Fishery Management Report No. 10-30

Annual Management Report for Shellfish Fisheries in the Kodiak, Chignik and Alaska Peninsula Areas, 2008

by

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and

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July 2010

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

Symbols and Abbreviations

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

Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Measures (fisheries)

fork length	FL
mideye to fork	MEF
mideye to tail fork	METF
standard length	SL
total length	TL

Mathematics, statistics

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

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

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TABLE OF CONTENTS

Page

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

This annual management report summarizes 2008 shellfish fisheries, excluding weathervane scallops *Patinopecten caurinus*, in the Kodiak, Chignik, and South Peninsula Districts of the 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.* Historically, these management districts also supported various Pandalid shrimp fisheries 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*, Pacific octopus, *Octopus dofleini,* Pandalid shrimp, catch per unit effort, exclusive economic zone, EEZ, guideline harvest level, GHL, Board of Fisheries, BOF, Kodiak, Chignik, Alaska Peninsula.

INTRODUCTION

This report provides information on shellfish fisheries 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.). The three primary management divisions within this area include Kodiak, Chignik, and the South Alaska Peninsula (Figure 1). All shellfish fisheries, excluding octopus, are managed by Alaska Department of Fish and Game (ADF&G) in both the territorial sea (0–3 nmi) as well as the Exclusive Economic Zone (EEZ; 3–200 nmi).

Shellfish fisheries are regulated using management divisions 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 commercial shellfish fishery regulations and management actions as well as review fishery specific harvest, effort, and value with emphasis on the 2008 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 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 Kilokak Rocks on the Alaska Peninsula (156° 19' W long.). Management may occur at the area, district, or section level depending upon the target species.

Historically, Kodiak waters have supported significant red king crab *Paralithodes camtschaticus* and shrimp trawl fisheries. Red king crab stocks in the Kodiak area are currently depressed and no commercial fishing has occurred since the early 1980s. Similarly, current shrimp stocks 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 additionally harvested in large quantities but are no longer targeted in commercial fisheries.

The predominant commercial shellfish species harvested from Kodiak waters in 2008 were Tanner crab *Chionoecetes bairdi*, Dungeness crab, giant Pacific octopus *Octopus dofleini*, and red sea cucumber *Parastichopus californicus*. The Kodiak area weathervane scallop *Patinopecten caurinus* fishery is summarized in a separate report. In recent years, Dungeness

crab have replaced Tanner crab as the most valuable shellfish species in the area, worth an estimated $2.3 million to the fleet in 2008. Bering Sea snow crab *Chionecetes opilio* and Bristol Bay red king crab were landed in Kodiak during 2008. Overall, more than 3.22 million pounds of shellfish were landed at the Port of Kodiak in 2008 for an estimated exvessel value of approximately $8.35 million.

ADF&G issues emergency orders to enact regulatory actions for time and area changes to commercial shellfish fisheries. These changes affect commercial fishery openings and closures and modify fishing periods or fishing areas. In total, ten emergency orders were issued during 2008 for shellfish fisheries in the Kodiak Area (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). However, the eastern boundary for some fisheries is located at the longitude of Cape Kumlik (157° 27' W long.) and those fisheries are divided into separate districts, Chignik and the Alaska Peninsula (or South Alaska Peninsula; Figure 3). Specific information on Alaska Peninsula management boundaries is described in detailed in the fishery descriptions that follow.

Historically, commercial shellfish fisheries for red king crab, Tanner crab, grooved Tanner crab, Dungeness crab, various Pandalid shrimp, red sea cucumber, and giant Pacific octopus have occurred along the Alaska Peninsula. Currently, most shellfish stocks in the region are considered depressed and commercial fisheries for red king crab or shrimp have not occurred since 1982. During 2008, Dungeness crab, Tanner crab, and octopus were commercially harvested. ADF&G issued two emergency orders pertaining to shellfish fisheries along the Alaska Peninsula during 2008 (Table 1).

TANNER CRAB

INTRODUCTION

Tanner crab fisheries in the Kodiak, Chignik, and South Peninsula districts are part of Registration Area J. Tanner crab fisheries open by regulation within each of the three districts on January 15 unless delayed by weather as specified in regulation (5 AAC 35.507). 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 information collected during ADF&G trawl surveys on the *R/V Resolution*.

KODIAK DISTRICT

Description of the District

The Kodiak District for Tanner crab 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.). The district is further subdivided into eight sections: Northeast, Eastside, Southeast, Southwest, Semidi Island Overlap, Westside, North Mainland, and South Mainland (Figure 2).

Overview of Fishery Regulations

The Kodiak District is a limited entry, superexclusive registration district for Tanner crab. Criteria within the harvest strategy specify that at least two sections within the district must be above the mature male threshold to open a commercial fishery. Additionally, the total district GHL must be at least 400,000 pounds, with each section having a minimum GHL of at least 100,000 pounds. The Kodiak District pot limit is based on a sliding scale, depending on the district GHL, and ranges from 20 to 60 pots per vessel. Gear 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 the department's assessment of effort, fishery manageability, available harvest, and harvest rate.

Historic Background

The domestic 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 fishery quickly expanded and harvests averaged approximately seven million pounds per year from 1968 through the 1971/72 season. In response, ADF&G initiated a pot survey in 1973 to better estimate relative abundance, predict recruitment trends, and establish annual harvest levels. The fishery continued to grow and harvests increased to 30 million pounds annually by the mid-1970s. During this time, ADF&G implemented an April 30 season closure date to protect crab during mating and molting cycles as well as established a minimum legal retention carapace width (CW) of 5.5 inches. The commercial fishery peaked during the 1977/78 season when over 33 million pounds were harvested (Table 2).

Beginning in December 1978, the federal government assumed joint responsibility of Tanner crab management with the State of Alaska in the EEZ. Under joint management, the state managed crab in waters from shore to three nautical miles 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 stocks and commercial harvests began to decline. Concerns about the effectiveness of pot surveys to predict recruitment of animals smaller than 114 mm CW prompted ADF&G to test trawl gear as a viable survey tool. In 1988, trawl surveys replaced pot surveys for crab stock assessment based on survey 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).

Tanner crab stocks continued to decline in the Kodiak District, and by the early 1990s, annual harvests averaged less than two million pounds. Beginning with the 1994/95 season, the fishery was closed due to the progressive decline in harvestable Tanner crabs. The commercial fishery remained closed until the 2000/01 season when Tanner crab stocks began to rebound. During the six-year closure period a harvest strategy was developed by ADF&G and adopted by the Alaska Board of Fisheries (BOF) in 1999. The harvest strategy specified minimum population levels (biological thresholds) and minimum GHLs (management thresholds) to open a commercial fishery.

In addition to adopting a revised management plan in 1999, the BOF also implemented the following regulations during the 2001/02 board cycle: 1) the Kodiak District was designated superexclusive for Tanner crab, 2) criteria were adopted to delay the fishery opening due to severe weather, 3) if less than six hours notice was provided for a fishery closure, baited gear could be left in waters deeper than 25 fathoms for up to three days following the closure, and 4) daily fishing periods were reduced from 12 hours to 10 hours per day. When the season was open, gear may only be operated from 8:00 AM to 5:59 PM, although gear may be left to soak from 6:00 PM until 7:59 AM.

During this time, the Commercial Fisheries Entry Commission (CFEC) developed a limited entry program using 1993/94, 1994/95, 2000/01, and 2001/02 as qualifying years to determine participation history. The 2003/2004 Kodiak District Tanner crab season was the first season under the CFEC limited entry program.

During the 2004/05 regulatory cycle the BOF adopted several additional regulations that modified the management plan: 1) daily fishing periods could be extended based on the department's assessment of effort, manageability, and harvest rates; 2) pot limits in the Semidi Island Overlap Section were increased to 70 per vessel; 3) the Semidi Island Overlap Section could open when either the Kodiak Southwest Section or the Chignik District opened; 4) the Semidi Island Overlap Section could be closed by emergency order if ADF&G determined Tanner crab abundance could not sustain commercial harvest; and 5) vessels participating in the Semidi Island Overlap Section were required to report daily harvest information.

Overview of the 2007/08 Kodiak District Tanner Crab Fishery

The Northeast and Eastside sections of the Kodiak District met criteria specified in the harvest strategy for a commercial fishery opening in 2008. The combined Kodiak District GHL was 500,000 pounds, which was 300,000 pounds less than the 2006/07 GHL (Table 3). The Northeast Section GHL was established at 100,000 pounds and the Eastside Section GHL was established at 400,000 pounds.

The scheduled opening date for the Kodiak District Tanner crab fishery was January 15. However, due to severe weather on January 14 and 15 and the opening date was delayed for 24 hours until NOON on January 16. A total of 33 vessels participated in the 2007/08 fishery. Harvest, including deadloss and personal use, was 425,353 pounds from 64 landings. The estimated ex-vessel fishery value was approximately $850,000 based on the average price of $2.00 per pound (Table 2).

Northeast Section Fishery

Based on 2007 trawl survey abundance, the Northeast Section population estimate of mature male Tanner crab in the Northeast Section was 2,271,492 crabs (Spalinger 2008), which exceeded the regulatory threshold of 1,123,000 crabs necessary for opening the fishery. Application of the harvest strategy to the 2007 abundance estimate resulted in a GHL of 229,000 pounds for the 2007/08 fishery. However, successive declines in fishery CPUE from past seasons and a reduction in observed Tanner crab abundance during annual trawl surveys prompted ADF&G to lower the exploitation rate of legal males from 30% to 13% resulting in a 2007/08 GHL of 100,000 pounds. ADF&G additionally did not open Chiniak Bay to commercial Tanner crab fishing and limited harvest within specific areas of the section proportional to the Northeast Section trawl survey estimates. The 2007/08 GHL was substantially lower than the GHLs from the previous three fisheries (Table 2).

Most commercial effort in the Northeast Section occurred within Marmot Bay. Catch per unit effort (CPUE) varied by location and ranged from 3 to 45 legal males per pot. CPUE declined steadily as the season progressed and by January 28, ADF&G closed inner Marmot Bay to prevent overharvest of Tanner crabs in areas of high effort and diminishing catch. Through the first week of February effort declined and most vessels switched to other fisheries. Effort and harvest in the Northeast Section was minimal through the end to the regulatory season on March 31. In total, nine vessels harvested 87,774 pounds from the Northeast Section (Table 3). The Northeast Section CPUE averaged 22 crabs per pot for the season. Approximately 75,000 pounds of the total 87,774 pound Northeast Section harvest were landed from Marmot Bay.

Eastside Section Fishery

Based on the 2007 trawl survey, the estimated population of mature male Tanner crab in the Eastside Section was 5,521,651 crabs (Spalinger 2008), well above the regulatory threshold of 1,552,000 crabs necessary for a 2008 commercial fishery. Application of the harvest strategy to the 2007 abundance estimate resulted in a GHL of 550,000 pounds for the 2007/08 fishery. However, fishery CPUE from the 2005/06 and 2006/07 fisheries were less than expected based on survey results and fewer vessels operated in the offshore areas that contribute large numbers of crab to the overall estimate. Based on these factors, ADF&G lowered the Eastside Section exploitation rate on legal-sized crab to 10% resulting in a GHL of 400,000 pounds (Table 3).

Thirty vessels registered to harvest Tanner crabs in the Eastside Section. Over the course of the fishery CPUE averaged 33 crabs per pot, with most vessels pulling their gear twice per day. Similar to the Northeast Section, a partial section closure occurred in the Eastside Section prior to a total district closure. Ugak Bay was closed on January 18 before a total Eastside Section closure on January 19. A total of 337,815 pounds of Tanner crab were harvested from the Eastside Section during the 2007/08 fishery.

Status of Kodiak District Tanner Crab Stocks

The 2007 Kodiak District Tanner crab population estimate (186 million crabs of all sizes and sex) was 12% higher than the 2006 estimate (165 million crabs) and more than double the 2005 estimate (67.6 million crabs). Most of the population increase was due to the high number of males between 71 and 91 mm CW observed during the 2007 trawl survey, suggesting strong future recruitment of legal-sized crabs into the fishery. Overall, the highest densities of crabs were found in the Eastside Section (Figure 4).

Egg clutches of 4,313 mature female Tanner crabs from the Kodiak District were examined during the survey. Of all mature females sampled, 59.6% were primiparous and 48.6% had clutches that were more than half full (Spalinger 2008).

CHIGNIK DISTRICT

Description of the District

The Chignik District for Tanner crab includes Pacific Ocean waters of Registration Area J 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 Fishery Regulations

The Chignik District is designated as a superexclusive registration district for Tanner crab. Criteria within the regulatory harvest strategy specify that 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. 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 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 by the deadline specified in 5 AAC 35.525 (c)(2).

Historic 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 7.0 million pounds. Annual harvests declined through the late 1970s and recruitment failures in the early 1980s led to consecutively smaller annual harvests until 1988, when a small increase in harvest occurred. Historically, much of the effort in the Chignik District occurred in 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. As expected, the recruitment was low, and subsequent fisheries had lower harvests. Catches declined first in the productive offshore areas, then later in bays. 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 then was again closed prior to the 2006/07 season.

Overview of the 2007/08 Chignik District Tanner Crab Fishery

The Chignik District Tanner crab population was above the threshold necessary to open a commercial fishery, but did not meet the GHL doubling requirement as specified in 5 AAC 35.507(e). As a result there was no commercial fishery during the 2007/08 season.

Status of Chignik District Tanner Crab Stock

The overall crab abundance in the Chignik District dropped from approximately 42 million in 2006 to 20 million in 2007 (Spalinger 2008). Population segments that showed the largest decreases were the number of juvenile females and males less than 70 mm. Egg clutches of 1,122 mature female Tanner crabs were examined during the Chignik District survey. Approximately 47% of 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 of Registration Area J west of a line from the southernmost tip of Kupreanof Point to the easternmost tip of Castle Rock, west of a line extending southeast 135° from the easternmost tip of Castle Rock, and east of a line extending south from Scotch Cap Light (Figure 3).

Overview of Fishery Regulations

The South Peninsula District is a nonexclusive registration area for Tanner crab. Vessels over 58 feet in overall length may not take Tanner crab in the South Peninsula District. The pot limit is based on a sliding scale and ranges from 30 to 75 pots per vessel depending on the GHL. Gear may only be set or retrieved during daily fishing periods from 8:00 AM to 5:59 PM. Gear may be left to 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.

Historic Background

The first harvest of Tanner crab in the South Peninsula District 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 eight million pounds. In response to expanding harvests, GHLs were established in 1974. In 1975, seasons were imposed to protect adult crab during the mating and molting period. In 1976, the minimum size limit of 5.5" CW was established. During the six fishing seasons from 1974/75 through 1978/79, harvests averaged approximately seven million pounds. From 1979 to 1984, harvest and CPUE declined as a result of low recruitment and in the 1983/84 season, the fleet only landed 1.8 million pounds. Recruitment improved in subsequent years and the harvest increased to almost four million pounds in 1985/86. The harvest decreased to one million pounds in the 1988/89 season, and ADF&G predicted a decline in recruitment based on analysis of the ADF&G trawl survey data. The fishery was closed from 1990 through 2000 due to the low abundance of legal-sized crab and limited recruitment.

In 1999, ADF&G presented the BOF with a comprehensive harvest strategy for Tanner crab in the South Peninsula District. Harvest strategy criteria were met for a commercial fishery opening 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 closed from 2001/02 season the through 2003/04 seasons due to low recruitment of legal sized male Tanner crab into the fishery. However, 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 District and historically was not separated into smaller management units (e.g., sections). Consequently, concentrations of crabs in a small number of bays or marginally commercial quantities spread across large areas allowed for commercial fisheries district-wide 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 divide the district into two sections at 162° W. longitude. 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 in place for the 2005/06 fishery.

The South Peninsula District Western Section met criteria specified in the harvest strategy for commercial fishery openings during the 2005\06 and 2006/07 seasons. Annual harvest from the 2006/07 South Peninsula District fishery, including deadloss, was approximately 165,811 pounds from 15 landings made by a total of 6 unique vessels from the Western Section.

Overview of the 2007/08 South Peninsula District Tanner Crab Fishery

The fishery opened as scheduled on January 15, 2008 although weather delayed most of the fleet from leaving port for approximately 24 hours. Throughout the season, effort was limited by high winds, rough seas, and freezing spray.

A total of nine vessels and one processor participated in the fishery. Most effort and harvest occurred in the Morzhovoi Bay area although several vessels targeted Tanner crab in Lenards Harbor near Cold Bay. Harvest from the 2007/08 South Peninsula District fishery, including deadloss, totaled 236,241 pounds from 42 landings made by nine vessels. The estimated exvessel value of the fishery was $238,603 based on an initial average payment of $1.01 per pound.

The fishery closed at 5:59 PM on February 11, 2008. Declining CPUE warranted the closure to protect the long term heath of the stock. Additionally, most of the participating vessels had switched to other commercial fisheries in the area.

Status of South Peninsula District Tanner Crab Stock

The overall crab abundance in the South Peninsula District increased from 16.1 million in 2004 to 22.3 million in 2005 to over 75.0 million in 2006 and 2007 (Spalinger 2008). Based on survey data, Morzhovoi Bay supported the highest densities of crab during 2006 and 2007 (Figure 5). Egg clutches of 1,141 mature female Tanner crabs showed approximately 51.2% of all mature females examined had a clutch fullness of 50% or higher.

