Fishery Management Report No. 17-23

Annual Management Report for Shellfish Fisheries in the Kodiak, Chignik, and Alaska Peninsula Districts, 2015

by

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and

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

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

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

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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The Fishery Management Reports series was established in 1989 by the Division of Sport Fish for the publication of an overview of management activities and goals in a specific geographic area, and became a joint divisional series in 2004 with the Division of Commercial Fisheries. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.adfg.alaska.gov/sf/publications/. This publication has undergone regional peer review.

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ABSTRACT

This management report summarizes 2015 shellfish fisheries in the Kodiak, Chignik, and South Peninsula districts. During 2015, commercial fisheries occurred for Dungeness crab *Metacarcinus 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 *Pandalus* and *Pandalopsis* fisheries that have low effort and harvest. All districts have supported Tanner crab *Chionoecetes bairdi* fisheries in recent years, but no fishery occurred during 2015 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 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 giant Pacific octopus *Octopus dofleini*, which is managed by ADF&G only in state waters.

Shellfish fisheries are regulated using management areas, districts, and sections that vary by species (Figure 2). For example, Tanner crab *Chionoecetes bairdi* management is defined by district (e.g., Kodiak, Chignik, and South Peninsula districts) and king crab *Paralithodes* and *Lithodes* management is defined by area (e.g., Kodiak and Alaska Peninsula areas). This report summarizes current commercial shellfish fishery regulations and management actions and reviews fishery-specific harvest, effort, and value with emphasis on the 2014/15 season within the Kodiak, Chignik, and Alaska Peninsula Districts.

ADF&G issues emergency orders to enact regulatory action to open, close, and modify fishing periods or fishing areas. In total, 10 emergency orders were issued during 2014/15 for Kodiak, Chignik, and South Alaska Peninsula district shellfish fisheries (Table 1).

KODIAK

Management boundaries for Tanner crab, king crab, weathervane scallop, and miscellaneous shellfish fisheries around Kodiak Island include Pacific Ocean waters south of Cape Douglas, east of Cape Kumlik (long 157°27′ W), and west of long 149° W. Management boundaries vary slightly for Dungeness crab *Metacarcinus magister* and Pandalid shrimp *Pandalus* and *Pandalopsis dispar*, which include waters south of Cape Douglas and east of Kilokak Rocks (long 156°20.22′ W) on the Alaska Peninsula (Figure 2).

Historically, Kodiak waters supported substantial red king crab *Paralithodes camtschaticus*, Tanner crab, 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*, were historically harvested but are no longer targeted in commercial fisheries.

Commercial shellfish species harvested from Kodiak waters in 2014/15 were red sea cucumber *Parastichopus californicus*, Dungeness crab, giant Pacific octopus, and weathervane scallop *Patinopecten caurinus*.

CHIGNIK

Management boundaries for Tanner crab, king crab, weathervane scallop, and miscellaneous shellfish fisheries around Chignik Bay, south of the Alaska Peninsula, include Pacific Ocean waters west of Cape Kumlik and east of a line extending from Kupreanof Point. The precise location of the management boundary that extends from Kupreanof Point varies by species. The western management boundary also varies slightly for Dungeness crab and Pandalid shrimp, and includes waters west of Kilokak Rocks (Figure 2). The West Chignik District is defined as part of the Alaska Peninsula Area for king crab and weathervane scallop management (Figure 3).

Historically, commercial shellfish fisheries for Tanner crab, Dungeness crab, Pandalid shrimp, red sea cucumber, and giant Pacific octopus have occurred in the Chignik District. Only minor harvests of Dungeness crab, red sea cucumber, and giant Pacific Octopus occurred in 2014/15.

SOUTH PENINSULA

Management boundaries for Tanner crab, Dungeness crab, Pandalid shrimp, and miscellaneous shellfish fisheries south of the Alaska Peninsula include Pacific Ocean waters west of a line extending from Kupreanof Point and east of Scotch Cap Light (Figure 2). The precise location of the management boundary that extends from Kupreanof Point varies by species. For king crab and weathervane scallop fisheries, the eastern boundary is located at the longitude of Cape Kumlik and includes the West Chignik District (Figure 3).

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 2014/15, giant Pacific octopus, Dungeness crab, and weathervane scallops were commercially harvested, whereas the Tanner crab fishery did not open.

TANNER CRAB FISHERIES

INTRODUCTION

Tanner crab fisheries in the Kodiak, Chignik, and South Peninsula districts were slower to develop than king crab fisheries because consumers did not readily accept Tanner crab, and processing facilities had yet to develop effective meat extraction techniques for canning. Once developed, the fisheries quickly expanded, and in the early 1970s Tanner crab harvest began to exceed king crab harvest.

Beginning December 1978, the federal government assumed responsibility of Tanner crab management in the EEZ. Under a fishery management plan (FMP), the state managed Tanner crab in waters from 0–3 nmi offshore and the federal government managed Tanner crab in waters 3–200 nmi offshore. Joint jurisdiction occurred until 1987, when the state again assumed full management authority for Tanner crab in the Kodiak, Chignik, and South Peninsula districts.

Commercial regulatory harvest strategies (5 AAC 35.507) specify mature male abundance thresholds must be met and minimum guideline harvest levels (GHLs) must be available before commercial fishing may occur. If thresholds are met GHLs are determined annually based on stock abundance information collected during an ADF&G trawl survey on the *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 Tanner crab District includes Pacific Ocean waters south of the latitude of Cape Douglas, west of long 149° W, and east of the longitude of Cape Kumlik. The district is subdivided into 8 sections: Northeast, Eastside, Southeast, Southwest, Semidi Island Overlap, Westside, North Mainland, and South Mainland (Figure 4).

Overview of Current Fishery Regulations

Criteria within the Kodiak District 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 is a limited entry, superexclusive registration district for Tanner crab. Vessel operators are required to obtain a limited-entry permit card from CFEC and a vessel registration from ADF&G prior to fishing. The 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). 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.

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 investigate trawl gear as an alternative survey platform. Trawl survey results were used in conjunction with pot survey results beginning in 1984. Results indicated that trawl surveys were more efficient and less size/sex selective than pot surveys, better representing the entire crab population (Jackson 1990), thus trawl surveys became the sole stock assessment method in 1987.

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 and remained closed for 6 years. During the closure period a new regulatory harvest strategy was developed by ADF&G and adopted by the BOF in 1999. The new harvest strategy adopted conservative management measures aimed at preventing overharvest and localized depletion (Urban 1999), and the fishery reopened in 2000/01.

In 2002, 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 vessels. 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).

2015 Kodiak District Tanner Crab Fishery

The 2014 Kodiak District crab survey estimate of mature male Tanner crab abundance was only above the regulatory stock size threshold in the Southeast Section. The requirement that at least 2 sections must be above threshold for a fishery to occur was not met. Additionally, the 400,000 pound minimum fishery GHL requirement for the Kodiak District was not met. Therefore, the commercial fishery did not open for the 2014/15 season.

Status of Kodiak District Tanner Crab Stocks

The 2014 Kodiak District Tanner crab population can be characterized by high juvenile crab abundance, weak recruitment of legal-size males, and a buildup of postrecruit males. Although the abundance of juvenile crab was high, it was much lower than the record abundance of juvenile crab present in the 2013 survey. This decline in juvenile abundance largely contributed to a 43% reduction in total Tanner crab abundance from 2013 to 2014 (Spalinger 2015).

The 2014 Kodiak District total abundance estimate of 113.3 million Tanner crab was the 6th highest estimate since the trawl survey was implemented as the primary assessment tool in 1988 (Table 3). Despite the decline in small crab, increases were seen in mature females and larger juvenile males. Highest total crab densities were found in Ugak Bay (Figure 5; Spalinger 2015). The number of legal-size males was estimated at 2.0 million crab, which was a small increase from the 1.8 million legal-size male crab observed during the 2013 survey. Most legal-size male crab were old-shell, postrecruit males; estimated abundance of newly recruited legal-size males was at an all time low of 0.2 million crab (Table 3). The Southeast Section had 65% of the estimated legal-size males within the Kodiak District and was the only section above the mature male abundance threshold (Spalinger 2015).

The Kodiak District abundance estimate of mature female Tanner crab increased from 3.2 million crab in 2013 to 10.6 million crab in 2014. Egg clutches of 4,293 mature female Tanner crab were examined; 71.7% were primiparous, or bearing their first egg clutch. This is an increase from 56.7% in 2013. Mature female egg clutches were more than half full in 35.8% of

samples. This was lower than 2013, when 41.2% of mature females sampled had egg clutches that were more than half full (Spalinger 2015). This corroborates current working knowledge that primiparous Tanner crabs are less fecund than multiparous crabs (Somerton and Meyers 1983). As the majority of mature females sampled in 2014 are primiparous, they are capable of contributing to the population for multiple years.

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 135° southeast from the easternmost point of Castle Rock, and west of the longitude of the easternmost tip of Cape Kumlik (Figure 6).

Overview of Current Fishery Regulations

Criteria within the Chignik District harvest strategy (5 AAC 35.507) specify 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 GHL of at least 200,000 pounds.

The Chignik District is an open access, superexclusive registration district for Tanner crab. Vessel operators are required to obtain an interim-use permit card from CFEC and a vessel registration from ADF&G prior to fishing. Vessel size is limited to 58 feet or less in overall length. The pot limit varies depending on the district GHL; no more than 30 pots per vessel may be operated when the district GHL is less than 2 million pounds, and when the GHL exceeds 2 million pounds the number of pots in the fishery is limited to 1,000, with no more than 50 pots per vessel. 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. 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. 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 Mitrofania Island and Lighthouse Rocks.

Pot surveys were not conducted in the Chignik District and harvest limits were based on historic catch and effort until 1981, when the first trawl survey was conducted. The survey provided ADF&G with the first estimate of Tanner crab population size and recruitment in the Chignik District. Trawl surveys continued through 1984 and predicted poor recruitment, resulting in reduced harvest recommendations. Subsequent fisheries had lower harvests as catches declined first in productive offshore areas, followed by declines inside bays and nearshore waters. An annual trawl survey in the Chignik District was again initiated in 1989. The district was closed to

commercial fishing following the 1989/90 season and remained closed for 15 years. During the closure period a new regulatory harvest strategy was developed by ADF&G and adopted by BOF in 1999. The new harvest strategy adopted conservative management measures aimed at preventing overharvest and localized depletion (Urban 1999).

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 and 2013/14 seasons (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).

2015 Chignik District Tanner Crab Fishery

The 2014 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 2014/15 season.

Status of Chignik District Tanner Crab Stocks

The 2014 Chignik District Tanner crab population can be characterized by high juvenile crab abundance, weak recruitment of legal-size males, and a buildup of postrecruit males. Although the abundance of juvenile crab was high, it was much lower than the record abundance of juvenile crab present in the 2013 survey. This decline in juvenile abundance largely contributed to a 64% reduction in total Tanner crab abundance from 2013 to 2014 (Spalinger 2015).

The 2014 Chignik District total abundance estimate of 11.1 million Tanner crab was the 10th highest estimate since the trawl survey was reinitiated in 1989 (Table 5). Despite large declines in the numbers of small crab, increases were seen in mature females and larger juvenile males. The highest total crab densities were in Chignik Bay (Figure 7; Spalinger 2015). The number of legal-size males was estimated at 900,768 crab, which was higher than the 765,214 crab observed in 2013, and the fourth highest legal-size male estimate on record. Although the total number of legal-size males was high the estimated abundance of newly recruited legal-size males was at a low of 4,366 crab (Table 5). Over 99.5% of legal-size males were old-shell postrecruits. Therefore, the minimum GHL requirement was not met.

The Chignik District abundance estimate of mature female Tanner crab was 310,910 crab, 26% higher than 2013. Egg clutches of 193 mature female Tanner crab from the 2014 Chignik District trawl survey were examined; 74.1% were primiparous, a significant increase from 9.6% observed in 2013. Sampled mature female egg clutches were more than half full in 17.1% of crab; this was lower than 2013, when 44.0% of mature females sampled had egg clutches that were more than half full (Spalinger 2014, 2015). This is consistent with research showing that primiparous Tanner crabs are less fecund than multiparous crabs (Somerton and Meyers 1983). As the majority of mature females sampled in 2014 are primiparous, they are capable of contributing to the population for multiple years.

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 135° southeast from the easternmost tip of Castle Rock, and east of a line extending

south from Scotch Cap Light (Figure 6). The district is subdivided into 2 sections divided at longitude 162° W: Eastern and Western.

Overview of Current Fishery Regulations

Criteria within the South Peninsula District regulatory harvest strategy (5 AAC 35.507) specify that a section 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 Section GHL of at least 200,000 pounds.

The South Peninsula District is an open access, nonexclusive registration district for Tanner crab. Vessel operators are required to obtain an interim-use permit card from CFEC and a vessel registration from ADF&G prior to fishing. Vessels are limited to 58 feet or less in overall length. The pot limit varies depending on the district GHL; no more than 30 pots per vessel may be operated when the district GHL 2 million pounds or less and no more than 50 pots per vessel may be operated when the GHL exceeds 2 million pounds. 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 6). 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 based on historic harvest and CPUE. Fishing seasons were established in 1975, and a minimum crab size limit of 5.5 inches CW was established in 1976.

Pot surveys in the district first occurred in 1974, but since areas were not surveyed consistently results could not be used to estimate stock abundance. Rather, pot survey results were used to corroborate fishery harvest and tagging data that indicated trends in population of legal-size and sublegal males. 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. In 1984, methods were developed to use pot survey results to generate an abundance index that could be used to set guideline harvest limits. By 1985/86, recruitment improved and harvest increased to almost 4 million pounds. In 1988 trawl surveys replaced pot surveys as the assessment method for Tanner crab in the South Peninsula District. 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-size crab.

During the extended closure, a new regulatory harvest strategy for the South Peninsula District was developed by ADF&G and adopted by BOF in 1999. Similar to the harvest strategies implemented in Kodiak and Chignik, the South Peninsula District harvest strategy adopted conservative management measures aimed at preventing overharvest and localized depletion (Urban 1999).

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

participation ranged from 6 to 56 vessels (Table 6). The fishery was closed for the 2013/14 season due to low Tanner crab abundance.

The South Peninsula District is large in comparison to the Chignik District and the sections within the Kodiak District, and historically was not separated into smaller management units. This allowed for districtwide fisheries to occur, although some portions of the district were likely not capable of sustaining commercial harvest. For example, if high concentrations of crab were present in only a small number or bays, or if marginal commercial quantities of crab were spread across large offshore areas, the entire district could open (Urban and Vining 2005). Therefore, in 2005 the district was divided into 2 sections at longitude 162° W (Figure 6). This allowed for a fishery to occur in a section if stocks were capable of sustaining a harvest while protecting the other section if stocks were weak or rebuilding.

2015 South Peninsula District Tanner Crab Fishery

The 2014 South Peninsula District Tanner crab survey estimate of mature male Tanner crab abundance was below the regulatory stock size threshold in the Eastern Section; therefore, the Eastern Section commercial fishery did not open. The estimate for the Western Section was above the regulatory stock size threshold for a fishery to occur. The regulatory GHL was also just above threshold for opening; however, the number of newly recruited legal-size males was the lowest on record, and legal-size males captured by the survey were in a localized area that also had high numbers of females and sublegal males. Therefore, the Western Section commercial fishery did not open for the 2014/15 season.

