				Confidential				
1993	3	15	127,979	273,811	15,675	18,254	8.2	2.1	\$0.79	\$214,982
1994	4	24	134,429	277,639	27,590	11,568	4.9	2.1	\$0.92	\$278,354
1995	1	3				Confidential				
1997	7	17	120,935	240,128	42,703	14,125	2.8	2.0	\$2.06	\$485,445
1998	3	8	60,049	116,757	19,800	14,595	3.0	1.9	\$1.44	\$162,059
1999	2	5				Confidential				
2000	3	3				Confidential				

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Table 8.–Page 2 of 2.

Year			Number			Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
	Vessels	Landings	Crab ^a	Pounds ^a	Pots lifted					
2001	2	2				Confidential				
2002	4	30	83,208	192,627	12,203	6,421	6.8	2.3	\$1.35	\$254,233
2003	5	42	146,469	292,931	14,137	6,975	10.4	2.0	\$1.35	\$370,664
2004	6	53	131,640	264,096	22,786	4,983	5.8	2.0	\$1.38	\$345,363
2005	6	35	156,045	314,938	16,695	8,998	9.3	2.0	\$1.22	\$380,982
2006	4	26	141,747	284,954	15,850	10,960	8.9	2.0	\$1.45	\$403,437
2007	4	36	241,550	465,261	19,334	12,924	12.5	1.9	\$1.90	\$875,750
2008	7	39	261,681	517,141	27,847	13,260	9.4	2.0	\$2.02	\$1,009,078
2009	7	56	266,075	542,831	42,691	9,693	6.2	2.0	\$1.49	\$781,176
2010	6	37	166,952	350,606	33,778	9,476	4.9	2.1	\$1.79	\$622,810
2011	7	40	102,232	222,101	23,761	5,553	4.3	2.2	\$2.17	\$481,959
2012	6	31	61,341	134,764	19,454	4,347	3.2	2.2	\$2.29	\$307,272
2013	4	15	32,967	75,679	6,947	5,045	4.7	2.3	\$2.25	\$169,995
2014	6	23	44,682	89,343	15,293	3,884	2.9	2.0	\$2.68	\$239,374

Notes: Beginning in 2002, the Alaska Peninsula District was divided into the Alaska Peninsula and Chignik districts. NA = not available; CPUE = legal crab per pot lift; confidential = less than 3 vessels participated or less than 3 processors purchased product.

^a Includes deadloss and personal use.

Table 9.—Kodiak Area commercial red king crab effort, harvest, and value, 1960/61–2013/14.

Season ^a	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
	Vessels	Landings	Crab ^b	Pounds ^b	Pots lifted					
1960/61	143	NA	2,116,375	21,064,871	NA	NA	NA	10.0	\$0.09	\$1,895,838
1961/62	148	NA	3,181,554	28,962,900	NA	NA	NA	9.1	\$0.10	\$2,896,290
1962/63	195	NA	4,146,143	37,626,703	NA	NA	NA	9.1	\$0.10	\$3,762,670
1963/64	181	NA	4,158,988	37,716,223	NA	NA	NA	9.1	\$0.10	\$3,771,622
1964/65	189	NA	4,923,309	41,596,518	95,951	NA	51	8.4	\$0.10	\$4,159,652
1965/66	175	NA	11,061,709	94,431,026	173,083	NA	64	8.5	\$0.13	\$12,087,171
1966/67	213	NA	8,476,299	73,817,779	223,174	NA	38	8.7	\$0.11	\$8,119,956
1967/68	227	3,847	5,147,321	43,448,492	207,392	11,294	25	8.4	\$0.26	\$11,296,608
1968/69	178	1,839	2,348,950	18,211,485	119,146	9,903	20	7.8	\$0.26	\$4,734,986
1969/70	136	978	1,606,181	12,200,571	96,841	12,475	17	7.6	\$0.28	\$3,416,160
1970/71	100	830	1,561,318	11,719,970	119,192	14,120	13	7.5	\$0.30	\$3,515,991
1971/72	89	507	1,539,157	10,884,152	66,166	21,468	23	7.1	\$0.39	\$4,244,819
1972/73	88	683	2,029,670	15,479,916	70,806	22,665	29	7.6	\$0.55	\$8,513,954
1973/74	129	837	1,847,679	14,397,287	77,826	17,201	24	7.8	\$0.45	\$6,478,779
1974/75	158	1,195	2,910,201	23,582,720	110,297	19,734	26	8.1	\$0.45	\$10,612,224
1975/76	169	1,569	2,976,909	24,061,651	113,795	15,336	26	8.1	\$0.66	\$15,880,690
1976/77	195	1,165	2,177,956	17,966,846	130,777	15,422	17	8.2	\$1.37	\$24,614,579
1977/78	179	1,186	1,590,477	13,503,666	145,867	11,386	11	8.5	\$1.34	\$18,094,912
1978/79	194	1,077	1,464,021	12,021,850	177,261	11,162	8	8.2	\$1.60	\$19,234,960
1979/80	247	1,346	1,979,394	14,608,900	207,991	10,854	9	7.4	\$0.95	\$13,878,455
1980/81	164	1,175	2,787,199	20,448,654	201,531	17,403	14	7.3	\$1.05	\$21,471,087
1981/82	246	2,214	3,035,674	24,237,601	388,751	10,947	8	8.0	\$2.00	\$48,475,202
1982/83	309	1,373	1,011,109	8,729,761	283,795	6,358	4	8.6	\$3.75	\$32,736,604
1983/84–2013/14										No Commercial Fishery

Notes: Data prior to 1985 was reconstructed from published management reports. NA = not available; CPUE = legal crab per pot lift.

^a Season defined as: May 1–April 30 from 1960/61–1965/66; July 1–April 30 from 1966/67–1968/69; and September 25–January 15 from 1969/70–present.

^b Includes deadloss and personal use.

Table 10.—Kodiak Area commercial golden king crab effort, harvest, and value, 1983–2014.

Year			Number			Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
	Vessels	Landings	Crab ^a	Pounds ^a	Pots lifted					
1983	12	36	16,349	111,398	8,490	3,094	2	6.8	\$3.00	\$334,194
1984	6	8	3,513	22,066	1,950	2,758	2	6.3	\$2.50	\$55,165
1985	4	19	10,005	63,641	2,693	3,350	4	6.4	\$1.96	\$124,736
1986	4	31	21,862	146,679	5,463	4,732	4	6.7	\$2.99	\$438,570
1987	5	38	9,485	67,191	3,187	1,768	3	7.1	\$3.17	\$212,995
1988	2	5	450	2836	251	567	2	6.3	\$3.13	\$8,877
1989	1	2	73	614	75	307	1	8.4	\$3.00	\$1,842
1990	3	6	1,214	7,314	1,090	1,219	1	6.0	\$3.00	\$21,942
1991										No Commercial Fishing Effort
1992	1	6								Confidential
1993	1	1								Confidential
1994										No Commercial Fishing Effort
1995	2	2								Confidential
1996–1999										No Commercial Fishing Effort
2000	1	1								Confidential
2001	1	1								Confidential
2002	3	7	5,464	25,184	990		6	4.6	\$3.14	\$79,078
2003	2	4								Confidential
2004	2	3								Confidential
2005–2009										No Commercial Fishing Effort
2010	1	6								Confidential
2011	2	3								Confidential
2012										No Commercial Fishing Effort
2013	2	7								Confidential
2014	1	2								Confidential

Notes: NA = not available, CPUE = legal crab per pot lift, confidential = less than 3 vessels participated or less than 3 processors purchased product.

^a Includes deadloss and personal use.

Table 11.—Alaska Peninsula Area commercial red king crab effort, harvest, and value, 1947–2013/14.

Season	Vessels	Landings	Number			Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
			Crab ^a	Pounds ^a	Pots lifted					
1947	NA	NA	18,800	141,000	NA	NA	NA	7.5	NA	NA
1948	NA	NA	518,500	3,363,000	NA	NA	NA	6.5	NA	NA
1949	NA	NA	205,500	3,476,000	NA	NA	NA	16.9	NA	NA
1950	NA	NA	270,000	2,124,000	NA	NA	NA	7.9	NA	NA
1951	NA	NA	86,500	599,000	NA	NA	NA	6.9	NA	NA
1952	NA	NA	32,400	298,000	NA	NA	NA	9.2	NA	NA
1953	NA	NA	38,400	380,000	NA	NA	NA	9.9	NA	NA
1954	NA	NA	31,666	316,660	NA	NA	NA	10.0	NA	NA
1955	NA	NA	164,069	1,640,688	NA	NA	NA	10.0	NA	NA
1956	NA	NA	421,651	4,221,496	NA	NA	NA	10.0	NA	NA
1957	NA	NA	668,709	6,687,092	NA	NA	NA	10.0	NA	NA
1958	NA	NA	724,595	7,245,947	NA	NA	NA	10.0	NA	NA
1959	NA	NA	568,303	6,166,974	NA	NA	NA	10.9	NA	NA
1960	NA	1,496	677,100	6,700,000	NA	4,479	NA	9.9	NA	NA
1961	NA	959	419,354	3,900,000	NA	4,067	NA	9.3	NA	NA
1962	NA	657	287,624	2,273,013	NA	3,460	NA	7.9	NA	NA
1963	27	1,037	970,739	6,539,129	NA	6,306	NA	6.7	\$0.09	\$588,522
1964	40	1,297	1,906,018	14,354,060	NA	11,067	NA	7.5	\$0.10	\$1,435,406
1965	36	1,081	1,813,728	14,713,501	NA	13,611	NA	8.1	\$0.10	\$1,471,350
1966	37	1,255	2,494,949	22,577,587	NA	17,990	NA	9.0	\$0.10	\$2,257,759
1967	39	1,062	1,943,463	17,252,307	NA	16,245	NA	8.9	\$0.19	\$3,277,938
1968/69	34	885	1,273,567	10,944,472	NA	12,367	NA	8.6	\$0.34	\$3,721,120
1969/70	33	415	558,800	4,137,000	51,300	9,969	11	7.4	\$0.25	\$1,034,250
1970/71	25	339	446,042	3,425,760	38,995	10,105	11	7.7	\$0.25	\$856,440
1971/72	26	364	597,394	4,123,130	41,759	11,327	14	6.9	\$0.28	\$1,154,476
1972/73	29	301	610,300	4,069,362	34,408	13,519	18	6.7	NA	NA
1973/74	36	389	658,632	4,260,674	53,642	10,953	12	6.5	\$0.72	\$3,067,685
1974/75	36	318	644,054	4,572,101	44,951	14,378	14	7.1	\$0.43	\$1,966,003

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Table 11.–Page 2 of 2.