DUNGENESS CRAB

INTRODUCTION

The Dungeness crab fisheries that occur in the Kodiak, Chignik, and Alaska Peninsula Districts are part of Registration Area J and are managed by staff in the ADF&G Kodiak office. There are no established GHLs for Dungeness crab in the registration area. The commercial fishery is managed by regulating sex, size, and season ('3-S' management). Only male crabs 6.5" CW or larger may be retained during the open fishing season. Currently, there are no pot limits or vessel size restrictions established for any Dungeness crab fishing districts in Registration Area J. However, participants must hold a valid CFEC interim-use permit card, obtain a shellfish registration from ADF&G, 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 the waters of Registration Area J 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 Kilokak Rocks (156° 19' W long.; Figure 6).

Overview of Fishery Regulations

The Kodiak District is a nonexclusive open access fishery for Dungeness crab. Currently, ADF&G does not have a stock assessment program for Dungeness crab in the Westward Region. Due to the lack of stock specific data, there are no GHLs or other harvest thresholds established

for the Dungeness crab fishery. The fishery is managed by regulating sex, size, and season ('3-S' management). Dungeness crab may be taken from May 1 to January 1 in most areas of the Kodiak District. 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). Only male crab 6.5' carapace width (CW) or larger may be retained during the open fishing season. There are no vessel size restrictions or pot limits in the Kodiak District Dungeness crab fishery although participants must hold a valid CFEC interim-use permit card and obtain a vessel registration and tank inspection prior to fishing.

Historic Background

Dungeness crabs were commercially harvested in the Kodiak District beginning in 1962. Commercial harvests peaked in the late 1960s then slowly declined through the late 1970s. 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 declined sharply. Through the 2007/08 season, harvests remained at comparatively low levels (Table 6). This decline likely reflects the unavailability of legal crab due to fluctuations in recruitment. In recent years, the Kodiak District fishery has been prosecuted primarily on crabs newly recruited to legal size. An additional factor limiting the fishery is the documented occurrence of paralytic shellfish poisoning (PSP) in Kodiak District Dungeness crabs. The Alaska Department of Environmental Conservation placed restrictions on the sale of live and whole cooked crabs in 1992 which remain in effect through today. Prices paid for Kodiak Dungeness crabs dropped from $1.37 per pound in 1991 to $0.86 per pound in 1992 after ADEC restrictions took effect. In recent years, the majority of Kodiak District Dungeness crab harvests have occurred around Sitkinak and Tugidak Islands (Figure 6).

2008/09 Kodiak District Dungeness Crab Fishery

The 2008/09 fishery opened on May 1 in all areas except Kodiak's south end, which opened on June 15 (Figure 6). Vessels registered for Dungeness crab in the Kodiak District ranged from 24 to 95 feet in total length with a district-wide average of 48 feet. The number of pots fished by Dungeness crab vessels during the 2008/09 season ranged from 100 to 1,650 pots per vessel with a district-wide average of 650 pots per vessel. By regulation, the fishery closed on January 1, 2009.

Sixteen vessels harvested 1,030,938 pounds from 86 landings (Table 6). The majority of harvest came from statistical areas (545601 and 545632) around Sitkinak and Tugidak Islands (Table 7). Harvest peaked in July and August although catches continued into December (Figure 7). Overall, Dungeness crab catch and CPUE were higher in 2008/09 compared to recent seasons. On average, six legal crabs per pot were landed during the 2008/09 season. Historically, CPUE has been highest in the late summer months, presumably as crabs molt to legal size and become available to the commercial fishery under '3-S' management. Dungeness crabs harvested in the Kodiak District had a mean CW of 174 mm in 2008/09, which was a slight increase compared to 2007/08, and suggests sustained recruitment into the fishery (Figure 8).

The average price per pound of Dungeness crab in 2008/09 was $2.20, up from $2.07 the previous season (Table 6). The estimated exvessel value for the 2008/09 fishery was $2.3 million, a large increase compared to the 2007/08 exvessel value of $1.4 million.

CHIGNIK DISTRICT

Description of the District

The Chignik District for Dungeness crab includes waters of Registration Area J 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 Fishery Regulations

The Chignik District is a superexclusive registration area for Dungeness crab fishing. Male Dungeness crab with a 6.5" CW or larger may be taken from May 1 to January 1.

2008/09 Chignik District Dungeness Crab Fishery

Prior to 2001, the Chignik and Alaska Peninsula Districts were combined. Since the creation of the Chignik District in 2002 until the 2008/09 season, less than three vessels or processors have participated in the fishery annually. Therefore, harvest information is combined with the Alaska Peninsula District. During the 2008/09 season a total of seven vessels participated in either the Chignik or Alaska Peninsula District landing approximately 517,000 pounds of Dungeness crab (Table 8).

ALASKA PENINSULA DISTRICT

Description of the District

The Alaska Peninsula District for Dungeness crab includes all waters of Registration Area J 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 Fishery Regulations

The Alaska Peninsula District is a superexclusive registration area for Dungeness crab fishing. Male Dungeness crab with a 6.5" CW or larger may be taken from May 1 to January 1.

Historic Background

Prior to 2001, the Alaska Peninsula District also included the Chignik District. Historically, Dungeness crab catches from the district have been sporadic, with the highest catch recorded in 1968 when 1.3 million pounds were landed (Table 8). Subsequent effort and harvest remained low for many years presumably due to low prices and better prospects in other crab fisheries. During the early 1980s, the decline in king crab stocks and a stronger market for Dungeness crabs generated renewed interest in the fishery. The BOF specified the Alaska Peninsula District as a superexclusive registration area in 1983. Since then effort in the district has declined and recent catches have been small.

2008/09 Alaska Peninsula District Dungeness Crab Fishery

The 2008/09 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. During the 2008/09 season a total of seven vessels participated in the Chignik or Alaska Peninsula District and made 39 landings for a total of 503,141 pounds of Dungeness crab (Table 8). The average price was $2.00 per pound resulting in an exvessel value of approximately $1.0 million.

STATUS OF KODIAK, ALASKA PENINSULA, AND CHIGNIK DISTRICTS DUNGENESS CRAB STOCKS

No stock assessments have been conducted for Dungeness crab in the Kodiak, Chignik, or Alaska Peninsula Districts. ADF&G assessment activities are limited to monitoring commercial fishery deliveries and conducting vessel operator interviews.

KING CRAB

GENERAL RED KING CRAB INFORMATION

Historically, red king crab fisheries in the Kodiak Area were opened by regulation on September 25 if biomass estimates met or exceeded 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 is necessary for a commercial fishery to occur. The female threshold is further broken down by individual Kodiak management districts. Additional harvest strategy criteria restricts harvest to only 20% of mature males and caps harvest on legal-sized males at 60% of the estimated legal-sized population. Stock size is estimated annually by a trawl survey conducted aboard the *R/V Resolution*. Trawl surveys indicate red king crab population levels remain low in the Kodiak and Alaska Peninsula Areas.

GENERAL GOLDEN KING CRAB INFORMATION

Minor harvests of golden king crabs, previously called 'brown' king crab, have occurred in the Kodiak Area. In contrast, the Alaska Peninsula Area largely remains unexplored for golden king crabs. Golden king crabs in the Kodiak and Alaska Peninsula areas may be harvested from January 1 to December 31. No GHL is established for the 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.), and east of the longitude of Cape Kumlik (157° 27' W long.). The Kodiak Area is further subdivided into five districts for king crab management, which include the Northeast, Southeast, Southwest, Semidi Island, and Shelikof districts (Figure 10).

RED KING CRAB

Overview of Fishery Regulations

The Kodiak Area is an exclusive registration area for red king crab. The Kodiak Area pot limit is based on the GHL and ranges from 25 to 75 pots per vessel.

Historic 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 exploratory in nature as fishermen were developing gear, locating commercially harvestable quantities of crab, and developing markets. Once established, the king crab fishery expanded rapidly and by 1960, 21 million pounds 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 ten-month fishing season. From the peak in 1966, catches ranged from approximately 12 to 24 million pounds through the 1981/82 season.

During the 1970s, several fishing seasons for crabs with minimum sizes ranging from 7.0 to 8.0 inches (CW) occurred. Often, second fishing seasons occurred that targeted larger, older crabs. Annual harvests ranged from 10.9 million pounds during the 1971/72 season to 24.1 million pounds during the 1975/76 season. Harvest declined in the late 1970s and by the 1978/79 season, harvest totaled 12.0 million pounds. However, the 1981/82 season harvest was the highest of the previous 13 years at 24.2 million pounds. The 1982/83 season total harvest declined to 8.7 million pounds, the lowest in 24 years. However, effort was the highest on record.

ADF&G did not open the 1983/84 season to red king crab fishing due to poor stock condition. The population of adult male crabs was the lowest recorded over the 13 years of annual population assessments. ADF&G developed a harvest strategy that included a threshold of 5.1 million female red king crabs before considering any future fishery openings (Pengilly and Schmidt 1995). The red king crab season has not opened since the 1982/83 season.

Since 1988, ADF&G has conducted trawl surveys to assess king and Tanner crab populations around Kodiak Island, along the Alaska Peninsula, and the eastern Aleutian Islands. The Kodiak Area remains closed because the abundance estimates of female king crabs are well below threshold levels.

The pot limit for commercial king crab fishing in the Kodiak area was reduced in 1993. A sliding scale of 25-75 pots per vessel was selected based on the projected harvest guideline. Although a fishery had not occurred in the prior 10 years, the pot limit was aimed at reducing effort when the fishery reopens.

STATUS OF KODIAK AREA RED KING CRAB STOCKS

The Kodiak red king crab population remains at historically low levels. The 2007 Kodiak trawl survey completed 211 hauls in known king crab habitat. The red king crab population was estimated to be 754,730 animals, up from 215,976 in 2006 and 113,710 crab on 2006 (Figure 11; Spalinger 2008). Annual fluctuations in total population estimates are common when populations, such as Kodiak red king crab become depressed and unevenly distributed, resulting in sampling variability. The majority of king crabs were located in the Southwest District (Spalinger 2008). The mature female population was estimated to be 15,502 crabs, well below the 5.1 million crab threshold required for a fishery opening. Approximately 67% of all mature female crabs sampled during the 2007 trawl survey had egg clutches at least half full.

GOLDEN KING CRAB

Overview of Fishery Regulations

The Kodiak Area is 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 crabs 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.

Historic Background

Interest in harvesting golden king crab increased after the collapse of the red king crab stocks. Although golden king crabs were occasionally landed with red king crab in prior years, the first recorded 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). The largest harvest from this fishery totaled 146,478 pounds which was taken in 1986.

Since 1988, most of the effort consisted of no more than two vessels annually, resulting in confidential catch information. During most years, there has been no activity. No vessels registered to fish for golden king crab in the Kodiak Area during 2008.

STATUS OF KODIAK AREA GOLDEN KING CRAB STOCK

ADF&G does not assess the golden king crab stock in the Kodiak Area. Given the low interest in the commercial fishery, the population is believed to be small when compared to populations in the Bering Sea, Aleutian Islands, and inside waters of Southeast Alaska. Detailed logbook data are collected when fishing occurs, and this information may yield better insight to golden king crab distribution and stock size in the Kodiak Area.

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.). The Alaska Peninsula is further divided into the Unimak Bight, Central, and West Chignik districts (Figure 12).

RED KING CRAB

Overview of Fishery Regulations

The Alaska Peninsula Area is a superexclusive registration area for red king crab. The area has a sliding scale pot limit based on the GHL that ranges from 40 to 75 pots per vessel.

Historic 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 dramatically starting in 1964. The largest historic catch of 22.6 million pounds occurred in 1966 (Table 11). Throughout the 1970s and early 1980s, most of the harvest occurred in the Central District near Pavlof Bay with lesser harvests occurring 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, the Alaska Peninsula Area harvest totaled just over 5.0 million pounds, the highest catch since the 1968/69 season. The catch was the result of strong recruitment from 1978 through 1980. Recruitment of young crabs to legal size has declined severely since that time, resulting in a closure of the fishery since the 1982/83 season.

STATUS OF ALASKA PENINSULA AREA RED KING CRAB STOCKS

ADF&G has annually conducted a trawl survey of the Alaska Peninsula crab stock since 1988 onboard the *R/V Resolution*. Data from the survey indicate the red king crab population remains at very low levels. The population estimate for 2008 was 26,392 crabs, up from 9,206 crabs estimated in 2007 (Spalinger 2008). Annual fluctuations in population estimates due to sampling variability are common due to depressed and unevenly distributed crab populations. Similar to previous surveys in the Alaska Peninsula Area, wide ranges in sizes of both sexes were observed.

GOLDEN KING CRAB

Overview of Fishery Regulations

The Alaska Peninsula Area is a superexclusive registration area for golden king crab. Similar to the Kodiak District fish may only occur 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.

Historic 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 2008.

STATUS OF ALASKA PENINSULA AREA GOLDEN KING CRAB STOCK

ADF&G does not assess golden king crab stocks 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 that occur 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 trawl gear. The majority of historically productive inshore sections have established biomass thresholds for commercial fishery openings, called Minimum Acceptable Biomass Indices (MABI). These thresholds and their derivation are explained in the Westward Region Shrimp Fishery Management Plan (ADF&G 1982; Jackson 2005). Sections with MABI thresholds open and close by emergency order. An emergency order can be issued 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 established seasons, without threshold criteria or established GHLs. Shrimp abundance estimates are determined by trawl surveys conducted aboard the *R/V Resolution.*

SHRIMP POT FISHERY INTRODUCTION

The pot shrimp fisheries that occur 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).

Historic Background

The Kodiak trawl shrimp fishery began with a harvest of 31,886 pounds in 1958 (Jackson and Ruccio 2003; Table 12). The fishery grew rapidly to an annual catch of 12.7 million pounds in 1962. The fishery slowed when shore-based processing plants and the fishing fleet were badly damaged by the 1964 earthquake and tsunami, but quickly rebounded to a peak harvest in the Kodiak District of 82.2 million pounds in 1971. However, Kodiak Area shrimp harvests declined through the 1970s and much of the vessel 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. The northern pink shrimp has been the most prevalent species contributing over 95% by weight of the harvest. Other species landed included sidestriped, coonstriped, spot, and humpy shrimps.

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, provided a means for establishing harvest levels. The system was flexible during its development stage, but in 1981, the industry requested this management scheme be defined and adopted into regulation. This led to the WESTWARD REGION SHRIMP MANAGEMENT PLAN, which was approved by the BOF in 1982. The objectives of this management plan are 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 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 about the lack of specific stock information and thus the sustainability of the fishery. Currently, only the General Section, 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, there has been little commercial trawl effort in the General Section since the mid-1980s.

Pot fishing for shrimp in the Kodiak District has been recorded since 1969 although pot fishing for shrimp has never developed into large fishery (Jackson and Ruccio 2003). The largest recorded landing of shrimp harvested with pot gear was less than 19,000 pounds in 1983 (Table 14). 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 Fishery Regulations

To participate in commercial shrimp fishing in the Kodiak District, vessel operators are required to obtain a shellfish registration from ADF&G and an interim-use permit card from CFEC. Vessel operators may not be registered to take shrimp in more than one district at a time.

In the Kodiak District, shrimp may be taken with trawl gear in the 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 a fishing season of 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].

2007/08 KODIAK DISTRICT SHRIMP POT AND TRAWL FISHERIES

There was no fishing effort for pot shrimp during the 2007/08 season.

STATUS OF KODIAK DISTRICT SHRIMP STOCKS

ADF&G conducts trawl surveys to assess shrimp biomass. From 1989 to 2001 surveys were conducted once every three 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 mile towed in the Kodiak District during the 2007 trawl survey occurred in Marmot and Wide Bays (Jackson 2007). Most sections remain well below historic population levels. In 2001, 2002, and again in 2007, Wide Bay showed some increase in shrimp population size (Table 13).

Trawl gear does not adequately sample the rocky habitat typically associated with spot and coonstripe shrimp. Therefore, no inferences about these species are drawn from the trawl survey.

[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.

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 15). 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 16). The offshore waters in the South Peninsula District are not divided into sections.

Historic Background

Shrimp fishing in the South Peninsula and Chignik districts began in 1968, but catch levels remained relatively low until the 1972 season when 14.7 million pounds were harvested from the South Peninsula District and 4.1 million pounds were harvested from the Chignik District (Table 15). Peak harvest occurred during the 1977/78 season. Harvests then declined rapidly and all South Peninsula sections were closed in 1980/81. Although the Sutwik Island Section and all offshore waters of the Chignik District remained open for the 1981/82 season, only 70,948 pounds of shrimp were landed from those areas. Since that time, all inshore waters 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 Fishery Regulations

The shrimp fisheries that occur in the Chignik and South Peninsula districts are part of Registration Area J which is a nonexclusive registration area for shrimp fishing. To participate in commercial shrimp fishing in Area J, a vessel operator is required to obtain an interim-use permit card from CFEC and a shellfish registration from ADF&G.

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

2007/08 South Peninsula and Chignik Districts Shrimp Pot and Trawl Fisheries

There was no fishing effort for shrimp with pot gear or trawl gear in the South Peninsula or Chignik districts during the 2007/08 seasons.

Status of South Peninsula and Chignik Districts Shrimp Stocks

The South Peninsula and Chignik districts were surveyed in 2008. Shrimp abundance indices from the 2008 survey were below MABI levels in all South Peninsula and Chignik district sections surveyed (Table 13). Recent shrimp densities within the South Peninsula and Chignik districts were similar to those found during the 2002 and 2004 surveys (Jackson 2006).