Status of South Peninsula District Tanner Crab Stocks

The 2014 South Peninsula District Tanner crab population can be characterized by high juvenile crab abundance, weak recruitment of legal-size males, and a buildup of postrecruit males. Although the abundance of juvenile crab was high, it was much lower than the record abundance of juvenile crab present in the 2013 survey. This decline in juvenile abundance largely contributed to a 43% reduction in total Tanner crab abundance from 2013 to 2014 (Spalinger 2015).

The 2014 South Peninsula District total abundance estimate of 24.0 million Tanner crab was the seventh highest estimate since the trawl survey was implemented in 1988 (Table 7). Despite the decline in small crab, increases were seen in mature females and larger juvenile males. The highest total crab densities were found in Morzhovoi Bay (Figure 7; Spalinger 2015). The number of legal-size male crab was estimated at 1.8 million, an increase from 1.0 million observed during the 2013 survey. The estimated abundance of newly recruited legal-size males was at an all time low of 31,368 crab (Table 7). Almost 75% of all legal-size males in the South Peninsula District in 2014 were postrecruits found in Morzhovoi Bay.

The South Peninsula abundance estimate of mature female Tanner crab increased from 0.7 million crab in 2013 to 2.9 million crab in 2014. Egg clutches of 899 mature female Tanner crab were examined; 65.6% were primiparous, an increase from 13.4% observed in 2013. Sampled mature female egg clutches were more than half full in 31.0% of crab; this was lower than 2013 when 48.8% of mature females sampled had egg clutches that were more than half full (Spalinger 2015, 2014). This is consistent with research showing that primiparous Tanner crabs are less fecund than multiparous crabs (Somerton and Meyers 1983). As the majority of mature females are primiparous, they are capable of contributing to the population for multiple years.

DUNGENESS CRAB FISHERIES

INTRODUCTION

Dungeness crab fisheries in the Kodiak, Chignik, and Alaska Peninsula districts are part of Registration Area J (Figure 1) 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. Participants must hold a valid CFEC interim-use permit card and an ADF&G shellfish registration.

KODIAK DISTRICT

Description of the District/Overview of Current Fishery Regulations

The Kodiak District for Dungeness crab includes waters south of the latitude of Cape Douglas, west of long 149° W, and east of the longitude of Kilokak Rocks (Figure 8). Male Dungeness crab 6.5 inches CW or larger may be taken from May 1 through October 31 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 October 31 (Figure 8). The Kodiak District is an open access, superexclusive registration area for Dungeness crab.

Historical Background

Dungeness crab were commercially harvested in the Kodiak District beginning in 1962. Harvest peaked in the late 1960s, then slowly declined through the late 1970s (Table 8). This trend reversed 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 and increased in 2014 and 2015.

Starting in 1992, the Alaska Department of Environmental Conservation (ADEC) placed restrictions on the sale of whole crab due to the presence of paralytic shellfish poisoning (PSP). This prevented anyone without a shellfish processing permit from selling crab directly to the public. In 2015, the restriction was reevaluated and sale of whole, live crab was allowed.

2015 Kodiak District Dungeness Crab Fishery

The 2015 fishery opened May 1 except in the southern portion of Kodiak Island, which opened June 15 (Figure 8). Seven vessels participated in the fishery. Vessels ranged in size from 30 to 65 feet in length. The number of pots ranged from 300 to 1,000 pots per vessel. By regulation (5 AAC 32.410) the fishery closed on October 31, 2015.

Total harvest was 193,223 pounds from 40 landings (Table 8). The first delivery occurred on May 15. Harvest peaked in July then declined in August and September, with little harvest in October (Figure 9). CPUE averaged 3 legal crab per pot.

Based on fish ticket information, the average weight of Dungeness crab harvested during the 2015 fishery was 2.1 pounds. The average price per pound was $3.00 (Table 8). The estimated exvessel value for the 2015 fishery was approximately $580,000, compared to approximately $660,000 in 2014.

CHIGNIK DISTRICT

Description of the District/Overview of Current Fishery Regulations

The Chignik District for Dungeness crab includes waters west of Kilokak Rocks and east of a line extending 135° southeast from Kupreanof Point (Figure 10). Only male Dungeness crab 6.5 inches CW or larger may be taken from May 1 through October 31. The Chignik District is an open access, superexclusive registration district for Dungeness crab.

Historical Background

Through 2001, the Chignik District was part of the Alaska Peninsula District. The Chignik District was created by the BOF in 2002, and since its inception, effort and harvest have been sporadic and generally low. Fewer than 3 vessels or processors have participated in the fishery annually since 2002.

2015 Chignik District Dungeness Crab Fishery

Due to low participation, Chignik District harvest and effort data are combined with the Alaska Peninsula District to ensure confidentiality. During the 2015 season, 6 vessels participated in either the Chignik or Alaska Peninsula districts, landing 129,885 pounds of Dungeness crab (Table 9).

In the Chignik and Alaska Peninsula districts, the average price per pound of Dungeness crab in 2015 was $2.90 (Table 9). The estimated exvessel value for the 2015 fishery was approximately $377,000, compared to approximately $245,000 in 2014.

ALASKA PENINSULA DISTRICT

Description of the District/Overview of Current Fishery Regulations

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 10). Only male Dungeness crab 6.5 inches CW or larger may be taken from May 1 through October 31. The Alaska Peninsula District is an open access, superexclusive registration district for Dungeness crab.

Historical Background

Annual Dungeness crab harvest levels in the Alaska Peninsula District have been sporadic, ranging from a low of 11,000 pounds in 1971 to a high of approximately 1.3 million pounds in 1968 (Table 9). 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 1983 the BOF responded by designating the Alaska Peninsula District as a superexclusive registration district. Since that time, effort in the district has declined and recent catches remain relatively small.

2015 Alaska Peninsula District Dungeness Crab Fishery

The 2015 Alaska Peninsula District Dungeness crab season opened May 1. Due to the limited number of participants, harvest data are combined with the Chignik District to maintain confidentiality (Table 9).

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. Estimates of stock size or measures of stock status are not possible based on these limited data.

RED KING CRAB FISHERIES

INTRODUCTION

Red king crab fisheries in the Kodiak and Alaska Peninsula management areas began prior to 1950. Early fisheries were largely exploratory as fishermen developed gear. Commercially harvestable quantities of crab were located and markets expanded, resulting in increased harvest that peaked in the mid 1960s. The fisheries continued through the early 1980s, closing prior to the 1983/84 season in both areas due to declining abundance. They have not reopened.

In 1995, a harvest strategy was developed for the Kodiak Area that established threshold levels for abundance that must be met in order for a red king crab fishery to open (Pengilly and Schmidt 1995). Thresholds were not established for the Alaska Peninsula Area, but similar criteria would be used in the event that opening a fishery was considered. Stock size is estimated annually by a trawl survey conducted onboard the *R/V Resolution*.

KODIAK AREA

Description of the Area

The Kodiak king crab Management Area includes waters of the Gulf of Alaska south of Cape Douglas, west of long 149° W, and east of Cape Kumlik (Figure 11). The Kodiak Area is further subdivided into 5 districts for king crab management: Northeast, Southeast, Southwest, Semidi Island, and Shelikof.

Overview of Current Fishery Regulations

Red king crab fisheries in the Kodiak Area may open by emergency order on September 25. Biomass estimates must 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), including a total mature female population threshold of 5.12 million crab, which is divided by individual management district. Additional harvest strategy criteria for the Kodiak Area restricts harvest to 20% of mature males and caps harvest on legal-size males at 60% of the estimated legal-size population.

The Kodiak Area is an exclusive registration area for red king crab. Vessel operators are required to obtain an interim-use permit card from CFEC and a shellfish registration from ADF&G prior to fishing. 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). Only male crab 7.0 inches CW or larger may be retained during the fishery.

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 10). 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 from 24.2 million pounds in the 1981/82 season to 8.7 million pounds during the 1982/83 season, which was the lowest recorded catch in 23 years (Table 10). 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.

The 2014 annual trawl survey estimated red king crab abundance estimate at 446,710 crab, up from an estimated 280,497 crab in 2013. The largest increases from 2013 were observed among mature females and legal-size males. Legal-size male red king crab abundance was estimated to be 205,343 crab, an increase from the 21,050 legal-size males estimated in 2013. Approximately 52.6% of all mature female crab sampled during the 2014 trawl survey had an egg clutch that was more than half full, which is lower than the 2013 observation (63.8%). The majority of all red king crab observed during the survey were located in Alitak Bay (Spalinger 2015; Figure 12).

ALASKA PENINSULA AREA

Description of the Area

The Alaska Peninsula king crab Management Area includes waters between Cape Kumlik and Scotch Cap Light (Figure 3). The Alaska Peninsula is further divided into Unimak Bight, Central, and West Chignik districts.

Overview of Current Fishery Regulations

Red king crab fisheries in the Alaska Peninsula may open by emergency order on September 25. If the area were to open to commercial fishing, GHLs would be established based on the

surveyed king crab population using criteria similar to that found in the Kodiak king crab harvest strategy (Pengilly and Schmidt 1995).

The Alaska Peninsula Area is a superexclusive registration area for red king crab. Vessel operators are required to obtain an interim-use permit card from CFEC and a shellfish registration from ADF&G prior to fishing. The pot limit is either 40 or 75 pots per vessel depending on the GHL. Only male crab 6.5 inches CW or larger may be retained during the fishery.

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.

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 2014 ADF&G trawl survey results, the red king crab stock remains at historically low levels. The 2014 estimated population was 189,339 crab, which was lower than the 2013 estimate of 331,723 crab. Legal-size male red king crab abundance was estimated to be 45,639 crab, a decrease from the 99,689 legal-size males estimated in 2013. 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 2015; Figure 12).

GOLDEN KING CRAB FISHERIES

INTRODUCTION

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 king crab Management Area includes waters of the Gulf of Alaska south of Cape Douglas, west of long 149° W, and east of Cape Kumlik (Figure 11). The Kodiak Area is further subdivided into 5 districts for king crab management: Northeast, Southeast, Southwest, Semidi Island, and Shelikof.

Overview of Current Fishery Regulations

The Kodiak Area is a nonexclusive registration area for golden king crab. Vessel operators are required to obtain an interim-use permit card from CFEC and a commissioner permit from ADF&G prior to fishing. 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

Golden king crab in the Kodiak Area were not targeted until 1983; prior to that they were occasionally landed incidental to red king crab. After collapse of regional red king crab stocks in the early 1980s, interest in golden king crab increased. In 1983, 12 vessels explored the Kodiak Area with limited success. Catch totaled 111,398 pounds from 36 landings (Table 12). Peak harvest occurred in 1986 when 146,679 pounds were landed.

Since 1990, most catch and effort information is confidential due to the limited number of vessels that annually targeted golden king crab. There were no commissioner permits issued for golden king crab during 2015.

Status of Kodiak Area Golden King Crab Stocks

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 king crab Management Area includes waters between Cape Kumlik and Scotch Cap Light (Figure 3). The Alaska Peninsula is further divided into Unimak Bight, Central, and West Chignik districts.

Overview of Current Fishery Regulations

The Alaska Peninsula Area is a superexclusive registration area for golden king crab. Vessel operators are required to obtain an interim-use permit card from CFEC and a commissioner permit from ADF&G prior to fishing. 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 2015. Exploratory efforts by commercial fishermen have yet to locate quantities sufficient for a commercial fishery.

Status of Alaska Peninsula Area Golden King Crab Stocks

ADF&G does not assess the golden king crab stock in the Alaska Peninsula Area.

SHRIMP FISHERIES

INTRODUCTION

Trawl Shrimp Fishery

Trawl shrimp fisheries in the Kodiak, Chignik, and South Peninsula districts are part of Registration Area J (Figure 1). 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, as determined by trawl surveys conducted onboard the *R/V Resolution*, 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 GHL.

Pot Shrimp Fishery

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 GHLs 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 13).

Overview of Current Fishery Regulations

Shrimp fisheries in the Kodiak District 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 Kodiak District, shrimp may be taken with trawl gear from June 15 through February 28 in the General Section, and in other sections as established by emergency order provided shrimp population estimates are above established MABIs.

Currently there is no closed season for shrimp fishing with pot gear in the Kodiak District with the exception of North Afognak, West Afognak, and Mainland sections, which have a fishing season of May 1 through February 28, unless closed earlier by emergency order. A Guideline Harvest Range (GHR) of 0 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 the season (5 AAC 31.590(c)).

Historical Background

The Kodiak District trawl shrimp fishery began in 1958 with a harvest of 31,886 pounds (Jackson and Ruccio 2003; Table 13). The fishery developed rapidly before the 1964 earthquake and tsunami destroyed most shore-based processing facilities. 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 stock abundance declined sharply thereafter, shifting effort to the Chignik and South Peninsula districts (Jackson and Ruccio 2003). Pink shrimp *Pandalus borealis* accounted for over 95% of the total harvest by weight. Other species landed included sidestripe *Pandalopsis dispar*, coonstripe *Pandalus hypsinotus*, spot *Pandalus platyceros*, and humpy *Pandalus goniurus* shrimp.

ADF&G initiated a voluntary logbook program in 1967 and began conducting trawl surveys in the early 1970s. This information 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* (ADF&G 1983) 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 14).

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 and adopted the *Westward Area Shrimp Fisheries Management Plan* (5 AAC 31.590), which closed the areas previously included in the Mainland plan to shrimp fishing. Currently, only the General Section, which includes 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 15). 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, GHRs, and mandatory logbook requirements were adopted. In areas outside of the management plan, shrimp may be taken year round with pots.

2014/15 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 2014/15 season. Harvest information is confidential due to limited participation. All historical catch information is located in Tables 13 and 15.

Status of Kodiak District Shrimp Stocks

Since 1971, ADF&G has conducted trawl surveys to assess shrimp biomass with a focus on pink, sidestripe, and humpy shrimp. 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 density of shrimp in the Kodiak District during the 2014 trawl survey occurred in Wide Bay on the Alaska mainland. Shrimp abundance in all sections with established MABIs remain below levels necessary for a commercial fishery (Table 14). Trawl gear does not sample the rocky habitat typically associated with spot and coonstripe 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, Mitrofania Island, Ivanof Bay, Chiginagak Bay, Seal Cape, Nakalilok Bay, and Aniakchak Bay (Figure 13).

The South Peninsula District 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).

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 (5 AAC 31.592(c)). There is no closed season in the South Peninsula District for vessels using pot gear.

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 16). The South Peninsula District fishery experienced a rapid decline, then closed prior to the 1980/81 season. The Chignik District fishery declined steadily for several years 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.

In 1997, the BOF closed the Chiginagak, Nakalilok, and Aniakchak sections of the Chignik District to all commercial shrimp fishing 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.

2014/15 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 2014/15 season (Table 16).

Status of South Peninsula and Chignik Districts Shrimp Stocks

During 2014, Pavlof and Beaver bays in the South Peninsula District were surveyed, along with Kujulik and Chignik bays in the Chignik District. Survey data suggest that shrimp abundance in these areas remain at historically low levels. The biomass estimates derived from 2014 survey data are well below established MABIs in each surveyed area (Table 14).

