Fishery Management Report No. 08-72

Annual Management Report for the Shellfish Fisheries of the Kodiak, Chignik and Alaska Peninsula Areas, 2007

by

Nicholas H. Sagalkin

December 2008

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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by
Nicholas H. Sagalkin
Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak

Alaska Department of Fish and Game
Division of Sport Fish, Research and Technical Services
333 Raspberry Road, Anchorage, Alaska, 99518-1565

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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.

Nicholas H. Sagalkin,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
211 Mission Road, Kodiak, Alaska 99615, USA

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ABSTRACT

This annual management report summarizes shellfish fisheries, excluding weathervane scallops *Patinopecten caurinus*, for the Kodiak, Chignik, and South Peninsula Areas during 2007. 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 areas have 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 covers shellfish fisheries in the Gulf of Alaska 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 Scotch Cap Light (164° 44' W long.). The three primary management divisions within this report are the Kodiak, Chignik, and Alaska Peninsula (Figure 1). Different species are managed using different management divisions. For example, Tanner crab are managed in districts (e.g., Kodiak, Chignik, and South Peninsula) within Registration Area J. In contrast, king crab are managed in areas (e.g., Area K or Area M). These changing geographic divisions can be confusing, but they remain consistent within a species.

KODIAK AREA

The Kodiak Area includes the Pacific Ocean waters south of the latitude of Cape Douglas (58° 51.10' N lat.) on the Alaska Peninsula, east of the longitude of Cape Kumlik (157° 27' W long.), and west of 148° 50.25' W long. (Figure 2). The Kodiak Area encompasses both the waters of the territorial sea, 0–3 nautical miles (nmi), and waters of the Exclusive Economic Zone (EEZ), (3–200 nmi). The management area varies slightly for Dungeness crab *Cancer magister* and Pandalid shrimp, where it extends 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, the Kodiak Area supported red king crab *Paralithodes camtschaticus* and trawl-caught shrimp fisheries. King crab stocks in the Kodiak Area are currently depressed and no fishing has occurred since the early 1980s for red king crab. Minor harvests of green sea urchins *Strongylocentrotus droebachiensis,* golden king crab *Lithodes aequispinus* and grooved Tanner crabs *Chionoecetes tanneri* have also occurred sporadically. Various clam species, primarily razor clams *Siliqua sp.* were once harvested in large quantities.

The predominant commercial shellfish species harvested from the Kodiak area in 2007 were Tanner crab *Chionoecetes bairdi*, Dungeness crab *Cancer magister*, giant Pacific octopus *Octopus dofleini*, and red sea cucumber *Parastichopus californicus*. During the last several years, the most valuable shellfish species harvested were Tanner crabs, but the ex-vessel value of the Dungeness fishery was the most valuable shellfish fishery in 2007, worth an estimated $1.4 million to the fleet. In 2007, harvests of Bering Sea snow crabs *Chionecetes opilio* and Bristol Bay red king crabs were landed in Kodiak. More than 3.2 million pounds of shellfish were landed at the Port of Kodiak in 2007 for an estimated exvessel value exceeding $9.3 million. The

Kodiak area weathervane scallop fishery is summarized in a separate report (Barnhart et al. 2008).

The Alaska Department of Fish and Game (ADF&G) issued emergency orders to enact regulatory actions for time and area changes to commercial fisheries. These changes affected commercial fishery openings, closures, and modified fishing periods, or fishing areas. Seven emergency orders were issued during 2007 for shellfish fisheries in the Kodiak Area (Table 1).

ALASKA PENINSULA AREA

The Alaska Peninsula Area includes waters of the Pacific Ocean west of Kilokak Rocks (156° 19' W long.), and east of Scotch Cap Light (164° 44' W long.; Figure 3); although, in some fisheries the eastern boundary is located at the longitude of Cape Kumlik (157° 27' W long.). For some fisheries, the Alaska Peninsula Area is divided into separate districts, Chignik and the Alaska Peninsula (or South Alaska Peninsula). The area divisions are detailed in each fishery description that follows.

Commercial shellfish fisheries have occurred in the Alaska Peninsula Area for red king crab, Tanner crab, grooved Tanner crab, Dungeness crab, various Pandalid shrimp, red sea cucumber, and giant Pacific octopus. Shellfish stocks are considered depressed for most species within the management area. No commercial fishery for red king crab or shrimp has occurred in the Alaska Peninsula Area since 1982. Harvest occurred in 2007 for Dungeness crab, Tanner crab and octopus. One emergency order was issued in 2007 that pertained to shellfish fisheries mentioned in this report in the Alaska Peninsula Area (Table 2).

TANNER CRAB

INTRODUCTION

The 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 if the provisions of 5 AAC 35.507 KODIAK, CHIGNIK, AND SOUTH PENINSULA DISTRICTS *C. BAIRDI* TANNER CRAB, HARVEST STRATEGIES are met. Harvest strategies contain a threshold of mature male abundance as well as additional criteria that must be met for each district or section to open to commercial fishing. Mature male abundance is determined annually by a trawl survey conducted by ADF&G on the *R/V Resolution*. The survey data are also used to determine an annual guideline harvest level (GHL). Commercial fisheries remain open until this harvest level is attained unless fishery performance (e.g., declining CPUE or average weights) warrants closure to protect the long-term health of the stocks.

KODIAK DISTRICT

Description of the District

The Kodiak District for Tanner crab is defined as the Pacific Ocean waters of 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 Overlap, Westside, North Mainland, and South Mainland (Figure 2).

