Fishery Management Report No. 11-43

Annual Management Report for Shellfish Fisheries in the Kodiak, Chignik, and Alaska Peninsula Areas, 2010

by

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and

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August 2011

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

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Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

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ABSTRACT

This management report summarizes 2010 shellfish fisheries, excluding weathervane scallops *Patinopecten caurinus*, in the Kodiak, Chignik, and South Peninsula Districts of the Alaska Department of Fish and Game's Westward Region. Commercial fisheries occurred for Tanner crab *Chionoecetes bairdi*, Dungeness crab *Cancer magister*, giant Pacific octopus *Octopus dofleini*, and red sea cucumber *Parastichopus californicus*. The Kodiak District supports a golden king crab *Lithodes aequispinus* fishery that has low effort and harvest. All management districts historically supported Pandalid shrimp and red king crab *Paralithodes camtschaticus* fisheries.

Key words: Tanner crab, *Chionoecetes bairdi*, Dungeness crab, *Cancer magister*, red sea cucumber, *Parastichopus californicus*, red king crab, *Paralithodes camtschaticus*, golden king crab, *Lithodes aequispinus* Pacific octopus, *Octopus dofleini,* Pandalid shrimp, 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 (58°51.10' N lat), west of Cape Fairfield (148°50.25' W long), and east of Scotch Cap Light (164°44' W long; Figure 1). All shellfish fisheries are managed by ADF&G in both the territorial sea (0–3 nmi) as well as the Exclusive Economic Zone (EEZ; 3–200 nmi), except for octopus which is managed by ADF&G only in state waters.

Shellfish fisheries are regulated using management areas, districts, and sections that vary by species. For example, Tanner crab management is defined by district (e.g., Kodiak, Chignik, and South Peninsula districts), king crab management is defined by area (e.g., Kodiak and Alaska Peninsula), while shrimp management is defined by area and section. The purpose of this report is to summarize current commercial shellfish fishery regulations and management actions as well as review fishery-specific harvest, effort, and value with emphasis on 2010 fisheries.

KODIAK

Management boundaries for most shellfish fisheries around Kodiak Island include Pacific Ocean waters south of the latitude of Cape Douglas (58°51.10' N lat), east of the longitude of Cape Kumlik (157°27' W long), and west of Cape Fairfield (148°50.25' W long; Figure 2). The management boundaries vary slightly for Dungeness crab *Cancer magister* and Pandalid shrimp, which extend from the latitude of Cape Douglas to the longitude of Cape Kilokak on the Alaska Peninsula (156°19' W long).

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

The predominant commercial shellfish species harvested from Kodiak waters in 2010 were Tanner crab *Chionoecetes bairdi*, Dungeness crab, giant Pacific octopus *Octopus dofleini*, and red sea cucumber *Parastichopus californicus*. In recent years, Dungeness crab has replaced Tanner crab as the most valuable shellfish species in the area, worth an estimated $1.8 million to

the fleet in 2010. Overall, more than 2.6 million pounds of shellfish were landed at the Port of Kodiak in 2010 including Bering Sea snow crab *Chionecetes opilio* and Bristol Bay red king crab.

ADF&G issues emergency orders to enact regulatory action for openings and closures and modify fishing periods or fishing areas. In total, 11 emergency orders were issued during 2010 for Kodiak Area shellfish fisheries (Table 1).

ALASKA PENINSULA

Management boundaries for most shellfish fisheries along the Alaska Peninsula include Pacific Ocean waters west of Kilokak Rocks (156°19' W long) and east of Scotch Cap Light (164°44' W long; Figure 3). However, for several fisheries the eastern boundary is located at the longitude of Cape Kumlik (157°27' W long). Specific information on Alaska Peninsula management boundaries is described in detail in the fishery descriptions that follow.

Historically, commercial shellfish fisheries for red king crab, Tanner crab, grooved Tanner crab, Dungeness crab, Pandalid shrimp, red sea cucumber, and giant Pacific octopus have occurred along the Alaska Peninsula. Most shellfish stocks in the area are depressed and commercial fisheries for red king crab and shrimp have not occurred since 1982. During 2010, Dungeness crab, Tanner crab, and octopus were commercially harvested. ADF&G issued three emergency orders pertaining to shellfish fisheries along the Alaska Peninsula during 2010 (Table 1).

TANNER CRAB

INTRODUCTION

Tanner crab fisheries in the Kodiak, Chignik, and South Peninsula districts open by regulation on January 15; the Kodiak District may be delayed by weather as specified in regulation (e.g. 5 AAC 35.510(2)). Commercial harvest strategies contain both biological (mature male abundance) and fishery management thresholds that must be achieved before any commercial fishing may occur. Guideline harvest levels (GHL) are determined annually using stock abundance information collected during ADF&G trawl surveys on the *R/V Resolution*.

KODIAK DISTRICT

Description of the District

The Kodiak Tanner crab District includes Pacific Ocean waters south of the latitude of Cape Douglas (58°51.10' N lat), west of the longitude of Cape Fairfield (148°50.25' W long), and east of the longitude of Cape Kumlik (157°27' W long; Figure 2). The district is subdivided into eight sections: Northeast, Eastside, Southeast, Southwest, Semidi Island Overlap, Westside, North Mainland, and South Mainland.

Overview of Current Fishery Regulations

The Kodiak District is a limited entry, superexclusive registration district for Tanner crab. Criteria within the harvest strategy (5 AAC 35.507) specify at least two sections within the district must be above the mature male abundance threshold to open a commercial fishery. Overall, the total district GHL must be at least 400,000 pounds, and each section open to fishing must have a minimum GHL of at least 100,000 pounds. The Kodiak District pot limit is based on a sliding scale, and ranges 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 AM to 5:59 PM although fishing periods may be extended depending on ADF&G's assessment of effort, fishery manageability, available harvest, and harvest rate.

Historical Background

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

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

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

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

The Kodiak District Tanner crab stock continued to decline, and by the early 1990s, annual harvests averaged less than 2 million pounds. Beginning with the 1994/95 season, the fishery was closed due to a progressive decline in harvestable surplus of Tanner crab. The fishery did not reopen until the 2000/01 season. During the six-year closure period a new harvest strategy was developed by ADF&G and adopted by the Alaska Board of Fisheries (BOF). The purpose of the revised harvest strategy was to implement more conservative management measures aimed at preventing overharvest and localized depletion. To accomplish this goal, biological thresholds (minimum district-wide population levels) as well as management thresholds (minimum section GHLs) must be achieved prior to opening a fishery (Urban et al. 1999).

After ADF&G revised the harvest strategy, the Commercial Fisheries Entry Commission (CFEC) developed a limited entry program for the Kodiak District Tanner crab fishery using 1993/94, 1994/95, 2000/01, and 2001/02 as qualifying years to determine eligibility. The 2003/04 Kodiak District Tanner crab season was the first season under limited entry. Approximately 180 limited entry permits were initially allocated to the fishery.

Overview of the 2009/2010 Kodiak District Tanner Crab Fishery

The Kodiak District's Northeast, Eastside, and Southeast sections met criteria specified in the harvest strategy for a commercial fishery opening in 2010. The combined Kodiak District GHL was 700,000 pounds, which was 300,000 pounds more than the 2008/09 GHL (Table 3). The Northeast Section GHL was 100,000 pounds, the Eastside Section GHL was 500,000 pounds, and the Southeast Section GHL was 100,000 pounds.

The Kodiak District Tanner crab fishery opened January 15. A total of 52 vessels participated in the 2009/2010 fishery. Harvest, including deadloss and personal use, was 650,315 pounds from 84 landings. The estimated ex-vessel fishery value was approximately $860,000 based on an average price of $1.34 per pound (Table 2).

Northeast Section Fishery

Based on the 2009 trawl survey, the Northeast Section population estimate of mature male Tanner crab in the Northeast Section was 3,360,622 crab (Spalinger 2010), which exceeded the regulatory threshold of 1,123,000 crab necessary for a commercial fishery. ADF&G set the 2009/2010 GHL at 100,000 pounds (Table 3).

Initial effort was concentrated in Chiniak Bay, which closed on January 17. In total, 23 vessels harvested 80,133 pounds from the Northeast Section (Table 3). Approximately 43,000 pounds were landed from Chiniak Bay while the remainder of the harvest primarily occurred in Marmot Bay.

Eastside Section Fishery

Based on the 2009 trawl survey, the estimated population of mature male Tanner crab in the Eastside Section was 16,366,497 crab (Spalinger 2010), well above the regulatory threshold of 1,552,000 crab necessary for a commercial fishery. Kiluda Bay was closed to fishing due to low numbers of legal-sized male crab during the 2009 marine resource survey. Ugak Bay was closed due to the large number of pre-recruit crab estimated during the 2009 trawl survey and to minimize handling mortality. ADF&G set the 2009/2010 GHL at 500,000 pounds (Table 3).

Thirty vessels registered to harvest Tanner crab in the Eastside Section. The seasonal CPUE averaged 34 crab per pot, with most vessels pulling gear twice per day (Table 3). Harvest and effort in the Eastside Section were evenly distributed throughout the season and the section closed January 22. A total of 469,807 pounds of Tanner crab were harvested from the Eastside Section during the 2009/2010 fishery. Most harvest occurred in the Outer Barnabas and Ugak areas as well as offshore from Kiliuda Bay.

Southeast Section Fishery

Based on the 2009 trawl survey, the estimated population of mature male Tanner crab in the Southeast Section was 3,974,309 crab (Spalinger 2010), well above the regulatory threshold of 733,000 crab necessary for a commercial fishery. ADF&G set the Eastside Section GHL at 100,000 pounds (Table 3).

Seven vessels registered to harvest Tanner crab in the Southeast Section. Seasonal CPUE averaged 48 crab per pot, with most vessels pulling gear twice per day (Table 3). The section was closed January 19. A total of 100,375 pounds of Tanner crab were harvested from the Southeast Section during the 2009/2010 fishery.

Status of Kodiak District Tanner Crab Stock

The estimated population of both sexes and all sizes of Tanner crab in the Kodiak District was approximately 84 million crab, down from the all time high of 186 million in 2007. Despite the decline, the total population of crab in the Kodiak District is above the average annual estimate since the trawl survey was implemented as the primary assessment tool in 1988. The number of legal-sized males was estimated at 5 million which is an increase from the 2 million observed in 2008. The highest densities of crab were found in the Eastside Section (Figure 4).

Egg clutches of 8,228 mature female Tanner crab from the Kodiak District were examined during the survey. Of all mature females sampled, 58.2% were primiparous and 76.7% had clutches that were more than half full (Spalinger 2010).

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 to the easternmost point of Castle Rock, and extending southeast 135° from the easternmost point of Castle Rock, and west of the longitude of the easternmost tip of Cape Kumlik (Figure 3).

Overview of Current Fishery Regulations

The Chignik District is a superexclusive registration district for Tanner crab. Criteria within the harvest strategy specify the district GHL must be at least 200,000 pounds for a commercial fishery to occur. Vessel size is limited to 58 feet in overall length or less and the pot limit is based on a sliding scale dependent on the district GHL. The number of pots is limited to no more than 30 pots per vessel when the district GHL is less than 600,000 pounds. Pot limits for GHLs equal to or greater than 600,000 pounds are 1,000 pots for the entire fishing fleet with no more than 75 pots per vessel. The individual pot limit is calculated by dividing the 1,000 total pot limit by the number of vessels that register prior to the preseason registration deadline on December 24 (5 AAC 35.506 (e)(6)).

Historical Background

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

ADF&G began Chignik District Tanner crab surveys in 1981. Surveys in the early 1980s predicted poor recruitment and subsequent fisheries had lower harvests. Catches declined first in productive offshore areas, followed later by declines inside bays and near shore waters. The district was closed to commercial fishing in 1990 and remained closed through the 2003/04 season. The Chignik District reopened to commercial Tanner crab fishing during the 2004/05 and 2005/06 seasons prior to closing again before the 2006/07 season. No commercial Tanner crab fisheries have occurred since that time.

Overview of the 2009/2010 Chignik District Tanner Crab Fishery

The Chignik District Tanner crab population was above threshold necessary for a commercial fishery. The threshold was achieved because of a large year class beginning to recruit to the fishery. However, based on the length of the time of the fishery had been closed and poor prior fishery performance, ADF&G kept the fishery closed in order for a greater proportion of the year class to recruit to legal size prior to opening the fishery.

Status of Chignik District Tanner Crab Stock

The total abundance estimate of Tanner crab in the Chignik District is the second highest recorded since the start of the survey in 1989 (Figure 5). The overall crab numbers in the Chignik District increased from 26 million in 2008 to 28 million in 2009. Numbers of juvenile and adult females steadily increased from 2003 to 2006, but have declined each subsequent year. Most size classes of male crab have increased from 2008. Egg clutches of 1,992 mature female Tanner crab were examined during the Chignik District survey. Approximately 67.4 percent of all mature females sampled had clutches that were more than half full.

SOUTH PENINSULA DISTRICT

Description of the District

The South Peninsula District for Tanner crab includes the Pacific Ocean waters west of a line from the southernmost tip of Kupreanof Point to the easternmost tip of Castle Rock, west of a line extending southeast 135° from the easternmost tip of Castle Rock, and east of a line extending south from Scotch Cap Light (164°44' W long; Figure 3).

Overview of Current Fishery Regulations

The South Peninsula District is a nonexclusive registration district for Tanner crab. Vessels are limited to 58 feet in overall length or less and the pot limit is based on a sliding scale ranging from 30 to 75 pots per vessel depending on the GHL. Crab pots may only be set or retrieved during daily fishing periods from 8:00 AM to 5:59 PM. Pots may soak from 6:00 PM until 7:59 AM. Additional criteria within the harvest strategy specify a section GHL must be at least 200,000 pounds for a commercial fishery to occur.

Historical Background

Harvest of Tanner crab in the South Peninsula District first occurred in 1967 when 3,100 pounds were landed (Table 5). The fishery grew quickly and by the 1973/74 season, the annual harvest exceeded 8 million pounds. In response to expanding harvests, GHLs were established in 1974, fishing seasons were established in 1975, and a minimum crab size limit of 5.5” CW was established in 1976. During the five fishing seasons from 1974/75 through 1978/79, yearly harvests averaged approximately 7 million pounds. From 1979 to 1984, harvest and CPUE declined and in the 1983/84 season, the fleet landed a total 2 million pounds. Recruitment improved in subsequent years and harvest increased to almost 4 million pounds by 1985/86. At the conclusion of the 1988/89 season, ADF&G predicted a decline in recruitment based on analysis of ADF&G trawl survey data. The fishery was subsequently closed from 1990 through 2000 due to low abundance of legal-sized crab.

During the extended closure, a comprehensive harvest strategy was developed to guide commercial Tanner crab fisheries in the South Peninsula District. Similar to the harvest strategies

implemented in Kodiak and Chignik, the South Peninsula District harvest strategy specified that minimum population levels (biological thresholds) and minimum GHLs (management thresholds) must be achieved prior to opening a commercial fishery. Criteria in the strategy were satisfied for a commercial fishery in 2000/01 and the South Peninsula District opened for the first time since 1989 with a 375,000-pound GHL. Fifty-five vessels harvested 258,631 pounds from 67 landings. The fishery was open for four days.

The South Peninsula District was again closed from 2001/02 season the through 2003/04 season due to low recruitment of legal sized male Tanner crab. The district reopened for the 2004/05 season with a GHL of 300,000 pounds.

The South Peninsula District is large in comparison to the Kodiak and Chignik districts and historically was not separated into smaller management units (e.g., sections). Consequently, high concentrations of crab in a small number of bays or marginally commercial quantities spread across large areas allowed for district-wide commercial fisheries to occur although certain portions of the district were likely not capable of sustaining commercial harvest (Urban and Vining 2005). Therefore, ADF&G submitted a proposal to the BOF in 2005 to split the district into two sections at 162° W long (Figure 3). This allowed for a fishery to occur in areas where stocks are capable of sustaining a harvest while protecting other areas where stocks are weak or rebuilding. The proposal was approved by the BOF and the Eastern and Western sections were established prior to the 2005/06 fishery. Since that time, commercial harvests have averaged approximately 250,000 pounds harvest per year in the Western Section.

Overview of the 2009/2010 South Peninsula District Tanner Crab Fishery

The 2009/2010 season was the first year since 2005/06 that the Eastern Section opened to commercial Tanner crab fishing and the sixth consecutive year the Western Section has opened. The combined South Peninsula District GHL was 500,000 pounds, which was 225,000 pounds more than the 2008/09 GHL (Table 5). The Eastern Section GHL was 300,000 pounds and the Western Section GHL was 200,000 pounds.

The South Peninsula District Eastern and Western sections opened by regulation at noon on January 15 and both sections closed by emergency order on January 24, 2010. Harvest from the Western Section, including deadloss and personal use was 228,690 pounds from 29 landings, made by 14 vessels (Table 5). Deadloss (88 pounds) accounted for a small percentage of the total Western Section harvest. Harvest from the Eastern Section, including deadloss and personal use was 354,512 pounds from 47 landings, made by 27 unique vessels. Deadloss (84 pounds) accounted for a small percentage of the Eastern Section harvest. The estimated exvessel value of the fishery was $828,147 based on an average price of $1.42 per pound (Table 5).

Western Section Tanner crab harvest primarily occurred in three general locations: Morzhovoi Bay, Cold Bay/Lenard Harbor, and around Deer Island. Within these areas, effort and harvest were evenly distributed. Approximately 75,000 pounds of Tanner crab were harvested from Morzhovoi Bay. Approximately 61,000 pounds of crab were harvested in the Cold Bay/Lenard Harbor area near King Cove, while about 93,000 pounds were harvested from around Deer Island. By February 27, declining CPUE warranted closure of the remainder of the Western Section to protect the long term health of the stock.

Eastern Section Tanner crab harvest occurred in four general locations: Beaver/Balboa bays, West Nagai Island, Pavlof Bay, and around Jude Island. Approximately 66,000 pounds were

harvested from Beaver/Balboa bays. Approximately 49,000 pounds of crab were harvested around West Nagai Island south of Sand Point. Tanner crab harvests from Pavlof Bay totaled approximately 215,000 pounds, while about 23,000 pounds were harvested from Jude Island which is adjacent to Pavlof Bay.

The South Peninsula District Eastern Section closed to commercial Tanner crab fishing at 2:00 p.m. on January 24, 2010. Processor and voluntary vessel catch reports on January 23 indicated the GHL would be achieved the following day. To prevent overharvest, fishing time on the day of the closure was reduced from ten to six hours. The closure at 2 p.m. on January 24 was announced at 8:00 p.m. on January 23, giving the fleet an 18-hour advance notice.

Similar to past years, weather conditions strongly influenced the pace of the fishery. Gale force winds, rough seas, and heavy freezing spray idled most of the fleet for 3 to 4 days approximately 48 hours after the opening.