MISCELLANEOUS SHELLFISH FISHERIES

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

RED SEA CUCUMBER

Introduction

Red sea cucumbers in the Kodiak, Chignik, and South Peninsula districts may be harvested from October 1 through April 30 under the provisions of a commissioner permit authorized in 5 AAC 38.062. Provisions of the commissioner permit specify sea cucumbers may only be taken during weekly fishing periods established by emergency order. Dive gear has been the only method used to harvest sea cucumbers in the Kodiak, Chignik, and South Peninsula districts. A valid CFEC interim-use permit card and diver registration is required. There are no minimum size limits for red sea cucumbers in regulation.

Management districts are divided into 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 4).

The Chignik District includes the Pacific Ocean waters of Registration Area J west of the longitude of Cape Kumlik, 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° southeast from the easternmost point of Castle Rock (Figure 6). The Chignik District is not 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 17). 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 was established from May 1 through September 30 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 17). 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 in Kodiak were further reduced to 125,000 pounds for the 1997/98 to 1999/00 seasons. As ADF&G established harvest limits in new areas, the Kodiak District GHL gradually increased to a GHL of 150,000 pounds for the 2003/04 season, then reduced to 140,000 pounds for the 2007/08 season. The Chignik District GHL was dropped to 15,000 pounds for the 2011/12 season. GHLs for both districts have remained at similar levels since (Table 18). Since the 1995/96 season, harvest ranged from approximately 107,000 to 190,000 pounds and participation ranged from 15 to 31 divers (Table 17).

2014/15 Kodiak and Chignik Districts Red Sea Cucumber Fishery

The 2014/15 red sea cucumber fishery opened October 1, 2014. The GHL was 140,000 pounds of eviscerated weight in the Kodiak District and 15,000 pounds of eviscerated weight in the Chignik District (Table 18). Twenty-one divers landed 130,870 pounds producing an exvessel value of approximately $525,000 (Table 17). During the 2014/15 season, GHLs were attained in the Eastside, Southeast, Southwest, and Westside sections of the Kodiak District during 4 fishing periods that totaled 6 days of fishing. Those sections were not reopened during subsequent fishing periods. The Northeast and Mainland sections remained open for the entire season. One diver participated in the Chignik District during the 2014/15 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 suggest stable recruitment in areas where sea cucumbers are commercially targeted. Stock status, particularly at depths unavailable to divers, is 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 135° southeast 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 2014/15 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 Cold Bay.

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 19). 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 indicate biomass in the Kodiak District is small compared to other areas on the Pacific coast (Lourie and Sanders 2000).

OCTOPUS

Introduction

The giant Pacific octopus fishery occurs 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 *Gadus macrocephalus* 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 GHLs 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 pot fisheries.

The decline of many crab stocks in the Gulf of Alaska resulted in reduced fishing opportunities for many pot gear 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 20 and 21).

2015 Kodiak District Octopus Harvest

All octopus harvested in the Kodiak District during 2015 were taken subsequent to other commercial fisheries. The 2015 Kodiak District bycatch harvest totaled 774,010 pounds. Most harvest occurred during state and federal Pacific cod pot fisheries. In state waters, 66 vessels harvested 316,613 pounds (Table 20), and in federal waters, 80 vessels harvested 457,397 pounds. Fish ticket information reported an average price of $0.63 per pound for an estimated total exvessel value of $487,626.

2015 Chignik and Alaska Peninsula Districts Octopus Harvest

Similar to Kodiak District, all octopus harvested in the Chignik and Alaska Peninsula districts during 2015 were taken subsequent to other commercial fisheries. The 2015 bycatch harvest totaled 47,051 pounds from state and federal waters combined (Table 21). Twenty-six vessels harvested 41,008 pounds in state waters, and 22 vessels harvested 6,042 pounds in federal waters. Fish ticket information reported an average price of $0.66 per pound for an estimated total exvessel value of $31,054.

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 GHLs for clam fisheries in Registration Area J.

Razor clams were harvested in the Kodiak District from the early 1920s through 1986 (Table 22). 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.

REFERENCES CITED

Alaska Department of Fish and Game (ADF&G). 1982. Westward Region shrimp fishery management plan, revision 1, April 1982. Unpublished manuscript Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K82-10, Kodiak.

Jackson, D. R. 1990. A bottom trawl survey of crab and groundfish in the Kodiak Island and Alaska Peninsula Areas, June through September, 1989. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K90-22, Kodiak.

Jackson, D. R. 1997. Westward Region commercial Dungeness crab and shrimp fisheries: A report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Regional Information Report 4K97-09, Kodiak.

Jackson, D. R. 2005. Trawl survey of shrimp and forage fish abundance in Alaska's Westward Region, 2004. Alaska Department of Fish and Game, Fishery Management Report No. 05-44, Anchorage.

Jackson, D. R., and M. P. Ruccio. 2003. Kodiak, Chignik, and South Peninsula shrimp fisheries and their management: A report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K03-07, Kodiak.

Lourie, S. A., and D. L. Sanders. 2000. IUNC species assessment for the green sea urchin *Strongylocentrotus droebachiensis.* McGill University Press.

Pengilly, D., and D. Schmidt. 1995. Harvest strategy for Kodiak and Bristol Bay red king crab and Saint Matthew Island and Pribilof blue king crab. Alaska Department of Fish and Game. Division of Commercial Fisheries Management and Development, Special Publication No. 7, Juneau.

Somerton, D. A., and W. S. Meyers. 1983. Fecundity differences between primiparous and multiparous female Tanner crab (Chionoecetes bairdi). Journal of Crustacean Biology 3(2): 183–186.

Spalinger, K. 2014. Bottom trawl survey of crab and groundfish: Kodiak, Chignik, South Peninsula, and Eastern Aleutians Management Districts, 2013. Alaska Department of Fish and Game, Fishery Management Report No. 14-34, Anchorage.

Spalinger, K. 2015. Bottom trawl survey of crab and groundfish: Kodiak, Chignik, South Peninsula, and Eastern Aleutian management districts, 2014. Alaska Department of Fish and Game, Fishery Management Report No. 15-27, Anchorage.

Urban, D., and I. Vining. 2005. Reconstruction of historic abundances of Tanner crabs in the proposed Eastern and Western Sections of the South Peninsula District, Report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Fishery Management Report No. 05-03, Anchorage.

Urban, D., D. Pengilly, D. Jackson, and I. Vining. 1999. A Tanner crab harvest strategy for the Kodiak, Chignik, and the South Peninsula Districts, a report to the Board of Fisheries. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 4K99-21, Anchorage.

TABLES

Table 1.–Kodiak, Chignik, and South Peninsula districts commercial shellfish emergency orders, 2014/15.

Emergency order	Effective date	Explanation
4-S-01-14	July 1, 2014	Establishes closed waters for the weathervane scallop fishery inside a line from Cape Chiniak on Kodiak Island to Marmot Island in the Northeast District of the Kodiak Registration Area.
4-S-02-14	July 12, 2014	Closes the fishing season for weathervane scallops in waters of the Northeast District of Kodiak Registration Area.
4-S-03-14	July 30, 2014	Closes the fishing season for weathervane scallops in waters of the Shelikof District of the Kodiak Registration Area east of long 154° W.
4-S-04-14	August 4, 2014	Closes the fishing season for weathervane scallops in all waters of the Shelikof District of the Kodiak Registration Area.
4-S-05-14	October 1, 2014	Establishes the first fishing period for the 2014/15 red sea cucumber season for all sections in the Kodiak District of Registration Area J.
4-S-08-14	October 8, 2014	Establishes the second fishing period for the 2014/15 red sea cucumber season for all sections in the Kodiak District of Registration Area J.
4-S-09-14	October 16, 2014	Establishes the third fishing period for the 2014/15 red sea cucumber season in the Northeast, Southwest, and Mainland sections of the Kodiak District of Registration Area J.
4-S-10-14	October 23, 2014	Opens the fourth fishing period for the 2014/15 red sea cucumber season in the Mainland and Northeast sections of the Kodiak District of Registration Area J until further notice.
4-S-11-14	October 30, 2014	Closes the fourth 2014/15 red sea cucumber fishing period in the Mainland and Northeast section of the Kodiak District of Registration Area J.
4-S-01-15	January 13, 2015	Closes the fishing season for weathervane scallops in waters of the Southwest District of Kodiak Registration Area.

Notes: Omitted emergency orders (e.g., 4-S-06-14) 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, 1967–2014/15.

Season	GHL	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight[b]	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[b]	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					
2014/15						No Commercial Fishery					

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

[a] Includes deadloss and personal use.

[b] Pounds per crab.

Table 3.–Tanner crab abundance estimates from bottom trawl surveys in the Kodiak District 1988-2014.

Year	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
	Juvenile	Mature	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
KODIAK DISTRICT													
1988	8,559,432	2,744,042	11,303,463	7,340,555	1,113,349	1,997,339	3,940,755	2,829,137	374,322	130,002	3,333,457	17,725,425	29,028,871
1989	16,380,280	8,907,154	25,287,427	14,727,746	3,418,679	3,585,343	4,518,769	2,044,897	620,249	236,779	2,901,922	29,152,419	54,439,822
1990	13,601,233	18,272,426	31,873,651	11,288,911	5,420,250	4,496,687	7,244,788	1,532,624	495,761	149,938	2,178,324	30,628,928	62,502,565
1991	11,462,215	8,054,069	19,516,277	9,962,659	2,799,137	3,382,811	5,890,407	3,840,652	719,139	110,731	4,670,531	26,705,520	46,221,776
1992	8,210,643	5,904,402	14,115,033	7,313,226	2,696,124	2,709,551	4,225,958	1,276,418	600,588	122,700	2,006,508	18,951,333	33,066,344
1993	17,531,130	4,652,879	22,184,004	15,637,846	1,604,924	2,081,855	3,411,157	863,002	815,974	100,904	1,779,876	24,515,636	46,699,627
1994	5,647,912	2,375,038	8,022,943	4,238,636	1,608,167	1,098,518	1,920,648	548,482	402,309	75,573	1,026,364	9,892,314	17,915,262
1995	10,353,928	1,983,535	12,337,459	9,477,362	1,653,663	1,008,662	1,078,509	201,217	372,184	25,621	599,018	13,817,198	26,154,651
1996	11,215,477	3,146,109	14,361,581	10,367,636	3,450,011	2,237,857	2,058,259	300,088	619,841	47,856	967,783	19,081,511	33,443,092
1997	4,513,032	2,465,690	6,978,721	4,208,146	2,613,356	2,503,551	2,300,669	409,654	501,549	30,844	945,341	12,571,050	19,549,768
1998	12,620,301	5,953,430	18,573,729	11,602,028	4,592,087	5,263,484	4,441,738	613,959	771,271	119,438	1,504,672	27,405,412	45,979,123
1999	17,437,126	3,294,798	20,731,914	16,419,459	1,733,916	2,238,781	3,937,558	807,338	1,295,490	144,417	2,247,250	26,576,944	47,308,845
2000	22,734,186	6,710,239	29,444,411	22,466,289	4,994,302	2,628,526	3,611,262	1,017,533	1,484,199	105,827	2,607,562	36,312,654	65,757,053
2001	69,111,883	12,547,204	81,659,089	60,596,643	15,184,465	5,755,539	4,015,215	481,797	1,913,626	121,664	2,517,087	88,068,918	169,728,000
2002	31,934,589	11,268,888	43,203,473	20,273,796	20,751,369	11,202,275	4,418,428	677,527	1,278,825	57,980	2,014,332	58,660,170	101,863,630
2003	6,669,928	16,796,157	23,466,083	8,666,025	7,601,995	17,269,485	11,517,498	898,381	989,250	54,849	1,942,480	46,997,451	70,463,535
2004	17,000,657	8,742,022	25,742,675	15,209,150	3,323,736	7,077,661	15,104,914	3,737,861	659,084	54,198	4,451,137	45,166,569	70,909,241
2005	17,059,289	8,397,544	25,456,826	16,542,184	2,963,213	3,905,076	12,612,268	4,468,564	1,637,813	90,305	6,196,678	42,219,379	67,676,188
2006	68,408,340	8,259,311	76,667,652	65,421,254	6,702,319	3,768,705	7,925,015	1,193,489	3,267,854	96,387	4,557,730	88,374,999	165,042,643
2007	70,835,014	11,380,228	82,215,246	43,634,190	41,039,085	7,317,691	8,086,856	619,046	3,257,389	86,498	3,962,933	104,040,715	186,255,949
2008	26,110,472	24,384,977	50,495,440	19,249,825	15,023,231	24,194,877	8,118,825	719,872	1,623,899	86,768	2,430,538	69,017,261	119,512,680
2009	10,278,417	17,159,097	27,437,510	6,888,245	8,085,863	12,890,615	23,913,865	4,383,358	702,847	89,136	5,175,345	56,953,904	84,391,405
2010	10,260,667	16,419,101	26,679,764	9,164,531	2,790,913	6,714,177	22,225,254	6,305,870	2,289,287	157,832	8,752,994	49,647,820	76,327,574
2011	16,662,367	5,411,391	22,078,488	16,834,185	645,829	1,653,341	8,579,128	1,960,105	3,455,644	148,805	5,575,778	33,288,226	55,366,705
2012	13,560,186	2,676,775	16,236,959	13,157,179	2,095,967	1,298,931	6,769,191	959,721	3,798,034	219,806	5,002,335	28,323,591	44,560,537
2013	94,745,938	3,213,918	97,959,858	90,716,790	5,406,063	1,831,924	2,550,773	174,930	1,547,671	84,646	1,811,994	102,317,528	200,277,376
2014	42,830,542	10,619,194	53,449,735	31,926,228	17,191,650	5,777,120	2,932,843	160,356	1,779,114	64,227	2,030,379	59,858,212	113,307,947

Table 4.–Chignik District commercial Tanner crab guideline harvest level (GHL), effort, harvest, and value, 1968–2014/15.

Season	GHL	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight[b]	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[b]	Avg. price per pound	Exvessel value
		Vessels	Landings	Crab[a]	Pounds[a]	Pots lifted					
2012/13–2014/15		No Commercial Fishery									

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

[a] Includes deadloss and personal use.

[b] Pounds per crab.

Table 5.–Tanner crab abundance estimates from bottom trawl surveys in the Chignik District 1989-2014.