Overview of Fishery Regulations

The Kodiak District is a limited entry, super exclusive registration area for Tanner crab fishing. Criteria within the harvest strategy specify that at least two sections in the district must be above the mature male threshold to have a fishery. The total district GHL must be at least 400,000 pounds, with each section having a GHL of 100,000 pounds or more. The Kodiak District has a sliding scale pot limit based on the district GHL that 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 3). Compared to king crab fisheries, the Tanner crab fishery was slower to develop. Consumers did not accept Tanner crab as readily and processing facilities had yet to develop effective meat extraction techniques for canning.

During the 1969/70 season, over eight million pounds were harvested. In 1973, ADF&G initiated a pot survey to estimate relative abundance, predict recruitment trends, and develop annual harvest levels. The fishery continued to grow with annual harvests increasing to 30 million pounds in the mid-1970s. ADF&G implemented an April 30 season closure date in 1975 to protect crab at the onset of the mating and molting season. A minimum carapace width (CW) of 5.5 inches was established in 1976. The commercial fishery peaked during the 1977/78 season when over 33 million pounds were harvested.

Beginning in December 1978, the federal government assumed joint responsibility with the State of Alaska in the EEZ for Tanner crab management. The state managed the resources in the waters from shore to three nautical miles offshore while the federal government managed those from three to 200 nmi offshore under a fishery management plan (FMP). This joint-jurisdiction lasted until 1987, when the state again assumed full management authority for Tanner crab in the Kodiak District for all waters out to 200 nmi offshore.

In the early 1980s, Tanner crab stocks and commercial harvest began to decline. Concerns about the ability of the pot survey to predict recruitment from 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 because they are more efficient and sample a wider range of crab sizes more representative of 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 the harvestable surplus of Tanner crabs in the Kodiak District. The commercial fishery remained closed until the 2000/01 season when the population began to increase. During the six-year closure period a harvest strategy was developed by ADF&G and was adopted by the Alaska Board of Fisheries (BOF) in 1999. This harvest strategy specified minimum population levels (biological thresholds) and minimum guideline harvest levels (management thresholds) to open a commercial fishery.

The following regulations were adopted by the BOF in the 2001/02 cycle, and were in effect starting with the 2002/03 season: 1) The Kodiak District was designated superexclusive for Tanner crab, 2) criteria were adopted to delay the fishery opening for severe weather, 3) if less

than six hours notice was provided for a fishery closure, baited gear may 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, and may be left to soak from 6:00 PM until 7:59 AM.

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 CFEC limitation to participate in the Kodiak District Tanner crab fishery began during the 2003/04 season.

During the 2004/05 cycle the BOF adopted several additional regulations: 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 Southwest Section or the Chignik District opened; 4) the Semidi Island Overlap Section closed by emergency order; and 5) vessels participating in the Semidi Island Overlap Section were required to either report daily or provide daily logbook data.

Overview of the 2006/07 Kodiak District Tanner Crab Season

The Northeast and Eastside sections of the Kodiak District met criteria specified in the harvest strategy for a commercial fishery opening in 2007, with a combined GHL of 800,000 pounds, which was a decrease of 1,300,000 pounds from the 2006 fishery (Table 4). The Northeast Section GHL was set at 100,000 pounds and the Eastside Section GHL was set at 700,000 pounds.

The scheduled opening date for the Kodiak District Tanner crab fishery was January 15 unless the season is delayed due to weather, as outlined in 5 AAC 35.510 FISHING SEASONS FOR REGISTRATION AREA J. The criteria for a weather delay were not met on January 14 and 15 in 2007; therefore, the season opened as scheduled at NOON on January 15. Forty-nine permit holders recorded landings on 49 unique vessels during the 2007 fishery. The total harvest, including deadloss and personal use, was 765,092 pounds from 95 landings. The estimated ex-vessel fishery value was $1.28 million as indicated by the price per pound on fish tickets (Table 3).

A partial section closure occurred in the Northeast Section. The Chiniak Bay portion of the Northeast Section closed at 6:00 PM on January 22. The remainder of the Northeast Section closed at 6:00 PM on January 28 (Table 5). Twenty two vessels harvested 88,584 pounds from the Northeast Section (Table 4). The Northeast Section catch per unit effort or catch of legal crabs per pot (CPUE) averaged 24 crabs during the season.

The Eastside Section waters closed at NOON on January 20. Thirty nine vessels harvested 676,508 pounds from the Eastside Section (Table 4). The Eastside Section CPUE averaged 45 legal crabs per pot.

Northeast Section Fishery

Based on the 2006 trawl survey estimate of abundance, the population of mature male Tanner crab was 1,163,042 crabs (Spalinger 2007), which exceeds the regulatory threshold of 1,123,000 crabs for opening the fishery. Because the population estimate was below the long-term average of mature male abundance, the regulatory harvest strategy prescribed a 10% exploitation rate on molting mature male abundance and not exceeding 30% exploitation on legal-size crabs. This

resulted in a 2007 GHL of 100,000 pounds. Over the course of the fishery, 22 vessels participated in the Northeast Section.

Approximately 13 vessels participated in the vicinity of Chiniak and Kalsin Bays. The number of legal crab per pot (CPUE) varied from the 20s to the high 40s. By January 19, approximately 20,000 pounds had been landed from Chiniak and Kalsin Bays. The inseason target was 25,000 pounds. A closure for Chiniak Bay was announced for January 22. Final harvest from this area was approximately 30,000 pounds.