Season	Vessels	Landings	Number			Avg. pounds per landing	Avg. CPUE	Avg. weight	Avg. price per pound	Exvessel value
			Crab ^a	Pounds ^a	Pots lifted					
1975/76	37	248	367,221	2,605,310	35,104	10,505	10	7.1	\$0.41	\$1,068,177
1976/77	26	122	125,778	958,069	17,748	7,853	7	7.6	\$0.61	\$584,422
1977/78	15	73	119,641	726,382	10,551	9,950	11	6.1	\$1.00	\$726,382
1978/79	33	226	520,168	3,093,859	31,142	13,690	17	5.9	\$1.27	\$3,929,201
1979/80	68	288	738,859	4,453,557	41,753	15,464	18	6.0	\$0.92	\$4,097,272
1980/81	51	358	821,071	5,080,632	54,114	14,192	15	6.2	\$0.96	\$4,877,407
1981/82	56	341	515,882	3,168,689	51,776	9,292	10	6.1	\$1.40	\$4,436,165
1982/83	63	157	271,237	1,683,654	30,894	10,724	9	6.2	\$3.20	\$5,387,693
1983/84–2013/14			No Commercial Fishery							

Notes: Data prior to 1985 was reconstructed from published management reports; NA = not available; CPUE = legal crab per pot lift.

^a Includes deadloss and personal use.

Table 12.–Kodiak District commercial trawl shrimp effort, harvest, and value, 1958–2013/14.

Season	Number		Pounds	Avg. pounds per landing	Avg. price per pound	Exvessel value
	Vessels	Landings				
1958	NA	NA	31,886	NA	\$0.04	\$1,275
1959	NA	NA	2,861,900	NA	\$0.04	\$114,476
1960	11	94	3,197,985	34,021	\$0.04	\$127,919
1961	12	203	11,083,500	54,599	\$0.04	\$443,340
1962	11	204	12,654,027	62,030	\$0.04	\$506,161
1963	NA	NA	10,118,472	NA	\$0.04	\$435,094
1964	6	NA	4,339,114	NA	\$0.04	\$173,565
1965	11	320	13,823,061	43,197	\$0.04	\$552,922
1966	17	551	24,097,141	43,733	\$0.05	\$1,084,371
1967	23	NA	38,267,856	NA	\$0.05	\$1,722,054
1968	16	NA	34,468,713	NA	\$0.04	\$1,378,749
1969	26	935	41,353,461	44,228	\$0.06	\$2,274,440
1970	18	1,024	62,181,204	60,724	\$0.04	\$2,487,248
1971	49	1,746	82,153,724	47,053	\$0.04	\$3,286,149
1972	63	1,398	58,352,319	41,740	\$0.04	\$2,334,093
1973	50	1,283	70,511,477	54,958	\$0.06	\$3,878,131
1973/74	63	1,029	56,203,992	54,620	\$0.08	\$4,496,319
1974/75	75	1,100	58,235,982	52,942	\$0.08	\$4,658,879
1975/76	58	884	49,086,591	55,528	\$0.08	\$3,926,927
1976/77	62	762	46,712,083	61,302	\$0.10	\$4,671,208
1977/78	58	653	26,409,366	40,443	\$0.13	\$3,433,218
1978/79	50	328	20,506,021	62,518	\$0.17	\$3,383,493
1979/80	37	242	12,863,536	53,155	\$0.23	\$2,894,296
1980/81	67	462	27,101,218	58,661	\$0.29	\$7,859,353
1981/82	55	298	19,112,367	64,135	\$0.27	\$5,160,339
1982/83	40	224	10,391,207	46,389	\$0.27	\$2,805,626
1983/84	14	63	2,779,030	44,112	\$0.35	\$972,661
1984/85	13	59	2,942,922	49,880	\$0.33	\$971,164
1985/86	6	26	1,145,980	44,076	\$0.20	\$229,196
1986/87	2	10	455,468	45,547	\$0.36	\$163,968
1987/88	1	2	10,841	5,421	NA	NA
1988/89–1992/93			No Commercial Fishing Effort			
1993/94	3	3	1,704	568	NA	NA
1994/95			No Commercial Fishing Effort			
1995/96			No Commercial Fishing Effort			
1996/97	1	1		Confidential		
1997/98	1	1		Confidential		
1998/99	5	8	12,724	1,591	\$3.25	\$41,353
1999/00	3	4	4,325	1,081	\$3.00	\$12,975
2000/01	1	5		Confidential		

-continued-

Table 12.–Page 2 of 2.

Season	Number			Avg. pounds per landing	Avg. price per pound	Exvessel value
	Vessels	Landings	Pounds			
2001/02	1	2			Confidential	
2002/03	1	10			Confidential	
2003/04	2	3			Confidential	
2004/05				No Commercial Fishing Effort		
2005/06	1	2			Confidential	
2006/07–2012/13				No Commercial Fishing Effort		
2013/14	1	13			Confidential	

Notes: NA = not available; confidential = less than 3 vessels participated or less than 3 processors purchased product.

Table 13.—Kodiak, Chignik, and South Peninsula district shrimp minimum acceptable biomass indices (MABI) and population estimates, in millions of pounds, from surveyed sections, 2001–2013.

District	Section	MABI													
			2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Kodiak	Inner Marmot Bay	3.59	0.40	0.64	0.59	0.61	0.61	0.94	0.96	1.38	0.97	1.18	0.82	1.18	2.17
	Outer Marmot Bay	24.94	4.82	2.86	4.10	4.03	4.39	6.21	5.52	12.71	7.96	5.79	10.04	11.69	36.10
	Chiniak Bay	1.45	0.22	0.14	0.21	0.09	0.02	0.08	0.03	0.08	0.09	0.05	0.20	0.13	0.85
	Ugak Bay	4.00	0.03	NA	0.04	NA	0.05	NA	0.02	NA	0.03	NA	0.01	NA	0.24
	Kiliuda Bay	5.23	0.05	NA	0.14	NA	0.39	NA	0.10	NA	0.07	NA	0.55	0.78	0.24
	Two Headed Island	7.39	0.36	NA	0.07	NA	0.00	NA	0.18	NA	0.12	NA	0.01	NA	0.15
	Alitak Bay	4.24	NA	NA	0.15	NA	0.18	NA	0.16	NA	0.34	NA	0.27	NA	0.81
	Uyak Bay	3.19	0.93	NA	0.46	NA	0.52	NA	0.22	NA	0.62	NA	0.86	NA	0.75
	Uganik Bay	2.59	0.57	NA	0.24	NA	0.28	NA	0.12	NA	0.59	NA	0.71	NA	1.31
	Kukak Bay	none	0.09	NA	0.02	NA	0.07	NA	0.08	NA	0.09	NA	0.16	NA	0.40
	Wide Bay	1.05	0.34	0.08	0.03	0.02	0.34	0.21	1.33	0.34	0.44	0.70	0.79	1.83	1.97
	Puale Bay	1.19	0.04	NA	0.01	0.00	NA	NA	0.01	NA	0.04	NA	0.08	NA	0.09
	Shelikof Strait	none	24.30	29.19	25.27	28.15	44.36	10.19	NA	15.84	90.34	12.38	41.03	NA	83.12
	Alitak Flats	2.79	NA	NA	NA	NA	0.07	NA	NA						
Chignik	Kujulik Bay	3.78	NA	0.10	NA	0.07	NA	0.14	NA	0.27	NA	NA	NA	0.04	NA
	Chignik Bay	4.60	NA	0.41	NA	0.79	NA	0.97	NA	1.82	NA	1.16	NA	0.93	NA
	Chiginagak Bay	0.69	NA	0.03	NA	0.10	NA	0.11	NA	NA	NA	0.13	NA	NA	NA
	Nakalilok Bay	0.82	NA	0.07	NA	0.10	NA	0.12	NA	NA	NA	0.17	NA	NA	NA
	Kuiukta Bay	1.85	NA	0.11	NA	0.40	NA	0.09	NA	0.29	NA	0.36	NA	0.27	NA
	Mitrofanian Island	5.22	NA	0.16	NA	0.05	NA	0.20	NA	NA	NA	0.03	NA	0.31	NA
	Ivanof Bay	5.68	NA	0.01	NA	0.03	NA	NA	NA	NA	NA	NA	NA	0.02	NA
South Peninsula	Stepovak Bay	23.52	NA	0.50	NA	1.38	NA	1.28	NA	11.41	NA	0.95	NA	0.93	NA
	Unga Strait	7.45	NA	0.02	NA	1.31	NA	0.35	NA	1.98	NA	0.38	NA	0.24	NA
	Beaver Bay	4.32	NA	0.17	NA	0.02	0.01	NA	NA	NA	NA	0.00	NA	0.02	NA
	Pavlof Bay	18.03	0.06	0.21	0.07	0.17	0.26	0.03	0.01	0.02	0.13	0.14	0.02	0.08	0.07
	Morzhovoi Bay	10.81	NA	NA	NA	0.00	NA	NA	NA	0.05	NA	NA	NA	NA	NA

Notes: NA = not available; **bold** indicates population estimate above established MABI.

Table 14.—Kodiak District commercial pot shrimp effort and harvest, 1980–2014.

Year	Number			Avg. pounds per landing
	Vessels	Landings	Pounds	
1980	4	22	4,485	204
1981	4	7	2,919	417
1982	6	18	9,754	542
1983	12	31	18,686	603
1984	6	21	4,361	208
1985	2	11	4,332	394
1986	2	8	3,595	449
1987	No Commercial Fishing Effort			
1988	2	2	531	266
1989	1	3	26	9
1990–1999 ^a	4	5	515	103
2000–2014 ^a	4	19	3,416	180

^a Years combined to maintain confidentiality.

Table 15.—South Peninsula and Chignik districts commercial trawl shrimp effort, harvest, and value, 1968–2013/14.