RED SEA CUCUMBER

Introduction

Red sea cucumber fisheries in the Kodiak, Chignik, and South Peninsula districts are part of miscellaneous shellfish Registration Area J. Sea cucumber dive fisheries are nonexclusive registration fisheries. The districts and sections that delineate sea cucumber management are based on the district and section boundaries used to manage Tanner crab fisheries. Sea cucumber fisheries are open by regulation from October 1 through April 30 under authority of a commissioner's permit. GHLs are established annually and fisheries remain open until section GHLs are attained or the season closes. Weekly fishing periods are announced and established by emergency order. Fishing periods typically begin on or shortly after October 1. Most sections are opened for one to three days per fishing period.

Historically, dive gear has been the only method used to harvest sea cucumbers in the Kodiak, Chignik, and South Peninsula districts. The use of mixed gasses in the dive fishery is allowed. Divers are required to submit dive logs along with ADF&G fish tickets at the time of landing. Each diver is 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 for sea cucumbers 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.

Historic Background

Red sea cucumbers were not harvested commercially in the Westward Region until 1991 (Table 16). In 1991 and 1992, processors recruited divers to gather small numbers of red sea cucumbers in the Kodiak and Chignik areas to test marketability. In the spring of 1993, several processors recruited divers to prosecute a commercial fishery for red sea cucumbers in those same areas.

ADF&G announced several management measures in 1994 intended to prevent over harvest of red sea cucumbers. A seasonal closure from May 1 through September 30 was established to protect spawning aggregates of red sea cucumbers. In addition, GHLs were established for the Kodiak and Chignik districts and short fishing periods were used to allow ADF&G opportunity to accurately track harvest and assess inseason fishery performance. Management areas based on the Tanner crab fishing sections were used in the Kodiak District in an attempt to distribute effort and harvest and prevent localized depletion. A GHL was set for each individual sections based on historic production and fisheries performance. Registration permit provisions included a weekly fishing period of five days and daily dive logs submitted by the divers with fish tickets. The combined Kodiak and Chignik district GHL was 225,000 pounds for the 1994/95 season, approximately 414,000 pounds of red sea cucumber were harvested (Table 16). Most effort occurred in the Eastside, Southeast, Southwest, and Westside sections of Kodiak.

Based on declining CPUE during the 1994/95 season, the 1995/96 sea cucumber GHLs were lowered to 135,000 pounds in the Kodiak District and 25,000 pounds in the Chignik District. GHLs have remained at similar levels since (Table 17). From 1997–2008 effort was concentrated in the Eastside, Southeast, Southwest, and Westside sections of the Kodiak District. During most years the fishery was prosecuted using four to five fishing periods of varying length.

2008/09 KODIAK AND CHIGNIK DISTRICTS RED SEA CUCUMBER FISHERY

The 2008/09 fishery opened October 1, 2008. The 2008/09 GHL for the Kodiak District totaled 140,000 pounds of eviscerated product (Table 17). The Chignik District GHL was 25,000 pounds. 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 closed by emergency order to prevent divers from exceeding GHLs; the Northeast and Mainland sections remained open for the entire season. The 2008/09 Kodiak District fishery was composed of five fishing periods totaling 16 days of fishing. There was no effort in the Chignik District during the 2008/09 season.

STATUS OF KODIAK AND CHIGNIK DISTRICTS RED SEA CUCUMBER STOCKS

There are no population estimates for red sea cucumbers in the Westward Region. Following the establishment of GHLs in 1995, catch rates from diver logbook data in the commercial fishery have remained stable. Biomass 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).

Historic Background

The waters adjacent to 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. There have been no landings in the South Peninsula District since 1994.

2008/09 SOUTH PENINSULA DISTRICT RED SEA CUCUMBER FISHERY

No fishing occurred during the 2008/09 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.

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 extent of the westward range of red sea cucumbers is not well documented. ADF&G trawl surveys have captured red sea cucumbers as far west as Pavlof Bay.

GREEN SEA URCHINS

INTRODUCTION

Green sea urchin may be harvested under the provisions of a miscellaneous shellfish permit authorized in 5 AAC 38.062. Commercial fishing may be allowed from October 1 to January 31 (5 AAC 38.412). Sea urchins may be taken only 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 currently no size limits for green sea urchins in regulation. However, buyers have only purchased green sea urchins that are approximately 2 or 2.25 inches or greater in test diameter.

HISTORIC 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 190,509 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 sections were adopted for green sea urchin management. Sections without historic harvest data were assigned a 5,000 pound GHL. Sections that had been previously explored were assigned a 10,000 pound GHL.

2008/09 GREEN SEA URCHIN FISHERY

No divers registered for the 2008/09 green sea urchin season in the Kodiak or South Peninsula areas.

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 in the fishery, data from logbooks on CPUE varies widely and does not allow for inferences on stock status. However, fishery information indicates biomass in the Kodiak Area is small compared to other areas on the Pacific coast (Lourie and Sanders 2000).

OCTOPUS

INTRODUCTION

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

HISTORIC BACKGROUND

Octopus is considered a groundfish species by National Marine Fisheries Service (NMFS) and a shellfish species under BOF regulation. Prior to 1985, octopus harvest in both state and federal waters were negligible and most octopus were retained for bait or kept for personal consumption. Octopus is a commonly used bait in the Pacific halibut *Hippoglossus stenolepis* longline and Pacific cod 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, pot vessels began to target Pacific cod in the Gulf of Alaska which resulted in increased retention of octopus. ADF&G worked with industry to ensure that all octopus harvest, particularly octopus that

were retained as bait, were documented on fish tickets. ADF&G also began requiring vessels to specify, at the time of registration for groundfish fisheries, their intent to retain octopus as bycatch.

Historically, the majority of octopus harvest in the Kodiak, Chignik, and South Peninsula districts has occurred within state waters (Tables 19 and 20), which likely reflects the distribution of Pacific cod effort. In 1991, approximately 107,000 pounds of octopus were harvested from state waters in the Kodiak Area. In that same year, approximately 23,000 pounds of octopus were harvested from federal waters in the Kodiak Area.

In 2008, the Kodiak District octopus harvest reached a record high with a combined state and federal harvest of about 379,000 pounds (Table 19). The highest recorded harvest of octopus in the Chignik and South Peninsula districts occurred in 2004 with a total combined harvest of approximately 293,000 pounds (Table 20).

2008 KODIAK DISTRICT OCTOPUS FISHERY

All octopus in the Kodiak Area during 2008 were taken subsequent to other commercial fisheries. The 2008 incidental harvest of octopus in the Kodiak District totaled 378,627 pounds mostly taken during state and federal Pacific cod pot fisheries. Fifty-three vessels harvested 249,667 pounds from 367 landings in state waters (Table 19). A total of 128,960 pounds were harvested by 131 vessels making 279 landings in federal waters. Fish tickets with price information reported an average of $0.56 per pound for an estimated total exvessel fishery value of $191,705.

2008 ALASKA PENINSULA AND CHIGNIK DISTRICTS OCTOPUS FISHERIES

No vessel registered for directed fishing of octopus in the Chignik and South Peninsula districts during 2008. The 2008 incidental harvest of octopus in the Chignik and South Peninsula districts totaled 200,385 pounds from state and federal waters combined. Forty-three vessels harvested 104,498 pounds from 183 landings in state waters. Thirty-four vessels harvested 95,887 pounds from 80 landings in federal waters (Table 20) Fish tickets containing price information listed an average of $0.49 per pound for an estimated total exvessel fishery value of $92,129.

STATUS OF KODIAK, CHIGNIK, AND ALASKA PENINSULA DISTRICTS OCTOPUS STOCKS

No stock assessment is currently conducted on octopus in the Westward Region; 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.

HISTORIC BACKGROUND

Razor clams were harvested in the Kodiak Management Area from the early 1920s through 1986 (Table 21). Though many Kodiak Island beaches were explored with some success, the principal commercial harvest occurred about 70 miles northwest of Kodiak in the Kukak Bay, Hallo Bay, Big River, and Swikshak Beach regions of the Alaska Peninsula. 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 ended in July 1980. Currently, there are no clam beaches in the Kodiak Area commercially certified as safe for human consumption.

Many of the principal harvest areas along the Alaska Peninsula 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

There has been minimal interest in harvesting other miscellaneous shellfish in the Kodiak, Chignik, and South Peninsula areas. Fishing permit requests for snails, intertidal mollusks, crabs, and mussels have occurred. 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, 2008.

Emergency Order	Effective Date	Explanation
Kodiak Tanner Crab		
4-S-01-08	01/14/08	Delayed opening the Eastside and Northeast sections 24 hours due to weather as specified in regulation.
4-S-02-08	01/18/08	Closed Ugak Bay in the Eastside Section to Tanner crab fishing for the remainder of the 2007/2008 season.
4-S-03-08	01/19/08	Closed the Eastside Section to Tanner crab fishing for the remainder of the 2007/2008 season.
4-S-04-08	01/28/08	Closed Inner Marmot Bay in the Northeast Section to Tanner crab fishing for the remainder of the 2007/2008 season.
Kodiak Sea Cucumber		
4-S-12-08	10/01/08	Opened the Kodiak District for the first 48-hour fishing period for red sea cucumbers.
4-S-15-08	10/08/08	Opened the Southwest and Eastside sections for a 48 hour fishing period; and opened the Westside, Northeast, North and South Mainland sections for a 72 hour fishing period.
4-S-17-07	10/15/08	Opened the Northeast, North Mainland, and South Mainland sections for a 72 hour fishing period; opened the Eastside Section for a 48 hour fishing period; and opened the Southeast and Southwest sections for a 6 hour fishing period.
4-S-19-08	10/22/08	Opened the Northeast, North Mainland, and South Mainland sections for a 72 hour fishing period; opened the Eastside Section for a 4 hour fishing period; opened the Southwest section for a 6 hour fishing period; and closed the Westside and Southwest sections until further notice.
4-S-20-08	10/23/08	Modified the fourth fishing period to open the Eastside Section for a 27 hour fishing period, and the open the Southwest Section for a 7 hour fishing period, and closed the Southwest Section for the remainder of the 2008 season.
4-S-21-08	10/29/08	Opened the Northeast, Eastside, Westside, North Mainland, and South Mainland sections for a 72 hour fishing period.
South Peninsula Tanner Crab		
4-S-06-08	01/23/08	Closed Cold Bay in the Western Section of the South Peninsula District to Tanner crab fishing for the 2007/2008 season.
4-S-06-08	03/05/08	Closed the Western Section of the South Peninsula District to Tanner crab fishing for the remainder of the 2007/2008 season.

Table 2.–Tanner crab commercial catch, effort, and value for the Kodiak District, 1967 – 2007/08.

		Number				Pots	Average	Average	Avg. Price	Exvessel Value
Year/Season	GHL	Vessels	Landings	Crabs[a]	Pounds[a]	Lifted	CPUE	Weight	($) Per Pound	($)
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
5 yr average[b]	1,189,000	59	190	482,994	1,137,073	14,828	32	2.4	$1.84	$1,888,680

Note: NA = not available.

[a] Includes deadloss.

[b] 5-year average based on fishery data from 2003/04 – 2007/08.

Table 3.–Tanner crab guideline harvest level, effort, and harvest by section for the Kodiak District, 2003/04 – 2007/08.

Year	Section[a]	GHL	Vessels	Harvest (lbs)	Pots Lifted	CPUE[b]
2003/04						
	Northeast	245,000	43	259,572	6,281	19
	Eastside	450,000	20	219,980	6,781	15
	Southeast	100,000	15	86,666	2,429	16
	Southwest	Closed				
	Semidi	NA				
	Total	795,000	66	566,218	15,550	16
2004/05						
	Northeast	550,000	43	467,516	6,876	25
	Eastside	650,000	27	665,339	8,607	33
	Southeast	100,000	9	92,398	1,711	20
	Southwest	450,000	20	574,944	4,021	56
	Semidi	NA		CONFIDENTIAL		
	Total[c]	1,750,000	99	1,800,197	21,215	34
2005/06						
	Northeast	550,000	41	519,730	8,565	27
	Eastside	1,300,000	43	1,302,378	10,478	51
	Southeast	100,000	9	130,292	1,489	35
	Southwest	150,000	7	168,984	1,108	61
	Semidi	NA		CONFIDENTIAL		
	Total[c]	2,100,000	67	2,121,384	21,640	40
2006/07						
	Northeast	100,000	22	88,584	1,613	24
	Eastside	700,000	39	676,508	6,034	45
	Total	800,000	50	765,092	7,834	41
2007/08						
	Northeast	100,000	9	87,774	1,697	22
	Eastside	400,000	30	337,815	3,783	33
	Total	500,000	33	425,589	5,569	31

[a] The Semidi Island Overlap Section (abbreviated Semidi) 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 – 2007/08.

Year/Season	GHL	Number				Pots Lifted	Average CPUE	Average Weight	Average Price ($) Per Pound
		Vessels	Landings	Crabs	Pounds				
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
1973/74	NA	25	115	1,585,560	4,054,873	28,083	57	2.6	$0.20
1974/75	NA	25	91	1,438,508	3,649,444	22,675	63	2.5	$0.14
1975/76	NA	35	288	4,434,381	11,201,941	59,377	75	2.5	$0.19
1976/77	NA	21	141	2,098,226	5,672,919	40,604	52	2.7	$0.33
1977/78	NA	32	140	1,725,042	4,693,830	38,414	45	2.8	$0.42
1978/79	NA	39	126	926,253	2,536,105	28,378	33	2.7	$0.55
1979/80	NA	42	155	2,340,004	3,517,920	54,627	25	2.6	$0.54
1980/81	NA	24	112	1,534,847	3,653,723	44,022	35	2.4	$0.64
1981/82	NA	45	174	1,343,500	3,240,476	47,830	28	2.4	$1.21
1982/83	NA	48	136	1,432,029	3,497,370	60,210	24	2.4	$1.12
1983/84	NA	15	30	148,232	343,579	14,162	10	2.3	$1.66
1984/85	NA	7	14	91,008	199,452	8,246	11	2.2	$2.10
1985/86	NA	9	18	86,732	189,087	6,819	13	2.2	$2.30
1986/87	NA	5	10	53,958	112,513	4,641	12	2.1	$2.22
1987/88	NA	6	35	152,250	346,556	10,345	15	2.3	NA
1988/89	NA	6	34	142,470	323,120	9,845	15	2.3	$3.05
1989/90 - 2003/04	NO COMMERCIAL FISHERY								
2004/05	400,000	22	59	184,706	410,741	7,456	25	2.2	$1.66
2005/06	200,000	4	7	57,547	143,164	2,037	28	2.5	$1.20
2006/07 - 2007/08	NO COMMERCIAL FISHERY								
5 year average [a]		9	29	118,186	267,219	6,865	19	2.3	$2.03

Note: NA = not available.

[a] 5-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 – 2007/08.

Year/Season	GHL	Number				Pots Lifted	Average CPUE	Average Weight	Average Price ($) Per Pound
		Vessels	Landings	Crabs	Pounds				
1967	NA	NA	NA	NA	3,100	NA	NA	NA	NA
1968	NA	NA	155	36,835	110,610	NA	NA	3.0	NA
1969	NA	NA	173	221,946	606,178	NA	NA	2.7	NA
1969/70	NA	NA	NA	NA	2,093,600	NA	NA	NA	NA
1970/71	NA	17	242	813,610	2,140,585	NA	NA	2.6	$0.10
1971/72	NA	NA	NA	NA	3,618,900	NA	NA	NA	NA
1972/73	NA	36	390	2,213,006	5,615,563	53,573	41	2.5	NA
1973/74	NA	44	386	3,504,668	8,300,578	58,444	60	2.4	NA
1974/75	NA	44	131	2,053,530	5,195,800	38,153	54	2.5	$0.14
1975/76	NA	36	288	2,724,509	6,926,161	52,381	52	2.5	$0.20
1976/77	NA	28	289	2,524,565	6,773,838	63,143	40	2.7	$0.32
1977/78	NA	36	374	2,847,948	7,446,270	70,587	40	2.6	$0.40
1978/79	NA	48	332	3,267,122	8,684,408	82,374	40	2.7	$0.51
1979/80	NA	61	363	2,581,544	6,961,251	96,989	27	2.7	$0.54
1980/81	6,000,000	43	268	1,274,539	3,294,106	59,560	21	2.6	$0.58
1981/82	4,500,000	72	365	1,815,060	4,589,042	81,008	22	2.5	$1.05
1982/83	3,000,000	82	230	1,144,096	2,863,798	70,524	16	2.5	$1.20
1983/84	2,750,000	61	207	775,472	1,789,883	50,726	15	2.3	$1.04
1984/85	1,930,000	52	187	1,085,864	2,514,843	48,416	22	2.3	$1.36
1985/86	3,900,000	75	187	1,589,757	3,781,950	65,078	24	2.4	$1.67
1986/87	2,000,000	55	106	950,300	2,400,784	37,506	25	2.5	$1.95
1987/88	3,431,000	73	148	1,360,367	3,328,799	52,516	26	2.4	$2.17
1988/89	700,000	65	87	433,112	1,055,082	27,958	15	2.4	$2.68
1989/90 - 1999/00	NO COMMERCIAL FISHERY								
2000/01	375,000	55	67	107,653	258,631	4,426	24	2.4	$1.32
2001/02 - 2003/04	NO COMMERCIAL FISHERY								
2004/05	300,000	42	68	134,019	295,741	5,655	24	2.2	$1.67
2005/06	290,000	15	47	126,383	287,749	3,703	34	2.3	$1.21
2006/07	200,000	6	15	74,187	165,811	1,959	38	2.2	$0.79
2007/08	250,000	9	42	102,290	236,241	3,368	30	2.3	$1.01
5 yr average [a]	283,000	25	48	108,906	248,835	3,822	30	2.3	$1.20

Note: NA = not available.