Vessels moved into Marmot Bay after the closure of Chiniak Bay, and additional vessels moved into the Northeast Section after the Eastside Section closed. Catch rates were highly variable among participants, but generally very low. Several vessels had catch rates less than 10 crab per pot, while the average was about 20, bolstered by two very high catch rates. The entire Northeast Section closed at 6:00 PM on January 28.

Eastside Section Fishery

Based on the 2006 trawl survey estimates of abundance, the population of mature male Tanner crabs was 7,632,290 crabs (Spalinger 2007), well above the regulatory threshold of 1,552,000 crabs for opening the fishery. Because the population estimate was above the long-term average of mature male abundance, the regulatory harvest strategy prescribed a 20% exploitation rate on molting mature abundance, but not exceeding 30% exploitation on legal-size crabs. This resulted in a 2007 GHL of 700,000 pounds, which was approximately half the 1,300,000 pound GHL from the 2005/2006 fishery.

Forty-one vessels registered for the Eastside Section, which was identical to the effort observed the past two seasons. CPUE averaged 45 crab per pot, with most vessels pulling their gear twice per day. Catch rates were generally higher in offshore areas. Catch rates in Kiliuda were lower. A tender offloaded crab from the vessels fishing in Kiliuda Bay once during the season.

The Eastside Section closed at NOON on January 20. Thirty nine vessels fished the Eastside Section, landing 658,987 pounds (Table 4).

Status of Kodiak District Tanner Crab Stocks

The 2007 Kodiak District estimate (186 million crabs of all sizes and sex) was 12% higher than 2006 and more than double the estimate in 2005 (69.2 million crabs) and 2004 (73.1 million crabs). The bulk of the population increase is from the number of males between 71 and 91 mm CW, and the population of legal male Tanner crabs has been steadily decreasing since 2005. 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 2007).

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

east of a line 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 super exclusive registration district for Tanner crab. Vessels larger than 58 feet in overall length may not take Tanner crab in the Chignik District. Criteria within the harvest strategy specify that the district GHL must be at least 200,000 pounds for a commercial fishery to occur.

The following regulations were adopted by the BOF in the 2001/02 cycle (effective in 2003/04): 1) The Chignik District was designated superexclusive for Tanner crab, 2) if less than six hours notice is provided for a fishery closure, baited gear may be left in waters deeper than 25 fathoms for up to three days following the closure, and 3) daily fishing periods were established. When the season is open for a Tanner crab fishery, gear may only be operated from 8:00 AM to 5:59 PM. Gear may be left to soak from 6:00 PM until 7:59 AM.

Additional regulations were adopted by the BOF in the 2004/05 cycle (effective in 2004/05): 1) The requirement that the South Peninsula District must open for the Chiginik District to open was repealed and 2) the pot limit is 30 pots per vessel until the GHL exceeds 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 35.506 (e) (6).

Historic Background

The Chignik District Tanner crab fishery began in 1968 when 21,100 pounds were harvested (Table 6). The fishery peaked during the 1975/76 season when 35 vessels harvested approximately 11.0 million pounds. Annual harvest declined in the late 1970s. Recruitment failures in the early 1980s led to consecutively smaller annual harvests until 1989, 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 Kodiak and South Peninsula Districts. The most productive areas were offshore between Mitrofania Island and Lighthouse Rocks.

ADF&G did not survey the Chignik District until 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 until the 2004/05 season.

Overview of the 2006/07 Chignik District Tanner Crab Season

The Chignik District Tanner crab population was below the threshold to open a commercial fishery.

Status of Chignik District Tanner Crab Stock

The overall crab abundance in the Chignik District dropped from approximately 42.0 million in 2006 to 21 million in 2007 (Spalinger 2008). The 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. Additional criteria within the harvest strategy specify that the district GHL must be at least 200,000 pounds. The pot limit ranges from 30 to 75 pots per vessel depending on the GHL.

The following regulation changes were adopted by the BOF in the 2001/02 cycle, and were in effect for the 2003/04 season. 1) If less than six hours notice is provided for a fishery closure, baited gear may be left in waters deeper than 25 fathoms for up to three days following the closure, and 2) daily fishing periods were established. When the season is open for a Tanner crab fishery, gear may only be operated from 8:00 AM to 5:59 PM. Gear may be left to soak from 6:00 PM until 7:59 AM.

Historic Background

The first harvest of Tanner crab in the South Peninsula District occurred in 1967 when 3,100 pounds were landed (Table 7). The fishery grew quickly and, by the 1972/73 season, the annual harvest exceeded five million pounds. 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 ranged from five to almost nine 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. The fishery was closed from 1990 through 2000 due to the low abundance of legal-sized crab and the lack of recruitment.

In 1999, ADF&G presented the BOF with a comprehensive harvest strategy for Tanner crab in the South Peninsula District. The criteria in the harvest strategy were met for a commercial fishery opening in 2000/01. 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 lasted for four days.