District	Season	Number		Pounds	Avg. pounds per landing	Avg. price per pound	Exvessel Value
		Vessels	Landings				
Chignik	1968	NA	NA	1,062,585	NA	NA	NA
	1969	NA	11	419,830	38,166	NA	NA
	1970	2	23	863,773	37,555	NA	NA
	1971	5	27	1,091,711	40,434	NA	NA
	1972	18	61	4,110,318	67,382	NA	NA
	1973	2	9	951,817	105,757	NA	NA
	1973/74	35	316	25,497,942	80,690	NA	NA
	1974/75	34	355	23,392,352	65,894	NA	NA
	1975/76	53	317	24,435,480	77,084	NA	NA
	1976/77	55	345	27,232,630	78,935	\$0.10	\$2,723,263
	1977/78	52	271	26,612,791	98,202	\$0.13	\$3,459,663
	1978/79	40	201	23,257,869	115,711	\$0.16	\$3,721,259
	1979/80	37	192	23,722,330	123,554	\$0.22	\$5,218,913
	1980/81	57	153	13,777,649	90,050	\$0.28	\$3,857,742
	1981/82	3	4	70,948	17,737	\$0.27	\$19,156
1982/83–2013/14		No Commercial Fishery					
South Peninsula	1968	NA	NA	4,465,732	NA	NA	NA
	1969	NA	74	2,714,911	36,688	NA	NA
	1970	4	172	4,425,909	25,732	NA	NA
	1971	3	212	5,212,590	24,588	NA	NA
	1972	11	408	14,705,809	36,044	NA	NA
	1973	6	66	1,837,401	27,839	NA	NA
	1973/74	12	345	19,960,612	57,857	NA	NA
	1974/75	24	403	26,145,720	64,878	NA	NA
	1975/76	21	325	20,044,112	61,674	NA	NA
	1976/77	59	437	37,147,932	85,007	\$0.10	\$3,714,793
	1977/78	53	403	44,223,213	109,735	\$0.13	\$5,749,018
	1978/79	14	68	5,259,241	77,342	\$0.16	\$841,479
	1979/80	10	40	3,134,367	78,359	\$0.28	\$877,623
1980/81–2013/14		No Commercial Fishery					

Notes: NA = not available

Table 16.–Kodiak and Chignik districts combined commercial red sea cucumber effort, harvest, and value, 1991–2013/14.

Season	Number			Pounds	Avg. pounds per landing	Avg. price per pound	Exvessel value
	Permits	Vessels	Landings				
1991	2	1	2		Confidential		
1992	1	1	2		Confidential		
1993	50	37	487	564,516	1,159	\$0.91	\$513,710
1994 ^b	69	36	164	256,659	1,565	\$1.08	\$277,192
1994/95	42	20	113	167,009	1,478	\$1.24	\$207,091
1995/96	18	8	52	135,000	2,596	\$1.25	\$168,750
1996/97	31	16	88	162,451	1,846	\$1.25	\$203,064
1997/98	26	16	65	132,337	2,036	\$1.16	\$153,511
1998/99	16	8	44	142,313	3,234	\$1.20	\$170,776
1999/00	18	8	56	116,134	2,074	\$1.20	\$139,361
2000/01	19	8	56	139,264	2,487	\$1.57	\$218,644
2001/02	18	7	51	152,613	2,992	\$1.25	\$190,766
2002/03	24	9	65	190,217	2,926	\$1.23	\$233,967
2003/04	21	7	80		Confidential		
2004/05	15	4	47		Confidential		
2005/06	20	5	64		Confidential		
2006/07	19	6	58		Confidential		
2007/08	16	5	46		Confidential		
2008/09	21	5	57		Confidential		
2009/10	16	6	45		Confidential		
2010/11	29	6	73		Confidential		
2011/12	22	7	61	122,280	2,005	\$4.98	\$608,954
2012/13	27	8	89	129,173	1,451	\$4.67	\$603,238
2013/14	22	8	61	107,320	1,759	\$3.43	\$368,108

Notes: Confidential = less than 3 permits fished or less than 3 processors purchased product.

^a Pounds of eviscerated product.

^b Covers the period from January 1, 1994, to September 30, 1994.

Table 17.—Kodiak, Chignik, and South Peninsula commercial red sea cucumber and green sea urchin guideline harvest levels (GHL), by district and section, 2013/14.

District/Section	Sea cucumber GHL (pounds) ^a	Sea Urchin GHL (pounds)
Kodiak		
Northeast Section	5,000	10,000
Eastside Section	40,000	10,000
Southeast Section	30,000	10,000
Southwest Section	20,000	10,000
Westside Section	30,000	10,000
North Mainland Section	5,000	5,000
South Mainland Section	5,000	5,000
Semidi Island Section	5,000	5,000
Total Kodiak	140,000	65,000
Chignik	15,000	5,000
South Peninsula	10,000	5,000
Grand total	165,000	75,000

Notes: GHL = guideline harvest level

^a Pounds of eviscerated product.

Table 18.–Kodiak District commercial green sea urchin effort, harvest, and value, 1980/81–2013/14.

Season	Number			Pounds	Avg. pounds per landing	Avg. price per pound	Exvessel Value
	Vessels	Permits	Landings				
1980/81	1	1	1	923	923	\$0.25	\$231
1981/82–1984/85				No Commercial Fishing Effort			
1985/86	1	2	7	13,866	1,981	NA	NA
1986/87	2	3	19	31,694	1,668	\$0.35	\$11,093
1987/88	12	15	143	142,520	997	\$0.64	\$91,213
1988/89	12	28	203	158,969	783	\$0.82	\$130,355
1989/90	14	32	83	49,745	599	\$0.84	\$41,786
1990/91	13	23	78	72,537	930	\$0.83	\$60,206
1991/92	5	7	27	33,119	1,227	\$0.92	\$30,469
1992/93	8	9	44	39,054	888	\$1.00	\$39,054
1993/94	7	11	16	8,847	553	\$1.09	\$9,643
1994/95	5	11	66	45,601	691	\$1.34	\$61,105
1995/96	2	7	28		Confidential		
1996/97	3	7	26	27,841	1,071	\$1.08	\$30,068
1997/98	2	3	3		Confidential		
1998/99	1	1	1		Confidential		
1999/00	2	3	8		Confidential		
2000/01	1	1	2		Confidential		
2001/02	1	1	1		Confidential		
2002/03–2013/14				No Commercial Fishing Effort			

Notes: NA = not available; confidential = less than 3 permits fished or less than 3 processors purchased product.

Table 19.—Kodiak District commercial octopus effort and harvest, by state and federal waters, and combined value, 1990–2014.

Year	State waters			Federal waters			Combined					
	Vessels	Landings	Pounds ^a	Vessels	Landings	Pounds ^a	Vessels ^b	Landings	Pounds ^a	Avg. pounds per landing	Avg. price per pound	Exvessel value
1990	26	95	56,052	15	51	20,127	31	140	76,179	544	\$1.13	\$86,082
1991	56	260	106,748	28	84	22,607	70	342	129,355	378	\$1.07	\$138,410
1992	65	260	107,860	34	153	44,851	78	404	152,711	378	\$0.94	\$143,548
1993	20	60	98,010	23	41	8,453	35	99	106,463	1,075	\$0.72	\$76,653
1994	5	7	4,504	4	9	613	8	15	5,117	341	NA	NA
1995	37	292	66,935	20	89	3,673	46	327	70,608	216	\$0.49	\$34,598
1996	34	193	67,898	26	142	20,670	44	257	88,568	345	\$0.45	\$39,856
1997	62	525	230,606	57	278	46,296	87	658	276,902	421	\$0.46	\$127,375
1998	53	407	259,263	54	290	117,332	76	671	376,594	561	\$0.43	\$161,935
1999	46	307	198,330	29	147	54,676	63	439	253,006	576	\$0.33	\$83,492
2000	48	292	98,928	45	239	61,550	69	483	160,478	332	\$0.39	\$62,586
2001	27	205	99,665	30	79	12,712	45	252	112,377	446	\$0.38	\$42,703
2002	31	213	208,991	26	96	23,078	45	279	232,069	832	\$0.49	\$113,714
2003	37	118	55,628	20	49	15,527	53	165	71,155	431	\$0.34	\$24,193
2004	15	42	11,891	15	50	29,718	26	88	41,609	473	\$0.36	\$14,979
2005	38	108	36,879	32	193	96,354	54	281	133,233	474	\$0.42	\$55,958
2006	41	183	69,329	43	240	168,110	63	394	237,439	603	\$0.63	\$149,587
2007	54	273	123,226	61	321	188,991	86	538	312,037	580	\$0.53	\$165,380
2008	55	371	252,840	61	279	129,000	86	592	381,839	645	\$0.57	\$217,648
2009	51	166	96,142	56	183	186,564	84	321	282,706	881	\$0.44	\$124,391
2010	60	200	92,881	69	228	202,566	104	413	295,448	715	\$0.38	\$112,270
2011	58	233	136,700	68	361	446,313	101	563	583,013	1,036	\$0.44	\$256,526
2012	58	263	116,061	73	404	309,011	97	623	425,071	682	\$0.55	\$233,789
2013	41	174	63,701	51	207	94,147	73	362	157,848	436	\$0.54	\$85,238
2014	45	274	250,000	74	457	657,273	110	707	907,273	1,283	\$0.36	\$326,618

Notes: State- and federal-waters harvest information derived from ADF&G fish ticket database.

^a Landed primarily as bycatch. Does not include discards.

^b Some vessels made landings from both state and federal waters.

Table 20.—Chignik and Alaska Peninsula districts combined commercial octopus effort and harvest, by state and federal waters, and combined value, 1990–2014.