Year	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
	Juvenile	Mature	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
CHIGNIK DISTRICT													
1989	1,300,457	1,115,925	2,416,379	1,304,173	317,256	1,132,323	881,655	259,491	37,237	27,552	324,282	3,959,685	6,376,063
1990	3,011,032	559,582	3,570,611	2,781,538	265,949	374,082	799,445	215,669	100,720	7,104	323,494	4,544,504	8,115,118
1991	1,930,040	531,669	2,461,709	1,840,128	206,417	116,741	185,553	120,995	71,485	3,270	195,752	2,544,593	5,006,303
1992	1,582,231	351,410	1,933,640	1,694,506	130,859	77,317	56,758	21,272	18,236	3,270	42,778	2,002,219	3,935,860
1993	1,119,784	252,242	1,372,024	995,639	658,850	384,347	206,686	40,650	70,434	3,939	115,023	2,360,541	3,732,563
1994	335,740	159,829	495,570	126,935	570,773	546,993	159,978	42,935	37,372	949	81,256	1,485,937	1,981,509
1995	456,543	165,595	622,138	541,142	19,515	100,619	209,447	112,050	15,020	2,532	129,602	1,000,324	1,622,460
1996	1,311,749	137,071	1,448,822	1,257,266	76,575	51,686	257,530	272,625	72,615	0	345,240	1,988,297	3,437,120
1997	1,760,639	530,773	2,291,413	1,495,923	1,107,980	591,270	357,065	162,312	108,598	15,741	286,651	3,838,885	6,130,298
1998	730,268	926,780	1,657,050	533,314	366,936	476,414	323,432	72,769	123,464	1,213	197,445	1,897,539	3,554,589
1999	951,830	228,196	1,180,027	784,432	390,006	421,250	525,148	171,662	169,666	3,165	344,492	2,465,329	3,645,353
2000	5,172,998	584,794	5,757,794	5,118,207	1,800,659	906,517	646,178	326,609	198,477	77,220	602,307	9,073,867	14,831,658
2001	3,740,603	911,777	4,652,379	2,272,777	3,404,293	1,225,633	578,618	264,597	100,519	10,995	376,113	7,857,433	12,509,814
2002	1,416,875	1,167,605	2,584,478	1,127,671	2,754,377	2,618,562	1,103,808	125,897	378,105	9,138	513,142	8,117,564	10,702,042
2003	776,512	983,276	1,759,787	701,999	816,986	1,060,295	919,704	122,016	187,422	15,073	324,510	3,823,495	5,583,282
2004	2,267,206	1,290,511	3,557,718	2,281,071	611,035	1,628,951	1,916,465	670,229	233,206	18,973	922,408	7,359,932	10,917,653
2005	3,882,382	1,484,753	5,367,137	4,154,999	780,788	900,197	977,966	244,366	156,450	6,084	406,901	7,220,853	12,587,989
2006	16,293,118	1,057,242	17,350,362	19,595,762	2,607,704	627,785	878,064	145,091	269,193	49,341	463,625	24,172,941	41,523,303
2007	5,703,763	1,586,435	7,290,199	5,536,588	4,286,488	1,613,262	666,845	128,544	84,753	9,325	222,625	12,325,804	19,616,000
2008	5,956,022	1,855,965	7,811,989	4,357,858	6,726,478	5,223,793	1,631,064	210,373	66,006	12,033	288,413	18,227,599	26,039,590
2009	2,577,563	3,870,398	6,447,960	1,800,410	5,741,936	8,579,136	4,408,944	633,759	83,300	12,037	729,097	21,259,525	27,707,488
2010	619,257	2,264,212	2,883,471	530,063	737,353	3,909,843	7,311,242	2,738,284	1,021,639	56,075	3,815,999	16,304,500	19,187,970
2011	1,263,069	838,998	2,102,072	1,385,139	36,108	399,356	2,854,262	1,741,344	1,207,550	144,818	3,093,710	7,768,573	9,870,638
2012	1,670,285	340,357	2,010,643	1,891,195	41,135	109,556	831,075	180,722	589,476	15,157	785,355	3,658,316	5,668,959
2013	12,703,345	247,393	12,950,738	15,699,513	328,625	100,679	888,518	12,722	716,803	35,689	765,214	17,782,543	30,733,281
2014	3,614,963	310,910	3,925,873	3,464,146	1,118,599	719,534	1,007,451	4,366	876,929	19,472	900,768	7,210,505	11,136,375

Table 6.–South Peninsula District commercial Tanner crab guideline harvest level (GHL), effort, harvest, and value, 1967–2014/15.

Season	GHL	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight[b]	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	12,127	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	3,782	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	4,349	24	2.2	$1.67	$492,176
2005/06	290,000	15	47	127,061	287,749	3,703	6,122	34	2.3	$1.21	$348,092

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Table 6.–Page 2 of 2.

Season	GHL	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight[b]	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	11,054	38	2.2	$0.79	$130,330
2007/08	250,000	9	42	102,290	236,241	3,368	5,625	30	2.3	$1.01	$237,330
2008/09	275,000	12	66	122,441	265,560	5,311	4,024	23	2.2	$1.31	$346,455
2009/10	500,000	41	72	261,170	583,202	5,779	8,100	45	2.2	$1.42	$827,527
2010/11	2,300,000	51	134	1,135,050	2,866,041	15,816	21,388	72	2.5	$2.31	$6,622,701
2011/12	1,620,000	56	117	723,578	1,875,277	10,524	16,028	68	2.6	$2.05	$3,844,652
2012/13	230,000	24	44	141,912	343,293	3,596	7,802	39	2.4	$2.20	$751,588
2013/14–2014/15	No Commercial Fishery										

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

[a] Includes deadloss and personal use.

[b] Pounds per crab.

Table 7.–Tanner crab abundance estimates from bottom trawl surveys in the South Peninsula District 1988-2014.

Year	Females			Number sublegal males by size (CW)				Recruit	Postrecruit males (CW)		Legal	Total	Total
	Juvenile	Mature	Total	<70 mm	70–91 mm	92–114 mm	>114 mm	males	<165 mm	≥165 mm	males	males	crab
SOUTH PENINSULA DISTRICT													
1988	1,227,389	1,679,912	2,907,294	830,400	710,754	927,261	871,197	353,415	157,695	89,598	600,708	3,940,322	6,847,624
1989	6,882,663	3,759,908	10,642,566	6,018,404	1,926,986	950,090	703,311	167,702	97,736	17,669	283,105	9,881,901	20,524,478
1990	7,132,693	4,541,385	11,674,079	5,875,064	1,904,845	1,714,348	906,734	199,682	214,668	23,719	438,067	10,839,053	22,513,128
1991	4,028,073	1,928,700	5,956,772	3,773,169	731,076	856,549	856,918	140,473	235,725	3,200	379,402	6,597,120	12,553,890
1992	1,505,976	1,674,414	3,180,385	1,020,276	818,479	670,627	551,875	110,945	117,161	2,671	230,779	3,292,031	6,472,417
1993	681,456	1,087,997	1,769,450	488,261	465,890	1,210,594	795,355	146,765	117,323	3,308	267,397	3,227,485	4,996,935
1994	329,213	753,759	1,082,969	226,453	210,283	348,159	506,036	99,743	93,733	1,258	194,734	1,485,665	2,568,628
1996	2,457,509	323,028	2,780,541	2,204,832	202,775	142,952	203,502	45,608	44,601	1,193	91,402	2,845,456	5,625,994
1997	902,543	553,904	1,456,446	553,067	630,058	465,660	221,195	49,351	46,694	1,432	97,478	1,967,456	3,423,895
1998	1,944,234	2,818,254	4,762,488	1,089,409	1,881,308	2,515,757	1,010,830	101,323	151,484	5,616	258,425	6,755,726	11,518,216
1999	544,080	863,057	1,407,135	397,985	436,359	1,001,607	1,260,451	220,694	93,217	2,768	316,675	3,413,961	4,821,089
2000	4,171,228	1,574,705	5,745,932	4,018,709	522,256	905,198	1,341,906	722,040	156,893	2,811	881,746	7,669,819	13,415,743
2001	5,396,622	899,458	6,296,076	4,356,216	1,681,485	766,457	720,841	328,297	158,604	14,915	501,812	8,026,819	14,322,886
2002	5,953,378	2,886,810	8,840,192	4,519,087	3,426,411	2,471,530	1,127,788	150,625	325,028	7,360	483,013	12,027,824	20,868,010
2003	1,696,141	3,027,237	4,723,377	827,413	2,009,280	2,128,662	1,254,004	134,428	235,182	2,057	371,666	6,591,020	11,314,397
2004	2,506,198	2,928,371	5,434,563	2,157,504	903,503	2,998,766	3,659,592	492,256	460,704	13,902	966,860	10,686,221	16,120,784
2005	5,911,856	5,148,091	11,059,945	6,104,296	957,501	1,176,190	2,092,819	560,634	332,244	2,848	895,726	11,226,527	22,286,471
2006	32,757,132	4,531,488	37,288,623	30,043,865	4,704,739	2,471,202	2,170,150	329,404	416,819	21,437	767,660	40,157,606	77,446,227
2007	23,449,044	10,780,003	34,229,052	14,743,628	14,293,519	7,694,826	4,880,801	692,767	423,562	14,630	1,130,958	42,743,722	76,972,772
2008	8,385,642	28,933,973	37,319,619	3,561,864	16,748,867	25,399,137	7,732,025	1,661,008	366,792	53,597	2,081,401	55,523,292	92,842,908
2009	3,162,945	19,108,186	22,271,130	2,076,430	3,731,026	12,855,868	21,997,782	3,500,469	442,894	75,540	4,018,907	44,680,009	66,951,137
2010	1,419,455	11,305,345	12,724,802	1,189,873	740,211	2,772,203	9,676,944	11,446,036	1,450,617	430,780	13,331,148	27,710,365	40,435,172
2011	1,513,057	4,350,907	5,863,964	1,544,716	291,403	787,290	4,059,868	1,872,174	4,697,445	423,923	6,993,532	13,676,809	19,540,767
2012	1,534,226	1,790,352	3,324,582	1,663,081	193,215	511,076	2,424,267	189,355	3,770,747	195,557	4,155,660	8,947,302	12,271,885
2013	18,745,372	680,660	19,426,028	19,402,317	1,402,576	293,755	632,800	113,821	872,805	50,071	1,036,697	22,768,145	42,194,169
2014	7,336,973	2,912,169	10,249,150	4,578,154	3,560,864	2,203,422	1,614,048	31,368	1,648,789	140,057	1,820,213	13,776,695	24,025,840

Table 8.–Kodiak District commercial Dungeness crab effort, harvest, and value, 1962–2015.

Year	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight[b]	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 8.–Page 2 of 2.

Year	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight[b]	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	$1.60	$4,699,469
1991	62	732	695,470	1,414,499	279,872	1,932	2.5	2.0	$1.38	$1,952,009
1992	46	501	805,215	1,656,793	218,602	3,306	3.7	2.1	$0.87	$1,441,410
1993	42	263	647,736	1,369,889	180,534	5,209	3.6	2.1	$0.95	$1,301,395
1994	31	162	426,848	948,461	151,888	5,855	2.8	2.2	$1.25	$1,185,576
1995	24	106	257,677	527,434	107,506	4,976	2.4	2.0	$1.74	$917,735
1996	21	113	334,237	668,772	88,682	5,918	3.8	2.0	$1.05	$702,211
1997	21	123	257,697	529,550	95,066	4,305	2.7	2.1	$2.11	$1,117,351
1998	12	60	185,249	371,241	63,926	6,187	2.9	2.0	$1.46	$542,012
1999	13	72	269,277	551,183	65,721	7,655	4.1	2.0	$1.58	$870,869
2000	12	69	114,038	238,955	57,037	3,463	2.0	2.1	$1.65	$394,276
2001	21	57	101,371	208,265	41,760	3,654	2.4	2.1	$1.80	$374,877
2002	18	74	181,698	355,943	71,096	4,810	2.6	2.0	$1.45	$516,117
2003	17	89	228,309	467,623	48,715	5,254	4.7	2.0	$1.50	$701,435
2004	11	57	169,899	352,216	42,990	6,179	4.0	2.1	$1.50	$528,324
2005	14	75	185,358	390,995	38,422	5,213	4.8	2.1	$1.23	$480,924
2006	12	62	74,044	148,583	31,670	2,397	2.3	2.0	$1.45	$215,445
2007	12	86	323,489	663,077	65,071	7,710	5.0	2.0	$2.08	$1,379,200
2008	15	86	517,567	1,030,498	93,414	11,983	5.5	2.0	$2.19	$2,256,791
2009	17	108	614,793	1,335,503	129,003	12,366	4.8	2.2	$1.59	$2,123,450
2010	19	100	473,708	1,002,576	101,341	10,026	4.7	2.1	$1.90	$1,904,894
2011	11	57	186,179	389,270	60,248	6,829	3.1	2.1	$2.39	$930,355
2012	7	23	46,101	97,001	24,645	4,217	1.9	2.1	$2.65	$257,053
2013	3	17	33,226	69,001	19,597	4,059	1.7	2.1	$2.68	$184,923
2014	6	34	108,406	223,773	35,960	6,582	3.0	2.1	$2.95	$660,130
2015	7	40	92,285	193,223	36,660	4,830	2.5	2.1	$3.00	$579,633

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.

[b] Pounds per crab.

Table 9.–Alaska Peninsula and Chignik districts combined commercial Dungeness crab effort, harvest, and value, 1968–2015.

Year	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight[b]	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 9.–Page 2 of 2.

Year	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight[b]	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	$260,046
2003	5	42	146,469	292,931	14,137	6,975	10.4	2.0	$1.45	$424,750
2004	6	53	131,640	264,096	22,786	4,983	5.8	2.0	$1.38	$364,452
2005	6	35	156,045	314,938	16,695	8,998	9.3	2.0	$1.25	$393,673
2006	4	26	141,747	284,954	15,850	10,960	8.9	2.0	$1.45	$413,183
2007	4	36	241,550	465,261	19,334	12,924	12.5	1.9	$1.90	$883,996
2008	7	39	261,581	516,945	27,847	13,255	9.4	2.0	$2.11	$1,092,066
2009	7	56	266,075	542,831	42,691	9,693	6.2	2.0	$1.49	$808,818
2010	6	37	166,952	350,606	33,778	9,476	4.9	2.1	$1.79	$627,585
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	$308,610
2013	4	15	32,967	75,679	6,947	5,045	4.7	2.3	$2.25	$170,278
2014	5	22	45,398	90,609	11,941	4,119	3.8	2.0	$2.70	$244,644
2015	6	20	63,861	129,885	7,625	6,494	8.4	2.0	$2.90	$376,667

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.

[b] Pounds per crab.

Table 10.–Kodiak Area commercial red king crab effort, harvest, and value, 1960/61–2014/15.

Season[a]	Number Vessels	Landings	Crab[b]	Pounds[b]	Pots lifted	Avg. pounds per landing	Avg. CPUE	Avg. weight[c]	Avg. price per pound	Exvessel value
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
1983/84–2014/15	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.

[c] Pounds per crab.

Table 11.–Alaska Peninsula Area commercial red king crab effort, harvest, and value, 1947–2014/15.

Season	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight[b]	Avg. price per pound	Exvessel value
	Vessels	Landings	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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Season	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight[b]	Avg. price per pound	Exvessel value
	Vessels	Landings	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
1983/84–2014/15	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.

[b] Pounds per crab.

Table 12.–Kodiak Area commercial golden king crab effort, harvest, and value, 1983–2015.

Year	Number					Avg. pounds per landing	Avg. CPUE	Avg. weight[b]	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	2,836	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				
2015	No Commercial Fishing Effort									

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.

[b] Pounds per crab.

Table 13.–Kodiak District commercial trawl shrimp effort, harvest, and value, 1958–2014/15.