The commercial fishery in the South Peninsula District did not open for the 2001/02 season and remained closed for the 2002/03 and 2003/04 seasons. However, the district did reopen 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 was not separated into any smaller management units (e.g., sections). Concentrations of crabs in a small number of bays or marginally commercial quantities spread across large areas may put the abundance calculation over the threshold needed to open the entire South Peninsula District, while some

portions of the district may not be capable of sustaining a harvest (Urban and Vining 2004). Therefore, ADF&G submitted a proposal to the BOF in 2005 to split the district into two sections at 162° W. longitude. This would allow for the opportunity for a fishery in portions of the district where stocks are capable of sustaining a harvest while protecting other portions of the district where stocks are weak or rebuilding (Urban and Vining 2004). 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 a commercial fishery opening in 2006 (Table 5). The Eastern Section did not meet criteria specified in the harvest strategy for a commercial fishery opening in 2006. Annual harvest from the 2005/06 South Peninsula District fishery, including deadloss, was approximately 287,749 pounds from 47 landings made by a total of 15 unique vessels from the Western Section (Table 7).

Overview of the 2006/07 South Peninsula District Tanner Crab Season

The fishery opened as scheduled on January 15, 2007. Weather on the day of tank inspections and the opening day of the fishery was poor. The weather delayed some of the smaller vessels from leaving port by approximately one half day. During the course of the season, there were many days with high winds, in excess of 40 knots, and rough seas; many fishers used those days to return to port to deliver their catch.

Only six vessels and one cannery participated in the fishery, simplifying management. The processor voluntarily used the Interagency Electronic Reporting System (e-landings) to enter fish tickets. This allowed managers to have real time access to fish ticket and landing data, rather than having to wait a week or more for fish tickets to arrive via the mail.

The fishery closed at 5:59 PM on February 11, 2007. Projected harvest from voluntary catch reports, fish ticket information and cannery landing reports indicated that the 200,000 pound GHL would be attained at the time of closure

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 (Table 7). The estimated exvessel fishery value of $265,297 resulted from an initial payment of $1.60 per pound.

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 density of crab the past two years (Figure 5). From 2006 to 2007 there was an increase in the number of adult females. Egg clutches of 1,141 mature female Tanner crabs were examined during the survey. Approximately 51.2% of the 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. There are no established GHLs for Dungeness crab in the registration area. Dungeness crab are 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. There are no pot limits established for any of the Dungeness crab fishing districts. 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 Registration is nonexclusive for Dungeness crab fishing. In most waters of the Kodiak District, Dungeness crab may be taken from May 1 through January 1. In the waters south of the latitude of the southernmost tip of Boot Point and south of the latitude of the southernmost tip of Cape Ikolik, Dungeness crab may be taken only from June 15 through January 1 (Figure 6).

Historic Background

Dungeness crabs were first harvested commercially in 1962 when 1.9 million pounds were taken (Table 8). Minor increases in recruitment led to slight production increases in harvest during the late 1970s. Prior to 1977, the Dungeness crab fishery was open year round. Closures were first implemented by the BOF from January 1 to April 30 when fishers were unable to operate effectively during winter due to storms. This season change was aimed at reducing the amount of gear left fishing over long periods of time. Some gear had been left fishing all winter without being checked or maintained. The June 15 opening date was set for the south end of Kodiak to avoid high incidences of female red king crab bycatch in Dungeness gear (Figure 6).

During the early 1980s, declines of other commercially harvested Alaskan shellfish created a void in markets that still demanded crab (Jackson 1997). This led to an increase in both effort and harvest of Dungeness crabs in the Kodiak District. A harvest of 5.6 million pounds occurred during the 1981/82 Kodiak District season. Effort peaked during the 1985/86 season when 125 vessels participated in the fishery.

The Kodiak District fishery has been prosecuted primarily on crabs newly recruited to legal size in recent years (Figure 7). The fishery has experienced years of low harvest that correspond to fluctuations in recruitment. Reduced effort may also contribute to decreased fishery production. Participation decreased from 62 vessels in 1991 to only 21 or less since the 1996/97 season.

Another factor limiting interest and effort in the Kodiak District Dungeness crab fishery during the 1990s was a lower market value. The toxin causing paralytic shellfish poisoning (PSP) was documented in the viscera of Dungeness crabs. The Alaska Department of Environmental Conservation (ADEC) placed restrictions on the sale of live and whole cooked crabs beginning in 1992. 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. ADEC restrictions have remained in place since their initial implementation in the early 1990s.

2007/08 Kodiak District Dungeness Crab Season

The 2007/08 fishery opened on May 1 in all areas except Kodiak's south end, which opened on June 15. Twelve vessels harvested 663,077 pounds from 86 landings (Table 8).

Harvest peaked in August; although, harvest continued into November and December (Figure 8). Pounds harvested and CPUE were much higher than in 2006. As in the previous four seasons, the majority of harvest during 2007/08 came from statistical areas around Sitkinak and Tugidak Islands (Table 9).

An average of ten legal crabs per pot were landed during the 2007/08 season. This was the highest CPUE recorded. CPUE has historically been highest in the late summer months, presumably as crabs molt to legal size and are then available to the commercial fishery under '3-S' management.

Price paid per pound in 2007/08 averaged $2.07, up from $1.45 in 2006 (Table 8). The estimated exvessel value for the 2007/08 season was $1.4 million compared to $215,328 in 2006/07.

Dungeness crabs harvested in the Kodiak District had a mean CW of 171 mm in 2007/08, approximately the same since 2002 (Figure 7).

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.

2007/08 Chignik District Dungeness Crab Season

Prior to 2001, the Chignik and Alaska Peninsula Districts were combined. Since the creation of the Chignik District in 2002 until the 2007/08 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 2007/08 season a total of four vessels participated in either the Chignik or South Peninsula District landing approximately 465,000 pounds of Dungeness crab (Table 10).

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 super exclusive 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 10). 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.