Year	State waters			Federal waters			Combined					
	Vessels	Landings	Pounds ^a	Vessels	Landings	Pounds ^a	Vessels ^b	Landings	Pounds ^a	Avg. pounds per landing	Avg. price per pound	Exvessel value
1990	7	45	6,746	14	33	2,393	19	78	9,139	117	NA	NA
1991	18	71	15,103	14	34	4,267	29	105	19,370	184	\$1.00	\$19,370
1992	31	141	38,333	36	102	14,383	60	243	52,716	217	\$0.95	\$50,080
1993	16	53	18,436	18	32	2,778	31	84	21,213	253	\$0.87	\$18,455
1994	17	41	18,918	4	5	1,053	21	46	19,971	434	\$0.75	\$14,978
1995	8	17	3,283	5	5	1,185	12	22	4,468	203	\$0.44	\$1,966
1996	16	47	10,459	6	11	882	21	57	11,341	199	\$0.49	\$5,557
1997	22	141	50,040	3	4	145	25	145	50,185	346	\$0.42	\$21,078
1998	8	12	Confidential	2	4	Confidential	10	16	5,449	341	\$0.20	\$1,090
1999	4	4	355	0	0	0	4	4	355	89	\$0.20	\$71
2000	9	9	328	7	15	979	13	23	1,307	57	NA	NA
2001	4	4	386	6	10	2,120	9	14	2,506	179	NA	NA
2002	2	2	Confidential	10	17	Confidential	12	19	6,093	321	NA	NA
2003	18	25	1,463	10	19	15,160	24	40	16,623	416	\$0.61	\$10,140
2004	60	319	124,224	32	119	130,208	68	424	254,431	600	\$0.41	\$104,317
2005	34	94	26,656	17	62	63,308	47	152	89,965	592	\$0.47	\$42,284
2006	37	140	42,864	11	27	12,246	41	166	55,111	332	\$0.53	\$29,209
2007	38	213	84,960	15	34	20,066	47	243	105,026	432	\$0.46	\$48,312
2008	36	175	100,607	31	79	95,167	51	239	195,773	819	\$0.49	\$95,929
2009	36	240	238,080	29	63	22,857	52	282	260,937	925	\$0.39	\$101,765
2010	39	170	133,925	29	80	136,142	56	231	270,067	1,169	\$0.43	\$116,129
2011	38	199	202,244	27	58	26,731	53	238	228,975	962	\$0.43	\$98,459
2012	19	99	65,149	17	75	73,182	33	147	138,331	941	\$0.42	\$58,099
2013	28	94	51,508	13	90	223,982	36	162	275,490	1,701	\$0.40	\$110,196

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Table 20.—Page 2 of 2.

Year	State waters			Federal waters			Combined					
	Vessels	Landings	Pounds ^a	Vessels	Landings	Pounds ^a	Vessels ^b	Landings	Pounds ^a	Avg. pounds per landing	Avg. price per pound	Exvessel value
2014	37	123	74,457	28	83	176,810	56	199	251,267	1,263	\$0.40	\$100,507

Notes: State- and federal-waters harvest information derived from ADF&G fish ticket database. NA = not available; confidential = less than 3 vessels participated or less than 3 processors purchased product.

^a Landed primarily as bycatch. Does not include discards.

^b Some vessels made landings in both state and federal waters.

Table 21.—Kodiak District commercial razor clam effort, harvest, and value, 1960–2014.

Year	Number			Avg. pounds per landing	Avg. price per pound	Exvessel value
	Registered Diggers ^a	Landings	Pounds			
1960	76	NA	420,636	NA	\$0.11	\$46,270
1961	95	NA	381,971	NA	\$0.11	\$42,017
1962	66	NA	297,516	NA	\$0.11	\$32,727
1963	39	NA	323,757	NA	\$0.11	\$35,613
1964	2	0	0	0	NA	\$0
1965	4	NA	20,000	NA	\$0.25	\$5,000
1966	29	NA	15,429	NA	\$0.38	\$5,863
1967	9	NA	2,155	NA	\$0.40	\$862
1968	19	NA	6,384	NA	\$0.40	\$2,554
1969	5	6	12,029	2,005	\$0.40	\$4,812
1970	6	32	132,261	4,133	\$0.40	\$52,904
1971	73	82	190,394	2,322	\$0.30	\$57,118
1972	95	128	152,116	1,188	\$0.35	\$53,241
1973	64	140	165,282	1,181	\$0.40	\$66,113
1974	58	74	198,381	2,681	\$0.50	\$99,191
1975	18	5	6,188	1,238	\$0.50	\$3,094
1976	9	0	0	0	NA	\$0
1977	8	1	400	400	\$1.00	\$400
1978	NA	1	1,352	1,352	\$0.73	\$987
1979	0	0	0	0	NA	\$0
1980	NA	8	8,006	1,001	\$0.79	\$6,325
1981	NA	5	8,186	1,637	\$1.00	\$8,186
1982	NA	11	11,608	1,055	\$1.00	\$11,608
1983	NA	7	7,920	1,131	\$1.00	\$7,920
1984	NA	21	33,972	1,618	\$1.00	\$33,972
1985	NA	11	16,945	1,540	\$1.00	\$16,945
1986	NA	4	3,993	998	\$1.00	\$3,993
1987–2014	No Commercial Fishing Effort					

Notes: NA = not available.

^a Represents registered diggers not actual diggers. No data after 1977 due to issuance of statewide Interim-Use Permits.

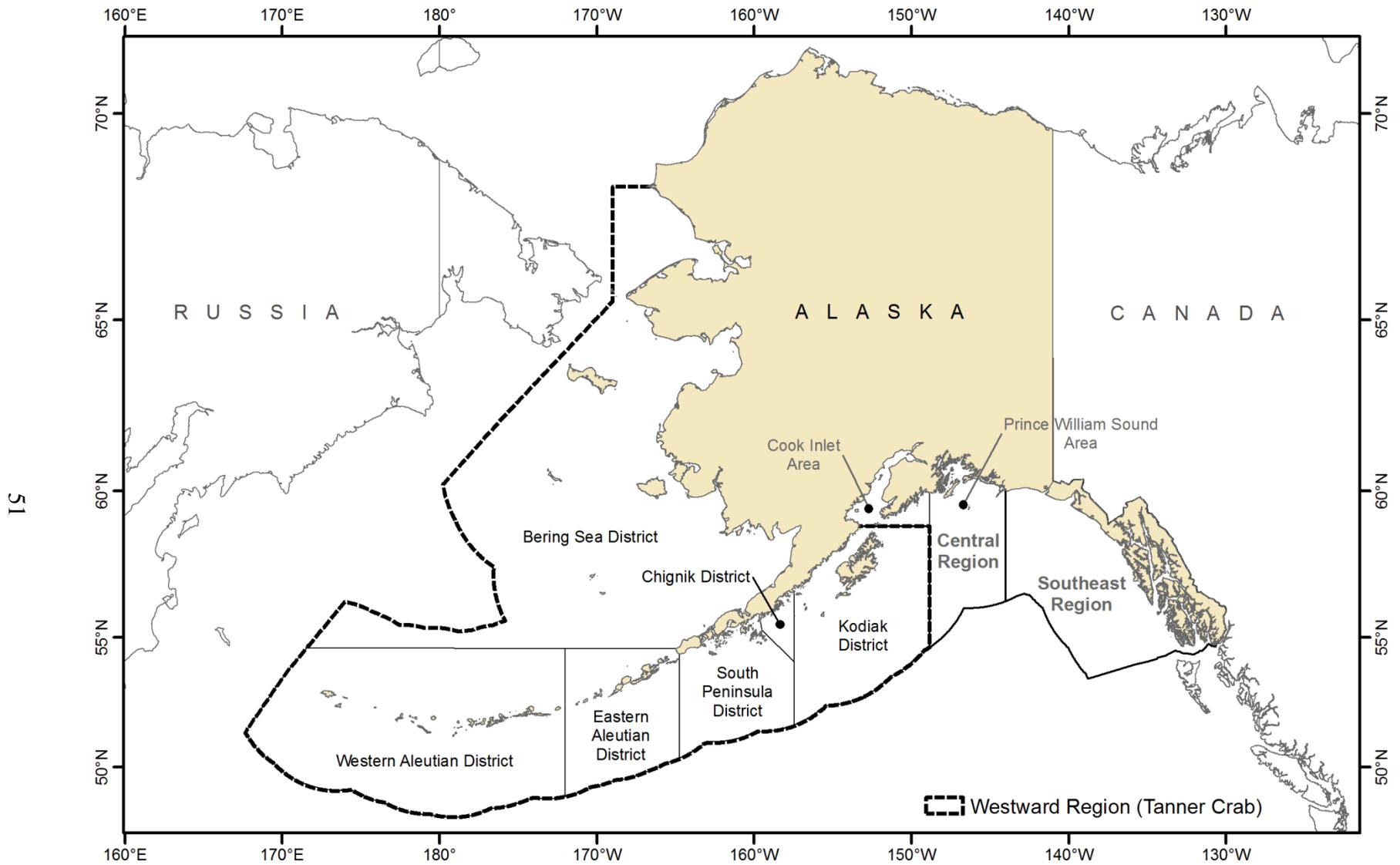


Figure 1.—Districts for shellfish fisheries in Alaska with Registration Area J (Westward) defined, 2014.