Season	Number			Avg. pounds per landing	Avg. price per pound	Exvessel value
	Vessels	Landings	Pounds			
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			

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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			
2014/15	1	15	Confidential			

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

Table 14.–Kodiak, Chignik, and South Peninsula district shrimp minimum acceptable biomass indices (MABI) and population estimates, in millions of pounds, from surveyed sections, 2001–2014.

			Year													
District	Section	MABI	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Kodiak	Inner Marmot Bay	3.59	1.36	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	6.70	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[a]
	Chiniak Bay	1.45	0.11	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	NA	0.03	NA	0.04	NA	0.05	NA	0.02	NA	0.03	NA	0.01	NA	0.24
	Kiliuda Bay	5.23	NA	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	NA	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	NA	0.15	NA	0.18	NA	0.16	NA	0.34	NA	0.27	NA	0.81
	Uyak Bay	3.19	NA	0.93	NA	0.46	NA	0.52	NA	0.22	NA	0.62	NA	0.86	NA	0.75
	Uganik Bay	2.59	NA	0.57	NA	0.24	NA	0.28	NA	0.12	NA	0.59	NA	0.71	NA	1.31
	Kukak Bay	none	NA	0.09	NA	0.02	NA	0.07	NA	0.08	NA	0.09	NA	0.16	NA	0.40
	Wide Bay	1.05	0.44	0.34	0.08	0.03	0.02	0.34	0.21	1.33[a]	0.34	0.44	0.70	0.79	1.836[a]	1.97[a]
	Puale Bay	1.19	NA	0.04	NA	0.01	0.00	NA	NA	0.01	NA	0.04	NA	0.08	NA	0.09
	Shelikof Strait	none	28.57	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	NA	NA	NA	NA	NA	NA	NA	0.07	NA	NA
Chignik	Kujulik Bay	3.78	0.12	NA	0.10	NA	0.07	NA	0.14	NA	0.27	NA	NA	NA	0.04	NA
	Chignik Bay	4.60	1.87	NA	0.41	NA	0.79	NA	0.97	NA	1.82	NA	1.16	NA	0.93	NA
	Chiginagak Bay	0.69	NA	NA	0.03	NA	0.10	NA	0.11	NA	NA	NA	0.13	NA	NA	NA
	Nakalilok Bay	0.82	NA	NA	0.07	NA	0.10	NA	0.12	NA	NA	NA	0.17	NA	NA	NA
	Kuiukta Bay	1.85	NA	NA	0.11	NA	0.40	NA	0.09	NA	0.29	NA	0.36	NA	0.27	NA
	Mitrofania Island	5.22	NA	NA	0.16	NA	0.05	NA	0.20	NA	NA	NA	0.03	NA	0.31	NA
	Ivanof Bay	5.68	NA	NA	0.01	NA	0.03	NA	NA	NA	NA	NA	NA	NA	0.02	NA
South	Stepovak Bay	23.52	NA	NA	0.50	NA	1.38	NA	1.28	NA	11.41	NA	0.95	NA	0.93	NA
Peninsula	Unga Strait	7.45	NA	NA	0.02	NA	1.31	NA	0.35	NA	1.98	NA	0.38	NA	0.24	NA
	Beaver Bay	4.32	0.12	NA	0.17	NA	0.02	0.01	NA	NA	NA	NA	0.00	NA	0.02	NA
	Pavlof Bay	18.03	0.03	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	NA	0.00	NA	NA	NA	0.05	NA	NA	NA	NA	NA

Notes: NA = not available.

[a] Population estimate above established MABI.

Table 15.–Kodiak District commercial pot shrimp effort and harvest, 1980–2015.

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
2000–2015[a]	4	19	3,416	180

[a] Years combined to maintain confidentiality.

Table 16.–South Peninsula and Chignik districts commercial trawl shrimp effort, harvest, and value, 1968–2014/15.

District	Season	Number			Avg. pounds per landing	Avg. price per pound	Exvessel Value
		Vessels	Landings	Pounds			
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
	1982/83–2014/15	No Commercial Fishing Effort					
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
	1980/81–2014/15	No Commercial Fishing Effort					

Notes: NA = not available.

Table 17.–Kodiak and Chignik districts combined commercial red sea cucumber effort, harvest, and value, 1991–2014/15.

	Number						
Season	Permits	Vessels	Landings	Pounds[a]	Avg. pounds per landing	Avg. price per pound	Exvessel value
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	30	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	14	65	132,337	2,036	$1.16	$153,511
1998/99	16	7	44	142,313	3,234	$1.20	$170,776
1999/00	18	7	56	116,134	2,074	$1.20	$139,361
2000/01	19	7	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
2014/15	21	9	59	130,870	2,218	$4.02	$524,590

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 18.–Kodiak, Chignik, and South Peninsula commercial red sea cucumber and green sea urchin guideline harvest levels (GHL), by district and section, 2014/15.

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 19.–Kodiak District commercial green sea urchin effort, harvest, and value, 1980/81–2014/15.

Season	Number				Avg. pounds per landing	Avg. price per pound	Exvessel Value
	Vessels	Permits	Landings	Pounds			
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			
2002/03–2014/15	No Commercial Fishing Effort						

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

Table 20.–Kodiak District commercial octopus effort and harvest, by state and federal waters, and combined value, 1990–2015.

	State waters			Federal waters			Combined					
Year	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels[b]	Landings	Pounds[a]	Avg. pounds per landing	Avg. price per pound	Exvessel value[c]
1990	26	95	56,052	15	51	20,127	31	140	76,179	544	$1.09	$83,035
1991	56	260	106,748	28	84	22,607	70	342	129,355	378	$1.05	$135,823
1992	65	260	107,860	42	176	53,198	78	404	161,058	399	$0.90	$144,952
1993	20	60	98,010	24	45	9,239	35	99	107,249	1,083	$0.68	$72,929
1994	5	7	4,504	4	9	613	8	15	5,117	341	$0.97	$4,963
1995	37	292	66,935	20	89	3,673	46	327	70,608	216	$0.39	$27,537
1996	34	193	67,898	26	142	20,670	44	257	88,568	345	$0.55	$48,712
1997	62	525	230,606	57	278	46,296	87	658	276,902	421	$0.58	$160,603
1998	53	407	259,263	54	290	117,332	76	671	376,595	561	$0.59	$222,191
1999	46	307	198,330	29	147	54,676	63	439	253,006	576	$0.33	$83,492
2000	48	292	98,928	46	241	60,707	69	483	159,635	331	$0.45	$71,836
2001	27	205	99,665	30	79	12,712	45	252	112,377	446	$0.34	$38,208
2002	31	213	208,991	26	96	23,078	45	279	232,069	832	$0.58	$134,600
2003	37	118	55,628	20	49	15,527	59	167	71,155	426	$0.44	$31,308
2004	15	42	11,891	15	50	29,718	26	88	41,609	473	$0.37	$15,395
2005	38	108	36,879	32	193	96,354	54	281	133,233	474	$0.63	$83,937
2006	40	182	69,312	42	238	167,936	63	391	237,248	607	$0.63	$149,466
2007	54	273	123,303	62	323	188,831	86	540	312,134	578	$0.65	$202,887
2008	55	371	253,027	61	279	129,000	86	592	382,027	645	$0.68	$259,778
2009	51	167	96,142	56	183	186,567	84	322	282,709	878	$0.56	$158,317
2010	60	200	92,881	69	228	202,566	104	413	295,448	715	$0.45	$132,952
2011	57	232	136,611	68	363	446,651	101	564	583,262	1,034	$0.63	$367,455
2012	58	263	116,061	73	404	309,011	97	623	425,071	682	$0.67	$284,798
2013	42	175	64,259	52	204	94,618	73	360	158,877	441	$0.67	$106,448

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	State waters			Federal waters			Combined					
Year	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels[b]	Landings	Pounds[a]	Avg. pounds per landing	Avg. price per pound	Exvessel value[c]
2014	45	274	250,000	74	457	657,273	95	709	907,273	1,280	$0.67	$607,873
2015	66	440	316,613	80	546	457,397	114	925	774,010	837	$0.63	$487,626

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

[a] Landed primarily as bycatch. Includes personal use and product retained for bait. Does not include discards.

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

[c] Exvessel value is based on retained pounds and may not represent product sold.

Table 21.–Chignik and Alaska Peninsula districts combined commercial octopus effort and harvest, by state and federal waters, and combined value, 1990–2015.

	State waters			Federal waters			Combined					
Year	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels[b]	Landings	Pounds[a]	Avg. pounds per landing	Avg. price per pound	Exvessel value[c]
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	18,539	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	9	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	9	13	4,290	2	4	Confidential	9	13	4,290	330	$0.20	$858
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	5,286	10	17	5,286	311	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	36	135	40,909	11	27	12,246	41	161	53,155	330	$0.53	$28,172
2007	38	213	84,960	15	34	19,479	47	243	104,439	430	$0.56	$58,486
2008	36	175	100,607	31	76	80,673	51	236	181,279	768	$0.56	$101,516
2009	36	240	238,080	29	64	22,857	52	283	260,937	922	$0.39	$101,765
2010	39	170	133,925	29	80	136,142	56	231	270,067	1,169	$0.25	$67,517
2011	38	199	202,244	27	60	26,765	53	239	229,009	958	$0.34	$77,863
2012	20	100	65,155	17	75	73,182	34	148	138,337	935	$0.40	$55,335
2013	23	88	49,320	11	86	222,914	29	152	272,235	1,791	$0.41	$111,616

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Table 21.–Page 2 of 2.

	State waters			Federal waters			Combined					
Year	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels[b]	Landings	Pounds[a]	Avg. pounds per landing	Avg. price per pound	Exvessel value[c]
2014	35	121	74,308	23	77	166,483	50	191	240,791	1,261	$0.31	$74,645
2015	26	112	41,008	22	48	6,042	43	158	47,051	298	$0.66	$31,054

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. Includes personal use and product retained for bait. Does not include discards.

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

[c] Exvessel value is based on retained pounds and may not represent product sold.

Table 22.–Kodiak District commercial razor clam effort, harvest, and value, 1960–2015.

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
1987–2015	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.

FIGURES

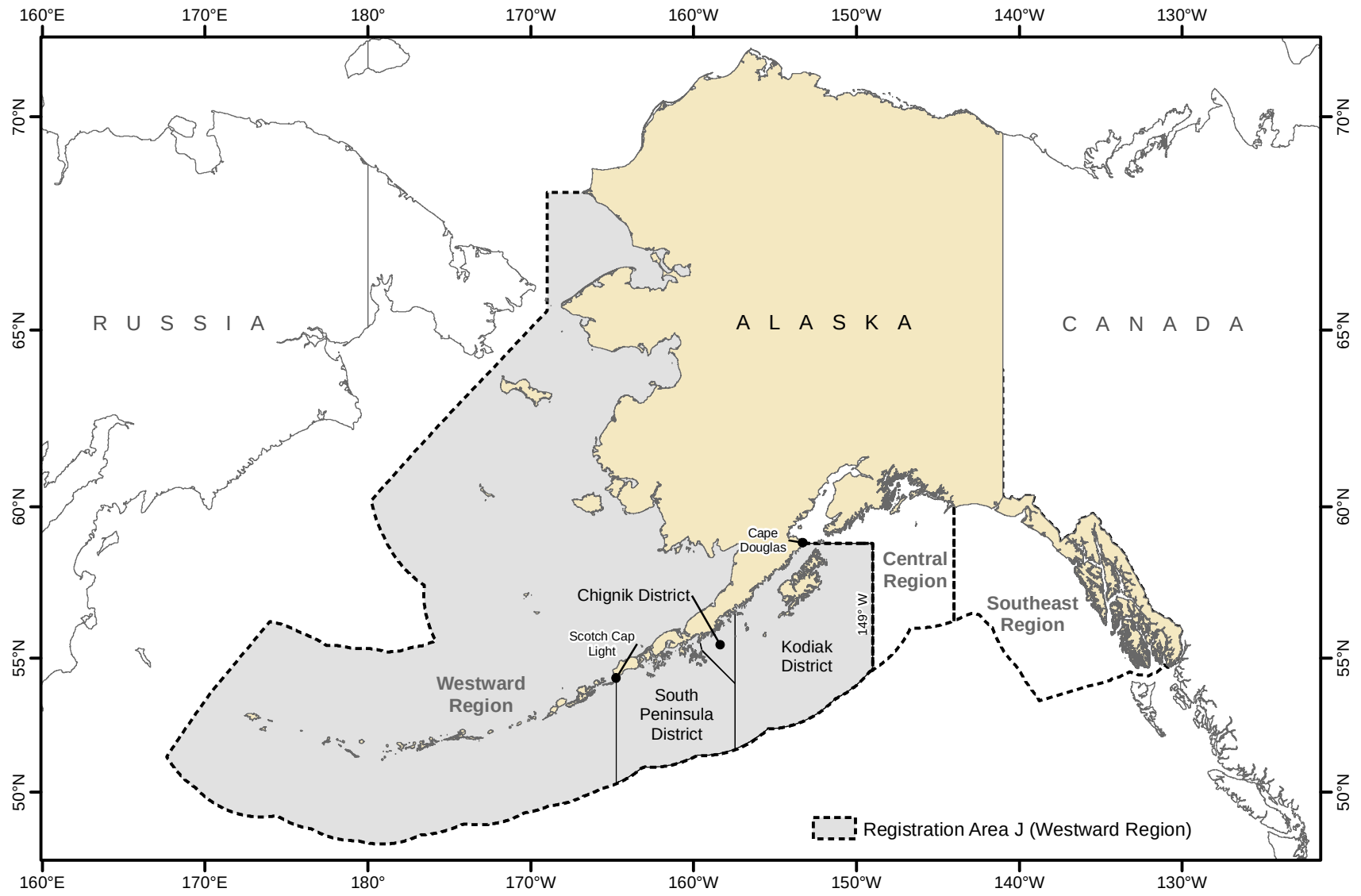

Figure 1.–Regions used by ADF&G for shellfish fisheries management in Alaska with Registration Area J (Westward) defined, and showing Kodiak, Chignik, and South Peninsula Tanner crab and miscellaneous shellfish districts, 2015.