[a] 5-year average is last 5 years of fishery data (1988/89, 2000/01 and 2004/05 – 2007/08).

Table 6.–Dungeness crab commercial catch, effort, and value for the Kodiak District, 1962 – 2008/09.

Year/Season	Number Vessels	Landings	Crab	Pounds[a]	Pots Lifted	Average Lbs Per Landing	Average CPUE	Average Price ($) Per Pound	Exvessel ($) 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	125	1,243	1,791,446	4,160,435	599,291	3,347	3	$1.20	$4,992,522
1986/87	81	577	439,738	967,423	199,881	1,667	2	$1.15	$1,112,500
1987/88	45	379	747,117	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	363	1,064,387	2,125,114	203,217	5,854	5	$1.06	$2,253,000
1989/90	47	359	1,428,973	3,077,937	185,242	8,574	8	$1.10	$3,385,730
1990/91	62	519	1,301,465	2,937,433	296,168	5,660	4	$1.54	$4,435,000
1991/92	62	732	695,470	1,414,499	279,872	1,932	1	$1.37	$1,938,000
1992/93	46	501	805,215	1,656,793	218,602	3,306	3	$0.86	$1,425,000
1993/94	42	263	647,736	1,369,889	180,534	5,209	5	$0.92	$1,260,000
1994/95	31	162	426,848	948,461	151,888	5,855	5	$1.20	$1,138,000
1995/96	24	106	257,677	527,434	107,506	4,976	4	$1.72	$907,000
1996/97	21	113	334,237	668,772	88,682	4,223	4	$1.01	$675,460
1997/98	21	123	257,697	529,550	95,066	4,305	3	$2.04	$1,080,282
1998/99	12	60	185,249	371,241	63,926	6,187	3	$1.45	$538,299
1999/00	13	72	269,277	551,183	65,721	7,655	4	$1.57	$849,555
2000/01	12	69	114,038	238,955	57,037	3,463	2	$1.65	$394,276
2001/02	21	57	101,371	208,265	41,760	3,654	2	$1.95	$392,080
2002/03	18	74	181,698	353,849	71,096	4,782	3	$1.46	$520,493
2003/04	17	89	228,309	467,623	48,715	5,254	5	$1.50	$695,000
2004/05	11	59	169,807	351,986	42,136	5,966	4	$1.48	$518,000
2005/06	14	75	185,165	390,547	63,170	5,207	6	$1.25	$485,519
2006/07	12	62	74,033	148,502	31,570	2,395	2	$1.45	$215,328
2007/08	12	86	323,489	663,077	65,071	7,710	10	$2.07	$1,372,569
2008/09	16	86	518,707	1,030,938	94,265	11,988	6	$2.20	$2,268,063
5 year average	13	74	254,240	517,010	59,242	6,653	6	$1.69	$971,896

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, the western boundary was located at the longitude located at Cape Kumlik, (157° 27' W long.).

[a] Includes deadloss.

Table 7.–Harvest, vessels, and landings by statistical area from the Kodiak District Dungeness crab fisheries, 2003/04 – 2008/09.

	2004/05			2005/06			2006/07			2007/08			2008/09		
Statistical Area	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]
525701	4	27	70,299	5	33	69,346	5	18	33,850	3	25	60,622	3	7	30,768
525703	3	14	23,979	3	18	39,331	4	12	12,828	CONFIDENTIAL			3	3	16,232
525733	4	7	6,641	9	43	17,743	7	30	7,339	3	23	6,483	4	6	1,614
535705	3	15	27,425	CONFIDENTIAL			CONFIDENTIAL			3	26	39,082	5	4	14,625
545601	4	17	159,253	3	10	187,078	CONFIDENTIAL			4	34	221,937	5	21	540,864
545602	CONFIDENTIAL			0	0	0	0	0	0	CONFIDENTIAL			0	0	0
545632	3	10	13,285	4	13	15,576	CONFIDENTIAL			3	27	45,146	7	17	237,154
Other	5	18	51,104[b]	10	37	61,473[c]	5	37	28,156[d]	12	239	253,255[d]	11	28	189,681[e]
Total[f, g]	16	59	351,986	23	79	390,547	12	62	82,173	12	374	626,525	16	86	1,030,938

[a] Includes deadloss.

[b] Total of 7 statistical areas.

[c] Total of 9 statistical areas.

[d] Total of 10 statistical areas.

[e] Total of 18 statistical areas.

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

[g] Total does not include confidential data.

Table 8.–Dungeness crab commercial catch, effort, and value for the Alaska Peninsula and Chignik districts combined, 1968 – 2008/09.

Year/Season	Number				Pots	Average	Average	Average Price
	Vessels	Landings	Crab[a]	Pounds[a]	Lifted	CPUE	Weight	($) Per Pound
1968	NA	NA	434,142	1,259,013	NA	NA	2.9	NA
1969	NA	NA	411,000	1,056,000	NA	NA	NA	NA
1970	NA	NA	4,200	13,000	NA	NA	NA	NA
1971	NA	NA	3,900	11,000	NA	NA	NA	NA
1972	NA	NA	29,400	65,000	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
1983/84	18	132	565,430	1,207,128	113,061	5	2.1	$0.97
1984/85	13	99	294,191	647,497	106,056	3	2.1	$1.38
1985/86	7	31	239,202	488,107	52,117	5	2.0	$1.26
1986/87	6	28	87,925	180,261	30,280	3	2.0	$1.05
1987/88	CONFIDENTIAL							
1988/89	CONFIDENTIAL							
1989/90	4	10	31,074	65,806	5,225	6	2.1	$1.53
1990/91	7	18	39,069	80,248	12,813	3	2.1	$1.24
1991/92	CONFIDENTIAL							
1992/93	3	15	127,979	273,811	15,675	8	2.1	$0.79
1993/94	4	24	134,429	277,639	27,950	5	2.1	$1.01
1994/95	CONFIDENTIAL							
1995/96	4	9	52,694	112,438	16,557	3	2.1	$1.01
1996/97	8	18	121,085	240,427	43,103	3	2.0	$2.06
1997/98	3	8	60,049	116,757	19,800	3	2.0	$1.50
1998/99 - 2004/05[b]	8	132	409,202	839,210	61,442	7	2.0	$1.42
2005/06	6	34	156,045	314,938	16,398	10	2.0	$1.21
2006/07	4	26	140,926	261,798	15,850	9	2.0	$1.43
2007/08	4	36	241,550	465,261	19,334	12	1.9	$1.89
2008/09	7	38	254,553	503,434	27,147	9	2.0	$2.00

Notes: In 2001/02 the Alaska Peninsula District was divided at the latitude of Kupreanof Point with waters to the east becoming the Chignik District.

NA = not available.

Confidential = Less than three vessels participated or less than three processors purchased product.

[a] Includes deadloss.

[b] Years combined to maintain confidentiality.

Table 9.–Red king crab commercial catch, effort, and value for the Kodiak Area, 1960/61 – 2008/09.

Fishing Year	Vessels	Landings	Number of Crab	Number of Pounds	Pots Lifted	Average CPUE	Average Weight Per Crab	Average Price Per ($) Pound
1960/61	143	NA	2,116,375	21,064,871	NA	NA	NA	$0.09
1961/62	148	NA	3,181,554	28,962,900	NA	NA	NA	$0.10
1962/63	195	NA	4,146,143	37,626,703	NA	NA	NA	$0.10
1963/64	181	NA	4,158,988	37,716,223	NA	NA	NA	$0.10
1964/65	189	NA	4,923,309	41,596,518	95,951	51	NA	$0.10
1965/66	175	NA	11,061,709	94,431,026	173,083	64	NA	$0.13
1966/67	213	NA	8,476,299	73,817,779	223,174	38	NA	$0.11
1967/68	227	3,847	5,147,321	43,448,492	207,392	25	NA	$0.26
1968/69	178	1,839	2,348,950	18,211,485	119,146	20	NA	$0.26
1969/70	136	978	1,606,181	12,200,571	96,841	17	NA	$0.28
1970/71	100	830	1,561,318	11,719,970	119,192	13	NA	$0.30
1971/72	89	507	1,539,157	10,884,152	66,166	23	NA	$0.39
1972/73	88	683	2,029,670	15,479,916	70,806	29	NA	$0.55
1973/74	129	837	1,847,679	14,397,287	77,826	24	NA	$0.45
1974/75	158	1,195	2,910,201	23,582,720	110,297	26	NA	$0.45
1975/76	169	1,569	2,976,909	24,061,651	113,795	26	8.1	$0.66
1976/77	195	1,165	2,177,956	17,966,846	130,777	17	8.2	$1.37
1977/78	179	1,186	1,590,477	13,503,666	145,867	11	8.5	$1.34
1978/79	194	1,077	1,464,021	12,021,850	177,261	8	8.2	$1.60
1979/80	247	1,346	1,979,394	14,608,900	207,991	9	7.3	$0.95
1980/81	164	1,175	2,787,199	20,448,654	201,531	14	7.3	$1.05
1981/82	246	2,214	3,035,674	24,237,601	388,751	8	8.0	$2.00
1982/83	309	1,373	1,011,109	8,729,761	283,795	4	8.6	$3.75
1983/84 - 2008/09				NO COMMERCIAL FISHERY				

Note: NA = not available.

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 – 1982/83

Table 10.–Golden king crab commercial catch, effort, and value for the Kodiak Area, 1983 – 2008.

Year	Vessels	Landings	Number		Pots	Average			Exvessel
			Crab[a]	Pounds[a]	Lifted	CPUE	Weight (lbs)	Price Per ($) Pound	Value ($)
1983	12	36	16,349	111,398	8,490	2.0	6.8	$3.00	$334,194.0
1984	6	8	3,513	22,066	1,950	2.0	6.3	$2.50	$55,165.0
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

Notes: NA = not available.

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 – 2008/09.

	Number				Pots	Average	Average	Average Price
Year/Season	Vessels	Landings	Crab[a]	Pounds[a]	Lifted	CPUE	Weight	($) Per Pound
1947	NA	NA	18,800	141,000	NA	NA	7.5	NA
1948	NA	NA	518,500	3,363,000	NA	NA	6.5	NA
1949	NA	NA	205,500	3,476,000	NA	NA	12.0	NA
1950	NA	NA	270,000	2,124,000	NA	NA	7.9	NA
1951	NA	NA	86,500	599,000	NA	NA	6.9	NA
1952	NA	NA	32,400	298,000	NA	NA	7.6	NA
1953	NA	NA	38,400	380,000	NA	NA	10.0	NA
1954	NA	NA	31,666	316,660	NA	NA	10.0	NA
1955	NA	NA	164,069	1,640,688	NA	NA	10.0	NA
1956	NA	NA	421,651	4,221,496	NA	NA	10.0	NA
1957	NA	NA	668,709	6,687,092	NA	NA	10.0	NA
1958	NA	NA	724,595	7,245,947	NA	NA	10.0	NA
1959	NA	NA	568,303	6,166,974	NA	NA	10.0	NA
1960	NA	1,496	677,100	6,700,000	NA	NA	9.9	NA
1961	NA	959	419,354	3,900,000	NA	NA	9.3	NA
1962	NA	657	287,624	2,273,013	NA	NA	7.9	NA
1963	27	1,037	970,739	6,539,129	NA	NA	6.7	$0.09
1964	40	1,297	1,906,018	14,354,060	NA	NA	7.5	$0.10
1965	36	1,081	1,813,728	14,713,501	NA	NA	8.1	$0.10
1966	37	1,255	2,494,949	22,577,587	NA	NA	9.0	$0.10
1967	39	1,062	1,943,463	17,252,307	NA	NA	8.9	$0.19
1968/69	34	885	1,273,567	10,944,472	NA	NA	8.6	$0.34
1969/70	33	415	558,800	4,137,000	51,300	11	7.7	$0.25
1970/71	25	339	446,042	3,425,760	38,995	11	7.7	$0.25
1971/72	26	364	597,394	4,123,130	41,759	14	6.9	$0.28
1972/73	29	301	610,300	4,069,362	34,408	18	6.7	NA
1973/74	36	389	658,632	4,260,674	53,642	12	6.9	$0.72
1974/75	36	318	644,054	4,572,101	44,951	14	7.1	$0.43
1975/76	37	248	367,221	2,605,310	35,104	11	7.2	$0.41
1976/77	26	122	125,778	958,069[a]	17,748	7	7.7	$0.61
1977/78	15	73	119,641	726,382	10,551	11	6.1	$1.00
1978/79	33	226	520,168	3,093,859	31,142	17	5.9	$1.27
1979/80	68	288	738,859	4,453,557	41,753	18	6.0	$0.92
1980/81	51	358	821,071	5,080,632	54,114	15	6.2	$0.96
1981/82	56	341	515,882	3,168,689	51,776	10	6.1	$1.40
1982/83	63	157	271,237	1,683,654	30,894	9	6.2	$3.20
1983/84 - 2008/09	NO COMMERCIAL FISHERY							

Note: NA = not available.

[a] Combined 6.5-inch and 7.5-inch seasons.

Table 12.–Shrimp trawl fishery catch, and value for the Kodiak District, 1958 – 2008/09.

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	0	0	0	NA
1964	6	NA	4,339,114	$0.04	1989/90	0	0	0	NA
1965	11	320	13,823,061	$0.04	1990/91	0	0	0	NA
1966	17	551	24,097,141	$0.05	1991/92	0	0	0	NA
1967	23	NA	38,267,856	$0.05	1992/93	0	0	0	NA
1968	16	NA	34,468,713	$0.04	1993/94	3	3	1,704	NA
1969	26	935	41,353,461	$0.06	1994/95	0	0	0	NA
1970	18	1,024	62,181,204	$0.04	1995/96	0	0	0	NA
1971	49	1,746	82,153,724	$0.04	1996/97		CONFIDENTIAL		
1972	63	1,398	58,352,319	$0.04	1997/98		CONFIDENTIAL		
1973	50	1,283	70,511,477	$0.06	1998/99	5	8	12,724	$3.25
1973/74	63	1,029	56,203,992	$0.08	1999/00	3	4	4,325	$3.00
1974/75	75	1,100	58,235,982	$0.08	2000/01		CONFIDENTIAL		
1975/76	58	884	49,086,591	$0.08	2001/02		CONFIDENTIAL		
1976/77	62	762	46,712,083	$0.10	2002/03		CONFIDENTIAL		
1977/78	58	653	26,409,366	$0.13	2003/04		CONFIDENTIAL		
1978/79	50	328	20,506,021	$0.17	2004/05	0	0	0	NA
1979/80	37	242	12,863,536	$0.23	2005/06		CONFIDENTIAL		
1980/81	67	462	27,101,218	$0.29	2006/07	0	0	0	NA
1981/82	55	298	19,112,367	$0.27	2007/08	0	0	0	NA
1982/83	40	224	10,391,207	$0.27	2008/09	0	0	0	NA

Table 13.–Shrimp minimum acceptable biomass indices (MABI) and population estimates in millions of pounds from surveyed districts and sections, 1998 – 2008.

			Survey Year								
District	Section	MABI	2008	2007	2006	2005	2004	2003	2002	2001	1998
Kodiak	Inner Marmot Bay	3.6	1.2	1.2	1.8	1.2	1.5	1.1	1.5	2.8	0.8
	Outer Marmot Bay	24.9	12.2	10.9	**25.0**	15.7	10.6	19.8	23.0	**71.0**	11.4
	Chiniak Bay	1.5	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.6	0.1
	Ugak Bay	4.0	ND	0.0	ND	0.0	ND	0.0	ND	0.2	ND
	Kiliuda Bay	5.2	ND	0.1	ND	0.1	ND	0.4	0.6	0.2	0.2
	Twoheaded Island	7.4	ND	0.3	ND	0.2	ND	0.0	ND	0.2	0.2
	Alitak Bay	4.2	ND	0.1	ND	0.2	ND	0.2	ND	0.6	0.2
	Uyak Bay	3.2	ND	0.2	ND	0.6	ND	0.8	ND	0.7	0.4
	Uganik Bay	2.6	ND	0.1	ND	0.6	ND	0.7	ND	1.3	0.3
	Kukak Bay	none	ND	0.1	ND	0.1	ND	0.2	ND	0.4	0.1
	Wide Bay	1.1	0.2	**1.5**	0.4	0.5	0.8	0.9	**2.0**	**2.2**	ND
	Puale Bay	1.2	ND	0.0	ND	0.0	ND	0.1	ND	0.1	ND
	Shelikof Strait	none	3.4	ND	5.3	30.0	4.1	13.6	ND	27.6	ND
	Alitak Flats	2.8	ND	ND	ND	ND	ND	0.1	ND	0.0	ND
Chignik	Kujulik Bay	3.8	0.1	ND	0.2	ND	ND	ND	0.0	ND	ND
	Chignik Bay	4.6	1.0	ND	1.9	ND	1.2	ND	1.0	ND	ND
	Chiginagak Bay	0.7	0.1	ND	ND	ND	0.1	ND	ND	ND	ND
	Nakalilok Bay	0.8	0.1	ND	ND	ND	0.1	ND	ND	ND	ND
	Kuiukta Bay	1.9	0.0	ND	0.4	ND	0.5	ND	0.4	ND	ND
	Mitrofania Island	5.2	0.2	ND	ND	ND	0.0	ND	0.3	ND	ND
	Ivanof Bay	5.7	ND	ND	ND	ND	ND	ND	0.0	ND	ND
South	Stepovak Bay	23.5	3.3	ND	**29.6**	ND	2.5	ND	2.4	ND	ND
Peninsula	Unga Strait	7.5	0.4	ND	2.1	ND	0.4	ND	0.3	ND	ND
	Beaver Bay	4.3	ND	ND	ND	ND	0.0	ND	0.0	ND	ND
	Pavlof Bay	18.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1
	Morzhovoi Bay	10.8	ND	ND	0.0	ND	ND	ND	ND	ND	ND

Notes: NA = No MABI established for survey area.