2007/08 Alaska Peninsula District Dungeness Crab Fishery

The 2007/08 Alaska Peninsula District Dungeness crab season opened May 1. Data is combined with the Chignik District to maintain confidentiality. During the 2007/08 season a total of four vessels participated in the Chignik or South Peninsula District landing approximately 465,000 pounds of Dungeness crab (Table 10).

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, major red king crab fisheries have occurred in the Kodiak and Alaska Peninsula Areas. Stock size is estimated annually by a trawl survey conducted aboard the *R/V Resolution*. Red king crab fisheries in the Kodiak Area were opened by regulation on September 25 if biomass estimates meet or exceed threshold levels contained in the Harvest Strategy for Kodiak and Bristol Bay Red King Crab and Saint Matthew Island and Pribilof Blue King Crab, Special Publication Number 7 (Pengilly and Schmidt 1995). In 2005, the BOF modified the fishery to open by emergency order rather than a set date in regulation. In the Kodiak Area, a threshold of 5.12 million fertilized females was established in this harvest strategy (Pengilly and Schmidt 1995). The female threshold is further broken down by individual Kodiak management districts.

Additional harvest strategy criteria restrict harvest to only 20% of mature males and caps harvest on legal-sized males at 60% of the estimated legal-sized population. 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. ADF&G manages the golden king crab fishery by commissioner's permit. The Alaska Peninsula Area has not been explored for golden king crabs. In the Kodiak and Alaska Peninsula areas golden king crabs may be harvested from January 1 to December 31. No GHL is established for the golden king crab fishery; however, effort and harvest is closely monitored through the 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.), 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 exclusive registration for red king crab. The Kodiak Area has a sliding scale pot limit based on the GHL that 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. This period in the history of the fishery was exploratory in nature with fishers developing gear, locating commercially harvestable quantities of crab and developing markets for product. In 1960, the king crab season was open year round and 21 million pounds were landed (Table 11). 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 dropped to 12 million pounds by the 1969/70 season. By the 1972/73 season, the decline had reversed and harvests started increasing. The 1972/73 fishery lasted 10 days under a fixed quota system. One district was reopened for an additional eight-day fishery when it was determined that the initial harvest fell almost three million pounds short of the district quota.

During the 1970s, several fishing seasons for crabs with minimum sizes ranging from 7.0 to 8.0 inches (CW) occurred (Table 12). 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. 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 in 13 years of annual population assessments. ADF&G developed a harvest strategy that included a threshold level of 5.1 million female red king crab 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 216 hauls in known king crab habitat. The red king crab population was estimated to be 215,976 animals (up from 113,710 in 2005 and down from 369,779 in 2004), of which 84,648 were legal-sized males (Figure 11; Spalinger 2008). Annual fluctuations in total population size are common when populations, such as Kodiak red king crab, become depressed and localized. The majority of king crabs were located in the Southwest District (Spalinger 2008). The mature female population was estimated to be 74,259 crabs, well below the 5.1 million crab threshold required for a fishery opening. Only 66.9% of the mature female crabs sampled had an estimated ovigerity of 50% or greater. That is an increase from 55.6% of adult female king crabs with clutches of ≥50% fullness in 2006.

GOLDEN KING CRAB

Overview of Fishery Regulations

The Kodiak Area is nonexclusive registration for golden king crab. Pot limits are stated in the commissioner's permit.

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 13). 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.

2007 KODIAK AREA GOLDEN KING CRAB FISHERY

No effort occurred in 2007.

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, 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 largest historic catch of 22.6 million pounds occurred in 1966 (Table 14). Throughout the 1970s and early 1980s, most of the harvest occurred in the Central District with Pavlof Bay being the most productive area. The annual catch in the Unimak Bight District during the same period averaged less than half the annual harvest taken from the Central 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 with the *R/V Resolution*. Data from the survey indicate the red king crab population remains at very low levels. The population estimate for 2007 was the lowest for the last 10 years, at less than 10,000 crabs (Spalinger 2008). Because the stock is at a very low level, and unevenly distributed, population estimates can vary widely each year. 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. Each vessel may operate up to 75 pots to harvest golden king crab.

Historic Background

On occasion, fishers have expressed an interest in exploring the Alaska Peninsula Area for golden king crab. Little to no effort has occurred within the area. In 1983, five vessels registered but no catch was landed. Presently, male golden king crab six inches or greater in CW may be taken from January 1 through December 31 under a permit issued by the commissioner.

2007 ALASKA PENINSULA AREA GOLDEN KING CRAB FISHERY

No vessels registered to fish for golden king crab in the Alaska Peninsula Area during 2007.

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 fishers 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 trawl shrimp. 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 May 15 through 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 pot shrimp. 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 15). The fishery grew rapidly to an annual catch of 12.7 million pounds in 1962. The fishery slowed when shore plants and the fishing fleet were badly damaged by the 1964 earthquake and tsunami, but then quickly surged to a peak Kodiak District harvest of 82.2 million pounds in 1971. As Kodiak shrimp catches declined in the 1970s, 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 fisheries declined sharply thereafter. The northern pink shrimp *Pandalus borealis* has been the most prevalent species contributing over 95% by weight of the harvest. Other species landed included sidestriped *P. dispar*, coonstriped *P. hypsinotus*, spot *P. platyceros* and humpy *P. goniurus* shrimps.

ADF&G initiated a voluntary logbook program in 1967. The resulting database, 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 were to maintain shrimp stocks at a level termed "representative biomass index" (RBI) determined by survey trawls, while allowing for a fishery during rebuilding periods. A minimum level at which any harvest would occur was established and termed the MABI (Table 16).