Status of South Peninsula District Tanner Crab Stock

The 2009 total abundance estimate of Tanner crab in the South Peninsula District is the fourth highest recorded since the first survey in 1988. This increased abundance is due to a large increase in the number juvenile crab. Despite the high levels, the overall crab numbers in the South Peninsula District decreased from 93 million in 2008 to 67 million in 2009 (Spalinger 2010). Numbers of female crab decreased from 37 million in 2008 to 22 million in 2009. The total number of male crab decreased from last year, but the number of legal males is approximately double last year's estimate, and the highest recorded since the survey began. Egg clutches of 4,427 mature female Tanner crab showed approximately 75% of all mature females examined had a clutch fullness of 50% or higher.

DUNGENESS CRAB

INTRODUCTION

Dungeness crab fisheries in the Kodiak, Chignik, and Alaska Peninsula districts are part of Registration Area J and are managed from the ADF&G Kodiak office. There are no GHLs 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 fishing in Registration Area J. However, participants must hold a valid CFEC interim-use permit card, an ADF&G shellfish registration, and have circulating seawater tanks inspected prior to participating in the fishery.

KODIAK DISTRICT

Description of the Area

The Kodiak District for Dungeness crab includes waters south of the latitude of Cape Douglas (58°51.85' N lat), west of the longitude of Cape Fairfield (148°50.25' W long) and east of the longitude of Cape Kilokak (156°19' W long; Figure 6).

Overview of Current Fishery Regulations

The Kodiak District is a nonexclusive open access fishery for Dungeness crab. Due to the lack of stock specific data, there are no GHLs or other harvest thresholds established for the fishery.

Dungeness crab may be taken from May 1 through January 1 in most areas of the Kodiak District. However, south of the line from the southernmost tips of Boot Point (Eastside Kodiak Island) and Cape Ikolik (Westside Kodiak Island), Dungeness crab may only be taken from June 15 through January 1 (Figure 6).

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 6). This trend was reversed starting in the early 1980s when declines of other commercially harvested Alaskan 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 2007/08 season. During the 2008/09 season, approximately 1 million pounds of Dungeness crab were harvested which was the highest reported harvest since the 1993/94 season. Historically, most Dungeness crab harvested in the Kodiak District were taken adjacent to Sitkinak and Tugidak Islands (Figure 6).

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

2010/2011 Kodiak District Dungeness Crab Fishery

The 2010/2011 fishery opened on May 1, 2010 except in the southern portion of Kodiak Island which opened June 15 (Figure 6). Vessels registered for Dungeness crab in the Kodiak District ranged from 30 to 95 feet in total length with a district-wide average of 54 feet. The number of pots ranged from 250 to 1,500 pots per vessel with a district-wide average of 710 pots per vessel. By regulation (5 AAC 32.410 Fishing Seasons for Registration Area J), the fishery closed on January 1, 2011.

In total, 19 vessels harvested 1,002,576 pounds from 100 landings (Table 6). The majority of harvest came from statistical area 545601 near Sitkinak and Tugidak Islands and statistical area 525701 inside Ugak Bay (Table 7). The first delivery occurred on May 15. Harvest peaked during August then steadily declined through October, with very little harvest in November and December (Figure 7). CPUE averaged five legal crab per pot for the season. Based on 1,438 samples taken from the commercial fishery, the average weight of Dungeness crab harvested during the 2009/2010 fishery was 2.1 pounds, and the mean CW was 177 mm (Figure 8). The 2009/2010 season had a predominance of new shell crab harvested in contrast to the 2008/09 season when predominantly old shell Dungeness crab were harvested.

The average price per pound of Dungeness crab in 2010/2011 was $1.86 (Table 6). The estimated exvessel value for the 2010/2011 fishery was $1.9 million, compared to $2.1 million in 2009/2010.

CHIGNIK DISTRICT

Description of the District

The Chignik District for Dungeness crab includes waters west of Kilokak Rocks (156°19' W long), and east of a line extending 135° southeast from Kupreanof Point (55°33.98' N lat, 159°35.88' W long; Figure 9).

Overview of Current Fishery Regulations

The Chignik District is a superexclusive registration district for Dungeness crab. Only male Dungeness crab with a 6.5 inches CW or larger may be taken from May 1 to January 1.

Historical Background

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

2010/2011 Chignik District Dungeness Crab Fishery

The Chignik District was created by the Alaska BOF prior to the 2002/2003 season and less than three vessels or processors have participated in the fishery annually since that time. Therefore, harvest and effort data is combined with the Alaska Peninsula District to ensure confidentiality. During the 2010/2011 season, six vessels participated in either the Chignik or Alaska Peninsula districts, landing approximately 350,000 pounds of Dungeness crab (Table 8).

ALASKA PENINSULA DISTRICT

Description of the District

The Alaska Peninsula District for Dungeness crab includes all waters west of a line extending 135° southeast from Kupreanof Point (55°33.98' N lat, 159°35.88' W long), and east of the longitude of Scotch Cap Light (164°44' W long; Figure 9).

Overview of Current Fishery Regulations

The Alaska Peninsula District is a superexclusive registration district for Dungeness crab. Only male Dungeness crab with a 6.5 inches CW or larger may be taken from May 1 to January 1.

Historical Background

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

2010/2011 Alaska Peninsula District Dungeness Crab Fishery

The 2010/2011 Alaska Peninsula District Dungeness crab season opened May 1. Due to the limited number of participants, harvest data is combined with the Chignik District to maintain confidentiality.

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

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

KING CRAB

GENERAL RED KING CRAB INFORMATION

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

GENERAL GOLDEN KING CRAB INFORMATION

Minor harvests of golden king crab have occurred in the Kodiak Area. The Alaska Peninsula Area remains largely unexplored for golden king crab. 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 closely regulated through a commissioner's permit.

KODIAK AREA

Description of the Area

The Kodiak King Crab Management Area includes waters of the Gulf of Alaska south of the latitude of Cape Douglas (58°51.10' N lat), west of 148°50.25' W long, and east of the longitude of Cape Kumlik (157°27' W long; Figure 10). The Kodiak Area is further subdivided into five districts for king crab management: the Northeast, Southeast, Southwest, Semidi Island, and Shelikof districts.

RED KING CRAB

Overview of Current Fishery Regulations

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

Historical Background

Beginning in 1936, small amounts of red king crab were landed in Kodiak, but catches were not officially recorded until 1950. During this time, the fishery was largely exploratory as fishermen were developing gear, locating commercially harvestable quantities of crab, and expanding markets. Once established, the fishery grew rapidly and by 1960, 21 million pounds of red king crab were harvested during a year-long season (Table 9). Harvest peaked during the 1965/66 season, when over 94 million pounds of crab were landed during a 12 month fishing season. The fishing season was reduced to 10 months beginning with the 1966/67 season. From that time catches ranged from approximately 11 to 74 million pounds annually through the 1981/82 season.

Harvest declined sharply during the 1982/83 season, totaling 8.7 million pounds which was the lowest recorded catch in 23 years (Table 9). High effort and low catch resulted in an average CPUE of only four 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 since that time.

Status of Kodiak Area Red King Crab Stocks

The Kodiak red king crab population remains at historically low levels. The 2009 Kodiak trawl survey completed 217 hauls in known king crab habitat. The 2009 red king crab population was estimated to be 28,257 crab, down from 71,877 crab in 2007 and 754,730 crab in 2006 (Spalinger 2010). The majority of king crab were located in Alitak Bay (Figure 11). Annual fluctuation in total population estimates is often large when populations, such as Kodiak red king crab, become depressed and unevenly distributed. In these situations, 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.

Overall, the mature female red king crab abundance was estimated to be 5,865 crab, well below the district thresholds required for a fishery opening. Approximately 63% of all mature female crab sampled during the 2009 trawl survey had egg clutches at least half full.

GOLDEN KING CRAB

Overview of Current Fishery Regulations

The Kodiak Area is a nonexclusive registration area for golden king crab. Under provisions of a commissioner's 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 of 100 fathoms in depth. There is no closed season for golden king crab.

Historical Background

Interest in exploiting golden king crab increased after the collapse of regional red king crab stocks in the early 1980s. Although golden king crab were occasionally landed incidental to red king crab, the first targeted landings occurred in 1983. In that year, 12 vessels explored the Kodiak Area with limited success. The catch totaled 111,398 pounds from 36 landings (Table 10). Peak harvest occurred in 1986 when 146,478 pounds were landed.

Due to the limited number of vessels that annually target golden king crab, catch and effort information often remains confidential. One commissioner's permit was issued for golden king crab during 2010.

Status of Kodiak Area Golden King Crab Stock

ADF&G does not assess the Kodiak Area golden king crab stock. The population is believed to be small when 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 (157°27' W long) and Scotch Cap Light (164°44' W long; Figure 12). The Alaska Peninsula is further divided into the Unimak Bight, Central, and West Chignik districts.

RED KING CRAB

Overview of Current Fishery Regulations

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

Historical Background

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

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 appreciably after the 1980/81 season, resulting in an area-wide closure prior to the 1983/84 fishery. 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 the 2009 ADF&G trawl survey, the red king crab stock remains at historically low levels. The population estimate for 2009 was 22,569 crab, down from 26,569 crab estimated in 2008 (Spalinger 2010). Wide ranges in sizes of both sexes were observed. Similar to the Kodiak Area, annual fluctuations in population estimates are due to sampling variability associated with depressed and unevenly distributed crab populations.

GOLDEN KING CRAB

Overview of Current Fishery Regulations

The Alaska Peninsula Area is a superexclusive registration area for golden king crab. Similar to the Kodiak District, golden king crab may only be taken under the guidelines of a commissioner's permit. Male golden king crab 6.5 inches or greater in CW may be taken from January 1 through December 31.

Historical Background

On occasion, fishermen have expressed interest in exploring the Alaska Peninsula Area for golden king crab although little effort has occurred. No vessels registered to fish for golden king crab in the Alaska Peninsula Area during 2010.

Status of Alaska Peninsula Area Golden King Crab Stock

ADF&G does not assess the golden king crab stock in the Alaska Peninsula Area. Exploratory efforts by commercial fishermen have yet to locate quantities sufficient for a commercial fishery.

SHRIMP

SHRIMP TRAWL FISHERY INTRODUCTION

The trawl shrimp fisheries in the Kodiak, Chignik, and South Peninsula districts are part of shrimp Registration Area J. Registration Area J is a nonexclusive registration area for shrimp caught with trawl gear. Most shrimp sections within these districts have established management thresholds referred to as minimum acceptable biomass indices (MABI). For a commercial fishery to occur in a section with an established threshold, the surveyed shrimp biomass must meet or exceed the MABI. Additional information on MABI is found in the Westward Region Shrimp Fishery Management Plan (ADF&G 1982; Jackson 2005). Commercial shrimp fishing in sections with MABI 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 GHLs. Shrimp abundance estimates are determined by trawl surveys conducted aboard the *R/V Resolution.*

SHRIMP POT FISHERY INTRODUCTION

Shrimp pot fisheries in the Kodiak, Chignik, and South Peninsula districts are part of shrimp Registration Area J. All of Registration Area J is a nonexclusive registration area for shrimp caught with pot gear. With the exception of six 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 east of the longitude of Kilokak Rocks. The Kodiak District is further divided into fifteen 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 sections (Figure 13).

Historical Background

Trawl fishing for shrimp in the Kodiak District began with a harvest of 31,886 pounds in 1958 (Jackson and Ruccio 2003; Table 12). The fishery grew rapidly before the 1964 earthquake and tsunami destroyed most shore-based processing capacity. Once processors were reestablished the shrimp fishery rebounded and a record 82 million pounds were harvested in 1971. Following the peak harvest, Kodiak Area shrimp harvests declined through the 1970s and most effort shifted to the Chignik and South Peninsula districts (Jackson and Ruccio 2003). The Westward Region

harvest peaked in 1973 at over 120 million pounds (Figure 14). Stock abundance and harvests declined sharply thereafter. Throughout this time period, pink shrimp (*Pandalus borealis*) accounted for over 95% by weight of the total harvest. Other species landed included sidestriped (*Pandalopsis dispar*), coonstriped (*Pandalus hypsinotus*), spot (*Pandalus platyceros*), and humpy (*Pandalus goniurus*) shrimp.

ADF&G initiated a voluntary logbook program in 1967. The resulting information, plus data from trawl surveys conducted by ADF&G since the early 1970s, guided the process for establishing harvest levels. In 1981 the industry requested harvest levels be defined and adopted into regulation. Subsequently, the WESTWARD REGION SHRIMP MANAGEMENT PLAN (5 AAC 31.590) was approved by the BOF in 1982. The objectives of this 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. A minimum level at which any harvest could occur was established and termed the MABI (Table 13).

Concurrent with approval of the WESTWARD REGION SHRIMP MANAGEMENT PLAN, the BOF enacted the MAINLAND SHRIMP MANAGEMENT PLAN (5 AAC 31.530) as an "economic alternative" to the more comprehensive regional plan. The mainland plan allowed for shrimp fishing in some bays on the Alaska Peninsula and around Afognak Island regardless of survey results. In September of 1997, the BOF repealed the MAINLAND SHRIMP MANAGEMENT PLAN due to concerns regarding the lack of specific stock information and thus the sustainability of the fishery. Currently, only the General Section which is mostly composed of offshore waters surrounding Kodiak Island (Figure 13) remains open to trawl gear from June 15 through February 28. However, most state waters within the General Section are closed to non-pelagic trawls, including otter and beam shrimp trawl nets. Overall, little commercial trawl effort has occurred in the General Section since the mid-1980s.

Pot fishing for shrimp in the Kodiak District began in 1969 although the pot fishery never developed into a large fishery (Jackson and Ruccio 2003; Table 14). The largest annual harvest of shrimp with pot gear was less than 19,000 pounds in 1983. Although pot harvests were minor compared to trawl harvests, 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 regarding the biology and 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 conservative management tools to allow some pot shrimp fishing opportunities. Under the plan, season dates, guideline harvest ranges (GHR), and mandatory logbook requirements were adopted. In areas outside of the management plan, shrimp may be taken year round with pots.

Overview of Current Fishery Regulations

In the Kodiak District, vessel operators must obtain a shellfish registration from ADF&G and an interim-use permit card from CFEC prior to any fishing. Vessel operators may not be registered to take shrimp in more than one district concurrently.

Shrimp may be taken with trawl gear in the Kodiak District General Section from June 15 through February 28. The remaining sections of the Kodiak District are only opened by emergency order. Currently, there is no closed season for shrimp fishing with pot gear in the Kodiak District with the exception of the North Afognak, West Afognak, and Mainland sections, which have fishing seasons from May 1 through February 28, unless closed earlier by emergency

order. The North Afognak, West Afognak, and Mainland sections GHR is established at 0 to 40,000 pounds whole weight, and no more than 15,000 pounds may be harvested from any individual section during a calendar year.[1]

2009/2010 Kodiak District Shrimp Pot and Trawl Fisheries

There was no shrimp trawl effort during the 2009/2010 season. Harvest information from the 2009/2010 pot fishery is confidential due to the limited number of participating vessels. Historic catch information is located in Table 14.

Status of Kodiak District Shrimp Stocks

ADF&G conducts trawl surveys to assess shrimp biomass. From 1989 to 2001, surveys were conducted once every 3 years in the Kodiak District. Beginning in 2001, portions of the Kodiak District have been surveyed on an annual basis. Most of the General Section is not surveyed. The highest survey catch of shrimp per kilometer towed in the Kodiak District during the 2010 trawl survey occurred in Marmot Bay (Ellsworth *In prep*). All sections remain well below MABI. Shrimp biomass in all surveyed sections remains at low levels and many areas show further declines in biomass. This is especially apparent in Wide Bay which has declined from a recent high of 2.2 million pounds in 2001 to a recent low of 22,000 pounds in 2010 (Table 13). Trawl gear does not adequately sample the rocky habitat typically associated with spot and coonstriped shrimp. Therefore, no inferences about these species are drawn from the trawl survey.

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 nine sections: Kujulik Bay, Chignik Bay, Kuiukta Bay, Mitrofania Island, Ivanof Bay, Chiginagak Bay, Seal Cape, Nakalilok Bay, and Aniakchak Bay (Figure 13). The offshore waters in the Chignik District are not divided into sections.

The South Peninsula District for shrimp includes all waters west of a line from Kupreanof Point to the easternmost point of Castle Rock, west of a line extending 135° southeast from the easternmost point of Castle Rock and Gulf of Alaska waters east of the longitude of Cape Sarichef. The South Peninsula District is divided into eight sections: Stepovak Bay, Unga Straits, West Nagai, Beaver Bay, Kenoys Island, Pavlof Bay, Belkofski Bay, and Morzhovoi Bay sections (Figure 13). The offshore waters in the South Peninsula District are not divided into sections.

Historical Background

Shrimp fishing in the South Peninsula and Chignik districts began in 1968. Harvest peaked at 27 million pounds in the Chignik District (1976/77) and 44 million pounds in the South Peninsula District (1977/78; Table 15). After peak harvest, the South Peninsula District fishery experienced a rapid decline then closed prior to the start of the 1980/81 season. In contrast, shrimp harvests in the Chignik District declined steadily for several years after peak harvest then dropped suddenly

[1] The current regulation, 5 AAC 31.590, limits harvest to 15,000 pounds per calendar year; however, registration and guideline harvest levels are from May 1 through February 28. ADF&G intends to submit a proposal to the BOF to clarify this discrepancy.

to approximately 71,000 pounds during the 1981/82 season. Since that time, all inshore waters in the Chignik District have remained closed and no fishing has occurred in the offshore areas.

The Chiginagak, Nakalilok, and Aniakchak sections of the Chignik District were closed to all commercial shrimp fishing in 1997. The BOF closed these sections due to concerns that inadequate information existed regarding the biology and stock status of shrimp in the Westward Area. In March 2003, the BOF created 5 AAC 31.592 CHIGNIK DISTRICT POT SHRIMP FISHERIES MANAGEMENT PLAN to guide pot fisheries.

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 any 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 MABI thresholds. Most sections are opened and closed by emergency order when abundance thresholds are achieved. Similar to the General Section of the Kodiak District, the remaining waters of the Chignik and South Peninsula districts have no established MABI and are open annually during the established season.

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 0 to 40,000 pounds whole weight is established for these three sections, and no more than 15,000 pounds may be harvested from any individual section during a calendar year. There are no closed sections in the South Peninsula District for vessels using pot gear.

2009/2010 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 2009/2010 seasons.

Status of South Peninsula and Chignik Districts Shrimp Stocks

Only Beaver and Pavlof bays in the South Peninsula district were surveyed in 2010. Survey data suggests both bays remain at historically low shrimp abundance (Ellsworth *In prep*). Population estimates derived from 2010 survey data are well below MABI throughout the South Peninsula and Chignik districts (Table 13).

RED SEA CUCUMBER

INTRODUCTION

Historically, dive gear has been the only method used to harvest sea cucumbers in the Kodiak, Chignik, and South Peninsula districts. Diving for sea cucumbers may occur from October 1 through April 30 under authority of a commissioner's permit although sea cucumbers may only be taken during specified weekly fishing periods established by emergency order. Similar to Tanner crab, each management district is divided into multiple sections to distribute effort. GHLs are established for each section, and 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 1 to 3 days in length.

Divers are required to submit dive logs along with ADF&G fish tickets for each landing. All divers are required to have a CFEC interim-use card and register with ADF&G prior to participating in the fishery.