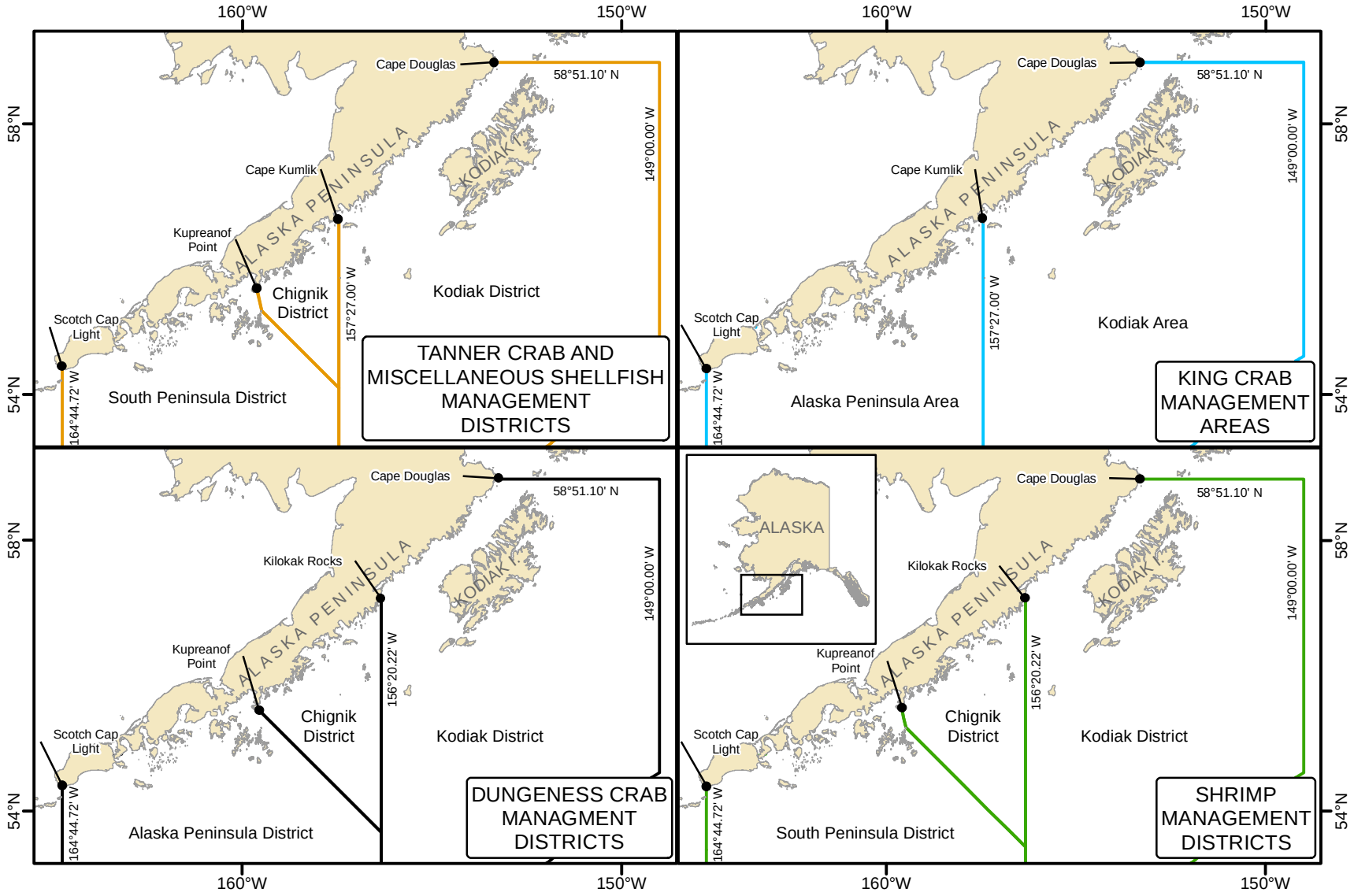

Figure 2.–Tanner crab, miscellaneous shellfish, king crab, Dungeness crab, and shrimp management units used by ADF&G, 2015.

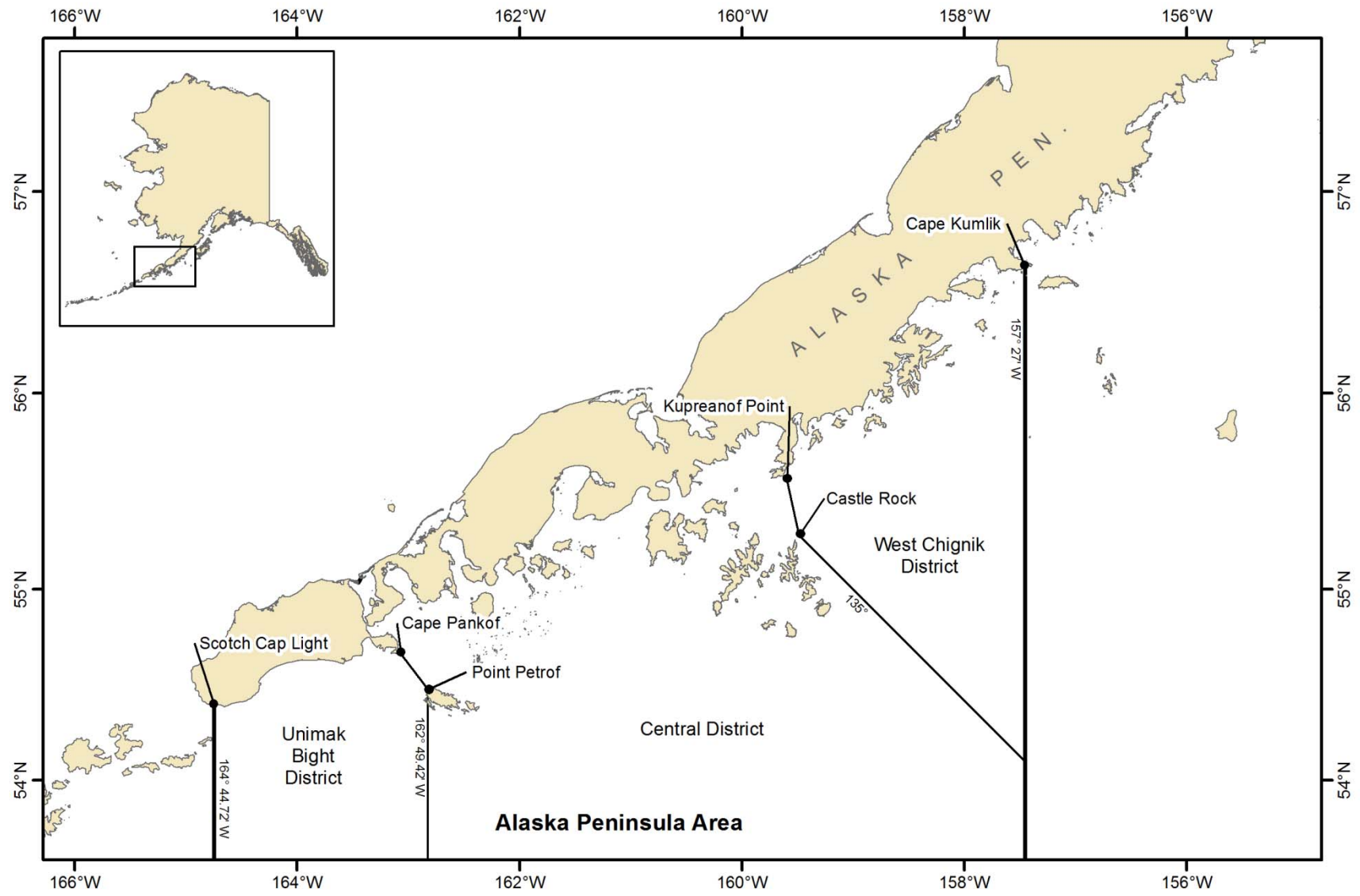

Figure 3.–Alaska Peninsula Area and districts for king crab fishery management, 2015.

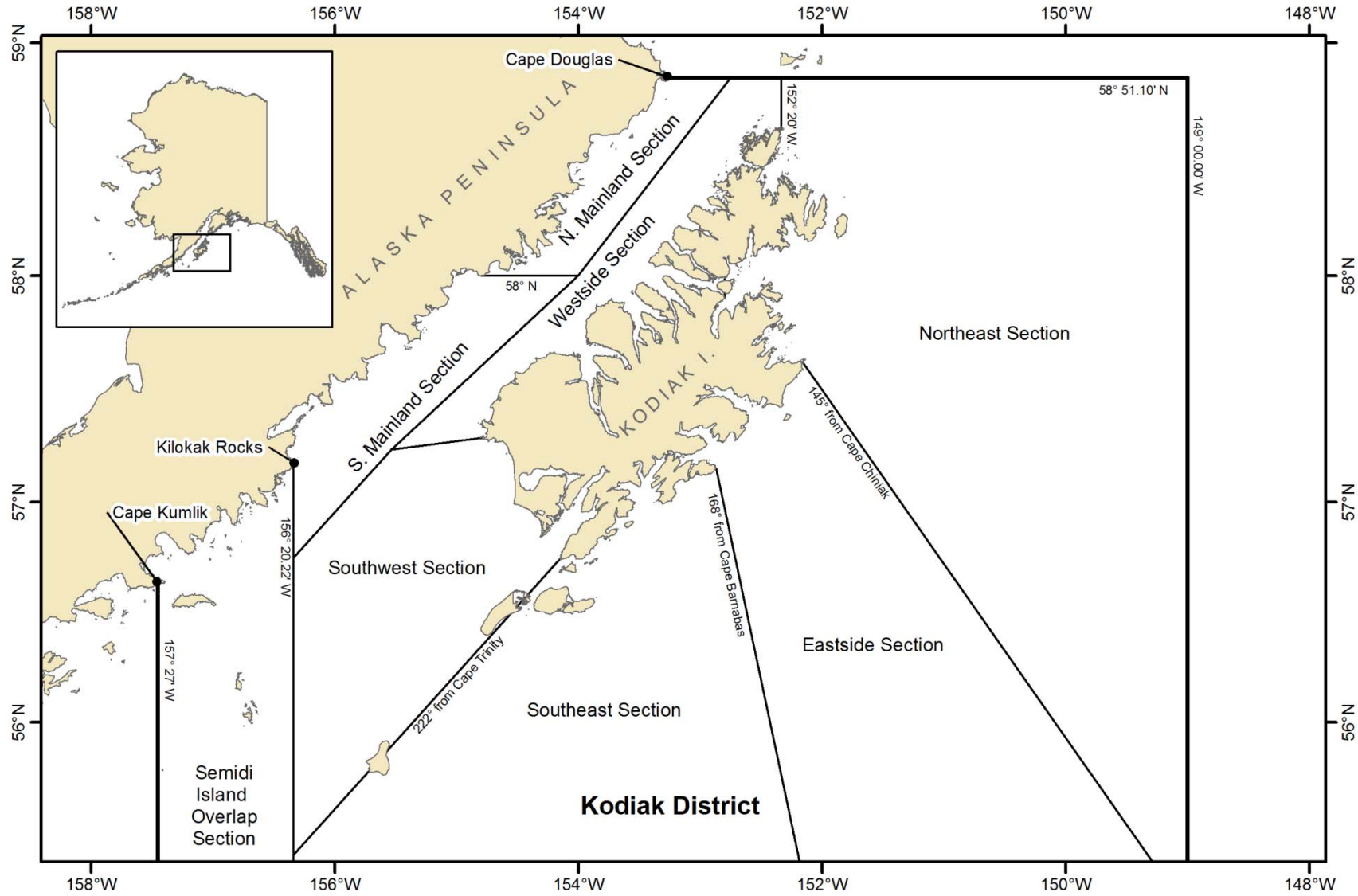

Figure 4.–Kodiak District and sections for Tanner crab, red sea cucumber, and green sea urchin fishery management, 2015.

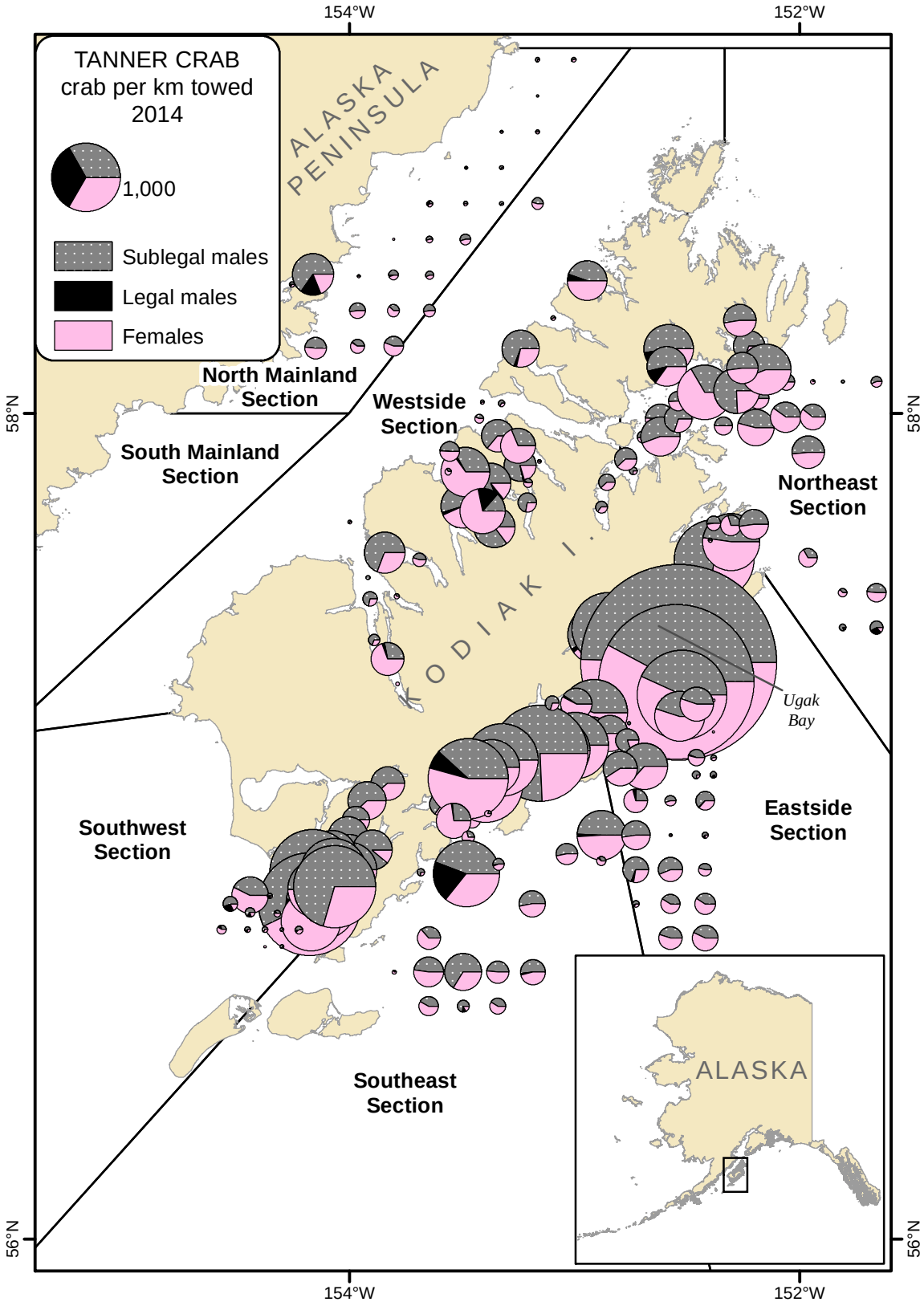

Figure 5.–Kodiak District trawl survey number of sublegal, legal, and female Tanner crab per kilometer towed, 2014.