Concurrent with approval of the WESTWARD REGION SHRIMP MANAGEMENT PLAN, the BOF also enacted an additional management strategy as an "economic alternative" known as the MAINLAND SHRIMP MANAGEMENT PLAN. This alternative strategy allowed 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 information needed for the sustainability of the fishery. This left only the General Section comprising offshore areas open annually from June 15 through February 28. Much of the state waters within the General Section are closed to non-pelagic trawls, including otter and beam shrimp trawl nets.

ADF&G requires vessels registering in the General Section to provide logbooks for fishery management and research. There has been little commercial trawl effort in the General Section since the 1986/87 season.

Pot fishing for shrimp has been recorded since 1969 in the Kodiak District but it has never been a large fishery (Jackson and Ruccio 2003). The largest landing of product was less than 19,000 pounds of spot shrimp tails in 1983 (Table 17). The North Afognak, West Afognak, and Mainland sections of the Kodiak 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 amended 5 AAC 31.590 WESTWARD AREA SHRIMP FISHERIES MANAGEMENT PLAN to contain conservative management tools to allow pot shrimp fishing opportunities in these areas. Season dates, a guideline harvest range (GHR), and a mandatory logbook requirement was adopted. These new regulations became effective July 1, 2003. In all other areas, shrimp may be taken year round with pots, and ADF&G requests that logbooks be submitted with fish tickets.

Overview of Fishery Regulations

To participate in commercial shrimp fishing in the Kodiak District, a vessel operator is required to obtain a shellfish registration from ADF&G and an interim use permit card from CFEC. Effective July 1, 2003, 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. There is a GHR of 0 to 40,000 pounds whole weight for these three sections, and no more than 15,000 pounds may be harvested from an individual section during a calendar year[1]. Logbooks are required of fishers targeting shrimp in the North Afognak, West Afognak, and Mainland Sections.

2007/08 KODIAK DISTRICT SHRIMP POT AND TRAWL SEASONS

There was no fishing effort for pot shrimp in 2007/08.

STATUS OF KODIAK DISTRICT SHRIMP STOCKS

ADF&G conducts trawl surveys to assess shrimp biomass. In recent years, surveys have been conducted every three years in the Kodiak District. Beginning in 2003, portions of the Kodiak District were surveyed on an annual basis. Most of the General Section is not surveyed nor is there any established MABI in the General Section. In the Kodiak District, the highest catch of shrimp per mile towed was found in Marmot and Wide Bays (Jackson 2008). 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 16).

Trawl gear does not adequately sample the rocky habitat typically associated with shrimps taken by pot gear. Therefore, no inferences about spot and coonstriped shrimps 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 and 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 further divided into nine sections: Kujulik Bay, Chignik Bay, Kuiukta Bay, Mitrofania Island, Ivanof Bay, Chiginagak Bay, Seal Cape, Nakalilok Bay, and Aniakchak Bay sections (Figure 15). The offshore waters in the Chignik District are not assigned sections.

The South Peninsula District for shrimp includes all waters west of a line from Kupreanof Point to the easternmost point of Castle Rock, and west of a line extending 135° southeast from the easternmost point of Castle Rock and Pacific Ocean waters east of the longitude of Cape Sarichef. The South Peninsula District is further 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 assigned sections.

Historic Background

Shrimp fishing in the South Peninsula and Chignik districts began in 1968, but catch levels remained relatively low until the 1972/73 season when 14.7 million pounds were harvested from the South Peninsula District and 4.8 million pounds were harvested from the Chignik District (Table 18). The historic high catch was reached in the 1977/78 season. Catches declined rapidly until 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 the 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.

Overview of Fishery Regulations

The shrimp fisheries that occur in the Chignik and South Peninsula districts are part of Registration Area J. All of Registration Area J 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 that estimated shrimp populations are above established thresholds. The majority of the sections in these two districts are open and closed by emergency order when abundance thresholds are met or exceeded. The remaining waters of the Chignik and South Peninsula districts, similar to the General Section of the Kodiak District, 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. There is a GHR of 0 to 40,000 pounds whole weight for these three sections, and no more than 15,000 pounds may be harvested from an individual section during a calendar year. Logbooks are required of fishers targeting shrimp in the Chiginagak, Nakalilok, and Aniakchak Bay sections. 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 Season

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 not surveyed in 2007. Shrimp abundance indices from the 2006 survey were below MABI levels in all South Peninsula and Chignik district sections that were surveyed (Table 16). Shrimp densities within the South Peninsula and Chignik districts were similar to those found during the 1995, 2002 and 2004 surveys (Jackson 2006).

RED SEA CUCUMBER

Introduction

The red sea cucumber fishery in the Kodiak, Chignik, and South Peninsula districts is part of miscellaneous shellfish Registration Area J. The sea cucumber dive fisheries are nonexclusive registration fisheries. The districts and sections in use for Tanner crab management are used to delineate sea cucumber management. Sea cucumber fisheries are open by regulation from October 1 through April 30 under the 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 about October 1. Most sections are opened from 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 at the time of landing, with the ADF&G copy of the fish ticket. Each diver is required to have a CFEC permit 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 southern

most 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 19). 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.

In February of 1994, ADF&G announced several management measures intended to prevent over harvest of the red sea cucumber resource. 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. Management areas based on the Tanner crab fishing sections were utilized in the Kodiak District in an attempt to distribute effort and harvest around the island and prevent localized depletion. A GHL was set for each of the 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 fishery was reopened April 1, 1994 and closed on April 30.