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 (58°51.10' N lat), west of the longitude of Cape Fairfield (148°50.25' W long), and east of the longitude of Cape Kumlik (157°27' W long). The district is further subdivided into eight sections: Northeast, Eastside, Southeast, Southwest, Semidi Island, Westside, North Mainland, and South Mainland (Figure 2).

The Chignik District includes the Pacific Ocean waters of Registration Area J west of the longitude of Cape Kumlik (157°27' W long), and east of a line from the southernmost tip of Kupreanof Point (55°34' N lat, 159°36' W long) to the easternmost point of Castle Rock, and east of a line extending 135° from the easternmost point of Castle Rock (Figure 3). The Chignik District is not subdivided into sections for sea cucumber management.

Historical Background

Prior to 1991 red sea cucumbers were not commercially harvested in the Kodiak and Chignik districts (Table 16). During 1991 and 1992, processors recruited divers to gather small numbers of red sea cucumbers in the Kodiak and Chignik districts to test marketability. In the spring of 1993, processors enlisted several divers to prosecute a commercial fishery.

As the fishery developed, ADF&G announced several management measures intended to prevent overharvest. A seasonal closure from May 1 through September 30 was established to protect spawning aggregates of sea cucumbers, GHLs were established for the Kodiak and Chignik districts based on eviscerated weight, and fishing periods were implemented to allow ADF&G opportunity to accurately track harvest (reported in eviscerated weight) and assess inseason fishery performance. Additionally, management areas for sea cucumbers based on Tanner crab 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 three 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 red sea cucumber were harvested (Table 16). Most effort occurred in the Eastside, Southeast, Southwest, and Westside sections of Kodiak.

Due to low CPUE during the previous season, GHLs for the 1995/96 sea cucumber fishery were lowered to 135,000 pounds in the Kodiak District and 25,000 pounds in the Chignik District. GHLs have largely remained at similar levels since (Table 17). From 1997 to 2010, effort was concentrated in the Eastside, Southeast, Southwest, and Westside sections of the Kodiak District.

2010/2011 Kodiak and Chignik Districts Red Sea Cucumber Fishery

The 2010/2011 fishery opened October 1, 2010. GHLs for the Kodiak District totaled 140,000 pounds of eviscerated product compared to the Chignik District GHL of 25,000 pounds (Table 17). Given a single processor purchased all sea cucumbers harvested, catch data remains confidential. The Eastside, Southeast, Southwest, and Westside sections of the Kodiak Area were all closed by emergency order when GHLs were attained. The Northeast and Mainland sections remained open for the entire season. The 2010/2011 Kodiak District fishery was composed of four fishing periods totaling nine days of fishing. There was limited effort in the Chignik District during the 2010/2011 season.

Status of Kodiak and Chignik Districts Red Sea Cucumber Stocks

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

SOUTH PENINSULA DISTRICT

Description of the Area

The South Peninsula District for red sea cucumbers includes all Pacific Ocean waters west of a line from the southernmost tip of Kupreanof Point to the easternmost tip of Castle Rock, west of a line extending southeast 135° from the easternmost tip of Castle Rock, and east of the latitude of Scotch Cap Light (Figure 3).

Historical Background

Waters on the south side of the Alaska Peninsula were initially explored for red 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. 2010 was the first year since 1994 a landing from the Alaska Peninsula District has occurred.

2010/2011 South Peninsula District Red Sea Cucumber Fishery

Only limited fishing occurred during the 2010/2011 season in the South Peninsula District sea cucumber fishery. The season was open from October 1 through April 30 with a GHL of 5,000 pounds for exploratory fishing; the majority of the GHL was harvested.

STATUS OF SOUTH PENINSULA DISTRICT RED SEA CUCUMBER STOCKS

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

GREEN SEA URCHINS

INTRODUCTION

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, which may be 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 in regulation, although buyers have only purchased green sea urchins that are approximately 2 or 2.25 inches or greater in test (shell) diameter.

HISTORICAL BACKGROUND

Green sea urchins were not harvested commercially in the Westward Region until 1980 when a small amount was taken in the Kodiak Area to test marketability. There was little further interest in green sea urchins until 1985 when several thousand pounds were harvested. The fishery continued to expand and peak harvest occurred in 1988 at 158,969 pounds (Table 18). Most green sea urchins harvested in Kodiak were shipped live to Japan for processing.

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

2010/2011 GREEN SEA URCHIN FISHERY

No divers registered to harvest green sea urchin in the Kodiak or South Peninsula areas during the 2010/2011 season.

STATUS OF GREEN SEA URCHIN STOCKS

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

OCTOPUS

INTRODUCTION

Giant Pacific octopus occurs in the Kodiak, Chignik, and South Peninsula districts of miscellaneous shellfish Registration Area J. There is no closed season for octopus; however, directed fisheries may only occur under the provisions of a commissioner's permit. A valid octopus permit card for the appropriate gear type must be obtained from CFEC prior to participating in a directed fishery. While in possession of a commissioner's permit for octopus, vessel operators may not participate in other directed fisheries such as the state-waters Pacific cod fishery. However, vessel operators may retain octopus bycatch up to 20 percent of their target species weight with any valid CFEC permit card when participating in other commercial fisheries. Vessel operators registered for directed harvest may only retain the permissible bycatch levels of other species. No GHLs are established for octopus in the Westward Region.

In 2001, ADF&G adopted a revised product recovery rate for octopus designated as "gutted" on fish tickets. The revision has changed historic data within the department's fish ticket database from 1995 to present; therefore, this report may contain data that is different from previously published reports on octopus harvest.

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 and federal waters were negligible and most octopus were retained for bait or kept for personal consumption. Octopus is commonly used as bait in the Pacific halibut *Hippoglossus stenolepis* longline and Pacific cod *Gadus macrocephalus* pot fisheries.

Octopus harvests increased substantially during the 1990s. The decline of many crab stocks in the Gulf of Alaska resulted in reduced fishing opportunities for many pot vessels. In response, those vessels began to target Pacific cod in the Gulf of Alaska which subsequently increased retention of octopus. ADF&G worked with industry to ensure that all octopus harvested, particularly octopus retained as bait, were documented on fish tickets. Octopus regulations pertain to the Westward Region and do not specify district or area subdivisions. In order to discuss more regional trends, landing data was queried based on shellfish areas. Historically, most octopus in the Kodiak, Chignik, and South Peninsula areas were harvested within state waters, although this trend has reversed since about 2004 (Tables 19 and 20).

2010 KODIAK AREA OCTOPUS FISHERY

All octopus harvested in the Kodiak Area during 2010 were taken subsequent to other commercial fisheries. The 2010 Kodiak Area incidental harvest totaled 295,448 pounds. All harvest occurred during state and federal Pacific cod pot fisheries. Sixty-nine vessels harvested 92,881 pounds from 200 landings in state waters (Table 19). A total of 202,566 pounds were harvested by 69 vessels in federal waters. Fish tickets with price information reported an initial average price of $0.38 per pound for an estimated total exvessel value of $97,784.

2010 ALASKA PENINSULA AREA OCTOPUS FISHERIES

Similar to Kodiak, all octopus harvested in the Alaska Peninsula Area during 2010 were taken subsequent to other commercial fisheries. The 2010 incidental harvest totaled 270,067 pounds from state and federal waters combined (Table 20). Thirty-nine vessels harvested 133,925 pounds in state waters and 29 vessels harvested 136,142 pounds in federal waters. Fish tickets containing price information listed an initial average of $0.43 per pound for an estimated total exvessel value of $103,627.

STATUS OF KODIAK ALASKA PENINSULA AREA OCTOPUS STOCKS

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

RAZOR CLAMS

The commercial razor clam fishery in the Kodiak, Chignik and South Peninsula districts are part of miscellaneous shellfish 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's permit. There are no established GHLs for clam fisheries.

HISTORICAL BACKGROUND

Razor clams were harvested in the Kodiak District from the early 1920s through 1986 (Table 21). Though many Kodiak Island beaches were explored with some success, commercial

harvest primarily occurred about 70 miles northwest of Kodiak in the Kukak Bay, Hallo Bay, Big River, and Swikshak Beach regions. Digging continued on a regular basis until the early 1960s when a combination of increasing federal and state clam processing regulations, poor market conditions, and the 1964 earthquake precipitated harvest declines. Commercial harvesting of clams for human consumption has not been re-established although some hand digging occurs to collect bait for the Dungeness crab fishery. The certification program conducted by the Alaska Department of Environmental Conservation in support of clam fisheries ended in July 1980. Currently, there are no clam beaches in the Kodiak District commercially certified as safe for human consumption.

Many of the principal 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 as 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.

STATUS OF KODIAK, CHIGNIK, AND ALASKA PENINSULA DISTRICTS RAZOR CLAM STOCKS

Currently, clam stocks in the Westward region are not assessed for population abundance. Past harvest levels in the Kodiak District have been established by reviewing historic catch records and studies conducted by ADF&G. These studies, however, were conducted in the mid-1970s and are of little benefit in assessing current stock status.

OTHER MISCELLANEOUS SHELLFISH FISHERIES

Occasionally, requests to harvest other miscellaneous shellfish in the Kodiak, Chignik, and South Peninsula districts occur. Fishing permit for snails, intertidal mollusks, other crabs, and mussels have been authorized. Information on harvesting shellfish species not described in this report can be obtained by contacting ADF&G. Regulations governing other miscellaneous shellfish can be found in Chapter 38 of the Alaska Administrative Code.

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TABLES AND FIGURES

Table 1.–Shellfish emergency orders issued for the Kodiak and South Peninsula areas, 2010.

Emergency Order	Effective Date	Explanation
Kodiak Tanner Crab		
4-S-01-10	01/17/10	Closed Chiniak Bay of the Northeast Section to Tanner crab fishing for the remainder of the 2009/10 season.
4-S-03-10	01/19/10	Closed Southeast Section to Tanner crab fishing for the remainder of the 2009/2010 season.
4-S-04-10	01/23/10	Closed Eastside Section to Tanner crab fishing for the remainder of the 2009/2010 season.
4-S-08-10	01/26/10	Closed remaining waters of the Northeast Section to Tanner crab fishing for the remainder of the 2009/2010 season.
Kodiak Sea Cucumber		
4-S-14-10	10/01/10	Opened the Kodiak District sea cucumber fishery for a 48-hour fishing period.
4-S-15-10	10/02/10	Extended the first period for the Kodiak District sea cucumber fishery for 24-hours.
4-S-16-10	10/08/10	Opened the Northeast, Eastside, Southwest, Westside, North Mainland, and South Mainland sections for a 34-hour fishing period, and the Southeast Section for a 25-hour period sea cucumber fishery.
4-S-17-10	10/15/10	Opened all sections except the Westside Section for 24-hours; the Westside Section remained closed to sea cucumber fishery.
4-S-18-10	10/22/10	Opened the Eastside, Southeast, and Southwest sections for a 8-hour sea cucumber fishing period, and the Northeast, North Mainland and South Mainland section for a 25-hour period. The Westside Section remained closed.
4-S-19-10	10/22/10	Opened the Eastside Section for a 24-hour sea cucumber fishing period and a 72-hour fishing period in the North and South Mainland sections.
		Extended the sea cucumber opening in the Southeast and Southwest sections for an additional 8 hours. All other sections closed as originally announced in 4-S-18-10.
4-S-20-10	10/25/10	Extended the sea cucumber fishery in Eastside Section for an additional 8-hours. All other sections closed as announced in 4-S-18-10.
South Peninsula Tanner Crab		
4-S-02-10	01/18/10	Closed Cold Bay to Tanner crab fishing in the Western Section of the South Peninsula District for the remainder of the 2009/2010 season.
4-S-05-10	01/24/10	Closed the Western Section to Tanner crab fishing of the South Peninsula District for the remainder of the 2009/2010 season.
4-S-06-10	01/24/10	Closed the Eastern Section to Tanner crab fishing of the South Peninsula District for the remainder of the 2009/2010 season.

Table 2.–Tanner crab commercial catch, effort, and value for the Kodiak District, 1967–2009/2010.

		Number				Pots	Average	Average	Avg. Price	
Year/Season	GHL	Vessels	Landings	Crabs[a]	Pounds[a]	Lifted	CPUE	Weight	Per Pound	Exvessel Value
1967	NA	NA	83	NA	110,961	NA	NA	NA	$0.07	NA
1968	NA	NA	817	NA	2,560,687	NA	NA	NA	0.10	NA
1969	NA	85	955	NA	6,827,312	72,748	43	NA	0.11	NA
1969/70	NA	67	833	3,237,244	8,416,782	78,266	42	2.6	0.11	NA
1970/71	NA	82	453	2,686,067	6,744,163	60,967	44	2.5	0.11	NA
1971/72	NA	46	505	3,878,618	9,475,902	65,907	59	2.4	0.13	NA
1972/73	NA	105	1,466	13,609,688	30,699,777	188,158	72	2.3	0.17	NA
1973/74	NA	123	1,741	11,857,573	29,820,899	217,523	55	2.5	0.20	NA
1974/75	NA	74	471	5,459,940	13,649,966	73,826	74	2.5	0.17	NA
1975/76	NA	104	1,168	10,748,958	27,336,909	199,304	54	2.5	0.20	NA
1976/77	NA	102	998	7,830,727	20,720,079	164,213	48	2.6	0.33	NA
1977/78	NA	148	1,483	12,401,243	33,281,472	251,621	49	2.6	0.43	NA
1978/79	NA	218	1,225	10,702,829	29,173,807	275,455	38	2.7	0.55	NA
1979/80	NA	211	1,385	6,813,128	18,623,875	282,946	24	2.7	0.55	NA
1980/81	NA	188	771	4,398,631	11,748,629	174,351	25	2.7	0.65	NA
1981/82	NA	221	950	5,413,467	13,756,159	230,403	24	2.5	1.65	NA
1982/83	NA	348	1,439	7,744,812	18,927,061	377,562	21	2.4	1.25	NA
1983/84	NA	303	1,229	5,891,968	14,478,066	303,764	19	2.5	1.20	NA
1984/85	NA	216	710	4,540,114	11,947,696	176,215	26	2.6	1.46	$17,404,393
1985/86	NA	233	602	3,454,957	8,990,612	160,220	22	2.6	1.78	15,984,432
1986/87	NA	190	506	1,832,962	4,839,446	111,198	16	2.6	2.24	10,819,836
1987/88	NA	178	560	1,648,064	3,959,504	103,391	16	2.4	2.27	8,969,526
1988/89	NA	171	566	2,096,540	5,185,563	86,056	24	2.5	2.84	14,703,552
1989/90	NA	232	547	1,437,905	3,446,937	96,956	15	2.4	2.36	7,989,025
1990/91	NA	135	445	764,357	1,917,713	54,110	14	2.5	1.56	2,990,659
1991/92	NA	143	434	982,391	2,400,213	47,384	21	2.4	2.23	5,343,087
1992/93	NA	140	353	518,982	1,318,446	43,528	12	2.5	2.11	2,780,410
1993/94	NA	130	379	511,131	1,253,462	41,587	12	2.5	2.25	2,732,432
1994/95– 1999/00					NO COMMERCIAL FISHERY					
2000/01	500,000	145	192	193,138	510,407	7,233	27	2.6	2.29	1,147,022
2001/02	500,000	181	279	146,672	361,086	10,446	14	2.5	2.04	735,995
2002/03	510,000	72	276	215,924	511,324	11,108	19	2.4	2.32	1,173,440
2003/04	795,000	66	252	254,990	566,218	15,550	16	2.2	2.30	1,297,405
2004/05	1,750,000	76	290	778,023	1,804,533	23,040	34	2.3	1.71	2,923,213
2005/06	2,100,000	68	249	890,901	2,123,931	22,145	40	2.4	1.43	3,030,417
2006/07	800,000	50	96	318,815	765,092	7,834	41	2.4	1.77	1,345,188
2007/08	500,000	33	64	172,240	425,589	5,569	31	2.5	2.00	847,178
2008/09	400,000	31	48	148,882	359,056	5,835	26	2.4	1.80	644,137
2009/10	700,000	52	84	294,569	650,315	8,417	35	2.2	$1.34	859,638
5 yr average	900,000	47	108	365,081	864,797	9,960	34	2.4	1.7	1,758,027

Notes: NA = not available, CPUE = legal crab per pot lift

[a] Includes deadloss and personal use.

[b] Exvessel value calculated based on average price per pound times pounds sold for food. Exvessel value excludes Semidi Island Overlap Section harvest due to confidentiality.

Table 3.–Tanner crab guideline harvest level (GHL), effort, and harvest by section for the Kodiak District, 2004/05–2009/2010.

Year	Section[a]	GHL	Vessels[b]	Harvest (lbs)	Pots Lifted	CPUE
2004/05						
	Northeast	550,000	43	470,128	6,896	30
	Eastside	650,000	27	664,576	8,617	33
	Southeast	100,000	9	92,398	1,711	23
	Southwest	450,000	20	574,944	4,021	60
	Semidi	NA		CONFIDENTIAL		
	Total[c]	1,750,000	99	1,802,046	21,245	34
2005/06						
	Northeast	550,000	41	520,054	8,565	27
	Eastside	1,300,000	43	1,304,396	10,478	51
	Southeast	100,000	9	129,165	1,489	36
	Southwest	150,000	7	169,089	1,108	61
	Semidi	NA		CONFIDENTIAL		
	Total[c]	2,100,000	68	2,122,704	21,640	40
2006/07						
	Northeast	100,000	21	88,584	1,651	24
	Eastside	700,000	40	676,508	6,181	45
	Total[c]	800,000	50	765,092	7,832	41
2007/08						
	Northeast	100,000	9	88,514	1,707	24
	Eastside	400,000	30	336,839	3,783	33
	Total[c]	500,000	33	425,353	5,490	31
2008/09						
	Northeast	100,000	11	60,370	1,467	18
	Eastside	300,000	24	298,686	4,368	28
	Total[c]	400,000	31	359,056	5,835	26
2009/10						
	Northeast	100,000	23	80,133	1,192	31
	Eastside	500,000	30	469,807	6,287	34
	Southeast	100,000	7	100,375	938	48
	Total[c]	700,000	52	650,315	8,417	35

Note: CPUE = legal crab per pot lift

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

[b] Total unique vessels; several vessels participated in multiple sections.

[c] Totals do not include confidential data.

Table 4.–Tanner crab commercial catch, effort, and value for the Chignik District, 1968–2009/2010.