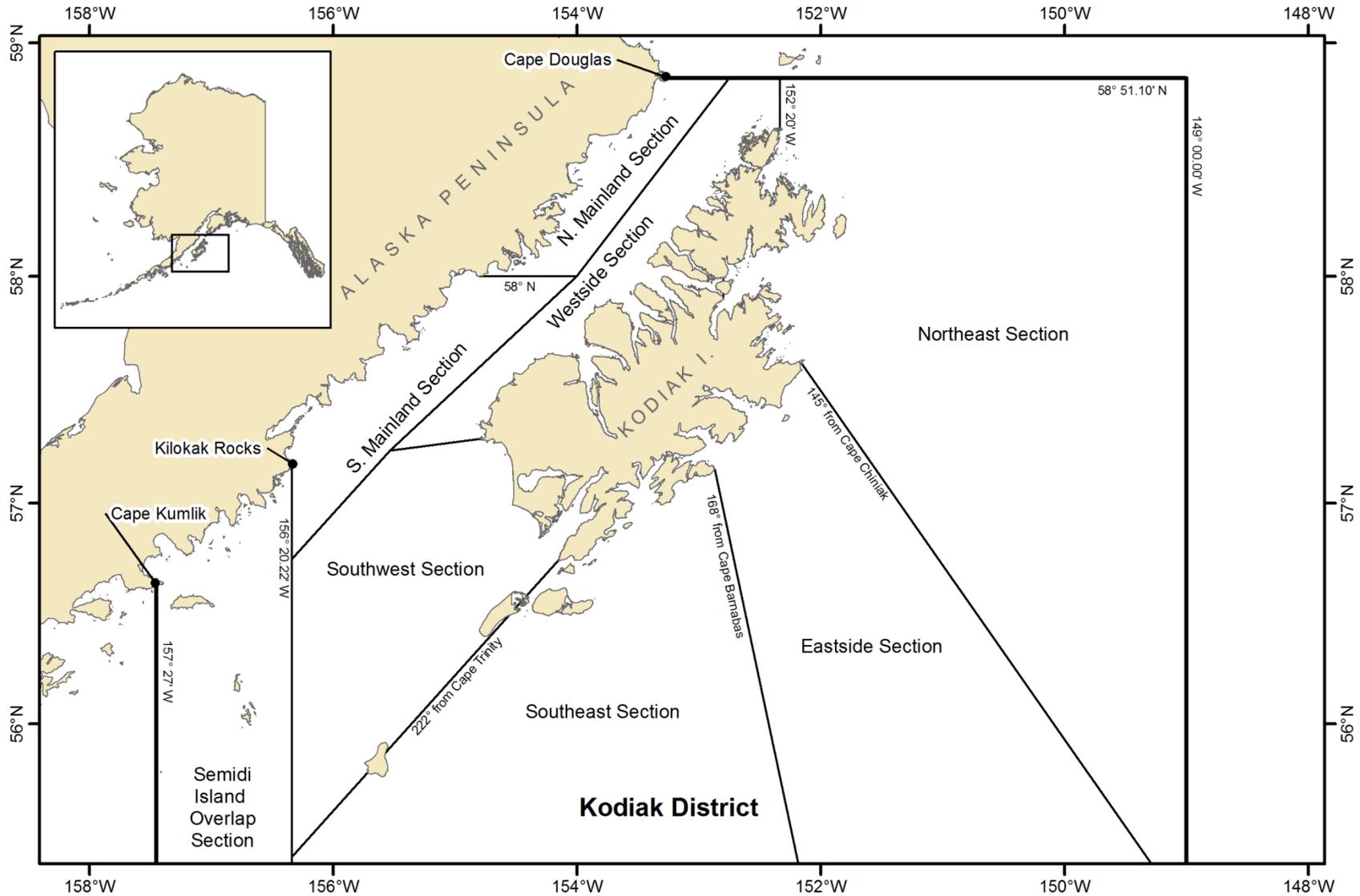


Figure 2.—Kodiak District and sections for Tanner crab, red sea cucumber, and green sea urchin fishery management, 2014.

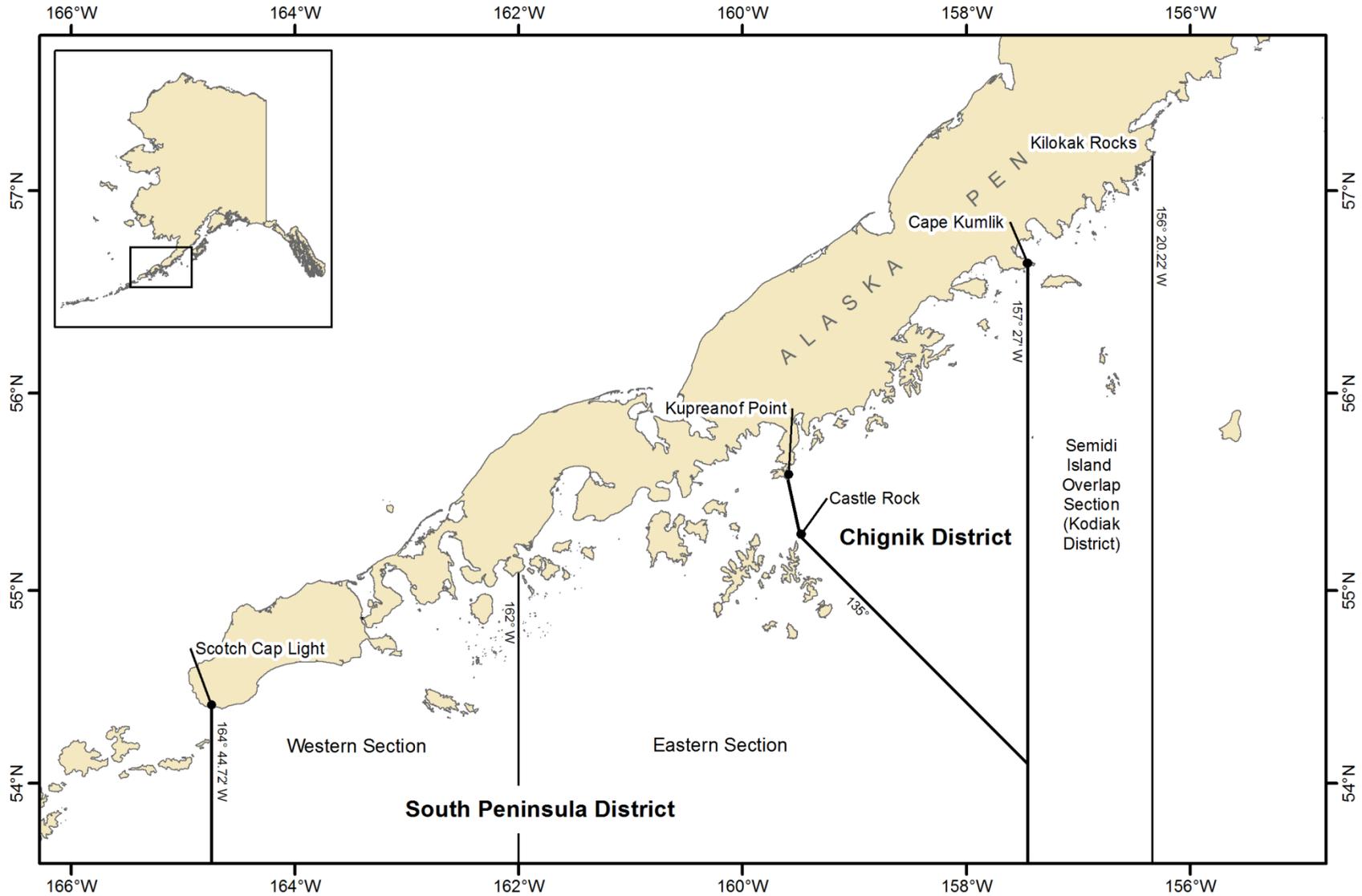


Figure 3.—Chignik and South Peninsula districts for Tanner crab, red sea cucumber, and green sea urchin fishery management, 2014.

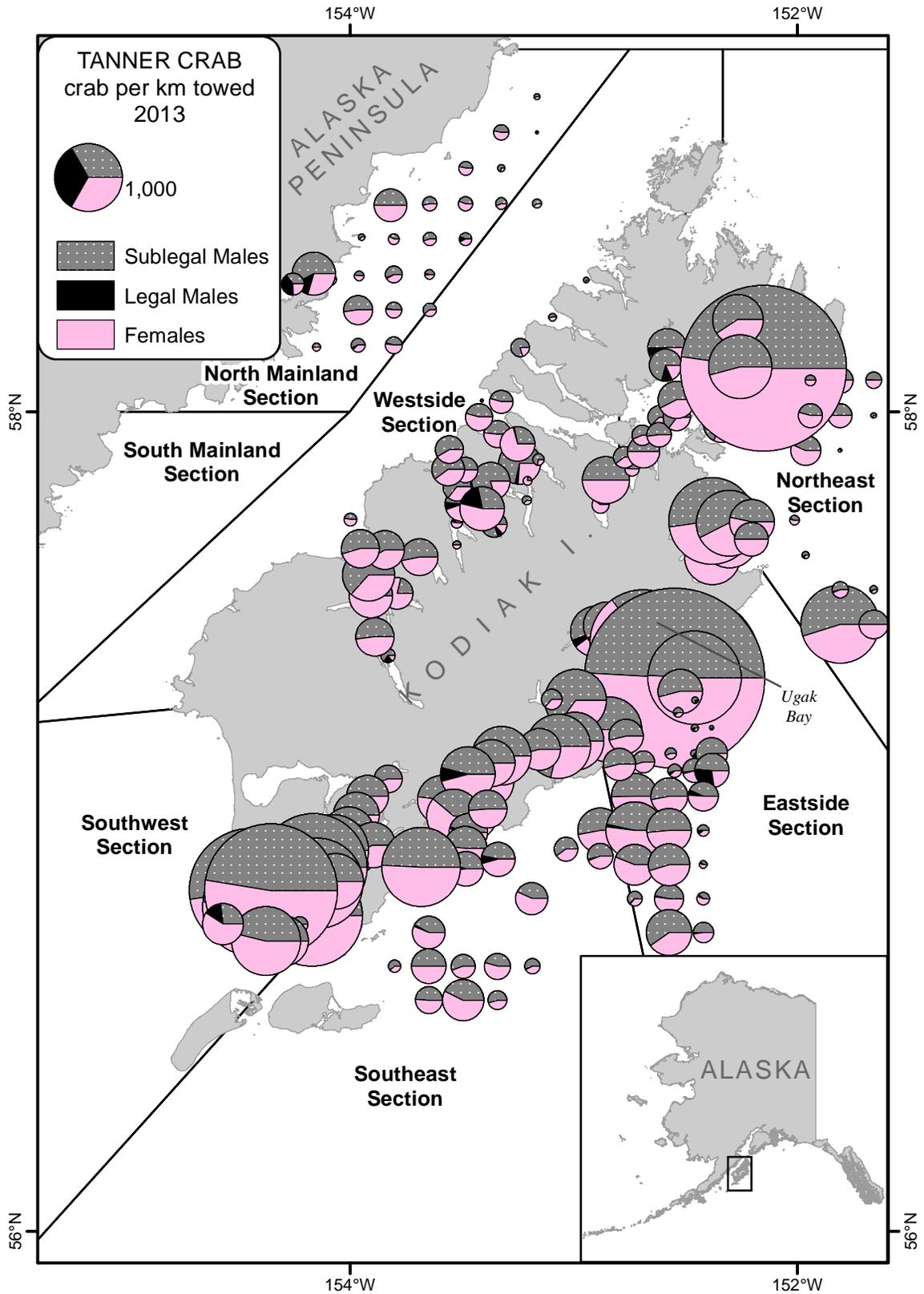


Figure 4.—Kodiak District trawl survey number of sublegal, legal, and female Tanner crab per kilometer towed, 2013.