ND = Not surveyed/No data.

BOLD indicates population estimate above established MABI.

Table 14.–Shrimp pot fishery catch and effort for the Kodiak District, 1980 – 2008.

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
2000-2008[a]	3	9	1,204
Total			50,408

[a] Years combined to maintain confidentiality.

Table 15.–Trawl shrimp fishery catch, effort, and value for the South Peninsula and Chignik districts, 1968 – 2007/08.

	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 - 2007/08	CLOSED				NO EFFORT			

Notes: NA = not available.

Confidential = Less than three vessels made landings or less than three 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, 1991 – 2008/09.

Year/Season	Number Dive Permits	Number Landings	Pounds Harvested[a]	Average Price ($) Per Pound
1991			CONFIDENTIAL	
1992			CONFIDENTIAL	
1993/94	50	487	564,516	$0.93
1994/95	86	269	413,576	$1.20
1995/96	21	60	145,092	$1.25
1996/97	31	93	162,451	$1.25
1997/98	26	65	132,337	$1.16
1998/99	16	55	142,313	$1.20
1999/2000	19	36	116,134	$1.20
2000/01	20	56	116,152	$1.50
2001/02	18	67	152,613	$1.25
2002/03	24	102	177,597	$1.25
2003/04	25		CONFIDENTIAL	
2004/05	13		CONFIDENTIAL	
2005/06	18		CONFIDENTIAL	
2006/07	21		CONFIDENTIAL	
2007/08	18		CONFIDENTIAL	
2008/09	16		CONFIDENTIAL	

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

Table 17.–Red sea cucumber guideline harvest levels, 2008/09.

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 – 2008/09.

Year	Number		Pounds Harvested	Average Price
	Permits	Landings	(Live Weight)	($) Per Pound
1980	CONFIDENTIAL			
1981	0	0	0	0
1982	0	0	0	0
1983	0	0	0	0
1984	0	0	0	0
1985-1986[a]	NA	26	45,560	$0.35
1987	12	78	104,139	$0.69
1988	28	260	190,509	$0.80
1989	29	81	44 862	$0.82
1990	25	83	84,004	$0.84
1991	6	24	29,947	$0.92
1992-1994[a]	22	95	73,399	$1.15
1995	8	50	38,437	$1.34
1996	7	31	36,147	$1.10
1997-2000[a]	11	21	22,850	$1.00
2001/02	CONFIDENTIAL			
2002/03	0	0	0	0
2003/04	0	0	0	0
2004/05	0	0	0	0
2005/06	0	0	0	0
2006/07	0	0	0	0
2007/08	0	0	0	0
2008/09	0	0	0	0

[a] Years combined because less than three processors or divers participated.

Table 19.–Octopus commercial catch, effort, and value for the Kodiak District, 1985 – 2008.

	State waters			Federal waters			Combined				
Year	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels[b]	Landings	Pounds[a]	Average Price Per Pound ($)	Exvessel Value ($)
1985	6	5	2,299	5	6	2,513	11	11	4,812	$0.85	$4,090
1986	CONFIDENTIAL			CONFIDENTIAL			CONFIDENTIAL			NA	NA
1987	7	13	12,136	2	2	2,015	9	15	14,151	$1.07	$15,142
1988	3	3	1,397	1	1	552	4	4	1,949	$0.73	$1,423
1989	CONFIDENTIAL			CONFIDENTIAL			CONFIDENTIAL			NA	NA
1990	28	96	56,052	19	51	20,127	47	147	76,179	$1.13	$86,082
1991	56	260	106,748	28	84	22,607	84	344	129,355	$1.07	$138,410
1992	69	252	103,230	35	152	44,551	104	404	147,781	$0.94	$138,914
1993	18	51	95,899	23	41	8,453	41	92	104,352	$0.71	$74,090
1994	4	8	4,504	4	9	613	8	17	5,117	NA	NA
1995	38	293	66,935	20	89	3,673	58	382	70,608	$0.49	$34,598
1996	33	194	67,898	26	142	20,670	59	336	88,568	$0.45	$39,856
1997	67	526	230,606	57	278	46,296	124	804	276,902	$0.46	$127,375
1998	59	406	258,942	57	290	117,332	116	696	376,274	$0.43	$161,798
1999	51	308	198,330	30	147	54,676	81	455	253,006	$0.33	$83,492
2000	47	292	98,833	46	239	61,550	93	531	160,383	$0.39	$62,549
2001	27	206	99,665	30	79	12,712	57	285	112,377	$0.38	$42,703
2002	31	214	208,991	26	96	23,078	57	310	232,069	$0.48	$111,393
2003	39	119	55,628	20	49	15,527	59	168	71,155	$0.35	$24,904
2004	14	42	11,816	15	50	29,718	29	92	41,534	$0.36	$14,952
2005	38	109	36,879	68	193	96,354	106	302	133,233	$0.42	$55,958
2006	41	183	69,029	43	240	168,110	84	423	237,139	$0.39	$92,484
2007	35	270	122,159	62	322	188,811	97	592	310,970	$0.40	$124,388
2008	53	367	249,667	131	279	128,960	184	646	378,627	$0.56	$212,031

Notes: 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 from both state and federal waters.

Table 20.–Octopus commercial catch, effort, and value for the Chignik and South Peninsula districts combined, 1980 – 2008.

	State waters			Federal waters			Combined				
Year	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels[b]	Landings	Pounds[a]	Average Price per Pound ($)	Exvessel Value ($)
1980-1985	CONFIDENTIAL			CONFIDENTIAL			CONFIDENTIAL			NA	NA
1986-1987	NO EFFORT			NO EFFORT			NO EFFORT				
1988	22	58	9,946	16	132	34,622	38	190	44,568	$0.99	$12,140
1989	12	40	5,309	15	82	9,581	27	122	14,890	$0.75	$11,153
1990	7	45	6,746	15	33	2,393	22	78	9,139	NA	$0
1991	18	71	15,103	14	34	4,267	32	105	19,370	NA	$0
1992	37	149	42,486	34	98	14,027	71	247	56,513	$0.95	$53,789
1993	20	62	20,547	16	30	1,994	36	92	22,541	$0.89	$16,109
1994	21	43	19,149	4	6	1,271	25	49	20,420	$0.72	$15,747
1995	8	14	3,100	2	4	89	10	18	3,189	$0.43	$1,373
1996	17	48	10,467	9	26	3,881	26	74	14,348	$0.35	$5,187
1997	25	144	51,184	5	11	815	30	155	51,999	$0.42	$21,215
1998	9	17	4,712	8	14	2,085	17	31	6,797	$0.12	$1,157
1999	4	4	450	6	12	351	10	16	801	NA	$0
2000	6	6	474	10	20	1,426	16	26	1,900	NA	$0
2001	3	6	420	6	17	3,160	9	23	3,580	NA	$0
2002	2	2	918	10	16	6,492	12	18	7,410	NA	$0
2003	15	21	1,404	12	25	18,589	27	46	19,993	$0.61	$3,108
2004	64	324	131,791	34	134	161,484	98	458	293,275	$0.45	$96,606
2005	39	103	31,816	19	76	75,444	58	179	107,260	$0.50	$46,341
2006	40	148	49,083	15	46	18,154	55	194	67,237	$0.53	$30,207
2007	51	256	95,139	18	39	20,759	69	295	115,898	$0.43	$49,986
2008	43	183	104,498	34	80	95,887	77	263	200,385	$0.49	$92,129

Notes: 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.

Table 21.–Razor clam commercial catch, effort, and value for the Kodiak District, 1960 – 2008.

	Number		Pounds		Ave. Price	Est. Fishery
Year	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	$0.00	$0
1977			CONFIDENTIAL			
1978			CONFIDENTIAL			
1979	0	0	0	0	$0.00	$0
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 - 2008			NO COMMERCIAL HARVEST			

Notes: 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.

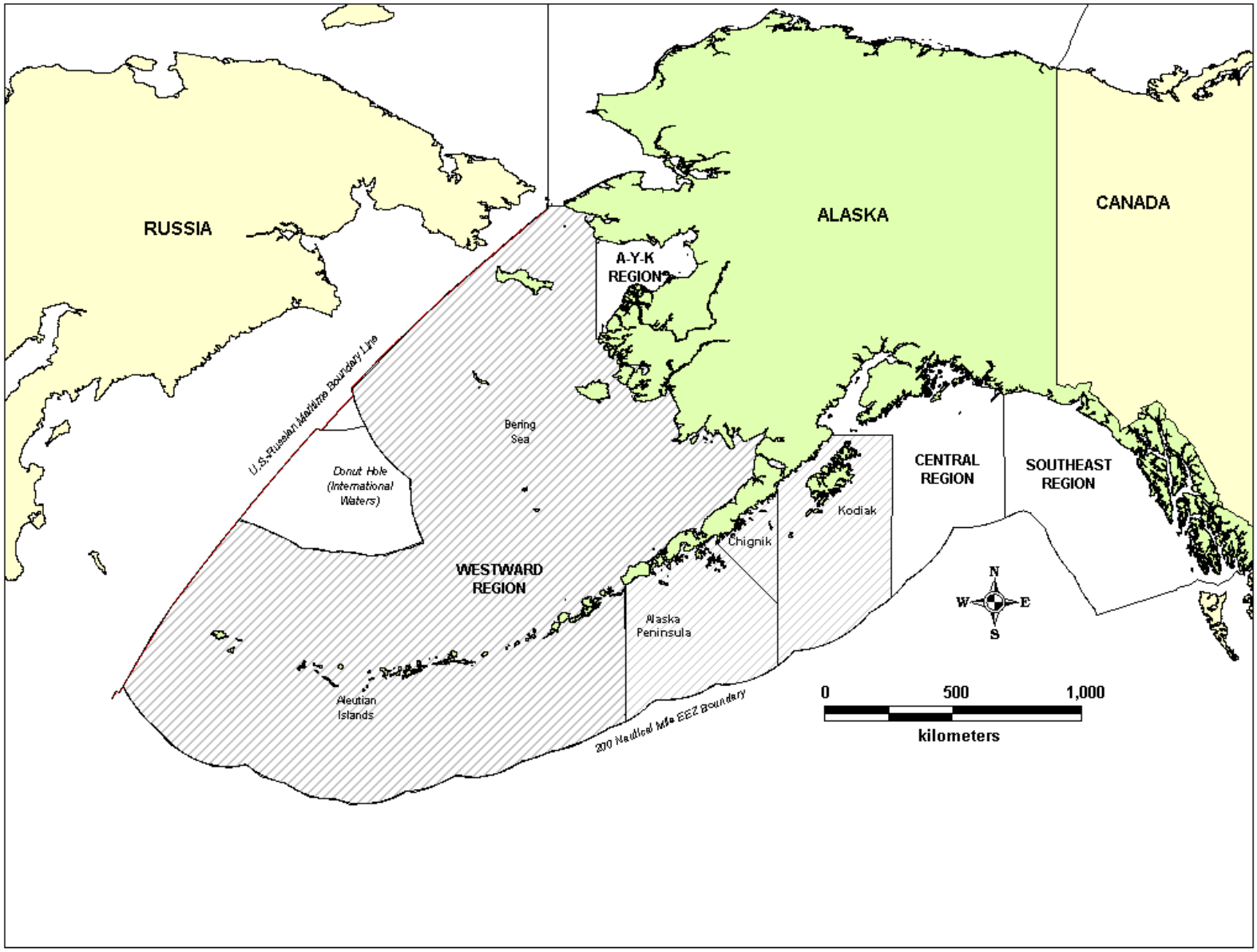

Figure 1.–Alaska Department of Fish and Game shellfish management regions, 2008.

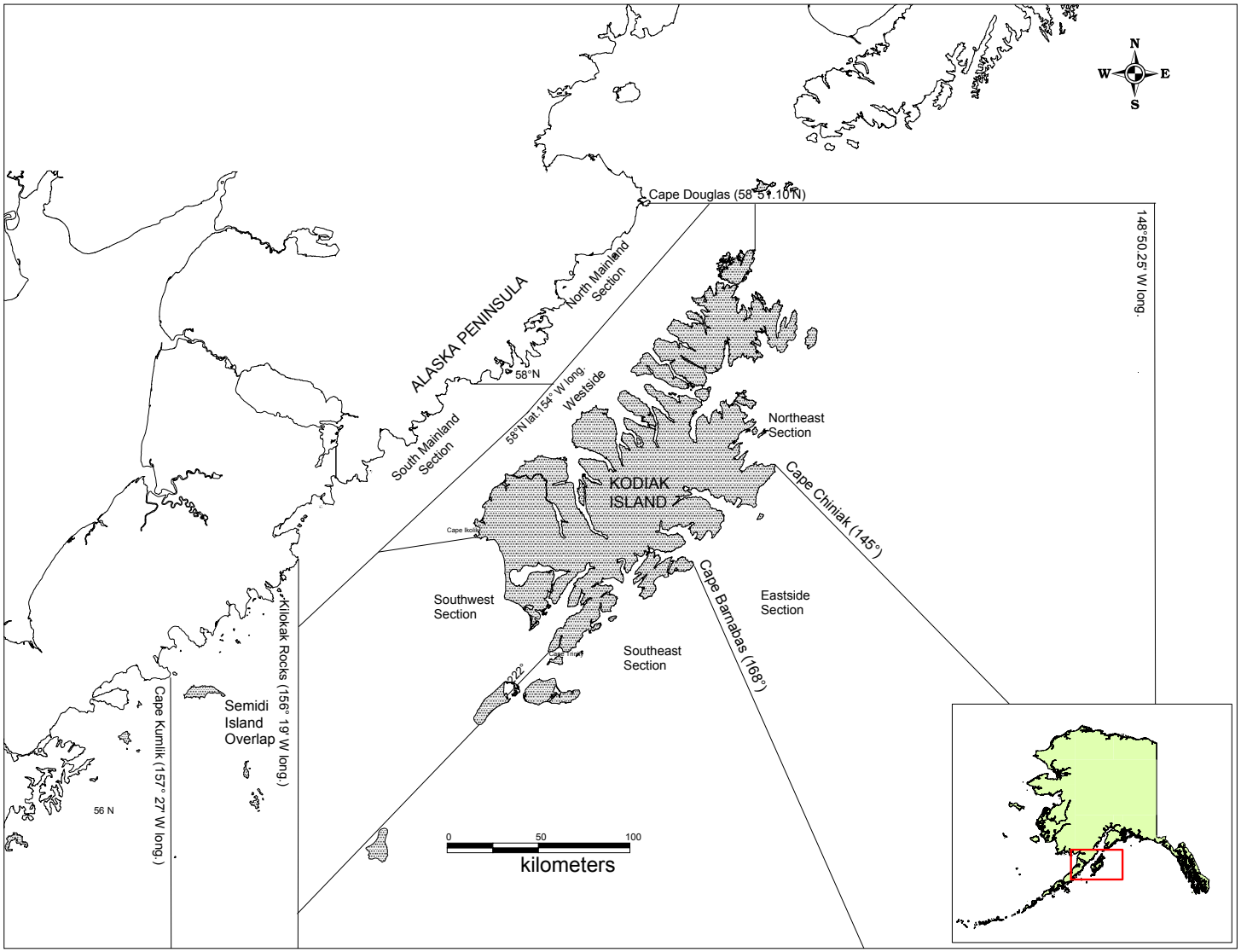

Figure 2.–Kodiak District and sections for Tanner crabs and sea cucumber fishery management, 2008.