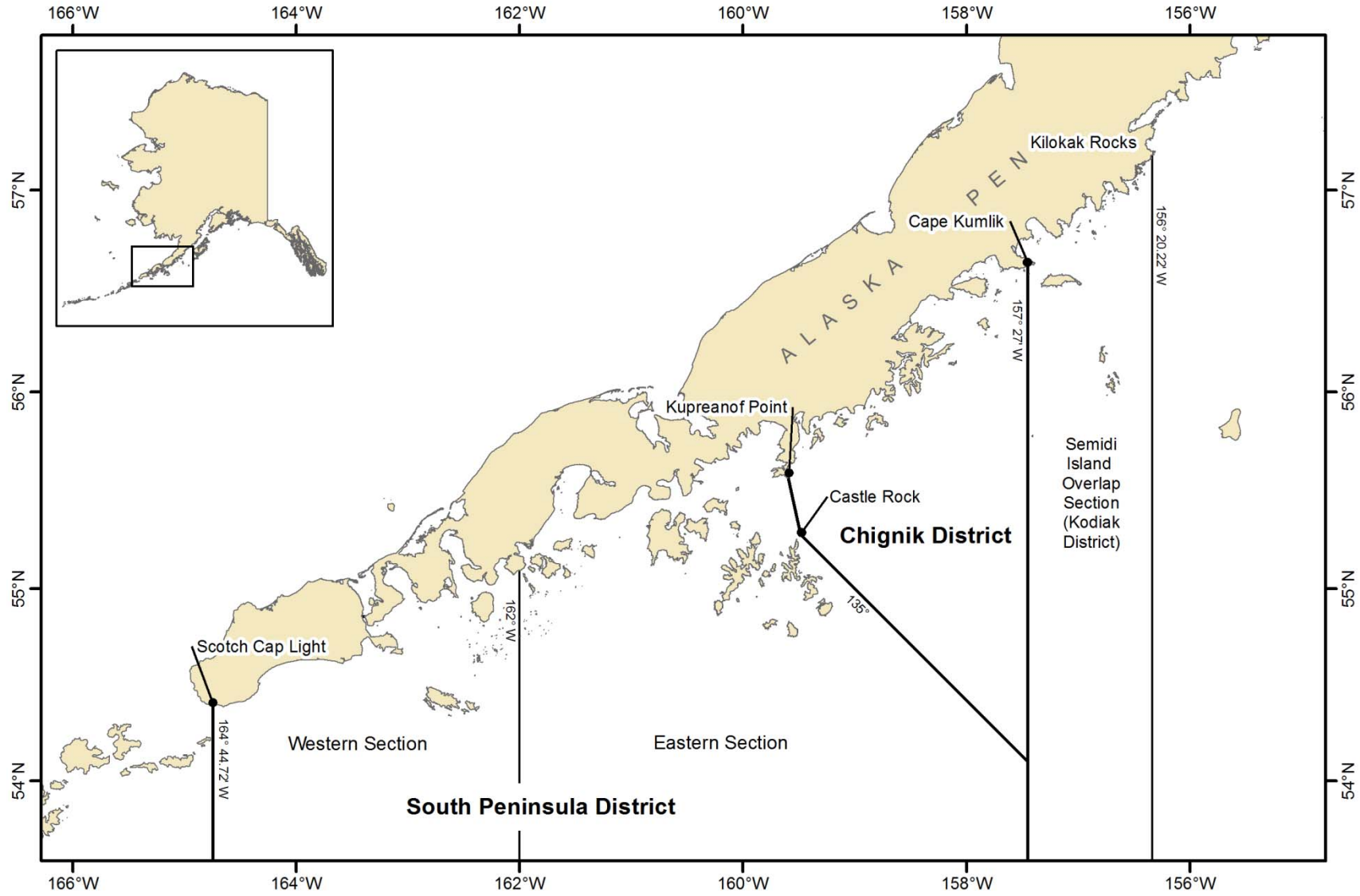

Figure 6.–Chignik and South Peninsula districts for Tanner crab, red sea cucumber, and green sea urchin fishery management, 2015.

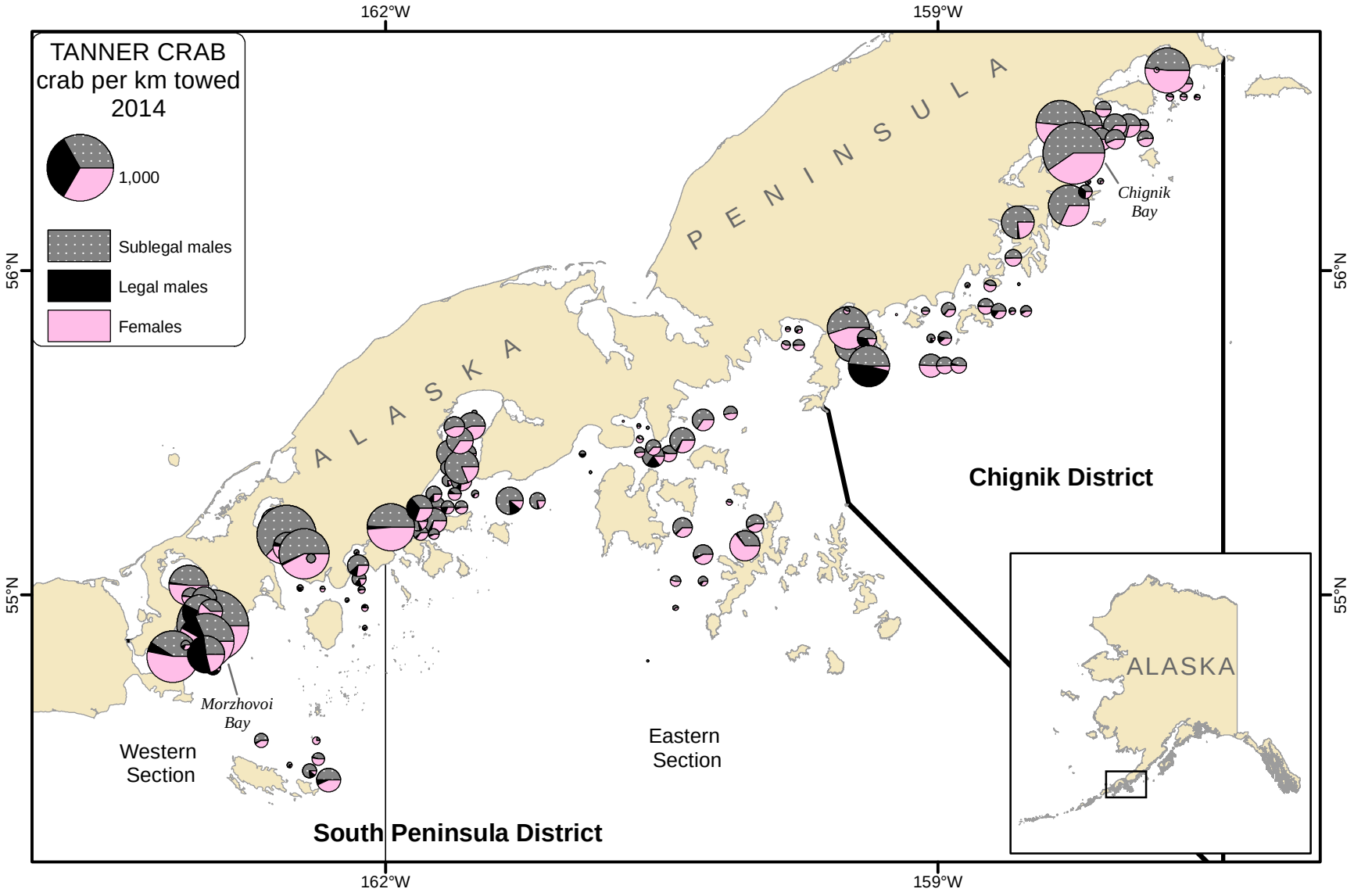

Figure 7.–Chignik and South Peninsula districts trawl survey number of sublegal, legal, and female Tanner crab per kilometer towed, 2014.

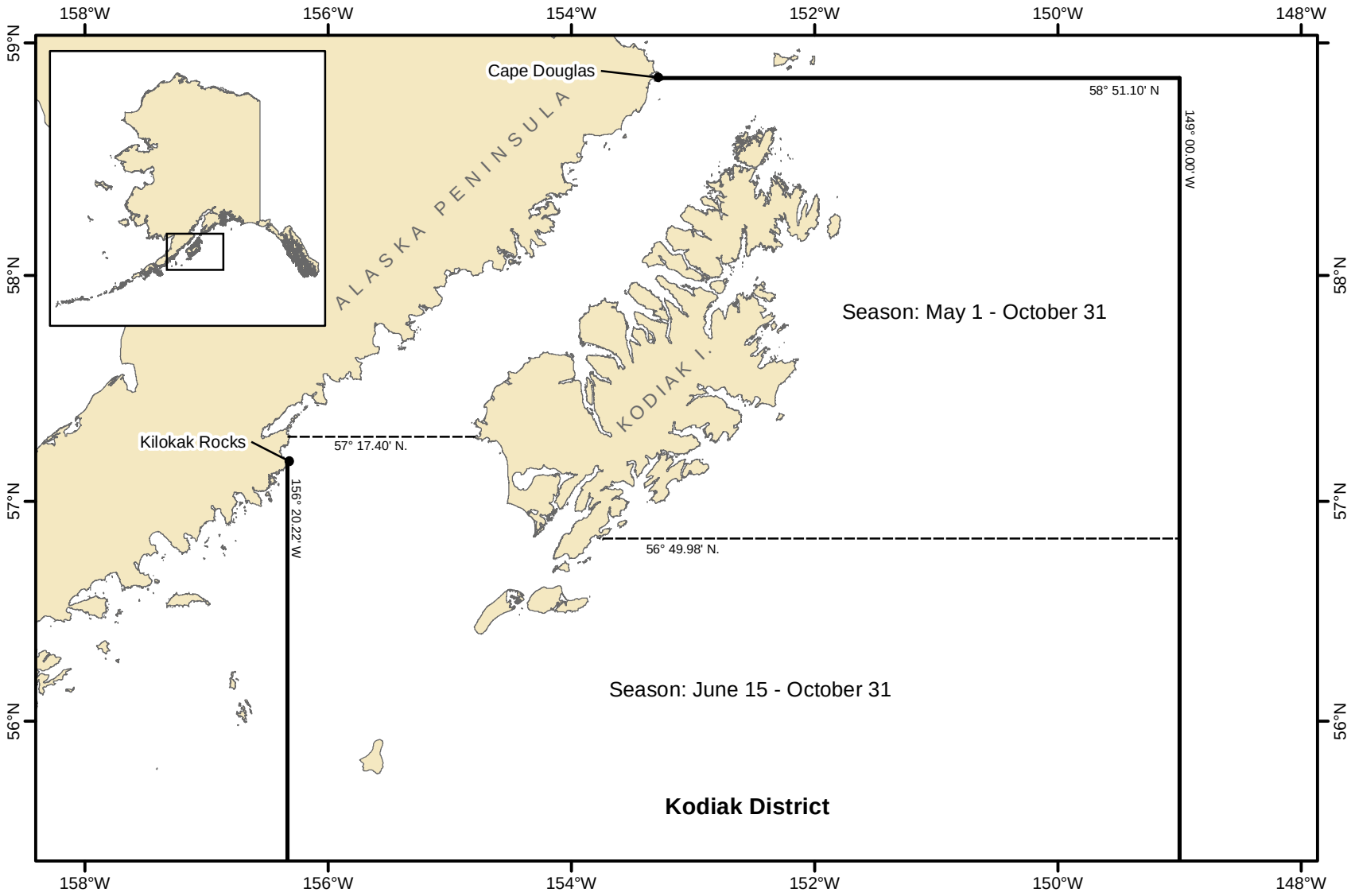

Figure 8.–Kodiak District Dungeness crab boundaries and fishing seasons, 2015.

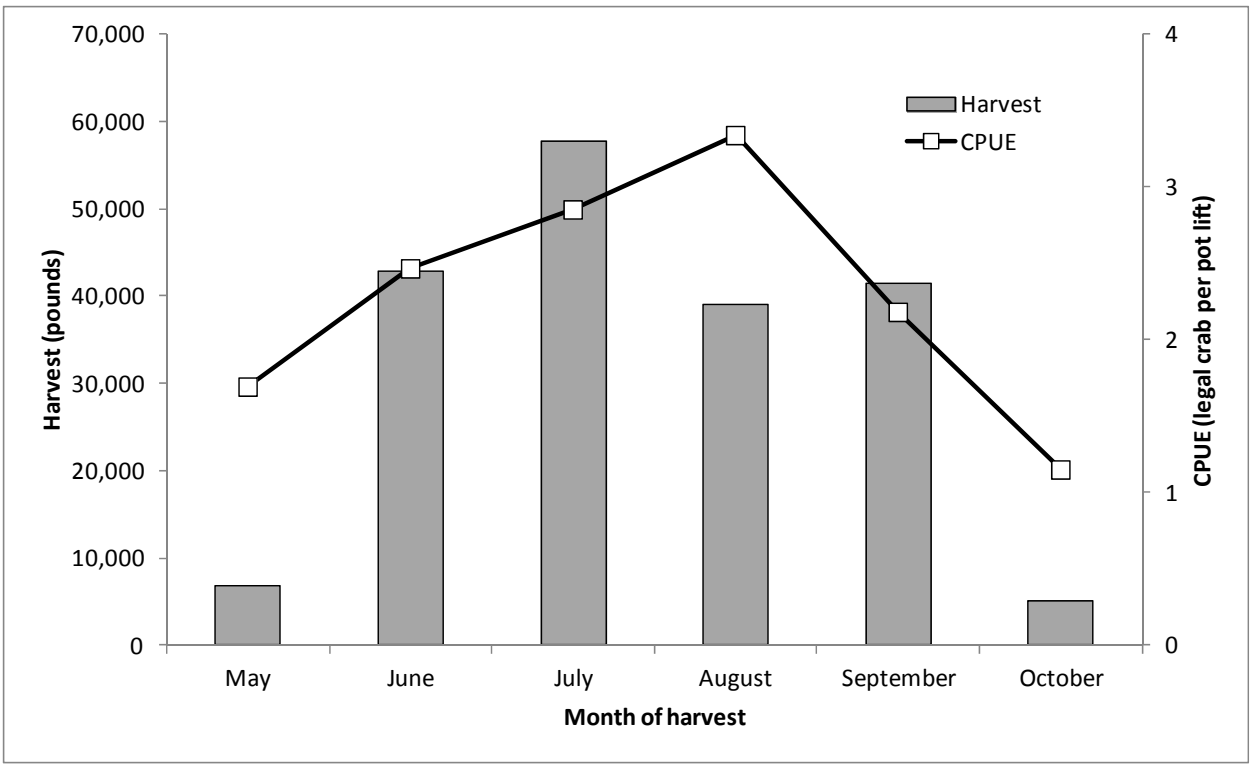

Figure 9.–Kodiak District commercial Dungeness crab harvest, in pounds, and CPUE (legal crab per pot lift), by month, 2015.