Following the May 1 to September 30 closure in 1994, ADF&G again opened the Kodiak and Chignik districts to red sea cucumber fishing. GHLs for the Kodiak and Chignik districts combined during the 1994/95 season totaled 225,000 pounds with three day weekly fishing periods. The shortened fishing periods were set to allow ADF&G a better opportunity to assess inseason fishery performance. GHLs were quickly reached in the sections surrounding Kodiak Island.

The 1995/96 sea cucumber fishing season opened on October 1, 1995. Evaluation of another year of fishery performance resulted in a decreased GHL. The GHL for the Kodiak District was 135,000 pounds, and the Chignik District GHL was set at 25,000 pounds. Effort again concentrated on the Eastside, Southeast, Southwest, and Westside sections of Kodiak. Although outlying areas along the Alaska Peninsula have historically remained open for the duration of the regulatory season, divers were reluctant to cross Shelikof Strait due to stormy weather and the expectation of marginal returns. From 1998-2004, the fishery in the Kodiak District has followed a similar pattern of approximately five fishing periods of varying length occurring before the areas around Kodiak Island obtained their respective GHLs and were closed for the season. The development of sea cucumber dive fisheries in both Kodiak and Chignik are very closely related. Therefore, the Chignik District information will continue to be reported in the Kodiak section of this report.

2007/08 KODIAK AND CHIGNIK DISTRICTS RED SEA CUCUMBER SEASON

The 2007/08 fishery was opened October 1, 2007. The 2007/08 GHL for the Kodiak District totaled 140,000 pounds of eviscerated product (Table 20). The GHL for Uganik Bay was eliminated due to poor fishery performance in previous seasons. The Chignik District GHL was 25,000 pounds. With only one processor purchasing sea cucumbers, all of the harvest data remains confidential. The Eastside, Southeast, Southwest, and Westside sections of the Kodiak Area were closed by emergency order to prevent divers from exceeding the GHLs.

There were a total of four fishing periods and twelve days of fishing. All sections in the Kodiak District except the Northeast and Mainland sections closed.

While fishing in the Chignik District historically has occurred in the spring, there was no effort in the Chignik District during the 2007/08 fishery.

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, especially 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. Very little effort has historically occurred in the South Peninsula District for red sea cucumbers. Effort occurred in the 1994 season with three divers. The catch during this season remains confidential as only one diver made a landing. There have been no landings in the South Peninsula District since 1994.

2007/08 SOUTH PENINSULA DISTRICT RED SEA CUCUMBER SEASON

No fishing occurred during the 2007/08 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

Fishers participate in the green sea urchin fishery under the terms of a miscellaneous shellfish permit as authorized in 5 AAC 38.062. Commercial fishing is allowed from October 1 to January 31. Sea urchins may be taken only by hand picking, which may be aided by the use of diving

gear, an abalone iron, or a sea urchin rake. A valid CFEC interim use permit card and registration are required. Logbooks are mandatory and must be submitted with completed fish tickets. 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

The green sea urchin was 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 in Kodiak until 1985 when several thousand pounds were harvested. In 1986, the harvest increased with more divers participating. Peak harvest occurred in 1988 at 190,509 pounds (Table 21). Kodiak green sea urchins are usually shipped live to Japan for processing.

In 2000, ADF&G developed conservative GHLs for the green sea urchin fisheries based on historic harvest information. The sections utilized for Tanner crab and red sea cucumber management were adopted for green sea urchin management. Sections that lacked historic harvest data were assigned a 5,000 pound GHL (Table 20). Sections that had been previously explored and had some prior harvest were assigned a 10,000 pound GHL to help prevent local depletion. ADF&G will work closely with fishery participants to collect baseline biological data from the green sea urchin fishery.

2007/08 GREEN SEA URCHIN SEASON

No divers were registered for the 2007/08 green sea urchin season in the Kodiak Area.

STATUS OF GREEN SEA URCHIN STOCKS

No stock assessment work is currently being done on green sea urchin populations in the Kodiak and Alaska Peninsula areas. Given the low effort levels in the fishery, data from logbooks on CPUE varies widely and does not lend itself to inferences on stock status. Fishery information indicates the biomass is not large when compared to other areas on the Pacific coast and when compared to an annual worldwide sea urchin harvest estimated at 100 million pounds (Lourie and Sanders 2000).

OCTOPUS

INTRODUCTION

Harvest of the giant Pacific octopus occurs in the Kodiak, Chignik, orSouth Peninsula districts of miscellaneous shellfish Registration Area J. There is no closed season for directed octopus fisheries; however, fisheries may only occur under the authority 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. Vessel operators may retain octopus bycatch up to 20% of their target species weight with any valid CFEC permit card. Vessel operators registered for an octopus fishery may only retain permissible bycatch levels of other species. As part of the commissioner's permit requirements, individuals targeting octopus are required to maintain a logbook. No GHLs are established for octopus fisheries.

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. Before 1985, no distinction between state and federal waters was made regarding octopus harvest. In the period from 1977 to 1984, 51,479 pounds were harvested from state and federal waters in the Kodiak District. During these years the highest recorded harvest in the Kodiak District occurred in 1980 with 19,342 pounds. Much of the octopus harvested was used as bait or kept for personal consumption and was not reported on fish tickets. Harvests were likely higher than indicated.