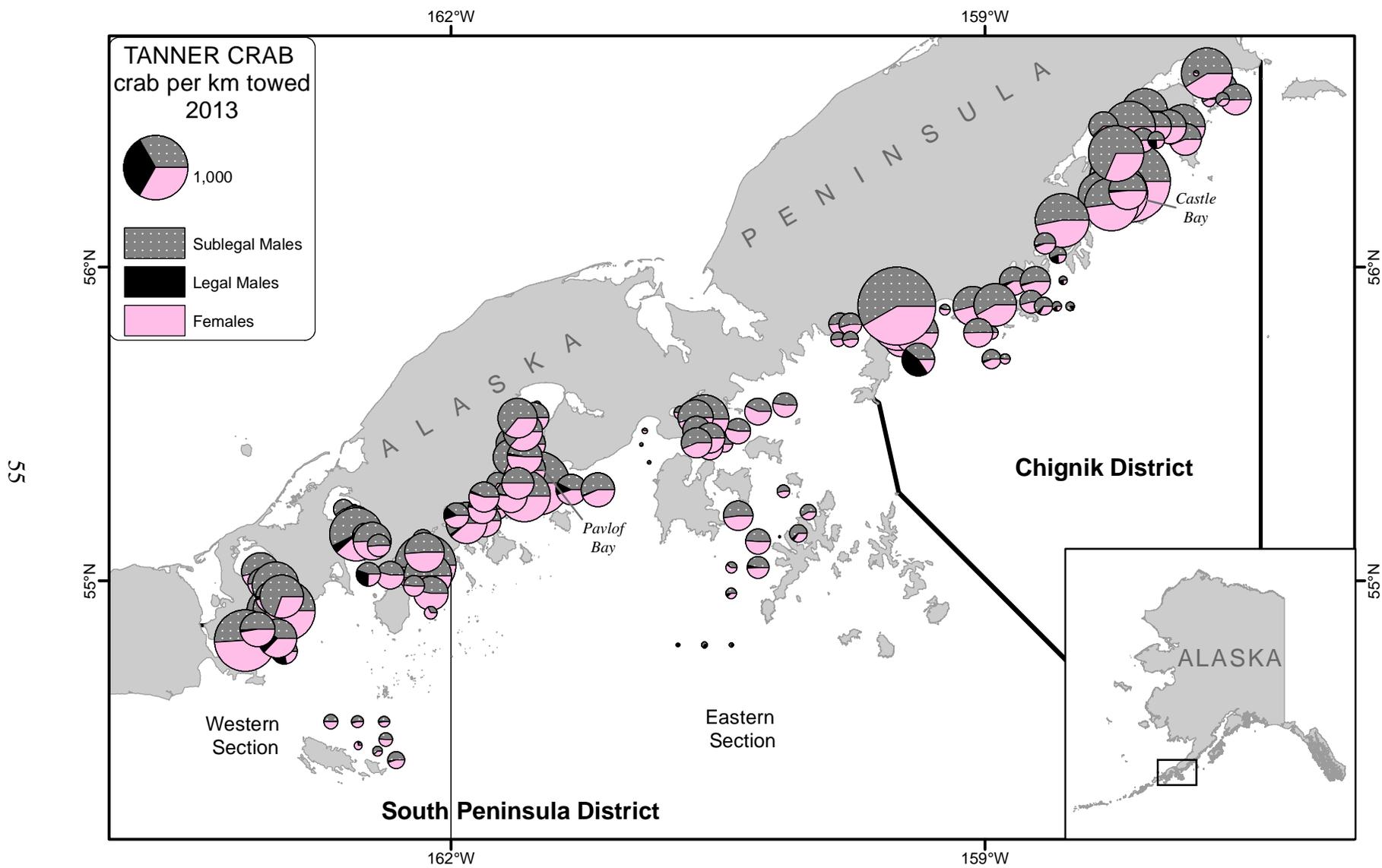


Figure 5.—Chignik and South Peninsula districts trawl survey number of sublegal, legal, and female Tanner crab per kilometer towed, 2013.

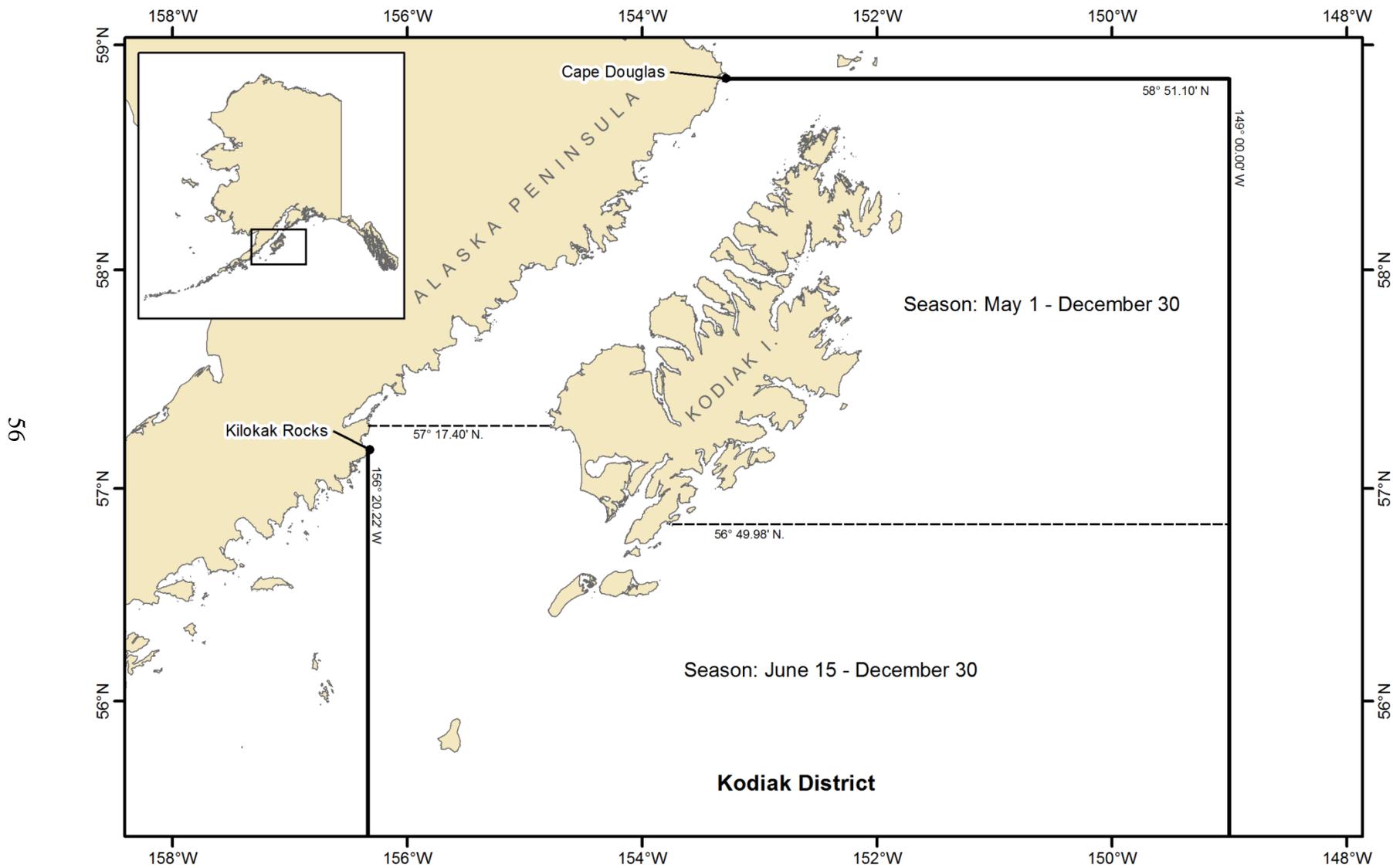


Figure 6.—Kodiak District Dungeness crab boundaries and fishing seasons, 2014.

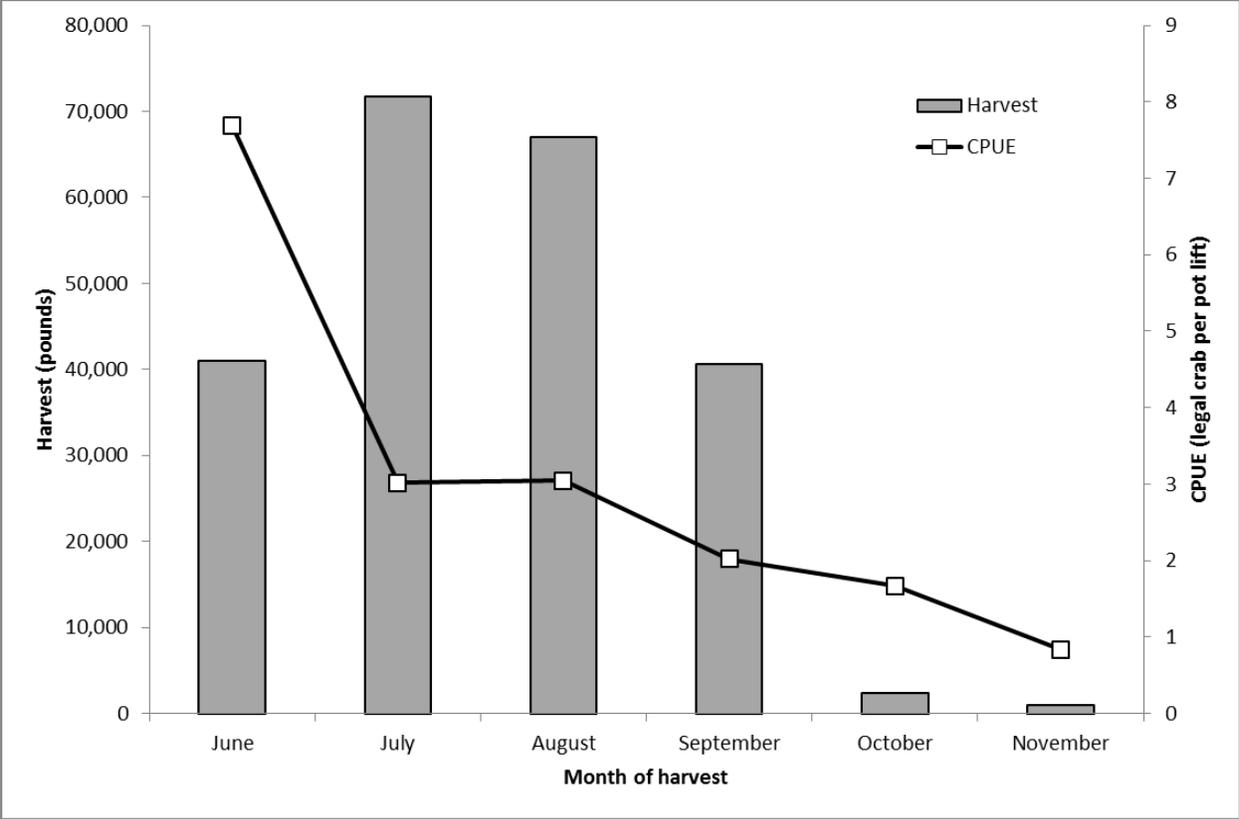


Figure 7.—Kodiak District commercial Dungeness crab harvest, in pounds, and CPUE (legal crab per pot lift), by month, 2014.