Year/Season	GHL	Number				Pots	Average	Average	Average Price	Exvessel
		Vessels	Landings	Crabs[a]	Pounds[a]	Lifted	CPUE	Weight	Per Pound	Value
1968	NA	NA	NA	NA	21,100	NA	NA	NA	NA	
1969	NA	NA	NA	NA	38,100	NA	NA	NA	NA	
1969/70	NA	NA	NA	NA	2,800	NA	NA	NA	NA	
1970/71	NA	NA	NA	NA	152,300	NA	NA	NA	NA	
1971/72	NA	CONFIDENTIAL								
1972/73	NA	15	56	297,363	747,788	8,080	51	2.5	$0.16	NA
1973/74	NA	25	115	1,585,560	4,054,873	28,083	57	2.6	0.20	NA
1974/75	NA	25	91	1,438,508	3,649,444	22,675	63	2.5	0.14	NA
1975/76	NA	35	217	4,434,381	11,201,941	59,377	75	2.5	0.19	NA
1976/77	NA	21	141	2,098,226	5,672,919	40,604	52	2.7	0.33	NA
1977/78	NA	32	140	1,725,042	4,693,830	38,414	45	2.8	0.42	NA
1978/79	NA	39	126	926,253	2,536,105	28,378	33	2.7	0.55	NA
1979/80	NA	42	155	2,340,004	3,517,920	54,627	25	2.6	0.54	NA
1980/81	NA	24	112	1,534,847	3,653,723	44,022	35	2.4	0.64	NA
1981/82	NA	45	174	1,343,500	3,240,476	47,830	28	2.4	1.21	NA
1982/83	NA	48	136	1,432,029	3,497,370	60,210	24	2.4	1.12	NA
1983/84	NA	17	41	269,724	659,043	14,665	18	2.4	1.09	NA
1984/85	NA	15	30	148,232	343,579	14,162	10	2.3	1.66	$553,185
1985/86	NA	7	14	91,008	199,452	8,246	11	2.2	2.10	407,423.00
1986/87	NA	9	18	86,732	189,087	6,819	13	2.2	2.30	434,194.00
1987/88	NA	5	10	53,958	112,513	4,641	12	2.1	2.22	241,762.00
1988/89	NA	6	35	152,250	346,556	10,345	15	2.3	NA	NA
1989/90 – 2003/04		NO COMMERCIAL FISHERY								
2004/05	400,000	22	59	184,706	410,741	7,456	25	2.2	1.66	675,349.00
2005/06	200,000	4	7	57,547	143,164	2,037	28	2.5	1.20	170,769.00
2006/07 – 2009/10		NO COMMERCIAL FISHERY								
5 year average[b]		9	26	107,039	240,412	6,260	19	2.3	$1.85	$380,518.50

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

[a] Includes deadloss.

[b] Five-year average is the last 5 years of fishery data (1986/87–1988/89 and 2004/05–2005/06).

Table 5.–Tanner crab commercial catch, effort, and value for the South Peninsula District, 1967–2009/2010.

		Number				Pots	Average	Average	Average Price	Exvessel
Year/Season	GHL	Vessels	Landings	Crabs[a]	Pounds[a]	Lifted	CPUE	Weight	Per Pound	Value
1967	NA	NA	NA	NA	3,100	NA	NA	NA	NA	NA
1968	NA	NA	155	36,835	110,610	NA	NA	3.0	NA	NA
1969	NA	NA	173	221,946	606,178	NA	NA	2.7	NA	NA
1969/70	NA	NA	NA	NA	2,093,600	NA	NA	NA	NA	NA
1970/71	NA	17	242	813,610	2,140,585	NA	NA	2.6	$0.10	NA
1971/72	NA	NA	NA	NA	3,618,900	NA	NA	NA	NA	NA
1972/73	NA	36	390	2,213,006	5,615,563	53,573	41	2.5	NA	NA
1973/74	NA	44	386	3,504,668	8,300,578	58,444	60	2.4	NA	NA
1974/75	NA	44	131	2,053,530	5,195,800	38,153	54	2.5	0.14	NA
1975/76	NA	36	288	2,724,509	6,926,161	52,381	52	2.5	0.20	NA
1976/77	NA	28	289	2,524,565	6,773,838	63,143	40	2.7	0.32	NA
1977/78	NA	36	374	2,847,948	7,446,270	70,587	40	2.6	0.40	NA
1978/79	NA	48	332	3,267,122	8,684,408	82,374	40	2.7	0.51	NA
1979/80	NA	61	363	2,581,544	6,961,251	96,989	27	2.7	0.54	NA
1980/81	6,000,000	43	268	1,274,539	3,294,106	59,560	21	2.6	0.58	NA
1981/82	4,500,000	72	365	1,815,060	4,589,042	81,008	22	2.5	1.05	NA
1982/83	3,000,000	82	230	1,144,096	2,863,798	70,524	16	2.5	1.20	NA
1983/84	2,750,000	61	207	775,472	1,789,883	50,726	15	2.3	1.04	NA
1984/85	1,930,000	52	187	1,085,864	2,514,843	48,416	22	2.3	1.38	3,453,672.00
1985/86	3,900,000	75	187	1,589,757	3,781,950	65,078	24	2.4	1.67	6,285,481.00
1986/87	2,000,000	55	106	950,300	2,400,784	37,506	25	2.5	1.95	4,660,911.00
1987/88	3,431,000	73	148	1,360,367	3,328,799	52,516	26	2.4	2.17	7,211,292.00
1988/89	700,000	65	87	433,112	1,055,082	27,958	15	2.4	2.68	2,823,249.00
1989/90 – 1999/00				NO COMMERCIAL FISHERY						
2000/01	375,000	55	67	107,653	258,631	4,426	24	2.4	1.24	320,122.00
2001/02 – 2003/04				NO COMMERCIAL FISHERY						
2004/05	300,000	42	68	134,019	295,741	5,655	24	2.2	1.67	492,176.00
2005/06	290,000	15	47	127,061	287,749	3,703	34	2.3	1.21	348,092.00
2006/07	200,000	6	15	74,187	165,811	1,959	38	2.2	0.79	130,330.00
2007/08	250,000	9	42	102,290	236,241	3,368	30	2.3	1.01	237,330.00
2008/09	275,000	12	66	122,441	265,560	5,311	23	2.2	1.31	346,455.00
2009/10	500,000	41	72	261,170	583,202	5,779	45	2.2	1.42	827,527.00
5 yr average	303,000	17	48	137,430	307,713	4,024	34	2.2	$1.15	$377,946.80

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

[a] Includes deadloss.

Table 6.–Dungeness crab commercial catch, effort, and value for the Kodiak District, 1962–2010/2011.

Year/Season	Number				Pots	Average Lbs	Average	Average Price	Exvessel
	Vessels	Landings	Crab	Pounds[a]	Lifted	Per Landing	CPUE	Per Pound	Value
1962	NA	149	NA	1,904,567	NA	12,782	NA	$0.09	$171,000
1963	NA	354	NA	2,487,512	NA	7,026	NA	0.09	224,000
1964	29	395	NA	4,254,565	NA	10,537	NA	0.09	375,000
1965	25	351	NA	3,311,571	NA	9,434	NA	0.12	397,000
1966	12	144	NA	1,416,174	NA	7,976	NA	0.13	149,000
1967	18	439	NA	6,663,668	NA	15,179	NA	0.13	866,000
1968	43	536	NA	6,829,061	NA	12,741	NA	0.14	956,000
1969	29	455	NA	5,834,628	190,967	12,823	12	0.16	934,000
1970	33	318	NA	5,741,438	249,800	18,005	9	0.14	804,000
1971	24	173	515,653	1,445,864	90,913	8,358	6	0.18	260,000
1972	34	316	766,960	2,059,536	140,921	6,517	6	0.40	824,000
1973	42	487	879,484	2,000,526	251,467	4,108	3	0.50	1,000,000
1974	23	172	337,839	750,057	104,062	4,361	3	0.47	353,000
1975	15	154	307,272	639,813	76,411	4,154	4	0.61	390,000
1976	4	6	38,072	87,110	4,410	14,518	9	0.15	13,000
1977					CONFIDENTIAL				
1978	20	173	618,357	1,362,306	93,633	7,875	6	0.75	1,022,000
1979	28	237	595,850	1,311,275	137,951	5,543	4	0.75	943,000
1980	21	197	968,829	2,011,736	107,261	10,212	9	0.45	905,000
1981/82	50	466	2,614,545	5,566,463	295,138	11,945	9	0.70	3,897,000
1982/83	111	991	2,004,075	4,546,311	481,542	4,588	4	0.75	3,410,000
1983/84	103	1,079	2,044,505	4,752,148	503,464	4,408	4	1.05	4,989,000
1984/85	106	1,163	2,393,974	5,303,052	627,441	4,564	4	1.45	7,689,000
1985/86	126	1,243	1,785,605	4,145,482	597,657	3,346	3	1.48	6,127,241
1986/87	82	577	441,007	967,423	199,356	1,667	2	1.21	1,167,765
1987/88	45	379	747,193	1,450,983	150,067	3,828	5	1.26	1,828,000

-continued-

Table 6.–Page 2 of 2.

Year/Season	Number Vessels	Landings	Crab	Pounds[a]	Pots Lifted	Average Lbs Per Landing	Average CPUE	Average Price/Pound	Exvessel Value
1988/89	50	364	1,064,427	2,125,114	203,237	5,838	5	$1.06	$2,243,032
1989/90	47	359	1,428,973	3,077,937	185,242	8,574	8	1.10	3,378,228.70
1990/91	62	519	1,301,465	2,937,168	296,168	5,659	4	1.54	4,497,343.62
1991/92	62	732	695,470	1,414,499	279,872	1,932	2	1.37	1,931,178.03
1992/93	46	501	805,215	1,656,793	218,602	3,306	3	0.86	1,424,813.60
1993/94	42	263	647,736	1,369,889	180,534	5,209	5	0.92	1,258,325.40
1994/95	31	162	426,848	948,461	151,888	5,855	5	1.20	1,138,138.80
1995/96	24	106	257,677	527,434	107,506	4,976	2	1.72	906,670.48
1996/97	21	113	334,237	668,772	88,682	5,918	4	1.00	668,772.00
1997/98	21	123	257,697	529,550	95,066	4,305	3	2.04	1,069,892.28
1998/99	12	60	185,249	371,241	63,926	6,187	3	1.45	534,055.30
1999/00	13	72	269,277	551,183	65,721	7,655	4	1.57	861,956.69
2000/01	12	69	114,038	238,955	57,037	3,463	2	1.65	394,173.45
2001/02	21	57	101,371	208,265	41,760	3,654	2	1.95	399,340.50
2002/03	18	74	181,698	355,943	71,096	4,810	3	1.46	516,324.62
2003/04	17	89	228,309	467,623	48,715	5,254	5	1.50	695,031.00
2004/05	11	57	169,899	352,216	42,990	6,175	4	1.50	526,644.00
2005/06	14	75	185,358	390,995	38,422	5,213	5	1.25	479,725.83
2006/07	12	62	74,044	148,583	31,670	2,397	2	1.45	215,146.65
2007/08	12	86	323,489	663,077	65,071	7,710	10	2.19	1,370,292.39
2008/09	15	86	517,567	1,030,498	93,414	11,983	6	2.20	2,263,001.46
2009/10	17	108	614,793	1,335,503	129,003	12,366	5	1.58	2,096,810.10
2010/11	19	100	473,708	1,002,576	101,341	10,026	5	1.86	1,852,300.00
5 year average	15	88	400,720	836,047	84,100	8896	6	$1.86	$1,559,510

Note: The western boundary of the Kodiak District for Dungeness crab fishing is the longitude located at Kilokak Rocks, (156°19' W long.). Prior to 2001/2002, the western boundary was located at the longitude located at Cape Kumlik, (157°27' W long.).
CPUE = legal crab per pot lift.
NA = not available.

[a] Includes deadloss.

Table 7.–Harvest, vessels, and landings by statistical area from the Kodiak District Dungeness crab fisheries, 2006/07–2010/2011 seasons.

Statistical Area	2006/07			2007/08			2008/09			2009/10			2010/11		
	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]
525701	5	22	33,896	3	24	60,622	3	15	30,768	7	32	147,403	9	47	156,165
525703	4	13	14,076	CONFIDENTIAL			3	14	17,548	3	18	41,477	6	34	71,240
525733	7	30	7,403	3	23	6,483	4	6	1,618	CONFIDENTIAL			3	7	3219
535635	0	0	0	3	13	13,114	3	6	5,578	CONFIDENTIAL			CONFIDENTIAL		
535701	0	0	0	CONFIDENTIAL			4	20	75,782	CONFIDENTIAL			3	18	73,073
535703	CONFIDENTIAL			3	11	9,923	0	0	0	3	10	26,554	3	15	18,605
535705	CONFIDENTIAL			3	23	39,082	5	19	14,963	CONFIDENTIAL			4	14	26,740
535706	CONFIDENTIAL			CONFIDENTIAL			0	0	0	3	12	23,640	4	17	21,292
545601	CONFIDENTIAL			4	22	221,937	5	29	543,795	7	30	566,529	5	18	458,915
545602	0	0	0	CONFIDENTIAL			0	0	0	CONFIDENTIAL			0	0	0
545632	CONFIDENTIAL			4	22	45,188	7	33	243,557	6	28	144,977	6	22	133,029
Other	6	28	93,208[b]	6	47	266,728[b]	14	34	96,890[c]	17	69	384,923[d]	5	27	40,300[e]
Total[f]	22	93	148,583	29	185	663,077	48	176	1,030,498	46	199	1,335,503	48	219	1,002,576

[a] Includes deadloss.

[b] Total of 10 statistical areas.

[c] Total of 9 statistical areas.

[d] Total of 11 statistical areas.

[e] Total of 18 statistical areas.

[f] Some vessels made landings from more than one statistical area.

Table 8.–Dungeness crab commercial catch, effort, and value for the Alaska Peninsula and Chignik districts combined, 1968–2010/2011.

	Number				Pots	Average	Average	Average Price	Exvessel
Year/Season	Vessels	Landings	Crab[a]	Pounds[a]	Lifted	CPUE	Weight	Per Pound	Value
1968	NA	NA	434,142	1,259,013	NA	NA	2.9	NA	NA
1969	NA	NA	411,000	1,056,000	NA	NA	NA	NA	NA
1970	NA	NA	4,200	13,000	NA	NA	NA	NA	NA
1971	NA	NA	3,900	11,000	NA	NA	NA	NA	NA
1972	NA	NA	29,400	65,000	NA	NA	NA	NA	NA
1973	CONFIDENTIAL								
1974 – 1978	NO COMMERCIAL FISHING EFFORT								
1979	CONFIDENTIAL								
1980	NO COMMERCIAL FISHING EFFORT								
1981/82	CONFIDENTIAL								
1982/83	16	79	357,955	779,600	59,265	6	2.2	$0.75	NA
1983/84	18	132	565,430	1,207,128	113,061	5	2.1	0.97	NA
1984/85	13	99	294,191	647,497	106,056	3	2.1	1.38	NA
1985/86	7	31	243,203	497,367	52,717	5	2.05	1.29	$642,811
1986/87	7	28	87,988	180,261	30,280	3	2.05	1.05	187,921
1987/88	5	21	88,744	182,706	22,588	4	2.06	1.09	196,983
1988/89	CONFIDENTIAL								
1989/90	CONFIDENTIAL								
1990/91	4	10	31,074	65,806	5,225	6	2.11	1.53	95,543
1991/92	7	18	39,069	80,248	12,813	3	2.05	1.24	73,924
1992/93	CONFIDENTIAL								
1993/94	3	15	127,979	273,811	15,675	8	2.14	0.79	214,982
1994/95	4	24	134,429	277,639	27,590	5	2.07	0.92	278,354
1995/96	CONFIDENTIAL								
1996/97	4	9	52,694	112,438	16,557	3	2.1	1.11	55,060
1997/98	7	17	120,935	240,128	42,703	3	2.0	2.06	485,445
1998/99	3	8	60,049	116,757	19,800	3	2.0	1.44	162,059
1999/00 – 2001/02[b]	3	7	49,314	95,311	9,651	5		1.66	158,556
2002/03	4	30	83,208	192,627	12,203	7	2.3	1.35	254,233
2003/04	5	42	146,469	292,931	14,137	10	2.0	1.35	370,664
2004/05	6	53	131,640	264,096	22,786	6	2.0	1.38	345,363
2005/06	6	35	156,045	314,938	16,695	9	2.0	1.22	380,982
2006/07	4	26	141,747	284,954	15,850	9	2.0	1.45	403,437
2007/08	4	36	241,550	465,261	19,334	12	1.9	1.90	875,750
2008/09	7	39	261,681	517,141	27,847	9	2.0	2.02	1,009,078
2009/10	7	56	266,075	542,831	42,691	6	2.0	1.49	781,176
2010/11	6	37	166,952	350,606	33,778	5	2.1	1.79	622,810
5 year average	6	39	215,601	432,159	27,900	8	2.0	$1.73	$738,450

Note: In 2001/02 the Alaska Peninsula District was divided into the Alaska Peninsula and Chignik districts.
NA = not available.
Confidential = less than three vessels participated or less than three processors purchased product.
CPUE = legal crab per pot lift

[a] Includes deadloss.
[b] Seasons combined to maintain confidentiality.

Table 9.–Red king crab commercial catch, effort, and value for the Kodiak Area, 1960/61–2010/2011.

Fishery Year[a]	Vessels	Landings	Number of Crab[b]	Number of Pounds[b]	Pots Lifted	Average CPUE	Average Weight Per Crab	Average Price Per Pound	Exvessel Value
1960/61	143	NA	2,116,375	21,064,871	NA	NA	NA	$0.09	NA
1961/62	148	NA	3,181,554	28,962,900	NA	NA	NA	0.10	NA
1962/63	195	NA	4,146,143	37,626,703	NA	NA	NA	0.10	NA
1963/64	181	NA	4,158,988	37,716,223	NA	NA	NA	0.10	NA
1964/65	189	NA	4,923,309	41,596,518	95,951	51	NA	0.10	NA
1965/66	175	NA	11,061,709	94,431,026	173,083	64	NA	0.13	NA
1966/67	213	NA	8,476,299	73,817,779	223,174	38	NA	0.11	NA
1967/68	227	3,847	5,147,321	43,448,492	207,392	25	NA	0.26	NA
1968/69	178	1,839	2,348,950	18,211,485	119,146	20	NA	0.26	NA
1969/70	136	978	1,606,181	12,200,571	96,841	17	NA	0.28	NA
1970/71	100	830	1,561,318	11,719,970	119,192	13	NA	0.30	NA
1971/72	89	507	1,539,157	10,884,152	66,166	23	NA	0.39	NA
1972/73	88	683	2,029,670	15,479,916	70,806	29	NA	0.55	NA
1973/74	129	837	1,847,679	14,397,287	77,826	24	NA	0.45	NA
1974/75	158	1,195	2,910,201	23,582,720	110,297	26	NA	0.45	NA
1975/76	169	1,569	2,976,909	24,061,651	113,795	26	8.1	0.66	NA
1976/77	195	1,165	2,177,956	17,966,846	130,777	17	8.2	1.37	NA
1977/78	179	1,186	1,590,477	13,503,666	145,867	11	8.5	1.34	NA
1978/79	194	1,077	1,464,021	12,021,850	177,261	8	8.2	1.60	NA
1979/80	247	1,346	1,979,394	14,608,900	207,991	9	7.3	0.95	NA
1980/81	164	1,175	2,787,199	20,448,654	201,531	14	7.3	1.05	NA
1981/82	246	2,214	3,035,674	24,237,601	388,751	8	8.0	2.00	NA
1982/83	309	1,373	1,011,109	8,729,761	283,795	4	8.6	3.75	NA
1983/84 – 2010/11	NO COMMERCIAL FISHERY								

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

[a] Fishery year defined as: May 1–April 30 from 1960/61–1965/66,
July 1–April 30 from 1966/67–1968/69, and
August 15–January 15 from 1969/70–present

[b] Includes deadloss.