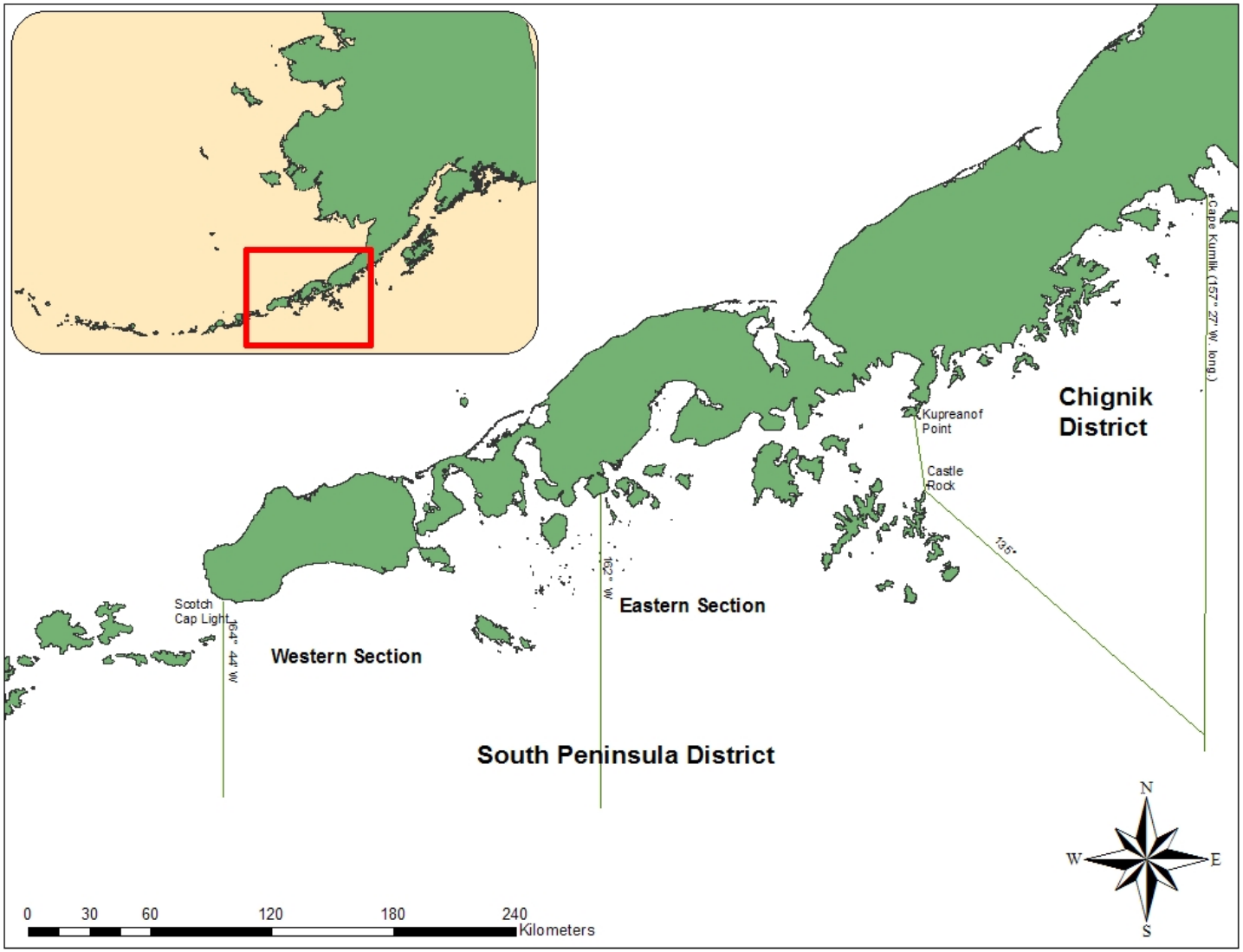

Figure 3.–Chignik and South Peninsula districts for Tanner crab and sea cucumber fishery management, 2008.

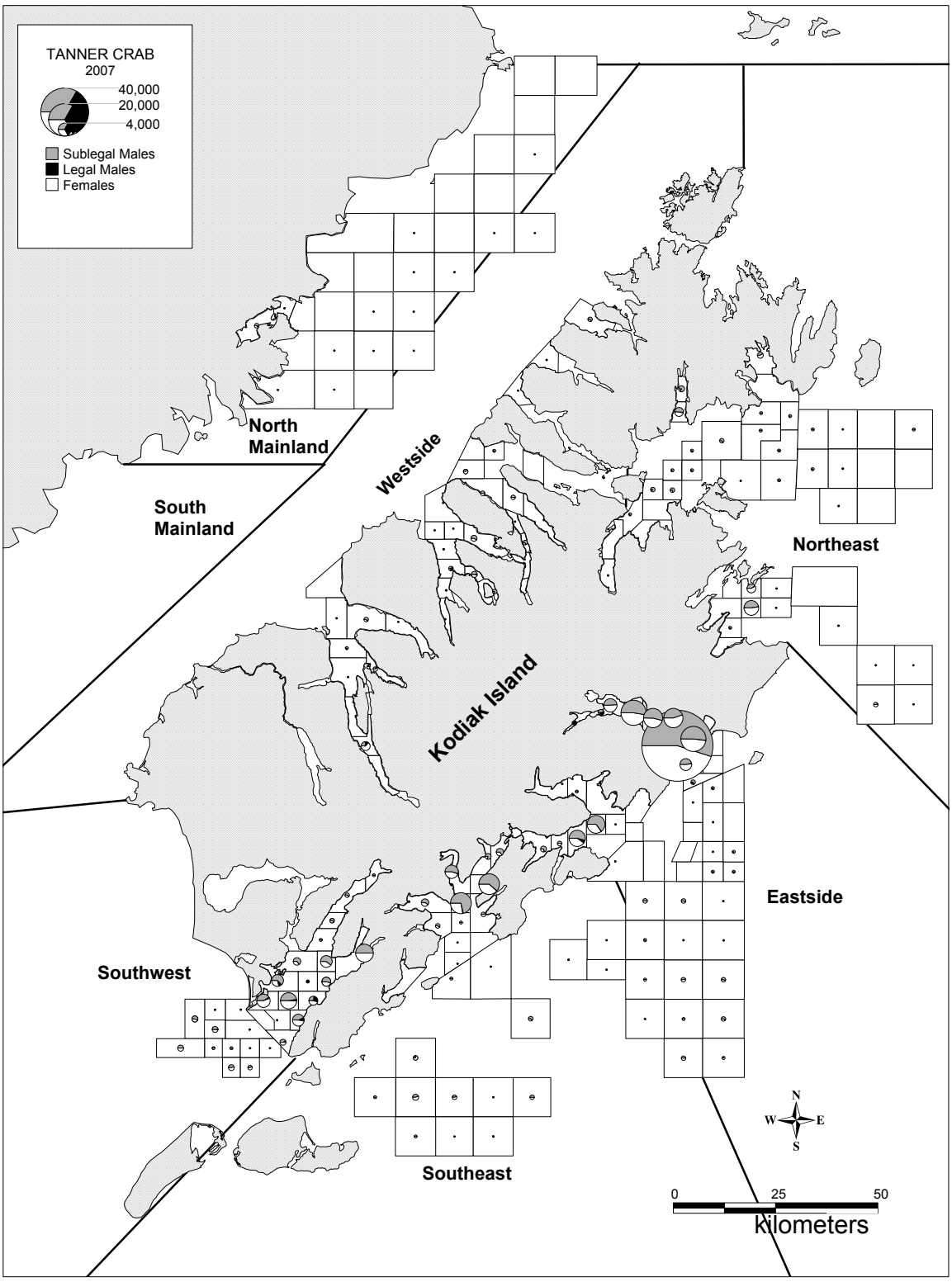

Figure 4.–Number of Tanner crabs per kilometer towed in the 2007 Kodiak District trawl survey.

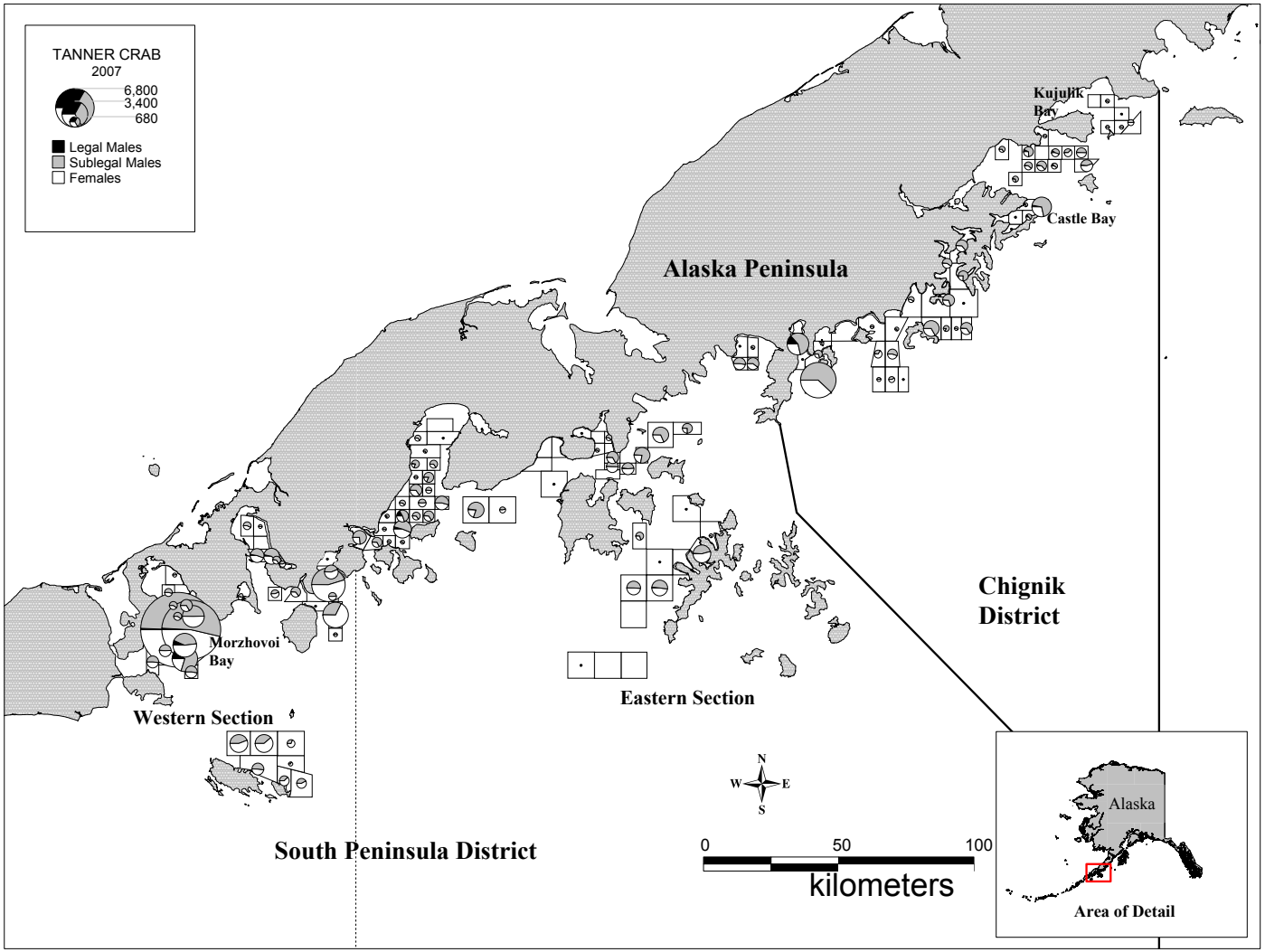

Figure 5.–Number of Tanner crabs per kilometer towed in the 2007 Chignik and South Peninsula districts trawl survey.

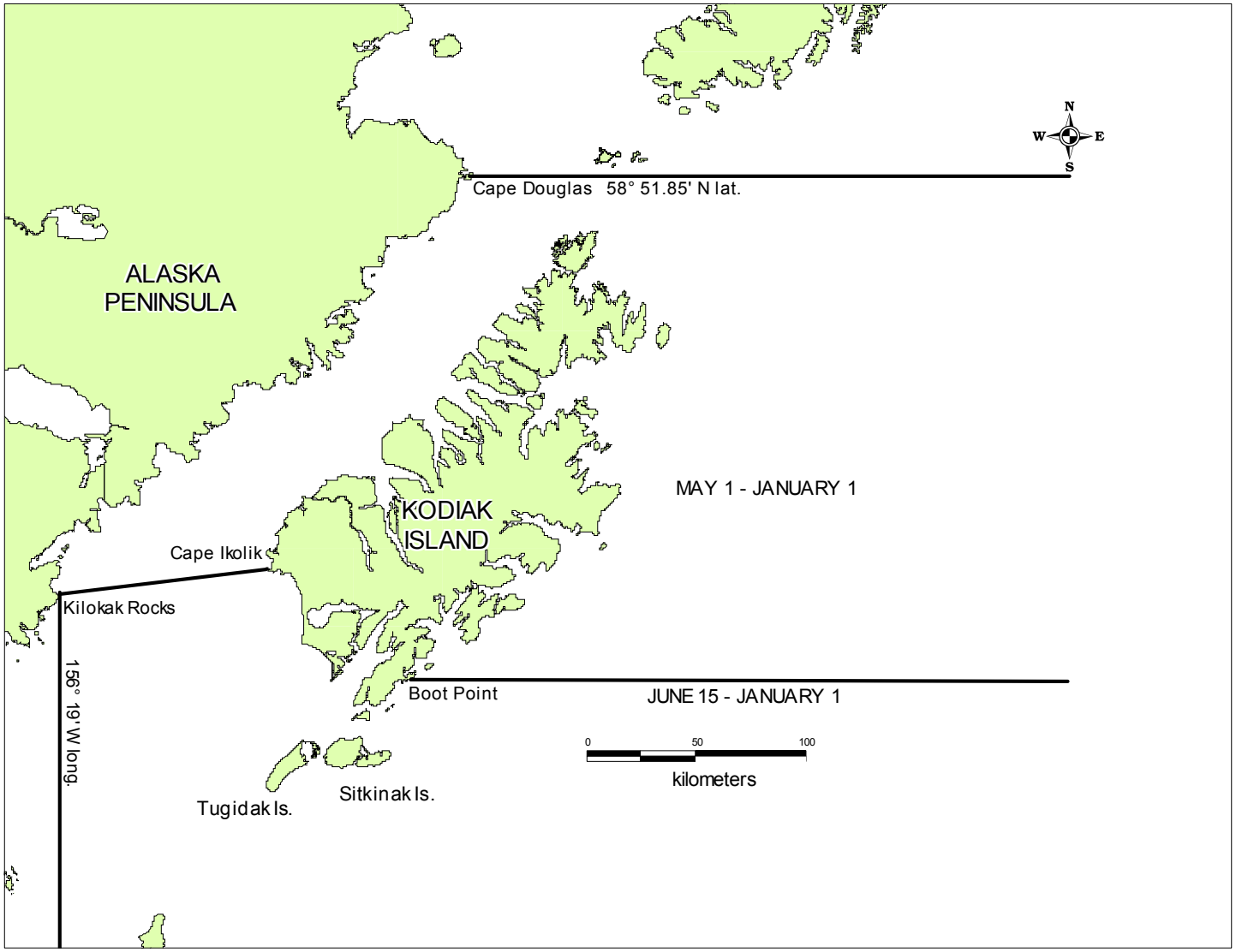

Figure 6.–Kodiak District Dungeness crab boundaries and fishing seasons, 2008.

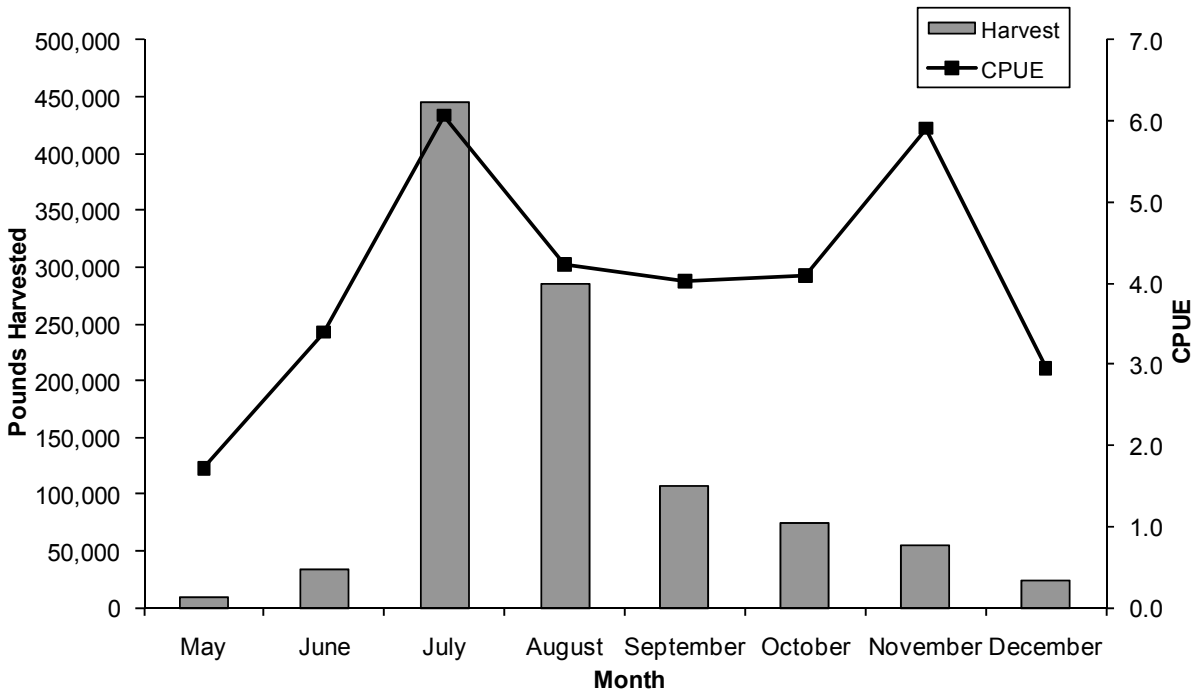

Figure 7.–Kodiak District Dungeness crab harvest, in pounds, CPUE by month, 2008.