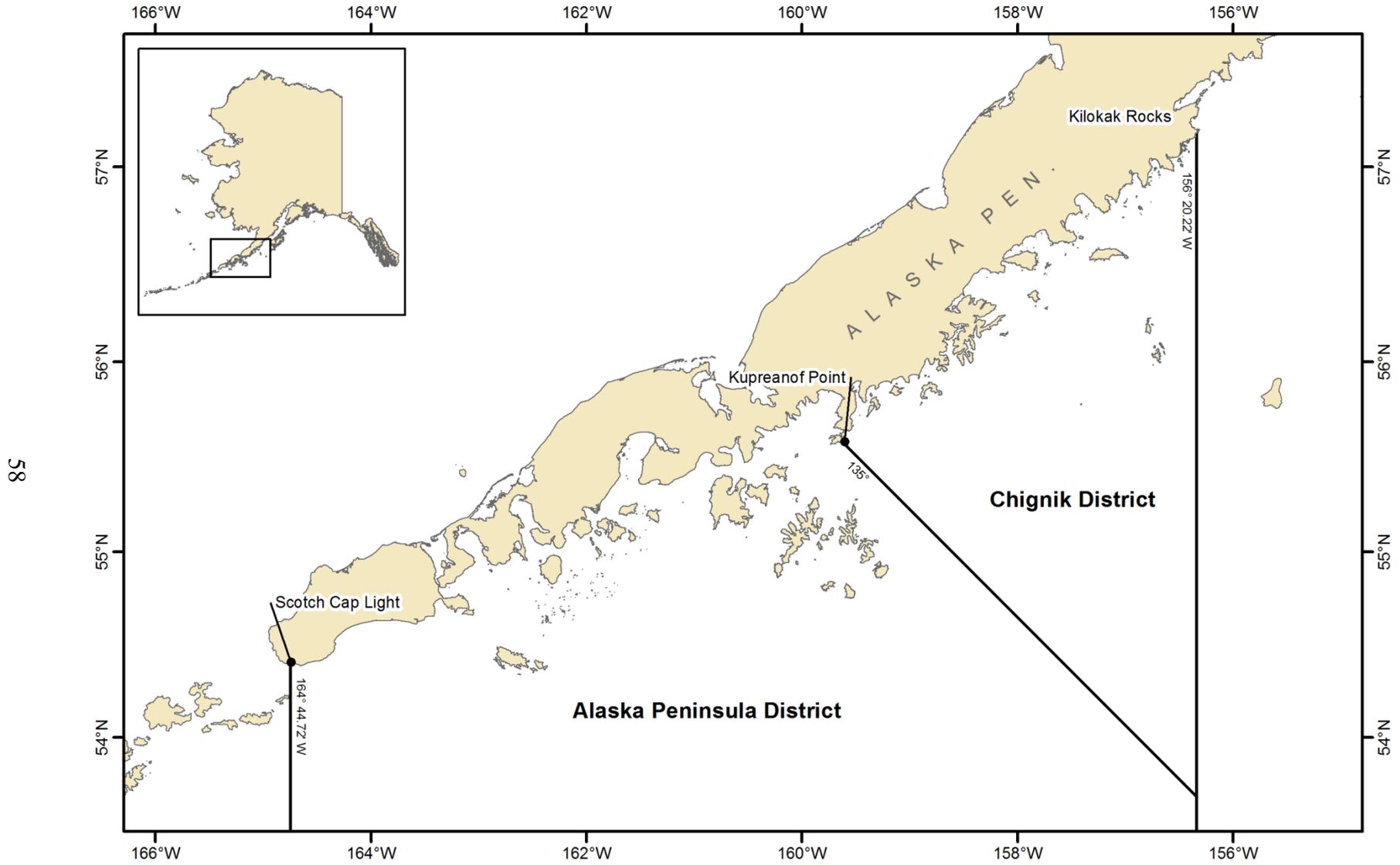


Figure 8.—Chignik and Alaska Peninsula districts for Dungeness crab fishery management, 2014.

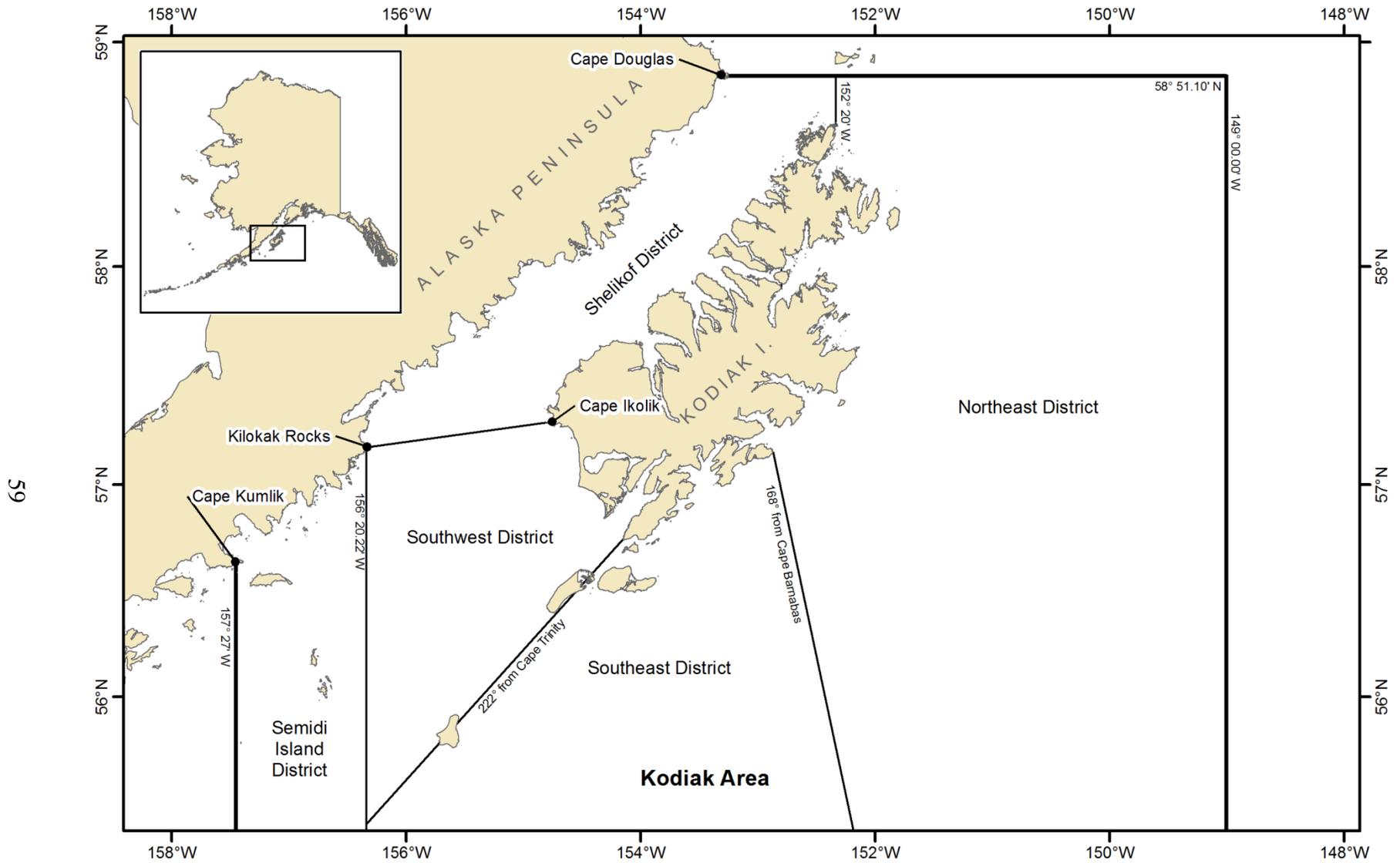


Figure 9.—Kodiak Area and districts for king crab fishery management, 2014.