Table 10.–Golden king crab commercial catch, effort, and value for the Kodiak Area, 1983–2010.

			Number			Average			
Year	Vessels	Landings	Crab[a]	Pounds[a]	Pots Lifted	CPUE	Weight (lbs)	Price Per Pound	Exvessel Value
1983	12	36	16,349	111,398	8,490	2.0	6.8	$3.00	$334,194
1984	6	8	3,513	22,066	1,950	2.0	6.3	2.50	55,165
1985	4	19	10,005	63,641	2,693	4	6.4	1.96	124,736
1986	4	31	21,862	146,679	5,463	4	6.7	2.99	438,570
1987	5	38	9,485	67,191	3,187	3	7.1	3.17	212,995
1988					CONFIDENTIAL				
1989					CONFIDENTIAL				
1990	3	6	1,214	7,314	1,090	1	6.0	3.00	21,942
1991	0	0	0	0	0	0	0	0	0
1992					CONFIDENTIAL				
1993					CONFIDENTIAL				
1994	0	0	0	0	0	0	0	0	0
1995					CONFIDENTIAL				
1996	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0
2000					CONFIDENTIAL				
2001					CONFIDENTIAL				
2002	3	7	5,464	25,184	990	6	4.6	3.14	79,078
2003					CONFIDENTIAL				
2004					CONFIDENTIAL				
2005	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0
2010					CONFIDENTIAL				

Note: 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.

Table 11.–Red king crab commercial catch, effort, and value for the Alaska Peninsula Area, 1947–2010/2011.

	Number				Pots	Average	Average	Average Price	Exvessel
Year/Season	Vessels	Landings	Crab[a]	Pounds[a]	Lifted	CPUE	Weight	Per Pound	Value
1947	NA	NA	18,800	141,000	NA	NA	7.5	NA	NA
1948	NA	NA	518,500	3,363,000	NA	NA	6.5	NA	NA
1949	NA	NA	205,500	3,476,000	NA	NA	12.0	NA	NA
1950	NA	NA	270,000	2,124,000	NA	NA	7.9	NA	NA
1951	NA	NA	86,500	599,000	NA	NA	6.9	NA	NA
1952	NA	NA	32,400	298,000	NA	NA	7.6	NA	NA
1953	NA	NA	38,400	380,000	NA	NA	10.0	NA	NA
1954	NA	NA	31,666	316,660	NA	NA	10.0	NA	NA
1955	NA	NA	164,069	1,640,688	NA	NA	10.0	NA	NA
1956	NA	NA	421,651	4,221,496	NA	NA	10.0	NA	NA
1957	NA	NA	668,709	6,687,092	NA	NA	10.0	NA	NA
1958	NA	NA	724,595	7,245,947	NA	NA	10.0	NA	NA
1959	NA	NA	568,303	6,166,974	NA	NA	10.0	NA	NA
1960	NA	1,496	677,100	6,700,000	NA	NA	9.9	NA	NA
1961	NA	959	419,354	3,900,000	NA	NA	9.3	NA	NA
1962	NA	657	287,624	2,273,013	NA	NA	7.9	NA	NA
1963	27	1,037	970,739	6,539,129	NA	NA	6.7	$0.09	NA
1964	40	1,297	1,906,018	14,354,060	NA	NA	7.5	0.10	NA
1965	36	1,081	1,813,728	14,713,501	NA	NA	8.1	0.10	NA
1966	37	1,255	2,494,949	22,577,587	NA	NA	9.0	0.10	NA
1967	39	1,062	1,943,463	17,252,307	NA	NA	8.9	0.19	NA
1968/69	34	885	1,273,567	10,944,472	NA	NA	8.6	0.34	NA
1969/70	33	415	558,800	4,137,000	51,300	11	7.7	0.25	NA
1970/71	25	339	446,042	3,425,760	38,995	11	7.7	0.25	NA
1971/72	26	364	597,394	4,123,130	41,759	14	6.9	0.28	NA
1972/73	29	301	610,300	4,069,362	34,408	18	6.7	NA	NA
1973/74	36	389	658,632	4,260,674	53,642	12	6.9	0.72	NA
1974/75	36	318	644,054	4,572,101	44,951	14	7.1	0.43	NA
1975/76	37	248	367,221	2,605,310	35,104	11	7.2	0.41	NA
1976/77	26	122	125,778	958,069	17,748	7	7.7	0.61	NA
1977/78	15	73	119,641	726,382	10,551	11	6.1	1.00	NA
1978/79	33	226	520,168	3,093,859	31,142	17	5.9	1.27	NA
1979/80	68	288	738,859	4,453,557	41,753	18	6.0	0.92	NA
1980/81	51	358	821,071	5,080,632	54,114	15	6.2	0.96	NA
1981/82	56	341	515,882	3,168,689	51,776	10	6.1	1.40	NA
1982/83	63	157	271,237	1,683,654	30,894	9	6.2	3.20	NA
1983/84 - 2010/11	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.

Table 12.–Shrimp trawl fishery catch, effort, and value for the Kodiak District, 1958–2010/2011.

Year/Season	Vessels	Landings	Harvest in Pounds	Average Price Per Pound	Year/Season	Vessels	Landings	Harvest in Pounds	Average Price Per Pound
1958	NA	NA	31,886	$0.04	1983/84	14	63	2,779,030	$0.35
1959	NA	NA	2,861,900	0.04	1984/85	13	59	2,942,922	0.33
1960	11	94	3,197,985	0.04	1985/86	6	26	1,145,980	0.20
1961	12	203	11,083,500	0.04	1986/87		CONFIDENTIAL		
1962	11	204	12,654,027	0.04	1987/88		CONFIDENTIAL		
1963	NA	NA	10,118,472	0.04	1988/89 – 1992/93	0	0	0	NA
1964	6	NA	4,339,114	0.04	1993/94	3	3	1,704	NA
1965	11	320	13,823,061	0.04	1994/95	0	0	0	NA
1966	17	551	24,097,141	0.05	1995/96	0	0	0	NA
1967	23	NA	38,267,856	0.05	1996/97		CONFIDENTIAL		
1968	16	NA	34,468,713	0.04	1997/98		CONFIDENTIAL		
1969	26	935	41,353,461	0.06	1998/99	5	8	12,724	3.25
1970	18	1,024	62,181,204	0.04	1999/00	3	4	4,325	3.00
1971	49	1,746	82,153,724	0.04	2000/01 – 2003/04		CONFIDENTIAL		
1972	63	1,398	58,352,319	0.04	2004/05	0	0	0	NA
1973	50	1,283	70,511,477	0.06	2005/06		CONFIDENTIAL		
1973/74	63	1,029	56,203,992	0.08	2006/07 – 2010/11	0	0	0	NA
1974/75	75	1,100	58,235,982	0.08					
1975/76	58	884	49,086,591	0.08					
1976/77	62	762	46,712,083	0.10					
1977/78	58	653	26,409,366	0.13					
1978/79	50	328	20,506,021	0.17					
1979/80	37	242	12,863,536	0.23					
1980/81	67	462	27,101,218	0.29					
1981/82	55	298	19,112,367	0.27					
1982/83	40	224	10,391,207	0.27					

Table 13.–Shrimp minimum acceptable biomass indices (MABI) and population estimates in millions of pounds from surveyed districts and sections, 2001–2010.

			Survey Year									
District	Section	MABI	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Kodiak	Inner Marmot Bay	3.6	0.8	0.8	1.2	1.2	1.8	1.2	1.5	1.1	1.5	2.8
	Outer Marmot Bay	24.9	7.5	8.6	12.2	10.9	**25.0**	15.7	10.6	19.8	23.0	**71.0**
	Chiniak Bay	1.5	0.1	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.6
	Ugak Bay	4.0	ND	0.1	ND	0.0	ND	0.0	ND	0.0	ND	0.2
	Kiliuda Bay	5.2	ND	0.3	ND	0.1	ND	0.1	ND	0.4	0.6	0.2
	Twoheaded Island	7.4	ND	0.0	ND	0.3	ND	0.2	ND	0.0	ND	0.2
	Alitak Bay	4.2	ND	0.1	ND	0.1	ND	0.2	ND	0.2	ND	0.6
	Uyak Bay	3.2	ND	0.5	ND	0.2	ND	0.6	ND	0.8	ND	0.7
	Uganik Bay	2.6	ND	0.3	ND	0.1	ND	0.6	ND	0.7	ND	1.3
	Kukak Bay	none	ND	0.1	ND	0.1	ND	0.1	ND	0.2	ND	0.4
	Wide Bay	1.1	0.0	0.4	0.2	**1.5**	0.4	0.5	0.8	0.9	**2.0**	**2.2**
	Puale Bay	1.2	ND	ND	ND	0.0	ND	0.0	ND	0.1	ND	0.1
	Shelikof Strait	none	9.3	14.7	3.4	ND	5.3	30.0	4.1	13.6	ND	27.6
	Alitak Flats	2.8	ND	ND	ND	ND	ND	ND	ND	0.1	ND	0.0
Chignik	Kujulik Bay	3.8	0.1	ND	0.1	ND	0.2	ND	ND	ND	0.0	ND
	Chignik Bay	4.6	0.8	ND	1.0	ND	1.9	ND	1.2	ND	1.0	ND
	Chiginagak Bay	0.7	0.1	ND	0.1	ND	ND	ND	0.1	ND	ND	ND
	Nakalilok Bay	0.8	0.1	ND	0.1	ND	ND	ND	0.1	ND	ND	ND
	Kuiukta Bay	1.9	0.5	ND	0.0	ND	0.4	ND	0.5	ND	0.4	ND
	Mitrofania Island	5.2	0.1	ND	0.2	ND	ND	ND	0.0	ND	0.3	ND
	Ivanof Bay	5.7	0.0	ND	ND	ND	ND	ND	ND	ND	0.0	ND
South Peninsula	Stepovak Bay	23.5	3.6	ND	3.3	ND	**29.6**	ND	2.5	ND	2.4	ND
	Unga Strait	7.5	1.4	ND	0.4	ND	2.1	ND	0.4	ND	0.3	ND
	Beaver Bay	4.3	0.0	0.0	ND	ND	ND	ND	0.0	ND	0.0	ND
	Pavlof Bay	18.0	0.2	0.3	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1
	Morzhovoi Bay	10.8	0.0	ND	ND	ND	0.0	ND	ND	ND	ND	ND

Note: ND = not surveyed/no data.
BOLD indicates population estimate above established MABI.

Table 14.–Pot shrimp fishery catch and effort for the Kodiak District, 1980–2010.

Year	Vessels	Landings	Whole Pounds
1980	4	22	4,485
1981	4	7	2,919
1982	6	18	9,754
1983	12	31	18,686
1984	6	21	4,361
1985 – 1989[a]	4	24	8,484
1990 – 1999[a]	4	5	515
2000 – 2010[a]	3	18	3,401

[a] Years combined to maintain confidentiality.

Table 15.–Trawl shrimp fishery catch, effort, and value for the South Peninsula and Chignik districts, 1968–2010/2011.

	SOUTH PENINSULA				CHIGNIK			
Year/Season	Vessels	Landings	Pounds	Average Price Per Pound	Vessels	Landings	Pounds	Average Price Per Pound
1968	NA	NA	4,465,732	NA	NA	NA	1,062,585	NA
1969	CONFIDENTIAL				CONFIDENTIAL			
1970	4	172	4,425,909	NA	2	23	863,773	NA
1971	3	212	5,212,590	NA	5	27	1,091,711	NA
1972	11	408	14,705,809	NA	18	61	4,110,318	NA
1973	6	66	1,837,401	NA	2	9	951,817	NA
1973/74	12	345	19,960,612	NA	35	316	25,497,942	NA
1974/75	24	403	26,145,720	NA	34	355	23,392,352	NA
1975/76	21	325	20,044,112	NA	53	317	24,435,480	NA
1976/77	59	437	37,147,932	$0.10	55	345	27,232,630	$0.10
1977/78	53	403	44,223,213	0.13	52	271	26,612,791	0.13
1978/79	14	68	5,259,241	0.16	40	201	23,257,869	0.16
1979/80	10	40	3,134,367	0.28	37	192	23,722,330	0.22
1980/81[a]	CLOSED				57	153	13,777,649	0.28
1981/82	CLOSED				3	4	70,948	0.27
1982/83 - 2010/11	CLOSED				NO EFFORT			

Note: NA = not available.

Confidential = less than 3 vessels made landings or less than 3 processors purchased product.

[a] South Peninsula District closed to trawl gear after the 1979/80 fishery.

Table 16.–Red sea cucumber commercial catch, effort, and value for the Kodiak and Chignik districts combined, 1991–2010/2011.

Year/Season	Number			Pounds[a]	Average Price Per Pound
	Vessels	Dive Permits	Landings		
1991				CONFIDENTIAL	
1992				CONFIDENTIAL	
1993	37	50	487	564,516	$0.91
1994[b]	36	69	164	256,659	1.08
1994/95	20	42	113	167,009	1.24
1995/96	8	18	52	135,000	1.25
1996/97	16	31	88	162,451	1.25
1997/98	16	26	65	132,337	1.16
1998/99	8	16	44	142,313	1.20
1999/00	8	18	56	116,134	1.20
2000/01	8	19	56	139,264	1.57
2001/02	7	18	51	152,613	1.25
2002/03	9	24	65	190,217	1.23
2003/04		21		CONFIDENTIAL	
2004/05		15		CONFIDENTIAL	
2005/06		20		CONFIDENTIAL	
2006/07		19		CONFIDENTIAL	
2007/08		16		CONFIDENTIAL	
2008/09		21		CONFIDENTIAL	
2009/10		16		CONFIDENTIAL	
2010/11		30		CONFIDENTIAL	

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

[a] Pounds of eviscerated product.

[b] Covers the period from Jan.1, 1994 to Sept. 30, 1994.

Table 17.–Red sea cucumber guideline harvest levels (GHL), 2010/2011.

Area/Section		Sea Cucumber GHL (pounds)[a]
Kodiak District		
	Northeast Section	5,000
	Eastside Section	40,000
	Southeast Section	30,000
	Southwest Section	20,000
	Westside Section	30,000
	North Mainland Section	5,000
	South Mainland Section	5,000
	Semidi Island Section	5,000
Total Kodiak District		**140,000**
Chignik District		25,000
Alaska Peninsula District		5,000
Totals		**170,000**

[a] Pounds of eviscerated product.

Table 18.–Green sea urchin commercial catch, effort, and value for the Kodiak District, 1980–2010/2011.

	Number			Whole Pounds	Average Price
Year/Season	Vessels	Dive Permits	Landings	Harvested	Per Pound
1980/81			CONFIDENTIAL		
1981/82	0	0	0	0	ND
1982/83	0	0	0	0	ND
1983/84	0	0	0	0	ND
1984/85	0	0	0	0	ND
1985/86			CONFIDENTIAL		
1986/87			CONFIDENTIAL		
1987/88	12	15	143	142,520	$0.64
1988/89	12	28	203	158,969	0.82
1989/90	14	32	83	49,745	0.84
1990/91	13	23	78	72,537	0.83
1991/92	5	7	27	33,119	0.92
1992/93	8	9	44	39,054	1.00
1993/94	7	11	16	8,847	1.09
1994/95	5	11	66	45,601	1.34
1995/96			CONFIDENTIAL		
1996/97	3	7	26	27,841	1.08
1997/98			CONFIDENTIAL		
1998/99			CONFIDENTIAL		
1999/00			CONFIDENTIAL		
2000/01			CONFIDENTIAL		
2001/02			CONFIDENTIAL		
2002/03 – 2010/11	0	0	0	0	ND

Note: Confidential = less than 3 permits fished or less than 3 processors purchased product.
ND = no data.

Table 19.–Octopus commercial catch (primarily as bycatch), effort, and value for the Kodiak Area, 1990–2010.

	State waters			Federal waters			Combined				
Year	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels[b]	Landings	Pounds[a]	Average Price Per Pound	Exvessel Value[c]
1990	26	95	56,052	15	51	20,127	31	140	76,179	$1.13	$86,082
1991	56	260	106,748	28	84	22,607	70	342	129,355	1.07	138,410
1992	65	260	107,860	34	153	44,851	78	404	152,711	0.94	143,323
1993	20	60	98,010	23	41	8,453	35	99	106,463	0.72	70,567
1994	5	7	4,504	4	9	613	8	15	5,117	NA	NA
1995	37	292	66,935	20	89	3,673	46	327	70,608	0.49	31,482
1996	34	193	67,898	26	142	20,670	44	257	88,568	0.45	36,943
1997	62	525	230,606	57	278	46,296	87	658	276,902	0.46	125,702
1998	53	407	259,263	54	290	117,332	76	671	376,594	0.43	143,921
1999	46	307	198,330	29	147	54,676	63	439	253,006	0.33	73,698
2000	48	292	98,928	45	239	61,550	69	483	160,478	0.39	50,893
2001	27	205	99,665	30	79	12,712	45	252	112,377	0.38	39,700
2002	31	213	208,991	26	96	23,078	45	279	232,069	0.49	98,333
2003	37	118	55,628	20	49	15,527	53	165	71,155	0.34	22,279
2004	15	42	11,891	15	50	29,718	26	88	41,609	0.36	11,533
2005	38	108	36,879	32	193	96,354	54	281	133,233	0.42	47,881
2006	41	183	69,329	43	240	168,110	63	394	237,439	0.63	126,126
2007	54	273	123,226	61	321	188,991	86	538	312,037	0.53	154,947
2008	55	371	252,840	61	279	129,000	86	592	381,839	0.57	134,611
2009	51	166	96,142	56	183	186,564	84	321	282,706	0.44	108,170
2010	60	200	92,881	69	228	202,566	104	413	295,448	0.38	97,784

[a] Does not include discards.

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

[c] Exvessel value include product sold for food and product sold for bait.

Table 20.–Octopus commercial catch (primarily as bycatch), effort, and value for the Alaska Peninsula Area, 1990–2010.

	State waters			Federal waters			Combined				
Year	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels[b]	Landings	Pounds[a]	Average Price Per Pound	Exvessel Value[c]
1990	7	45	6,746	14	33	2,393	19	78	9,139	NA	NA
1991	18	71	15,103	14	34	4,267	29	105	19,370	$1.00	$15,103
1992	31	141	38,333	36	102	14,383	60	243	52,716	0.95	49,194
1993	16	53	18,436	18	32	2,778	31	84	21,213	0.87	17,773
1994	17	41	18,918	4	5	1,053	21	46	19,971	0.75	14,933
1995	8	17	3,283	5	5	1,185	12	22	4,468	0.44	1,358
1996	16	47	10,459	6	11	882	21	57	11,341	0.49	5,253
1997	22	141	50,040	3	4	145	25	145	50,185	0.42	20,939
1998	CONFIDENTIAL			CONFIDENTIAL			10	16	5,449	0.20	1,037
1999	4	4	355	0	0	0	4	4	355	CONFIDENTIAL	
2000	9	9	328	7	15	979	13	23	1,307	NA	NA
2001	4	4	386	7	11	2,162	10	15	2,548	CONFIDENTIAL	
2002	CONFIDENTIAL			CONFIDENTIAL			12	19	6,101	CONFIDENTIAL	
2003	18	25	1,463	10	19	15,160	24	40	16,623	0.61	8,481
2004	60	319	124,224	32	119	130,208	68	424	254,431	0.41	86,894
2005	34	94	26,656	17	62	63,308	47	152	89,965	0.47	35,508
2006	37	140	42,864	11	27	12,246	41	166	55,111	0.53	24,382
2007	38	213	84,960	15	34	20,066	47	243	105,026	0.46	47,137
2008	36	175	100,607	31	79	95,167	51	239	195,773	0.49	81,905
2009	36	240	238,080	29	63	22,857	52	282	260,937	0.39	95,604
2010	39	170	133,925	29	80	136,142	56	231	270,067	0.43	103,627

Note: NA = not available.