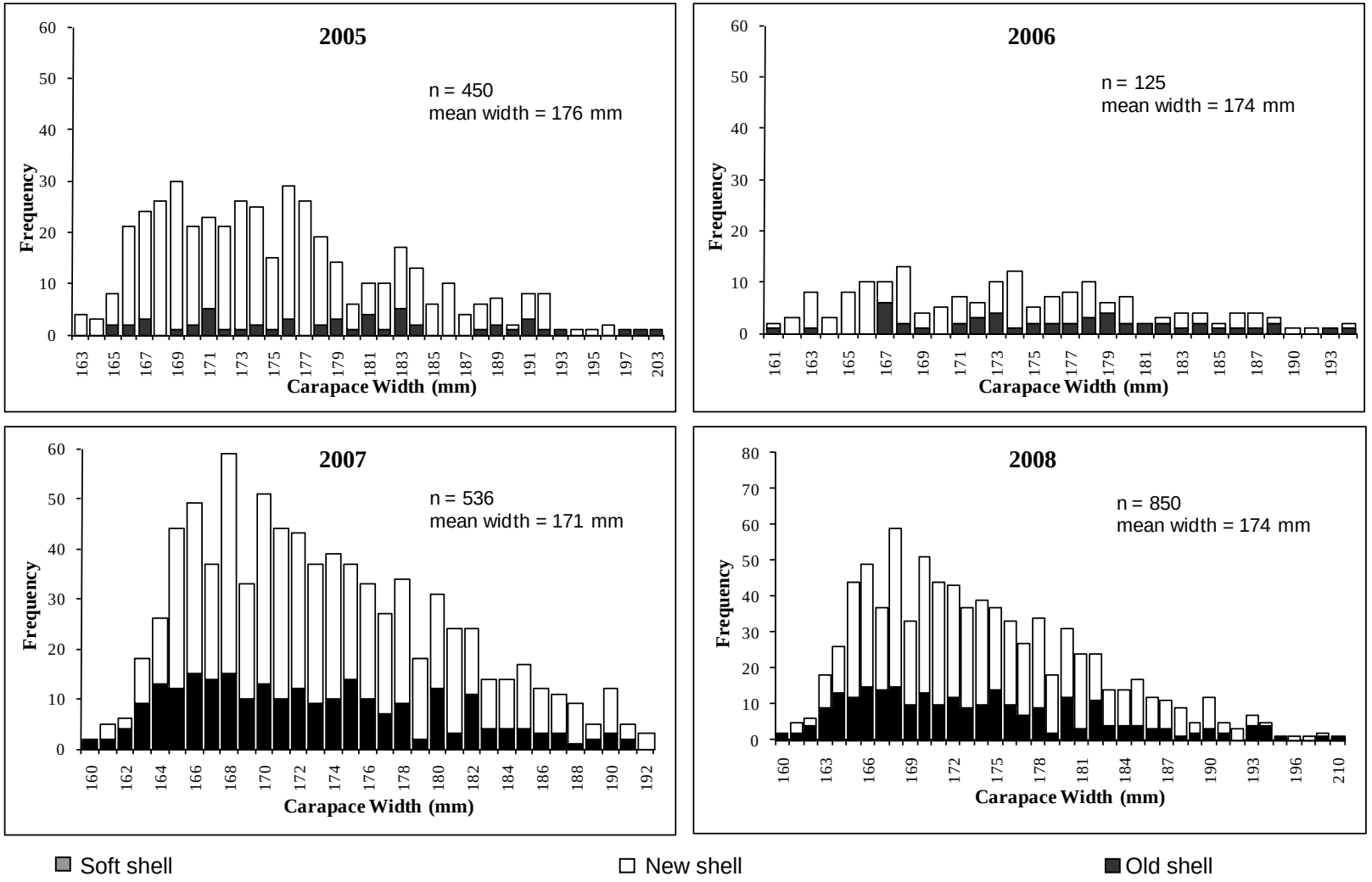

Figure 8.–Kodiak District Dungeness crab carapace width frequencies and shell condition from dockside samples, 2005–2008.

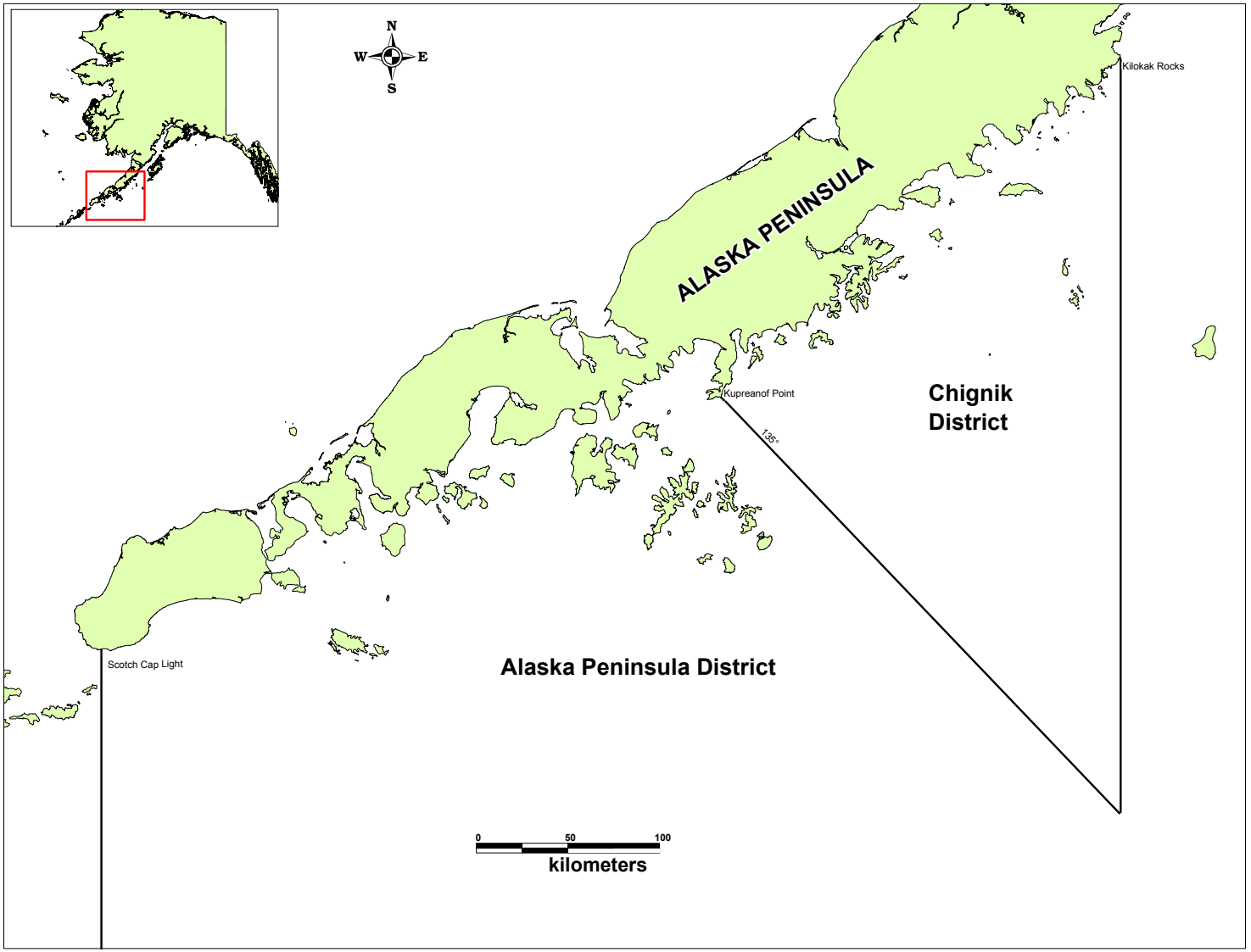

Figure 9.–Chignik and Alaska Peninsula districts for Dungeness crab fishery management, 2008.

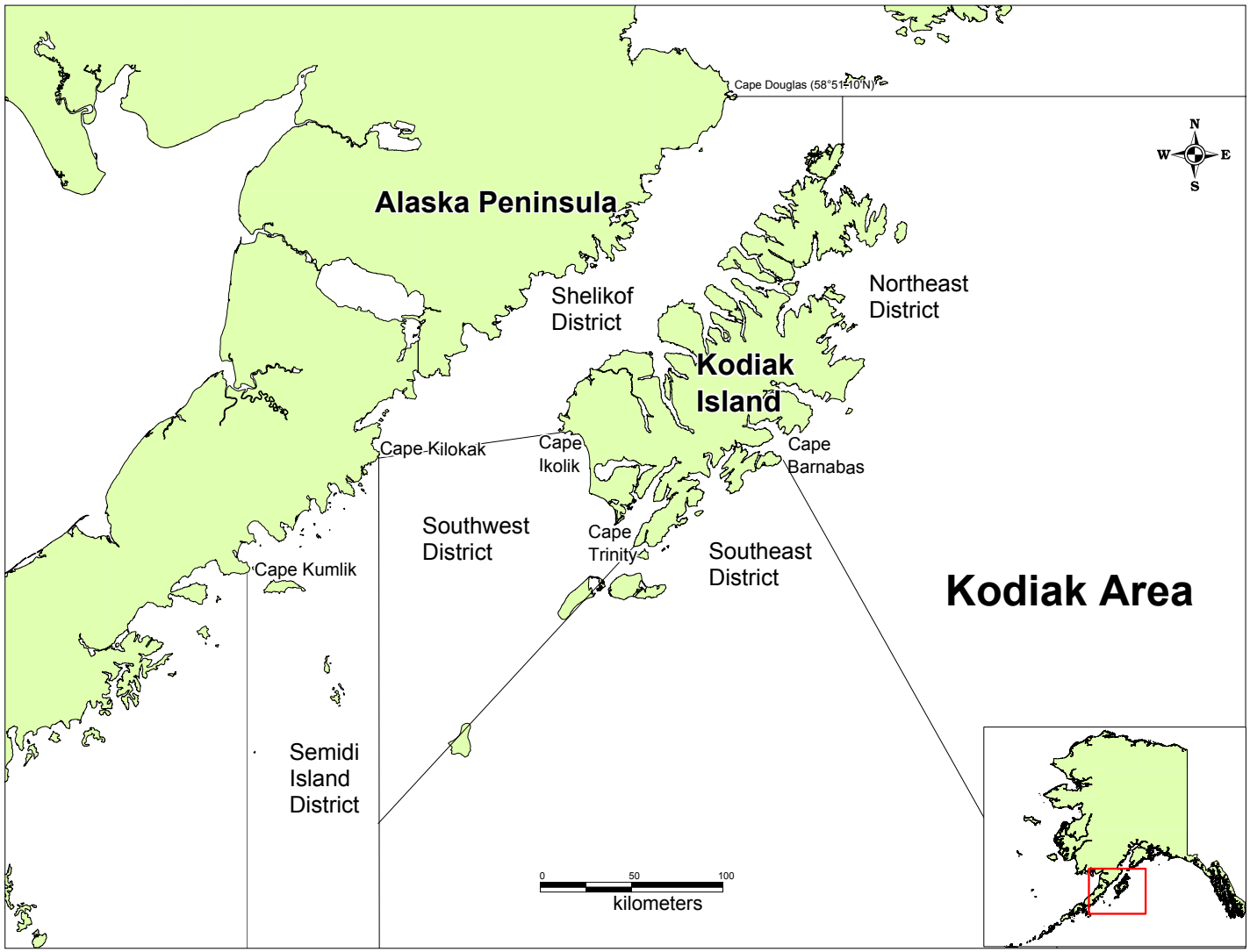

Figure 10.–Kodiak Area districts for king crab fishery management, 2008.

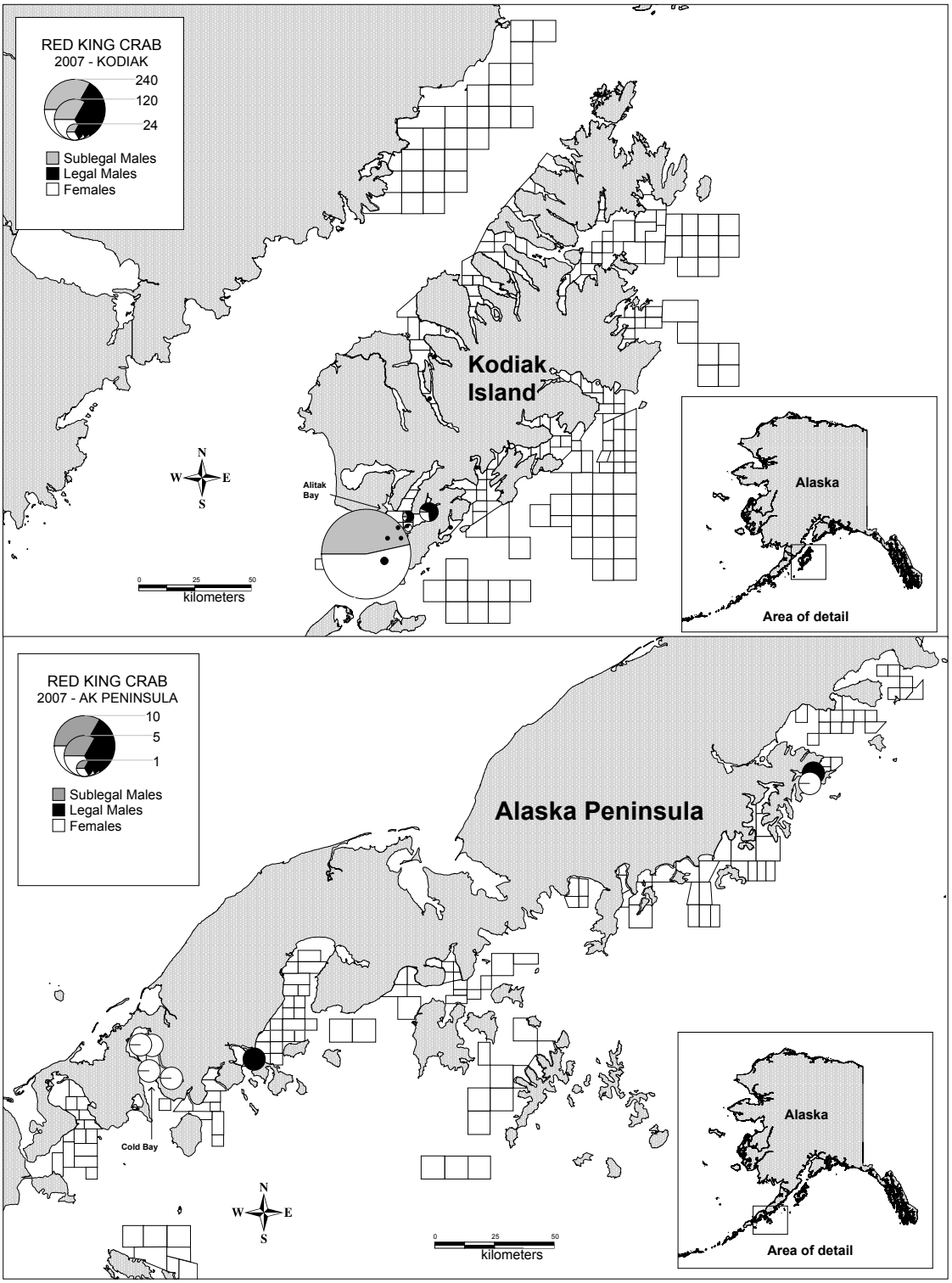

Figure 11.–Number of red king crabs per kilometer towed from the 2007 Kodiak and Alaska Peninsula Area trawl survey.

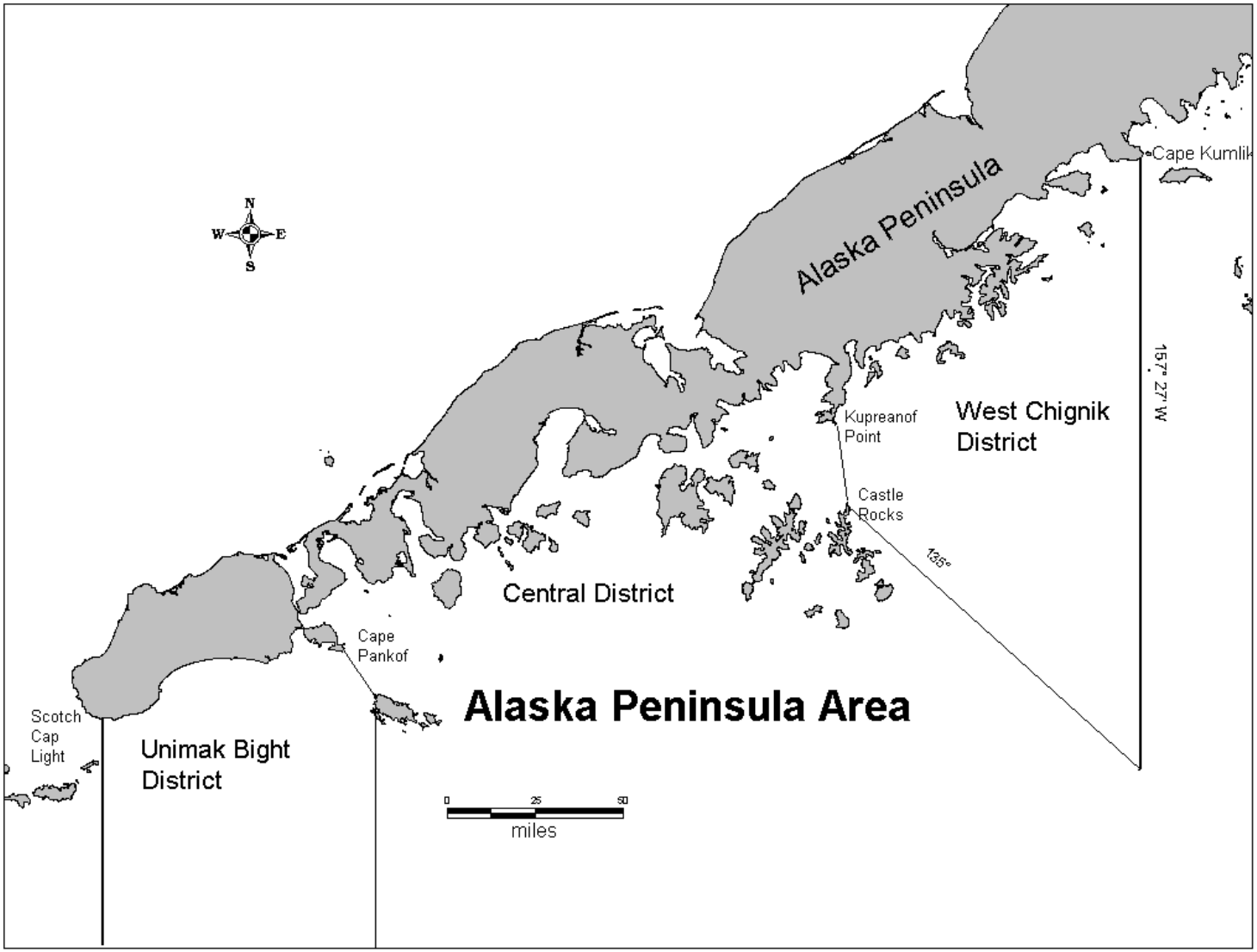

Figure 12.–Alaska Peninsula Area and districts for king crab fishery management, 2008.