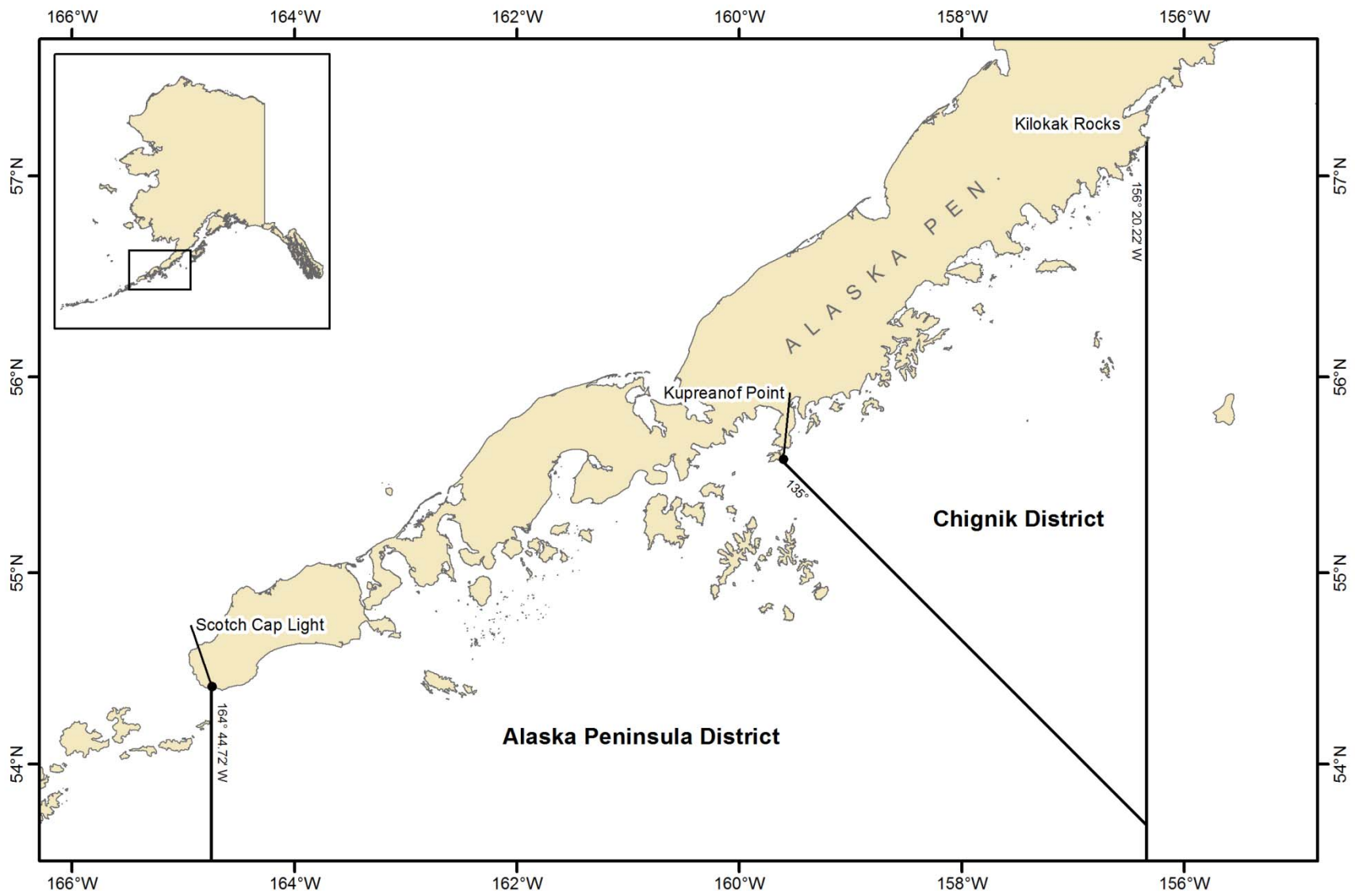

Figure 10.–Chignik and Alaska Peninsula districts for Dungeness crab fishery management, 2015.

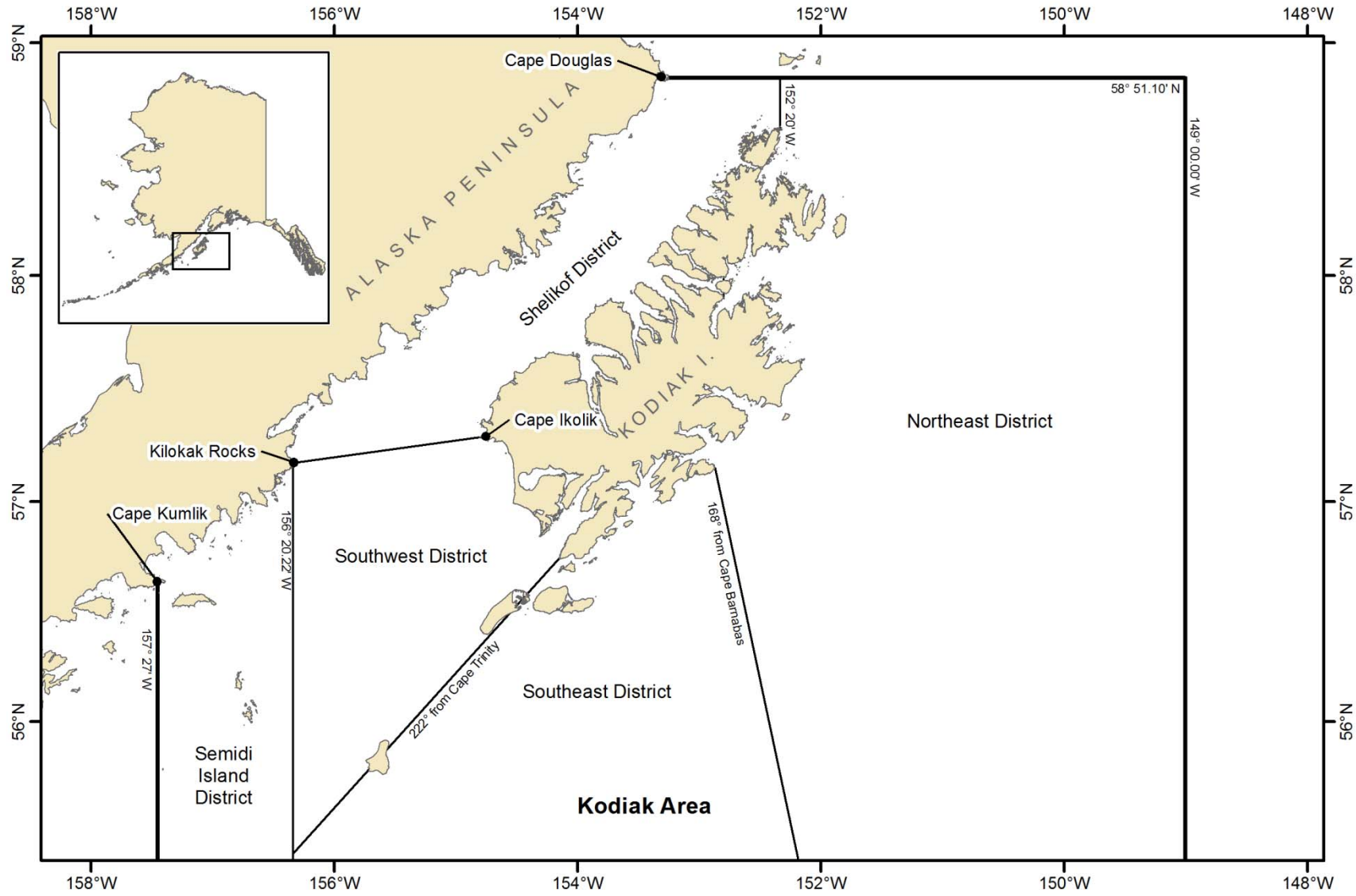

Figure 11.–Kodiak Area and districts for king crab fishery management, 2015.

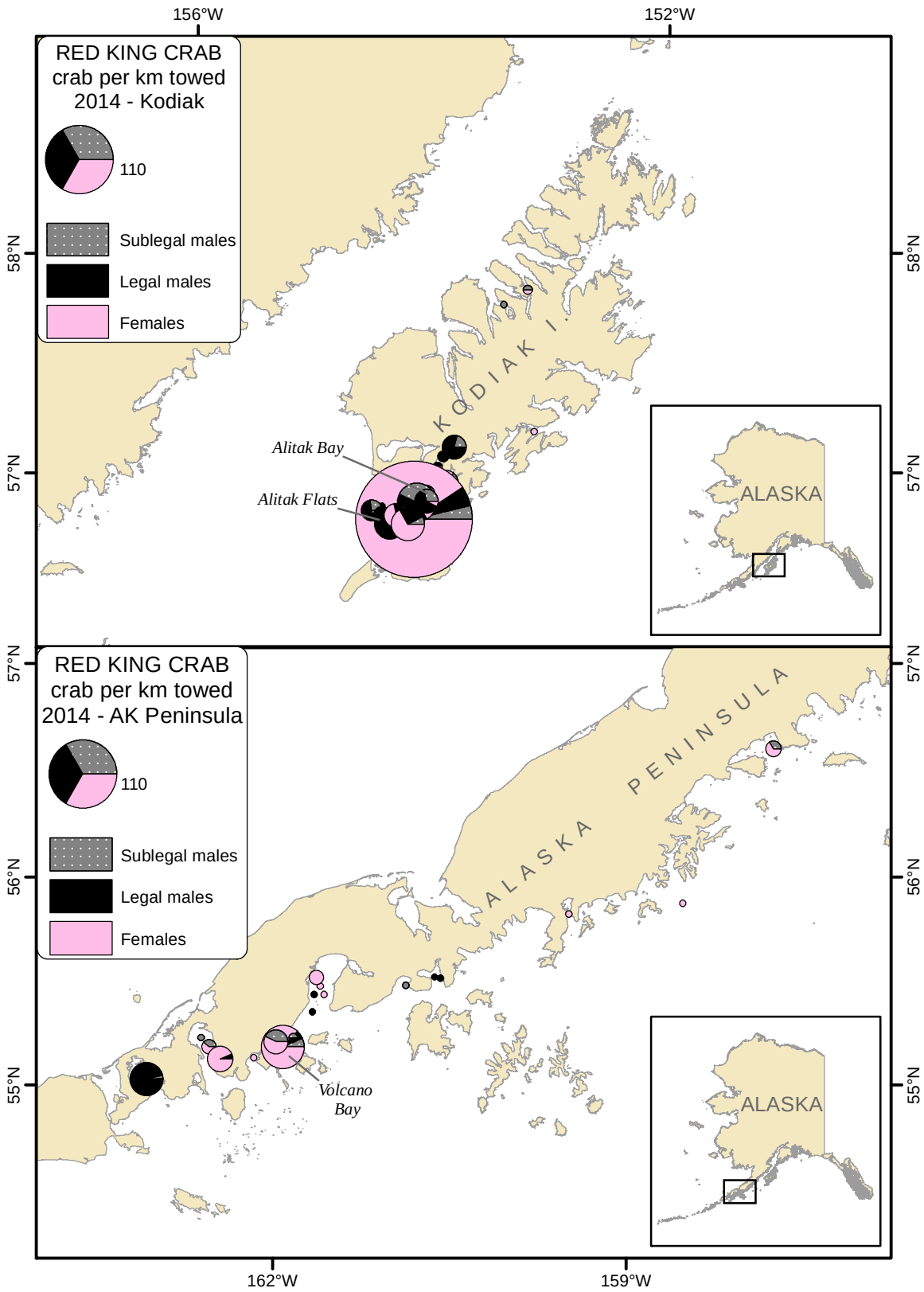

Figure 12.–Kodiak and Alaska Peninsula areas trawl survey number of female, legal, and sublegal red king crab per kilometer towed, 2014.

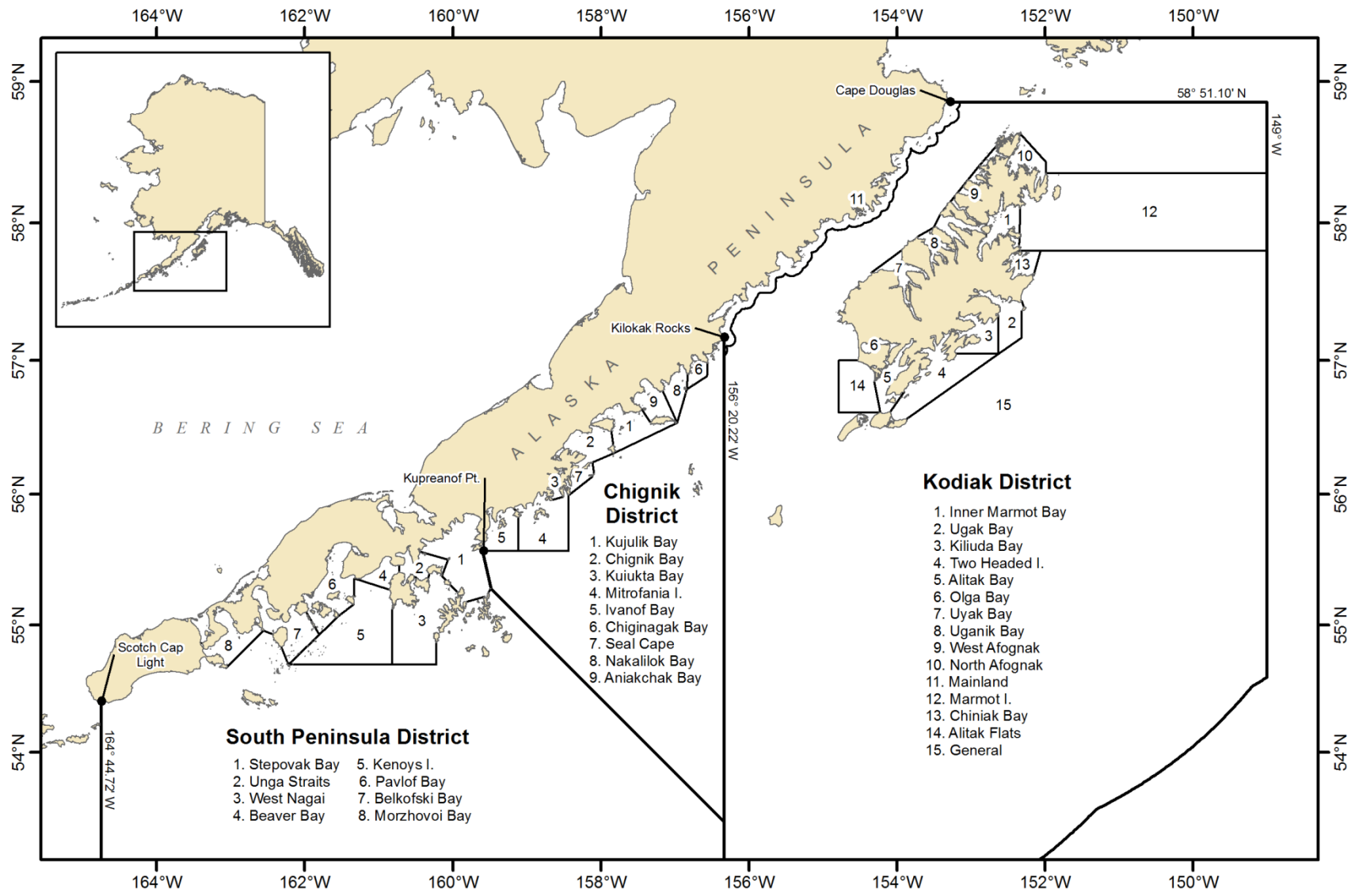

Figure 13.–Kodiak, Chignik, and South Peninsula districts and sections for shrimp fishery management, 2015.