Confidential = less than 3 vessels participated or less than 3 processors purchased product.

[a] Does not include discards.

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

[c] Exvessel value include product sold for food and product sold for bait.

Table 21.–Razor clam commercial catch, effort, and value for the Kodiak District, 1960–2010.

Year	Number		Pounds		Ave. Price	Est. Fishery
	Registered Diggers[a]	Landings	Ave. per landing	Total	Per Pound	Value
1960	76	NA	NA	420,636	$0.11	$44,000
1961	95	NA	NA	381,971	0.11	40,000
1962	66	NA	NA	297,516	0.11	31,000
1963	39	NA	NA	323,757	0.11	35,600
1964	2	NA	NA	0	0.00	0
1965	4	NA	NA	20,000	0.25	5,000
1966	29	NA	NA	15,429	0.38	6,000
1967	9	NA	NA	2,155	0.40	900
1968	19	NA	NA	6,384	0.40	2,600
1969	5	6	2,005	12,029	0.40	4,812
1970	6	32	4,133	132,261	0.40	53,000
1971	73	82	2,322	190,394	0.30	57,000
1972	95	128	1,188	152,116	0.35	53,000
1973	64	140	1,181	165,282	0.40	66,000
1974	58	74	2,681	198,381	0.50	99,000
1975	18	5	1,238	6,188	0.50	3,000
1976	9	0	0	0	NA	NA
1977				CONFIDENTIAL		
1978				CONFIDENTIAL		
1979	0	0	0	0	NA	NA
1980	NA	8	1,001	8,006	0.79	6,325
1981	NA	5	1,637	8,186 [b]	1.00	8,186
1982	NA	11	1,055	11,608 [c]	1.00	11,608
1983	NA	7	1,131	7,920	1.00	7,920
1984	NA	21	1,613	33,972	1.00	33,972
1985	NA	11	1,540	16,945 [d]	1.00	16,945
1986	NA	4	998	3,993	1.00	3,993
1987 – 2010				NO COMMERCIAL HARVEST		

Note: NA = not available.

Confidential = less than 3 diggers made landings or less than 3 processors purchased product.

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

[b] Additional 1,985 pounds of hardshell clams harvested.

[c] Additional 1,506 pounds of hardshell clams harvested.

[d] Additional 1,496 pounds of hardshell clams harvested.

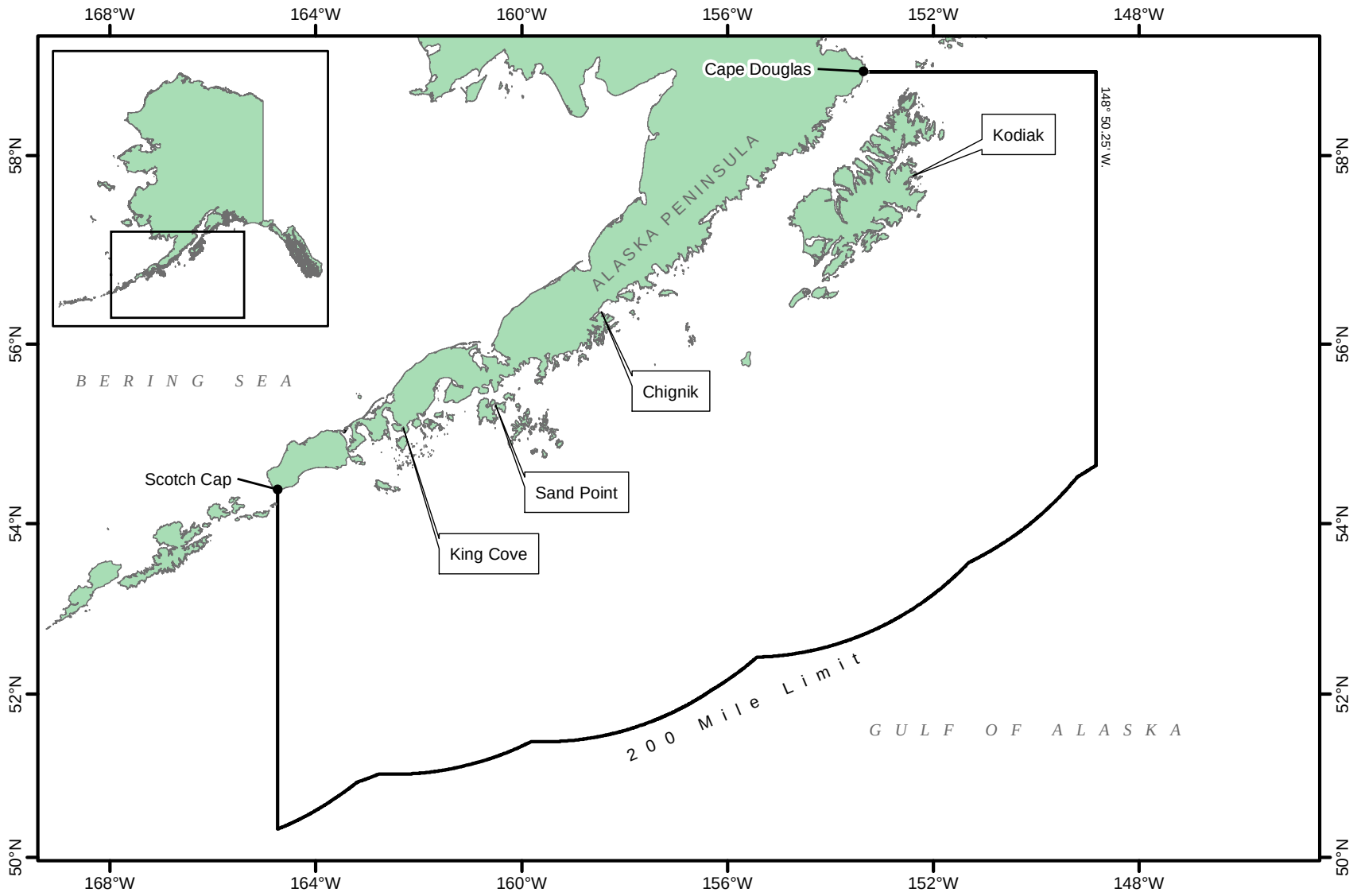

Figure 1.–Geographic area of fisheries covered in this report and managed out of the Kodiak office, 2010.

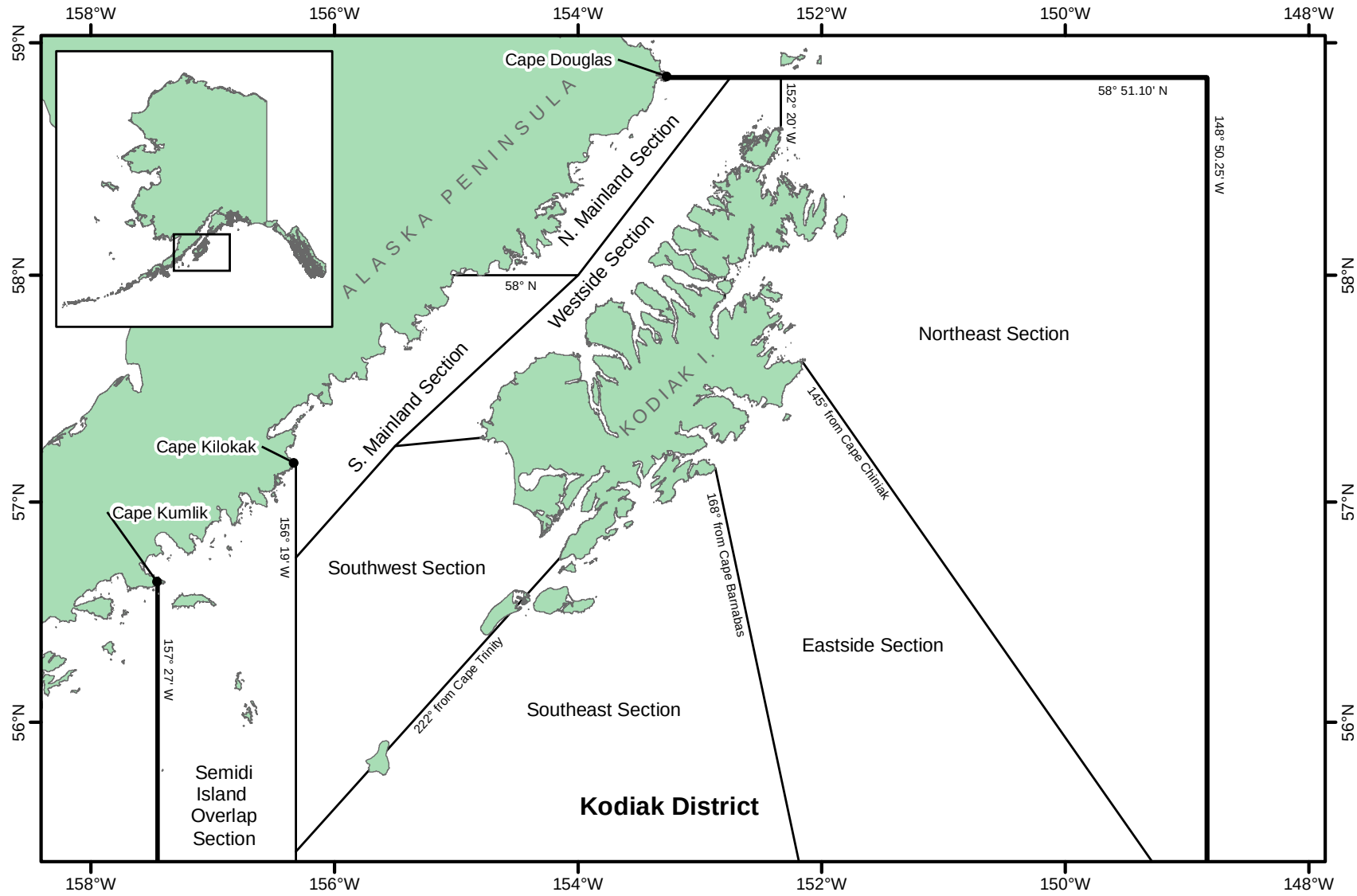

Figure 2.–Kodiak District and sections for Tanner crab and sea cucumber fishery management, 2010

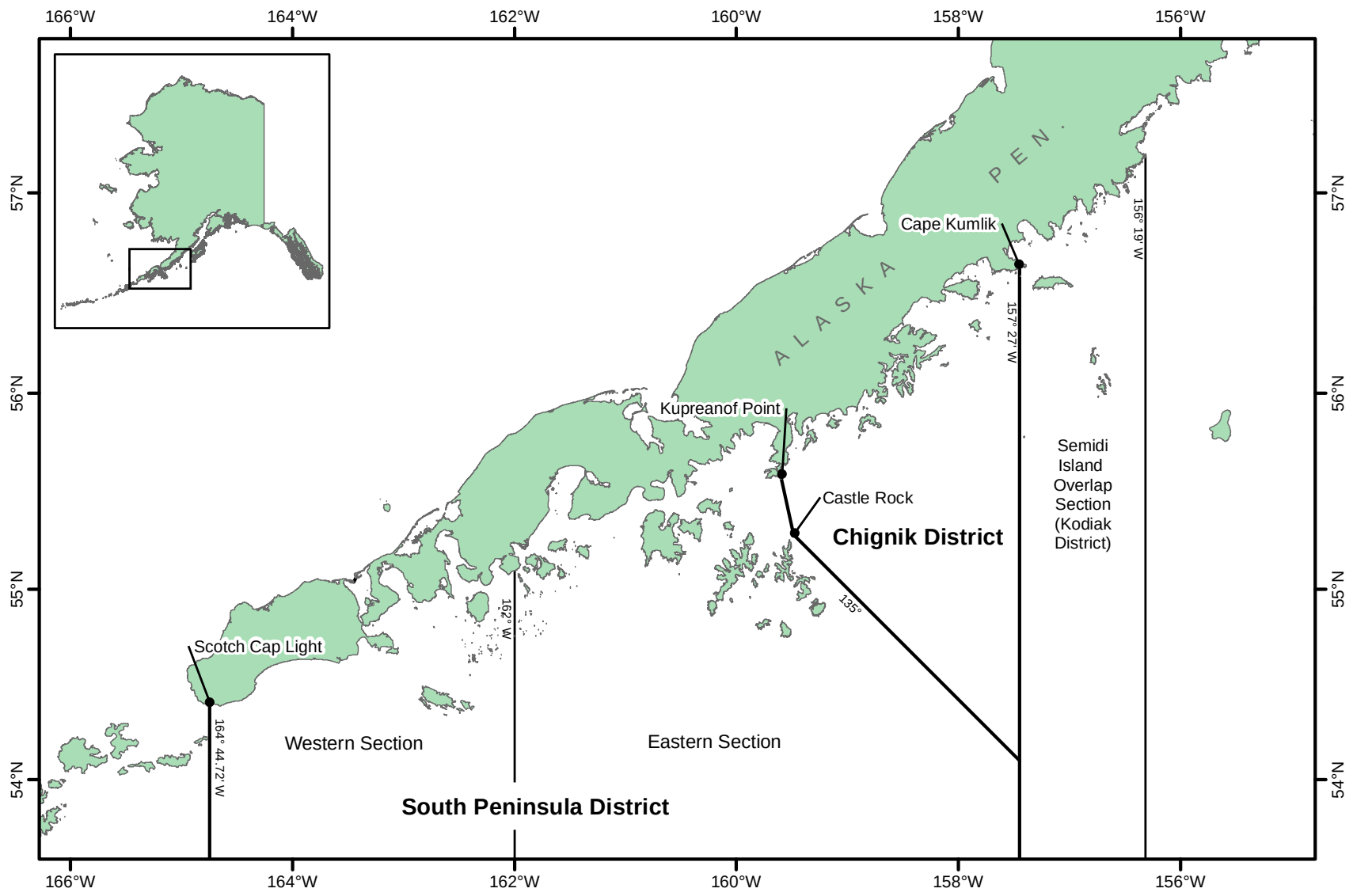

Figure 3.–Chignik and South Peninsula districts for Tanner crab and sea cucumber fishery management, 2010.

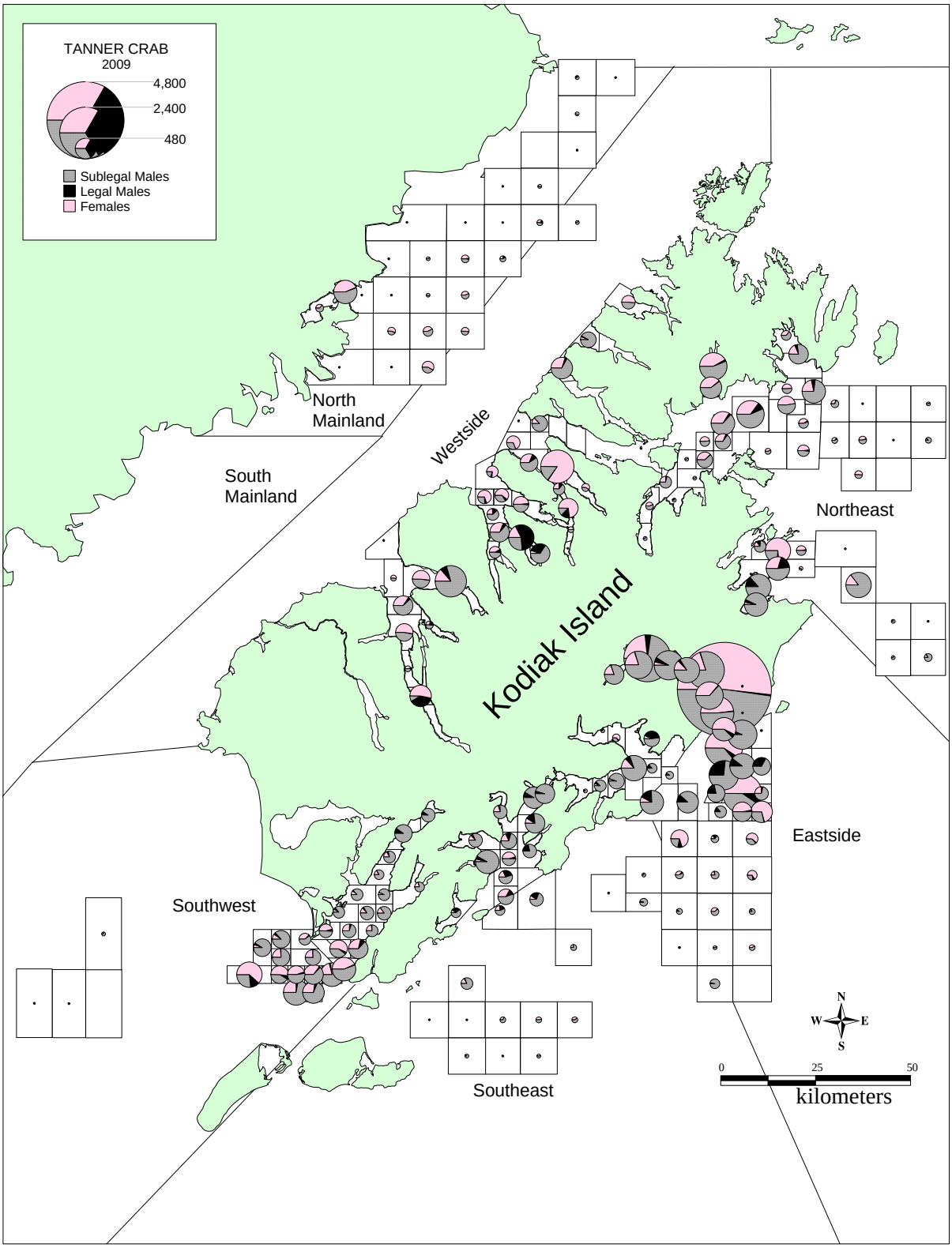

Figure 4.–Number of sublegal, legal, and female Tanner crab per kilometer towed in the 2009 Kodiak District trawl survey.