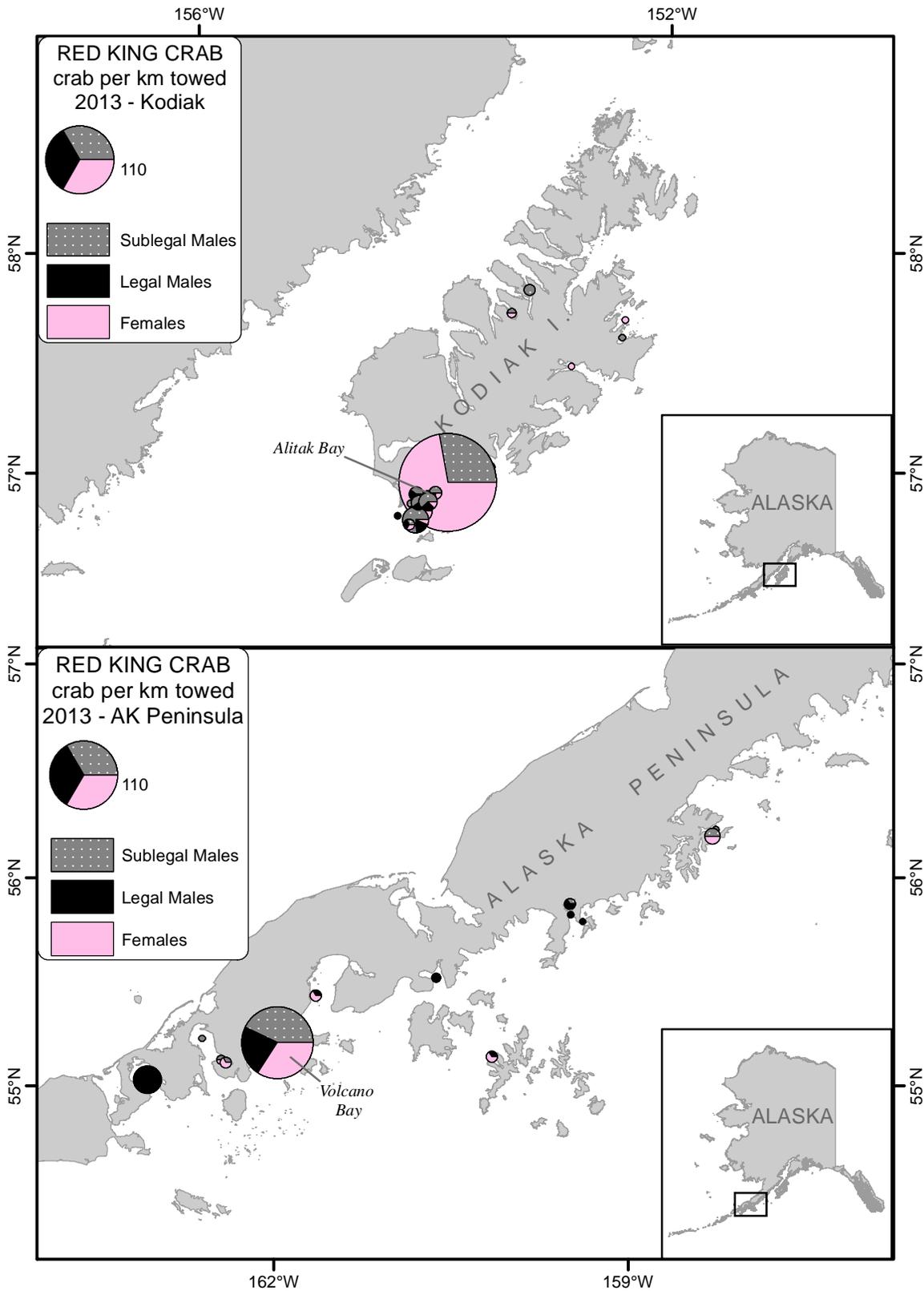


Figure 10.—Kodiak and Alaska Peninsula areas trawl survey number of female, legal, and sublegal red king crab per kilometer towed, 2013.

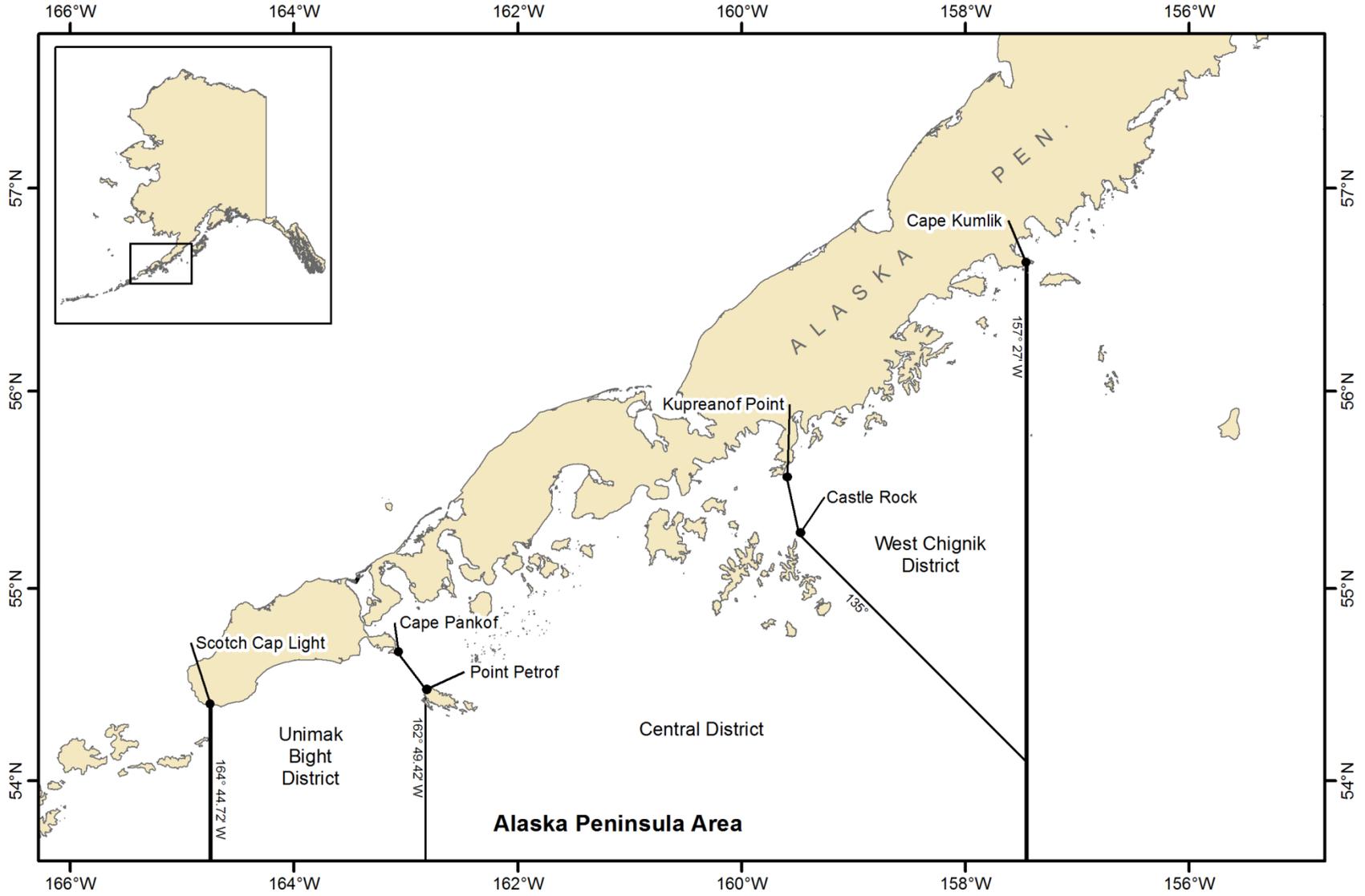


Figure 11.—Alaska Peninsula Area and districts for king crab fishery management, 2014.

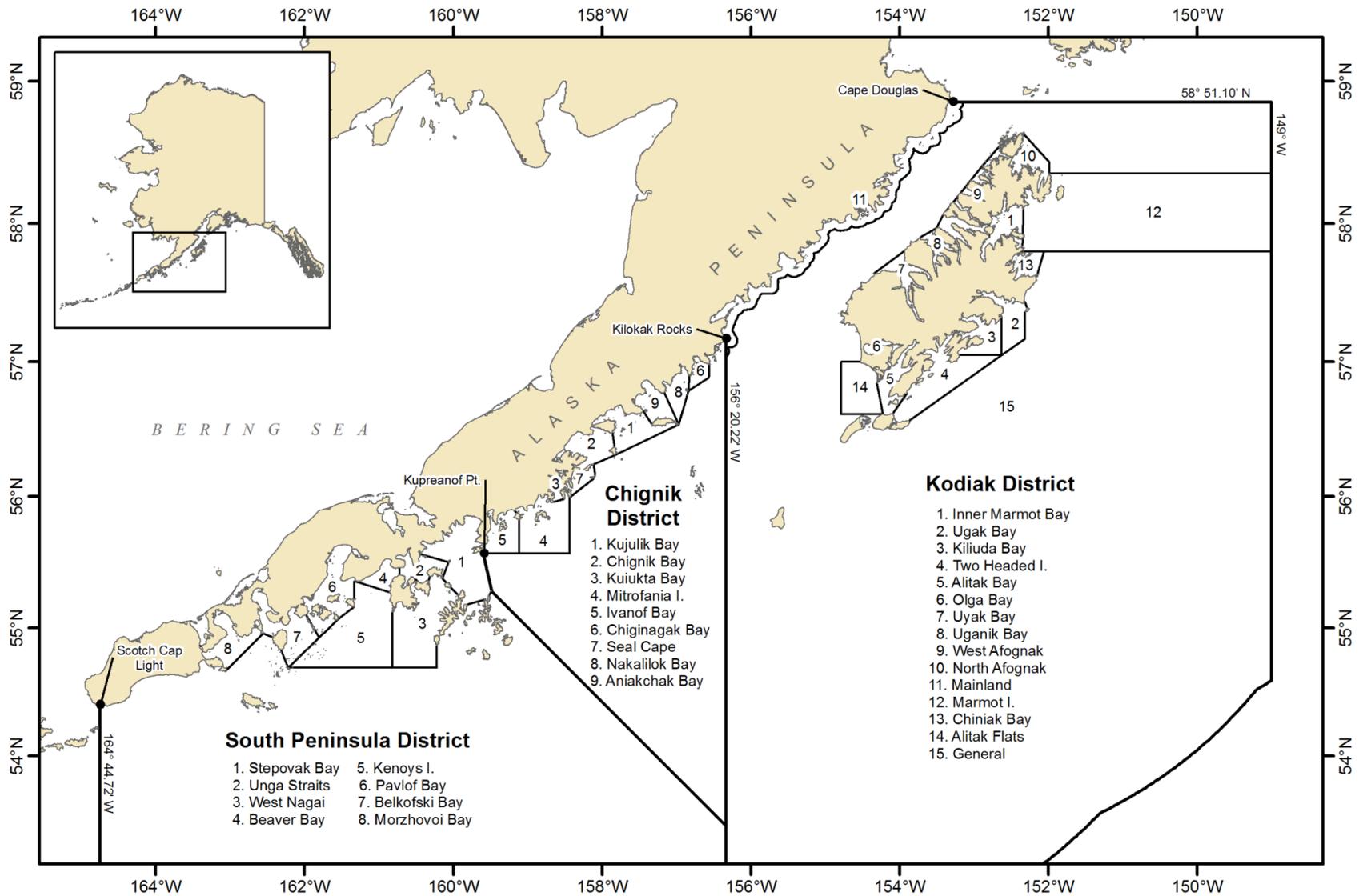


Figure 12.—Kodiak, Chignik, and South Peninsula districts and sections for shrimp fishery management, 2014.