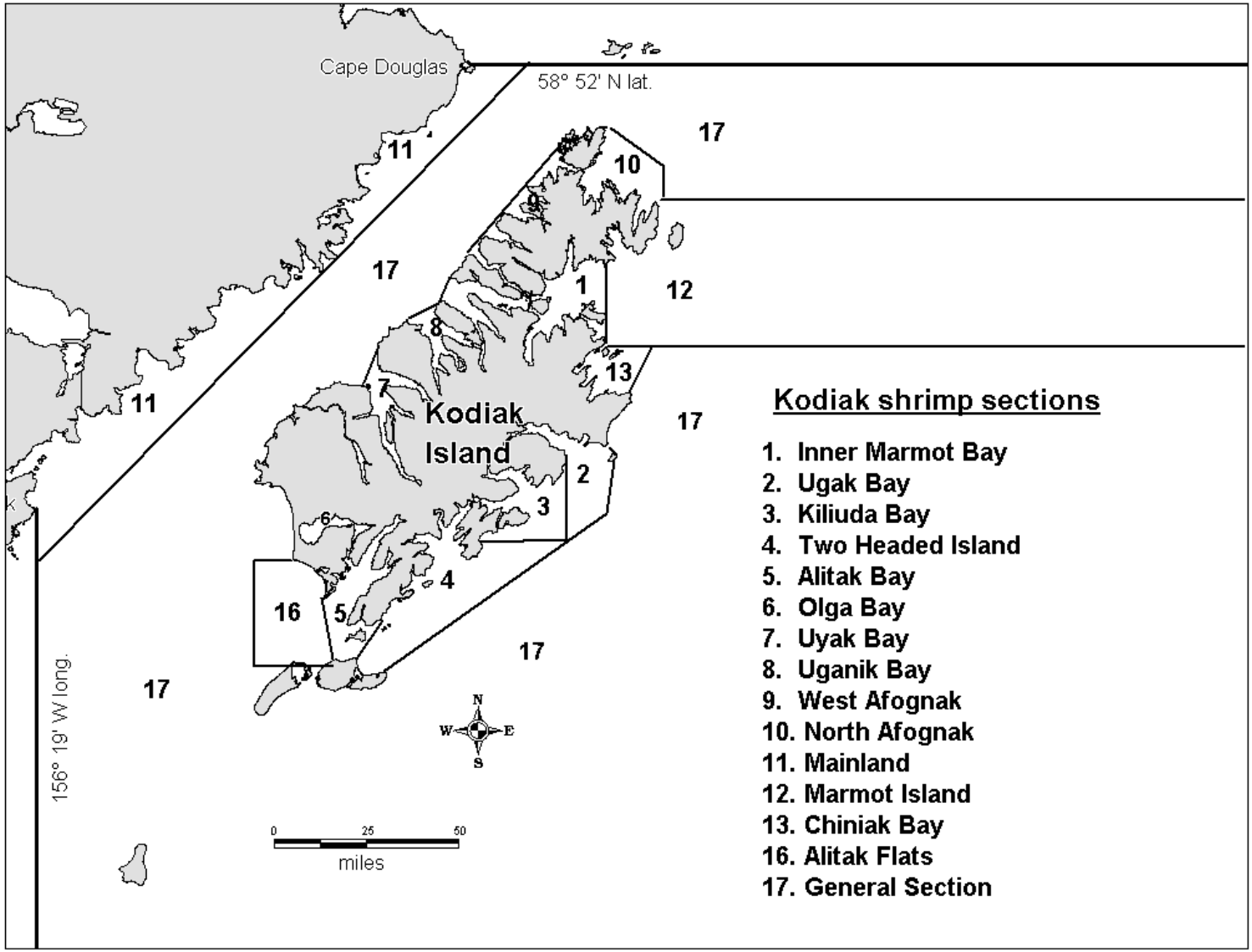

Figure 13.–Kodiak District and sections for shrimp fishery management, 2008.

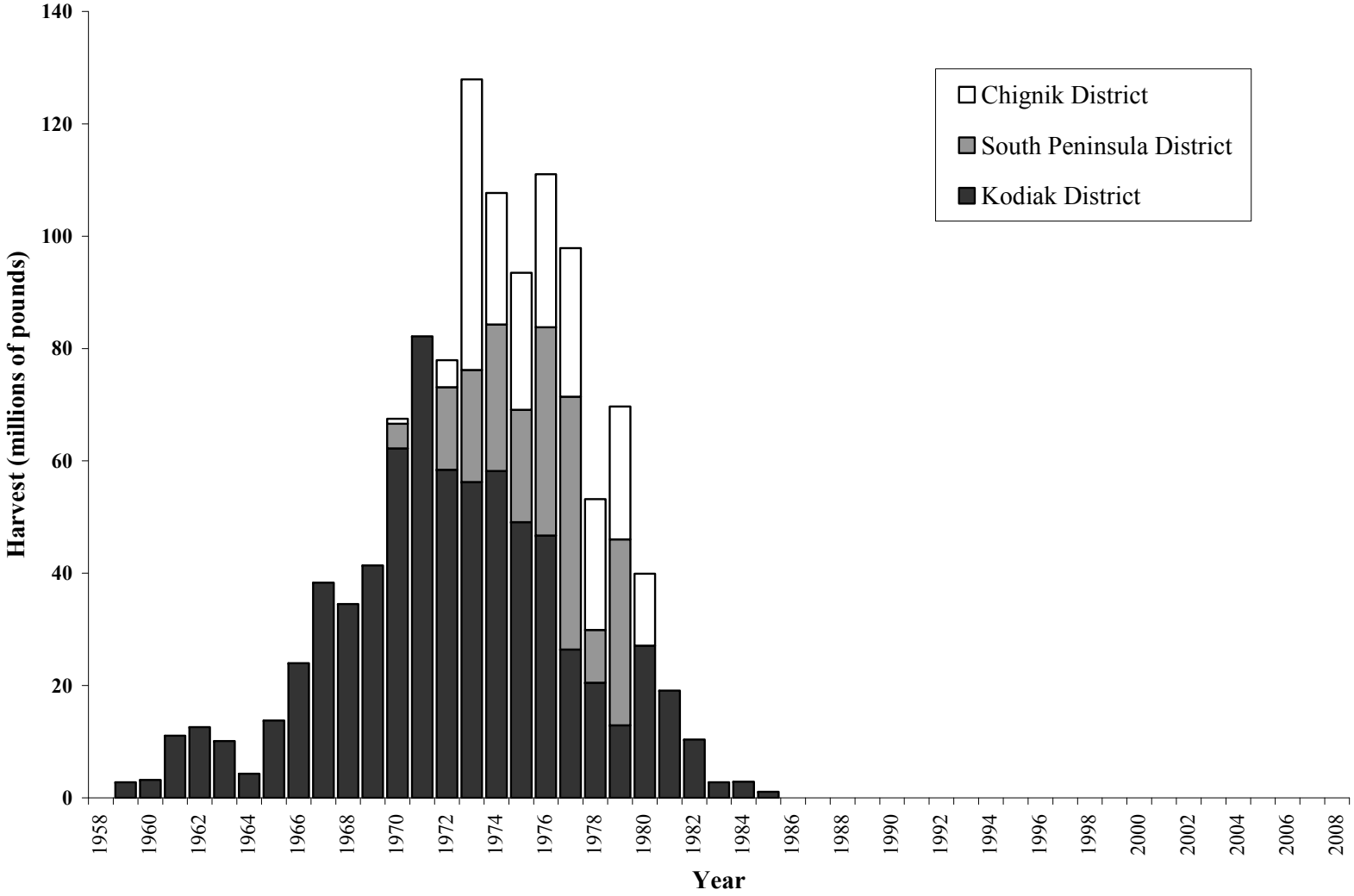

Figure 14.–Shrimp harvests from the Kodiak, Chignik, and South Peninsula districts, 1958–2008.

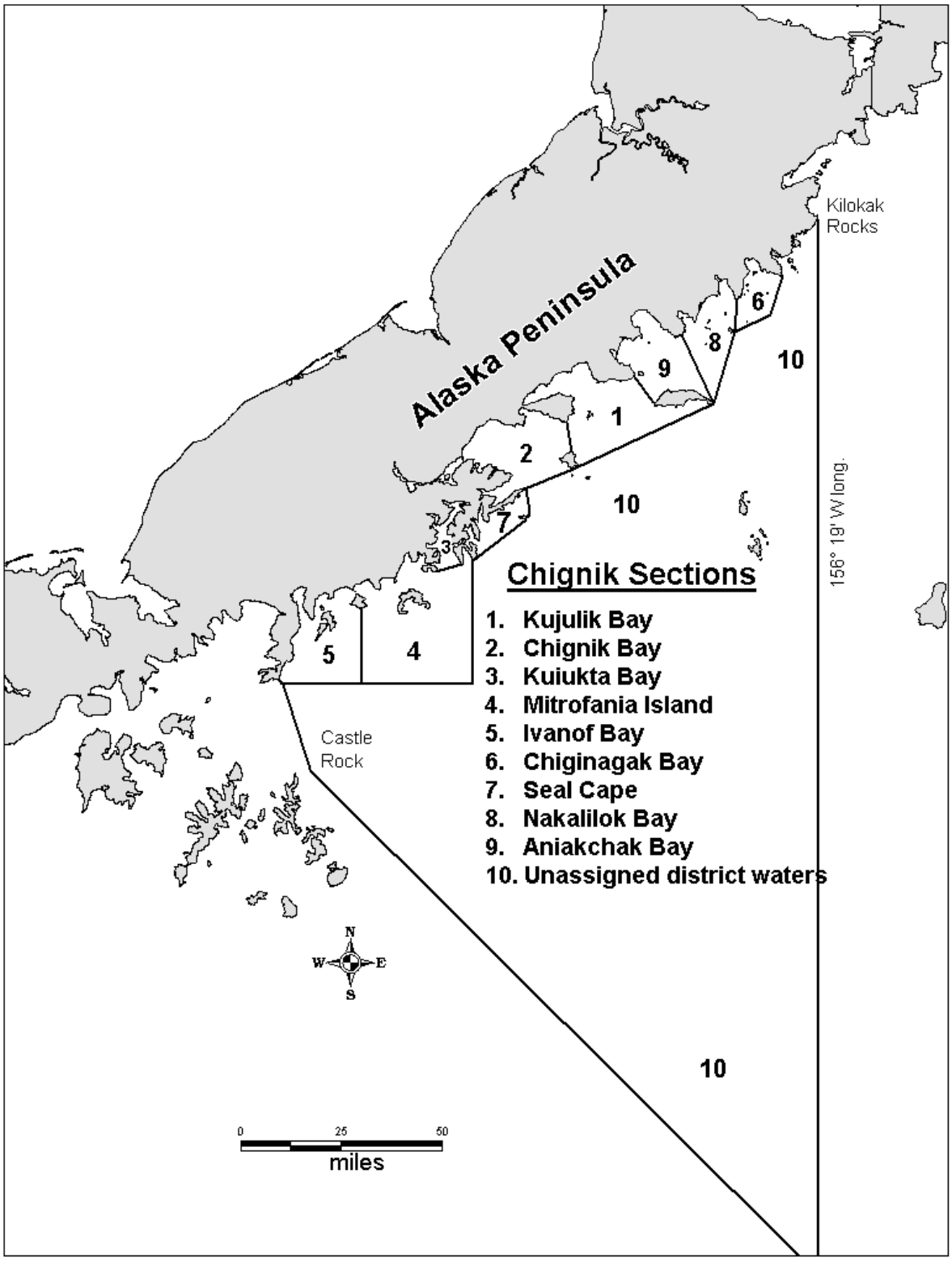

Figure 15.–Chignik District and sections for shrimp fishery management, 2008.

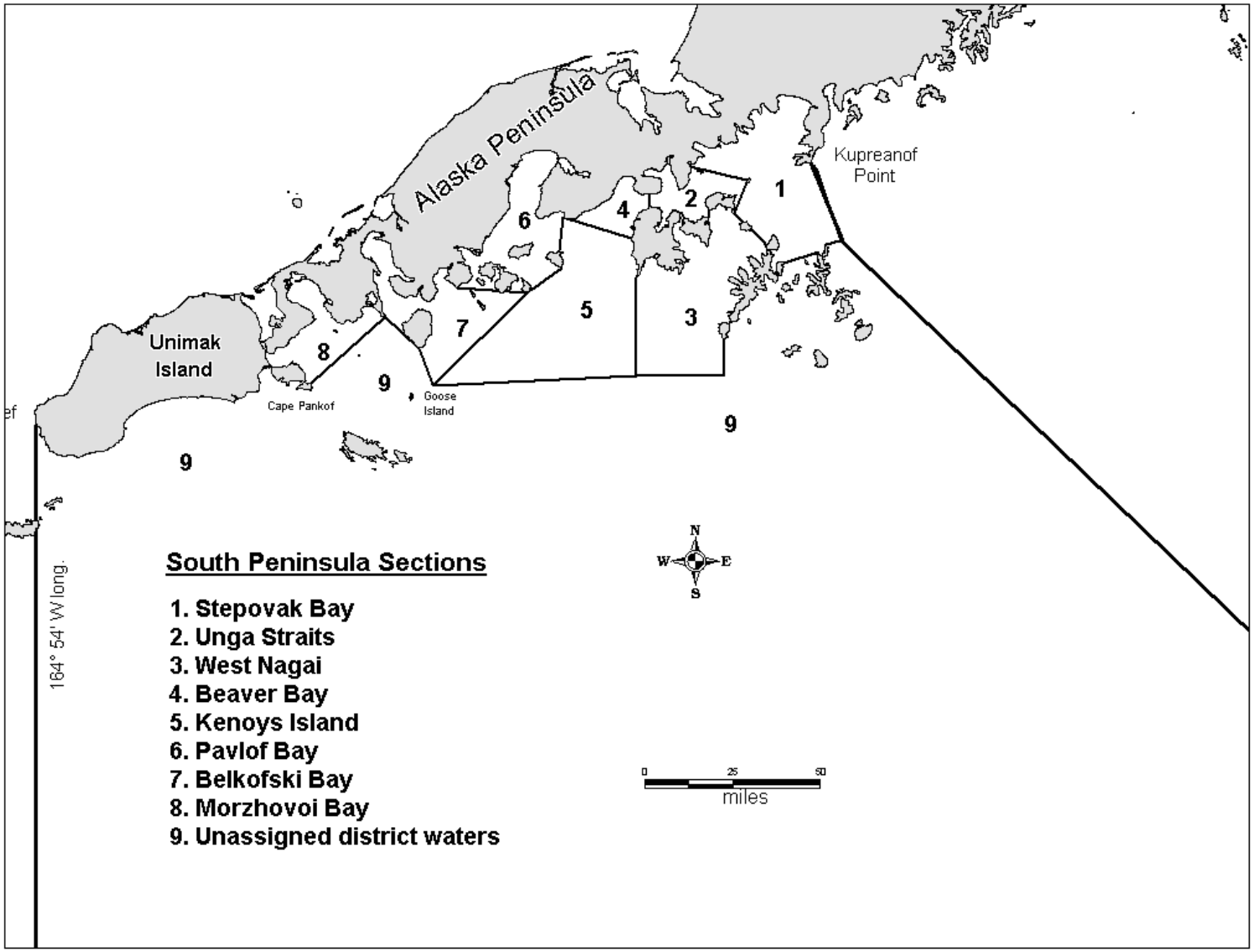

Figure 16.–South Peninsula District and sections for shrimp fishery management, 2008.