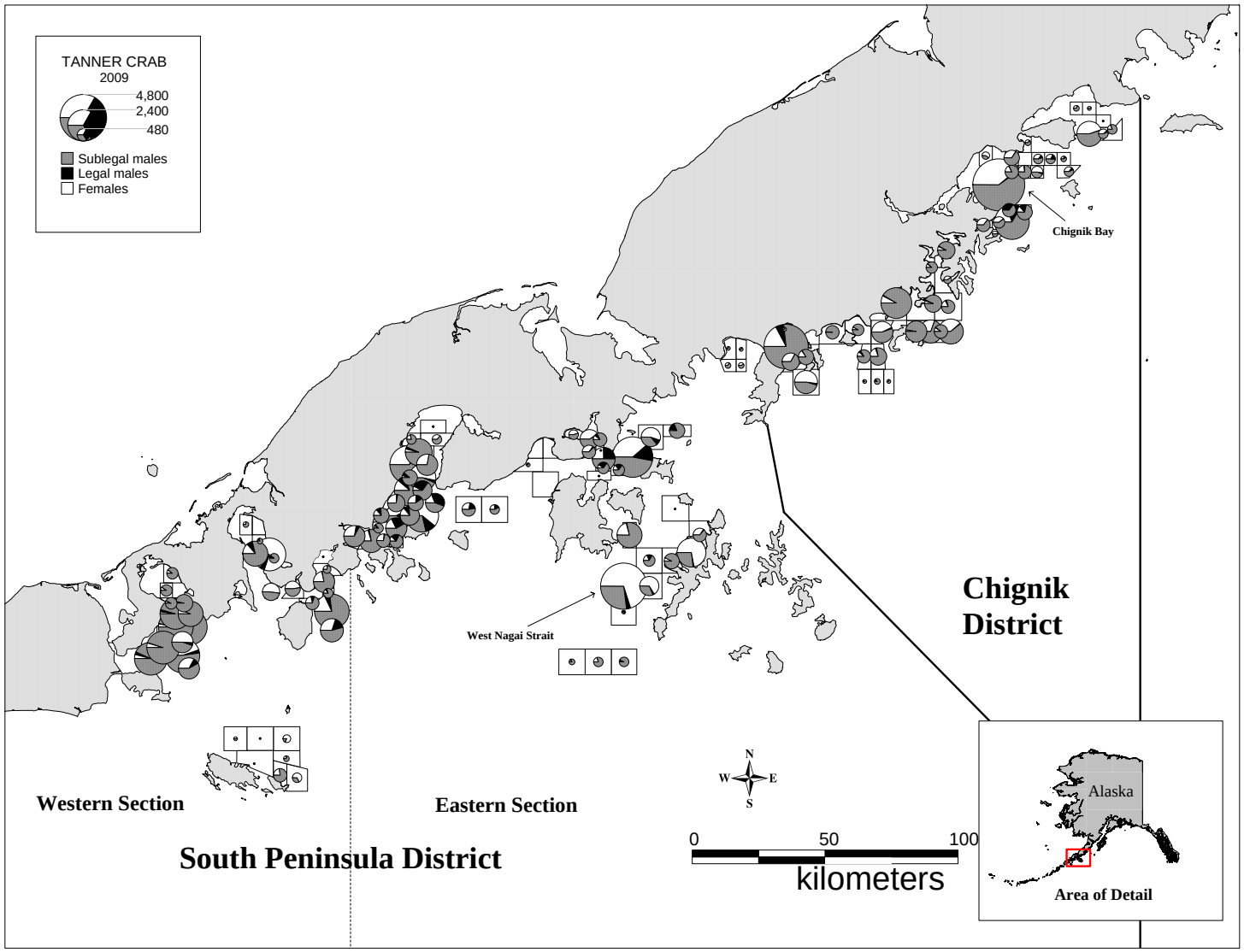

Figure 5.–Number of sublegal, legal, and female Tanner crab per kilometer towed in the 2009 Chignik and South Peninsula districts trawl survey.

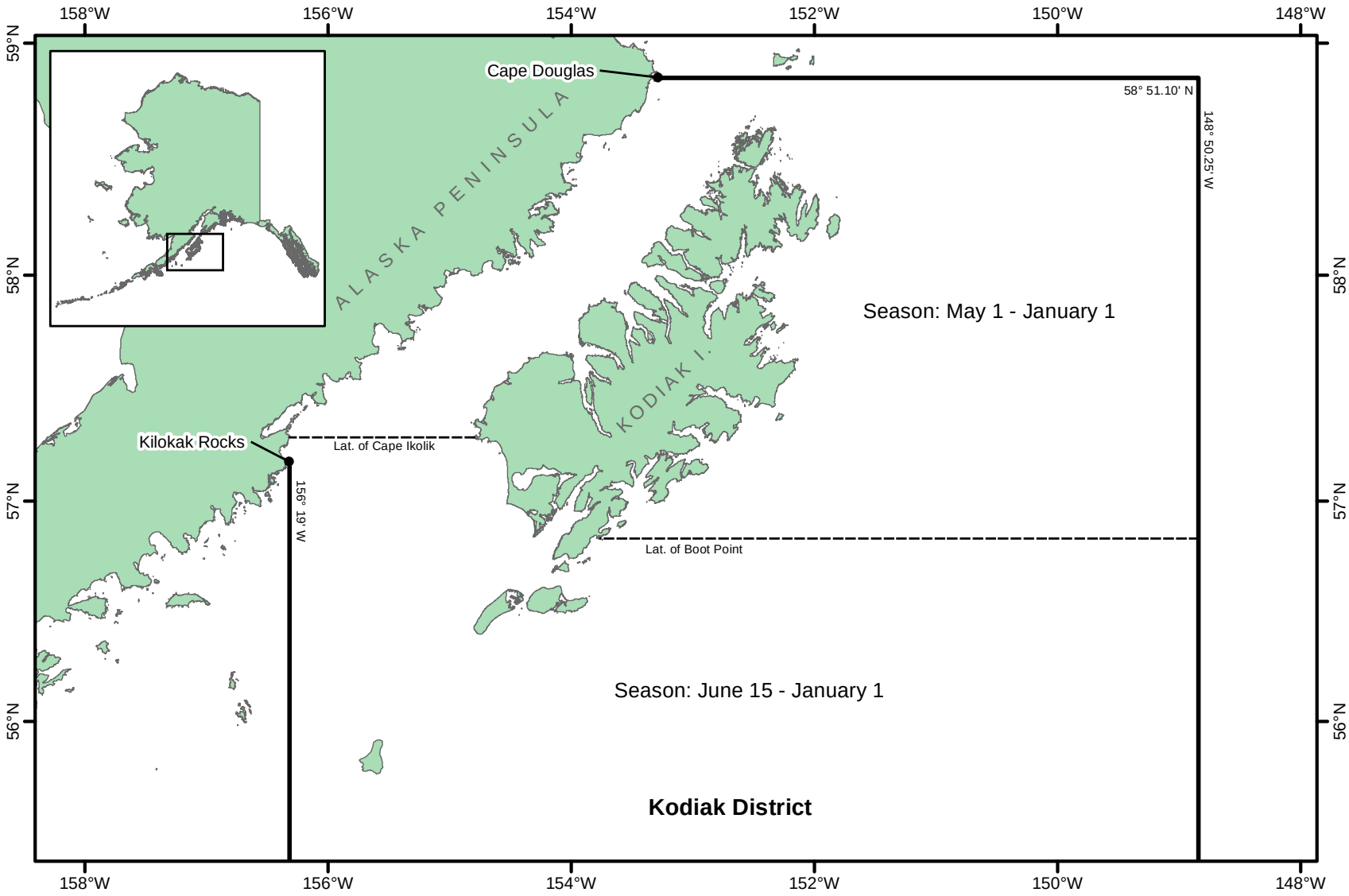

Figure 6.–Kodiak District Dungeness crab boundaries and fishing seasons, 2010.

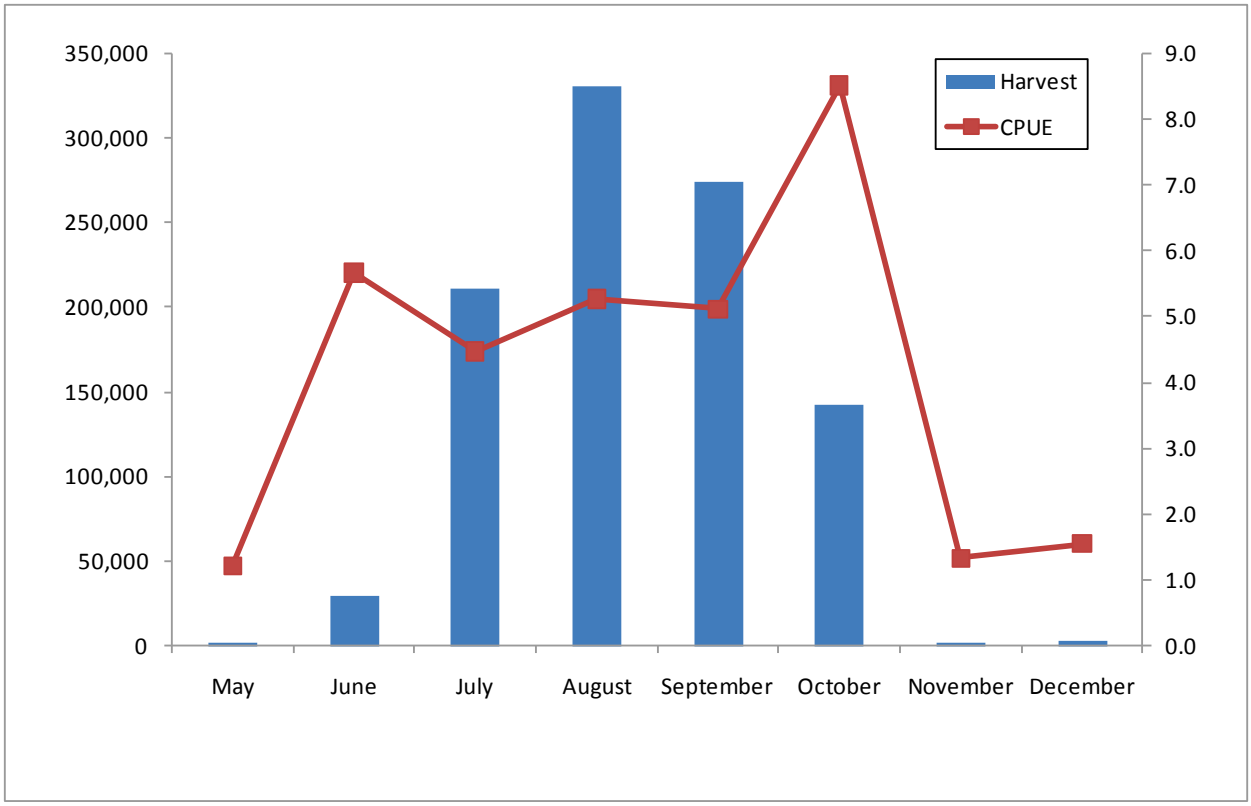

Figure 7.–Kodiak District Dungeness crab harvest, in pounds, and CPUE (legal crab per pot lift), by month, 2010.

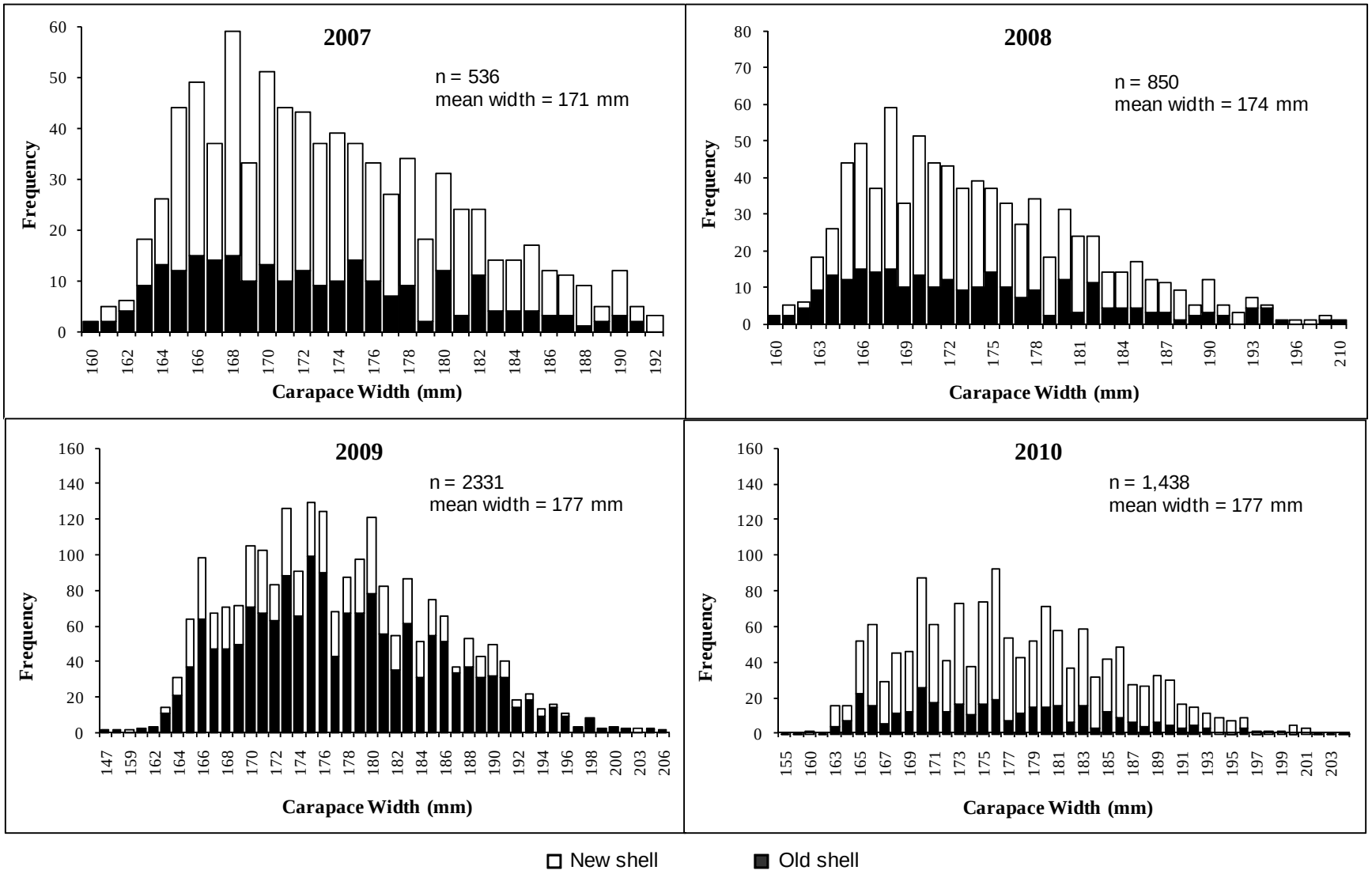

Figure 8.–Kodiak District Dungeness crab carapace width frequencies and shell condition from dockside samples, 2007–2010.

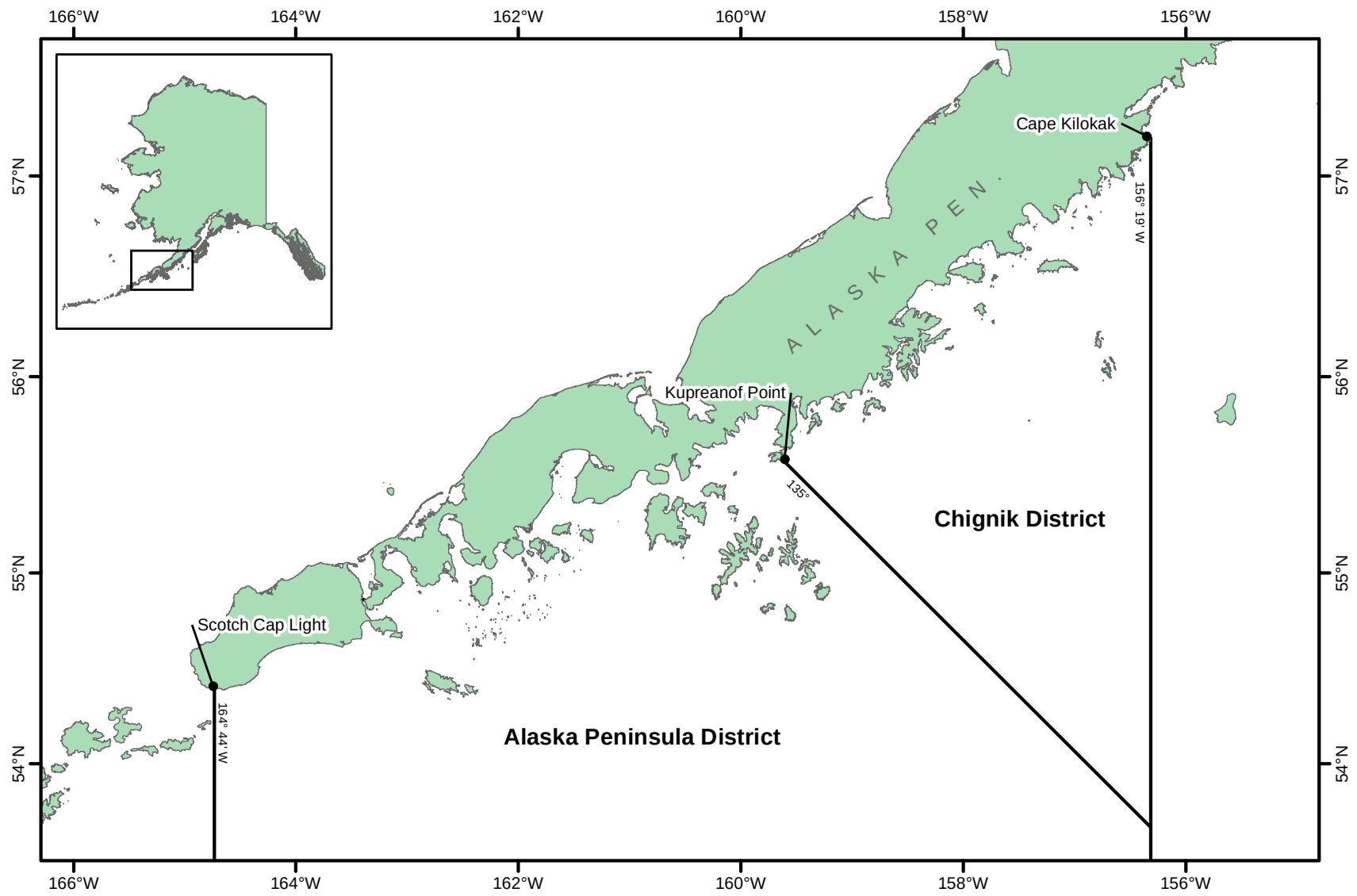

Figure 9.–Chignik and Alaska Peninsula districts for Dungeness crab fishery management, 2010.

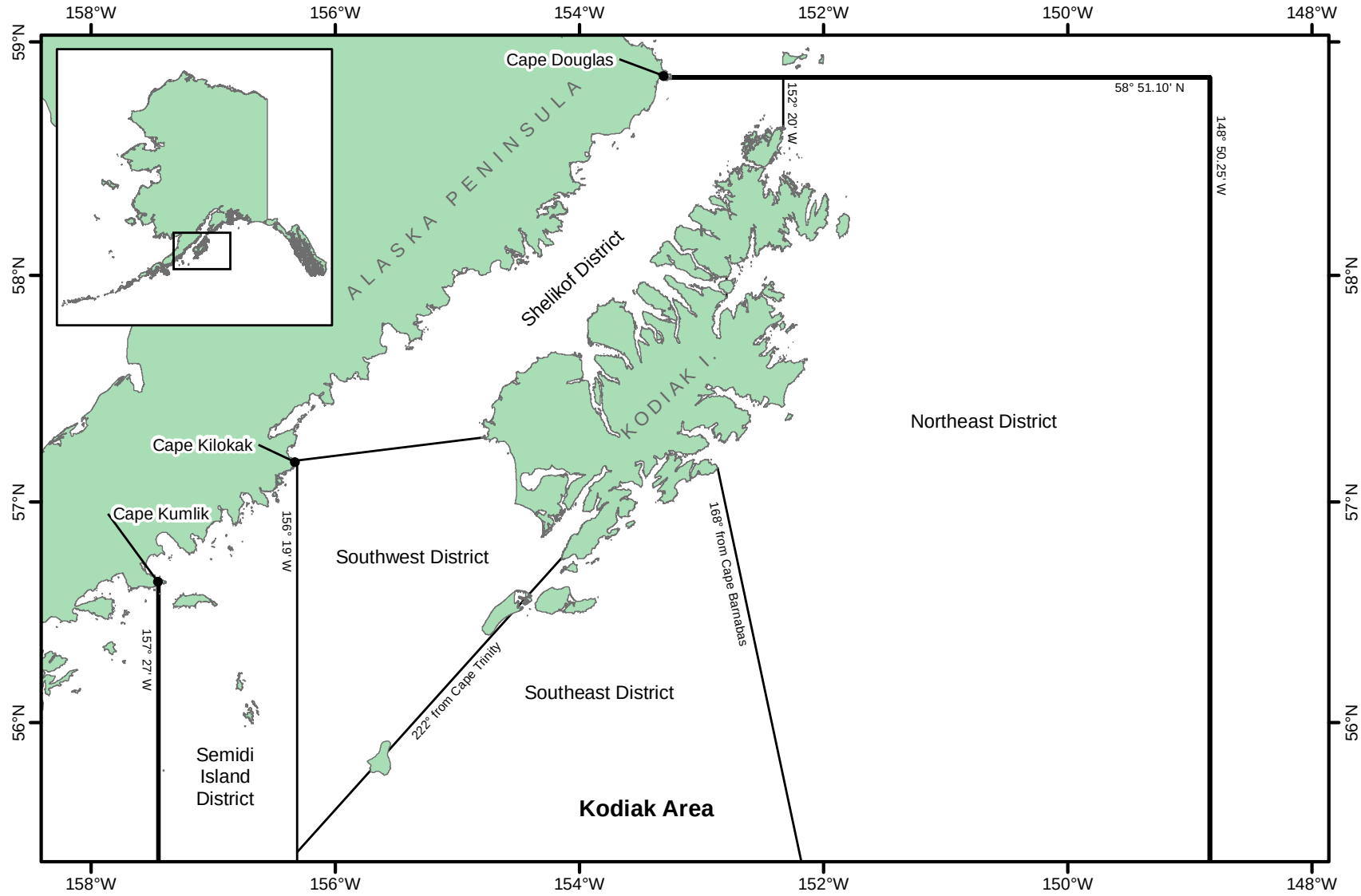

Figure 10.–Kodiak Area districts for king crab fishery management, 2010.

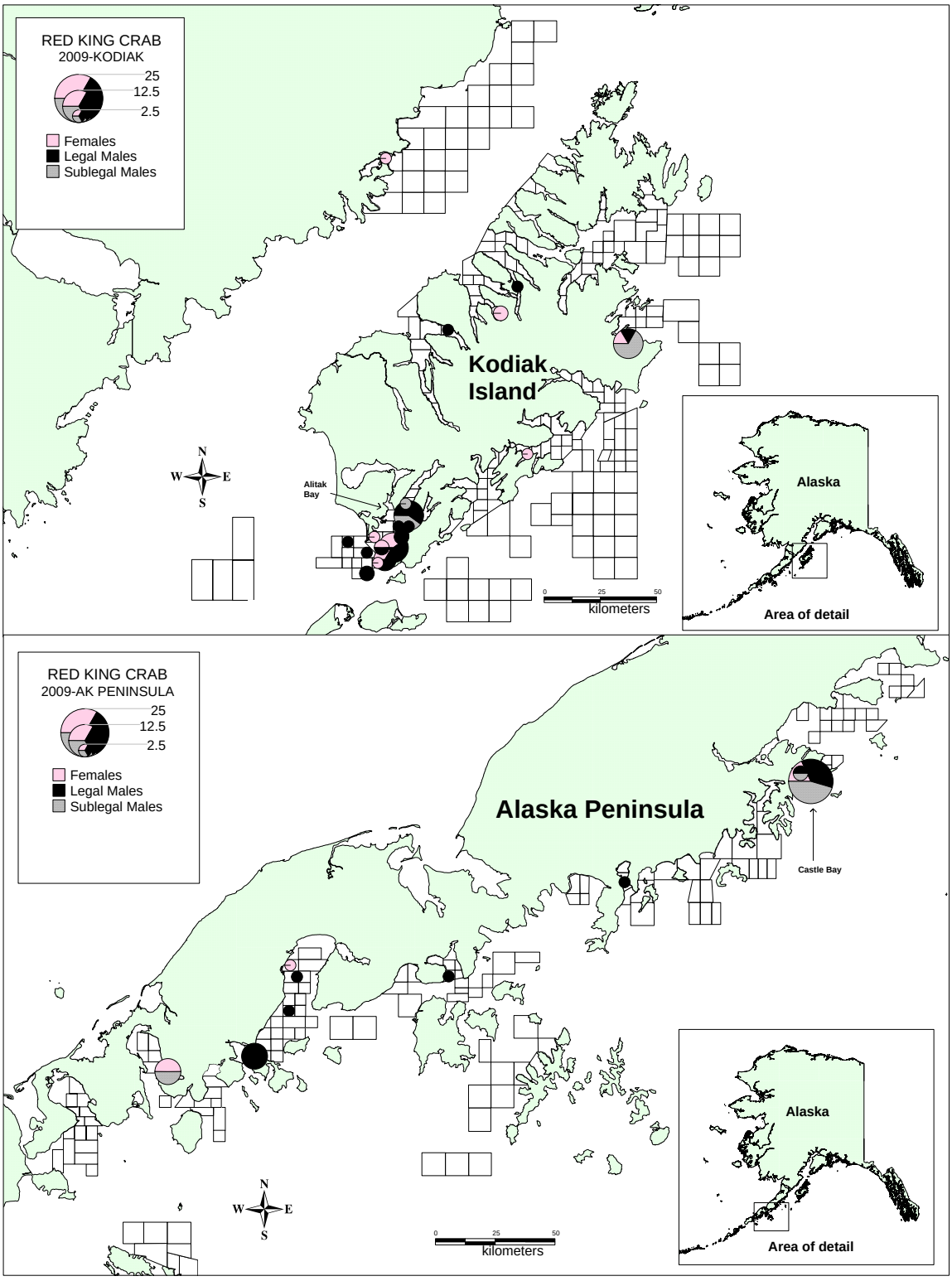

Figure 11.–Number of female, legal, and sublegal red king crab per kilometer towed from the 2009 Kodiak and Alaska Peninsula Area trawl survey.

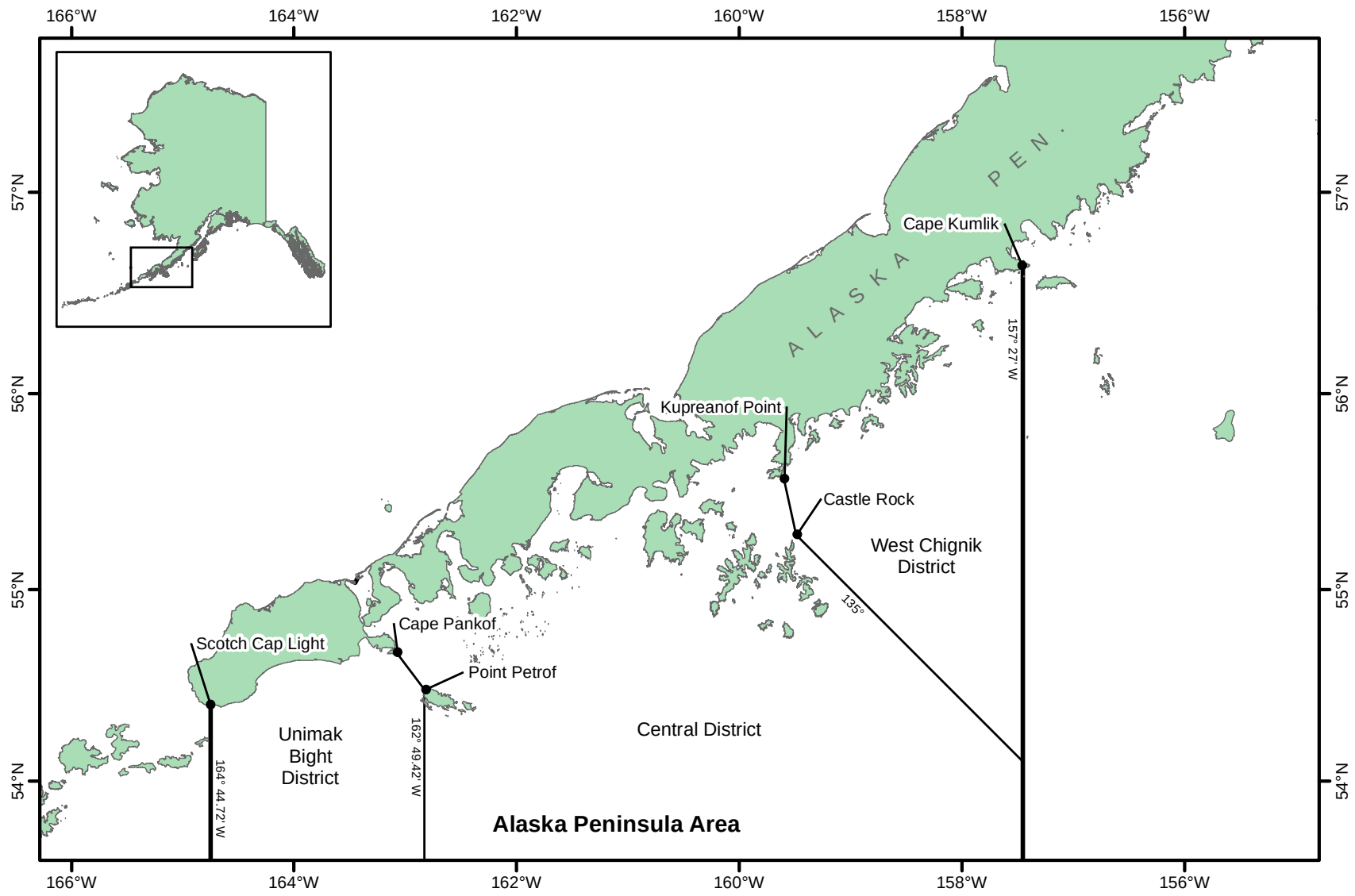

Figure 12.–Alaska Peninsula Area and districts for king crab fishery management, 2010.

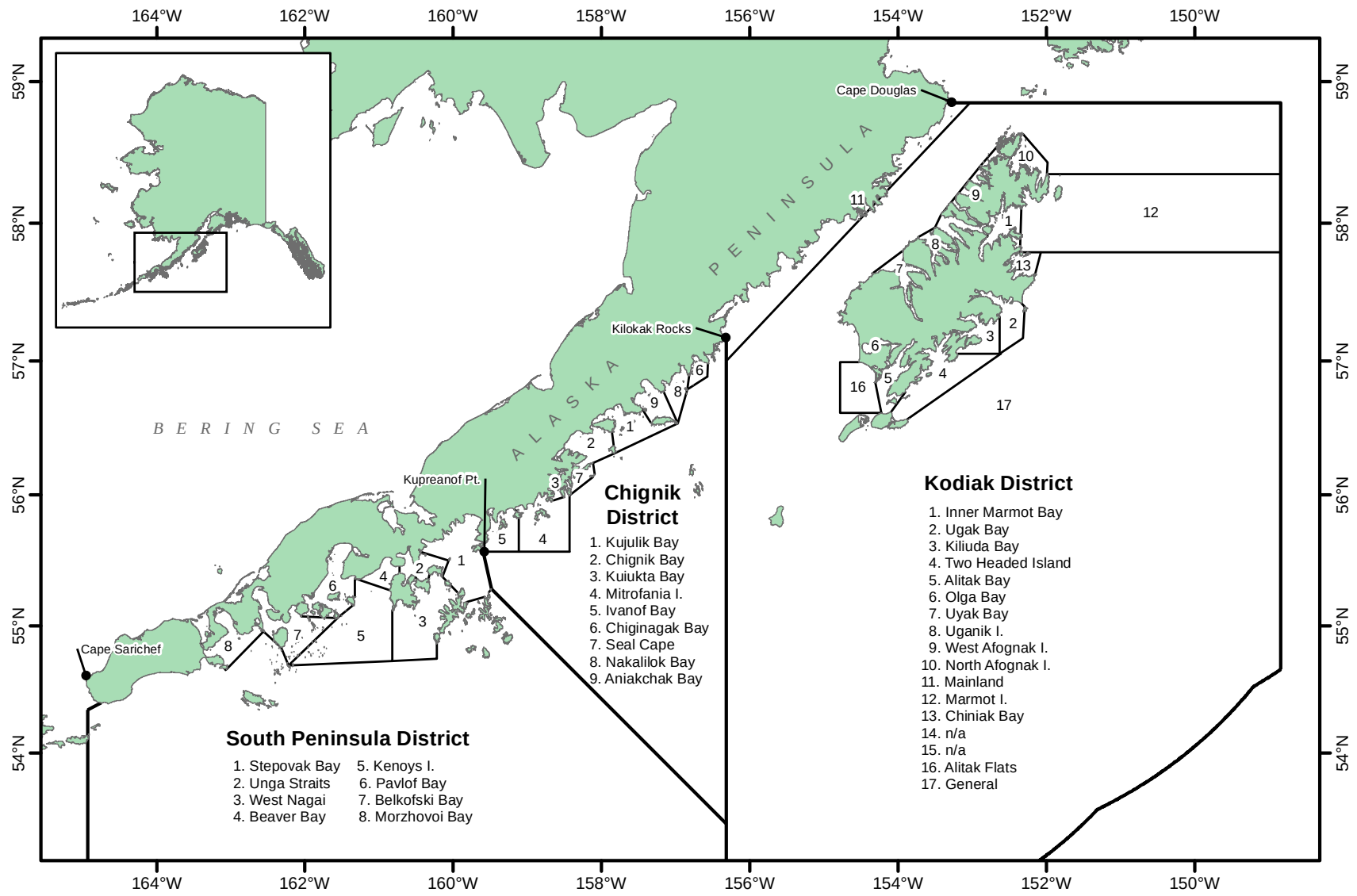

Figure 13.–Kodiak, Chignik, and South Peninsula districts and sections for shrimp fishery management, 2010.

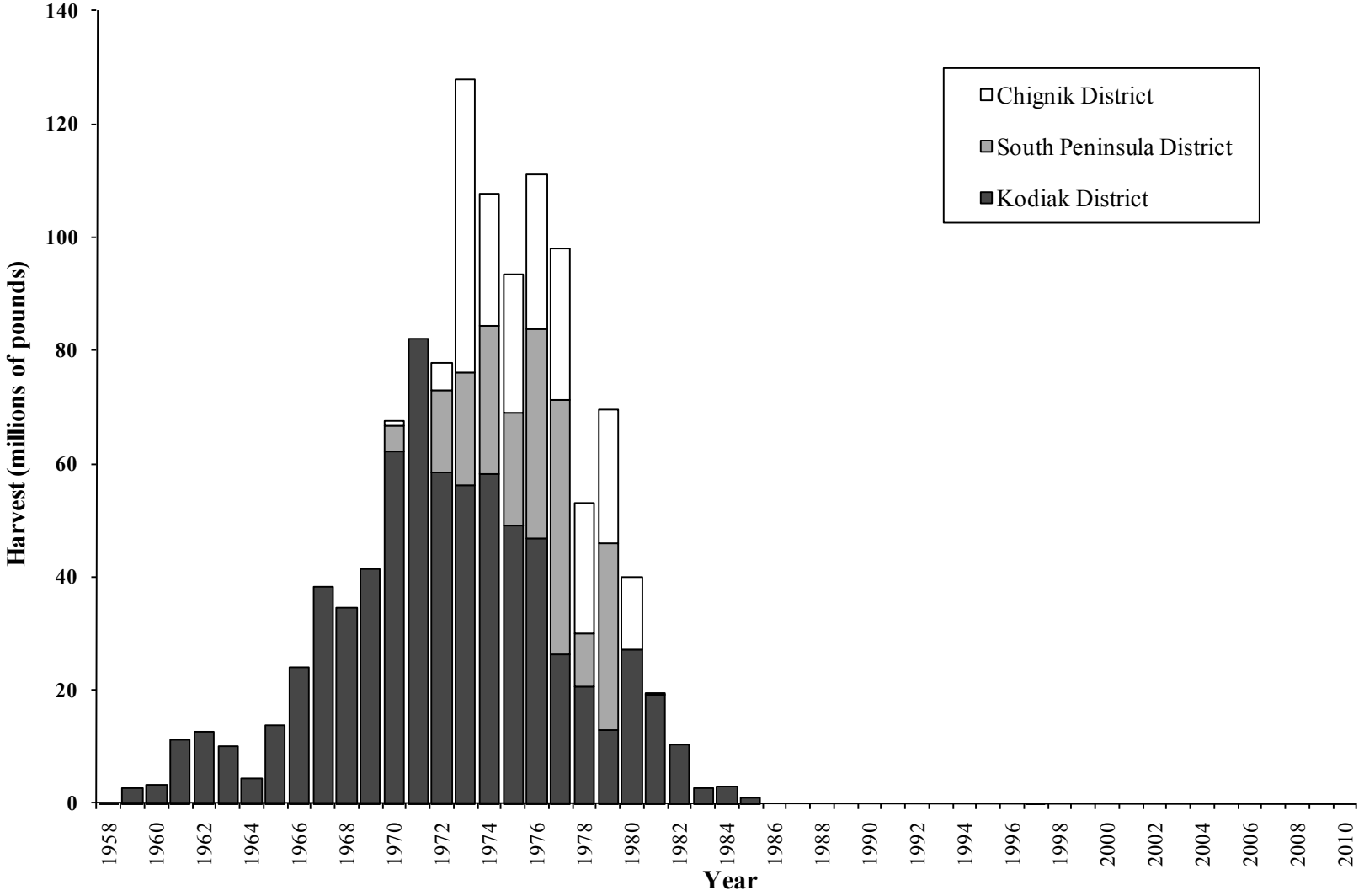

Figure 14.–Trawl shrimp harvests from the Kodiak, Chignik, and South Peninsula districts, 1958–2010