The octopus fishery experienced a dramatic increase in the 1990s. The decline of many crab stocks in the Gulf of Alaska resulted in reduced harvest opportunity or fishery closures for many of the crab fisheries that had been prosecuted from late fall to early spring with pot gear. To fill the void, many pot-gear fishers turned to Pacific cod in those months. In turn, octopus retention increased during Pacific cod fisheries. ADF&G worked with industry to ensure that all octopus harvest, particularly harvests that were not sold but retained as bait, was 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. Octopus has long been sought as bait in the Pacific halibut *Hippoglossus stenolepis* longline fisheries and in the Pacific cod pot fisheries. Periodic episodes of favorable market conditions also resulted in large amounts of octopus sold to processors.

Historically, the majority of octopus harvest in the Kodiak, Chignik, and South Peninsula districts has occurred within state waters (Tables 22 and 23). In 1991, there were 106,748 pounds of octopus harvested from state waters in the Kodiak Area. In that same year, 22,607 pounds of octopus were harvested from federal waters in the Kodiak Area. Octopus harvests declined substantially in the mid-1990s, then rebounded sharply with the advent of the state-waters Pacific cod fisheries in 1997. In the Kodiak District, harvest reached a record high in 1998 with a combined state and federal harvest of 375,379 pounds. In the Chignik and South Peninsula districts, harvest reached a record high in 2004 with a combined harvest of 330,192 pounds.

2007 KODIAK DISTRICT OCTOPUS FISHERY

No vessels registered to target octopus in 2007. The 2007 incidental harvest of octopus in the Kodiak District totaled 312,128 pounds from state and federal waters. Thirty-five vessels harvested 122,192 pounds from 116 landings in state waters. A total of 189,939 pounds were harvested from federal waters by 44 vessels making 220 landings. Fish tickets with price information listed an average of $0.40 per pound for an estimated exvessel fishery value of $124,851 for the state and federal water harvest combined.

2007 ALASKA PENINSULA AND CHIGNIK DISTRICTS OCTOPUS FISHERIES

No vessel registered for directed fishing of octopus in the Chignik and South Peninsula districts in 2007. The 2007 incidental harvest of octopus in the Chignik and South Peninsula districts totaled 123,047 pounds from state and federal waters. Fifty five vessels harvested 98,000 pounds

from 268 landings in state waters. A total of 25,047 pounds were harvested from federal waters by 28 vessels making 57 landings. Fish tickets with price information listed an average of $0.41 per pound for an estimated exvessel fishery value of $49,998 for the state and federal water harvest combined.

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 be harvested only under the authority of a commissioner's permit. There are no established GHLs for clam fisheries.

HISTORIC BACKGROUND

Razor clams have been harvested in the Kodiak Management Area from the early 1920s through 1986 (Table 24). 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 somewhat 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 a decline in harvests. Commercial harvesting of clams for human consumption has not been re-established and the fishery has been strictly hand digging for use as bait in the Dungeness crab fishery. The certification program conducted by the DEC 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 by the current policy of the U.S. Park Service that dictates a ban on camping in the monument in support of a business enterprise. 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

The potential for a razor clam harvest in the Kodiak District has been established by historic catch records and studies conducted by ADF&G. These studies, however, were conducted in the mid-1970s and are of little benefit in judging current stock status. No commercial activity has occurred in this area since 1986.

OTHER MISCELLANEOUS SHELLFISH FISHERIES

There has been minimal interest in harvesting other miscellaneous shellfish in the Kodiak, Chignik, and South Peninsula areas. Request for fishing permits 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 shellfish regulations.

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TABLES AND FIGURES

Table 1.–Shellfish emergency orders issued for the Kodiak Area, 2007.

Emergency Order	Effective Date	Explanation
Tanner Crab		
4-S-02-07	1/20/2007	Closed the Eastside Section to Tanner crab fishing for the remainder of the 2006/2007 season.
4-S-03-07	1/22/2007	Closed Chiniak, Kalsin, Middle, and Womens bays to Tanner crab fishing for the remainder of the 2006/2007 season.
4-S-04-07	1/28/2007	Closed the Northeast Section to Tanner crab fishing for the remainder of the 2006/2007 season.
Sea Cucumber		
4-S-06-07	10/1/2007	Opened the Kodiak District for the first 48-hour fishing period for red sea cucumbers.
4-S-07-07	10/8/2007	Opened the Southeast and Eastside sections for a 48 hour fishing period; opened the Westside and Northeast sections for a 72 hour fishing period for red sea cucumbers; opened the Southwest Section for a 24 hour fishing period.
4-S-08-07	10/14/2007	Closed the Southeast and Southwest sections for the remainder of the 2007/08 season. Opened the Eastside Section for 36 hours; opened the Westside Section for 48 hours; and the remainder of the Kodiak District for a 72 hour fishing period for red sea cucumbers.
4-S-09-07	10/21/2007	Closed the Eastside Section for the remainder of the 2007/2008 season. Opened the Westside Section for a 10 hour fishing period and the Mainland and Northeast sections of the Kodiak District for a 72 hour fishing period for red sea cucumbers.

Table 2.–Shellfish emergency orders issued for the Alaska Peninsula Management Area, 2007.

Emergency Order	Effective Date	Explanation
Tanner Crab		
4-S-05-07	2/11/2007	Closed the South Peninsula District to Tanner crab fishing for the remainder of the 2006/2007 season.

Table 3.–Tanner crab commercial catch, effort, and value for the Kodiak District, 1967 – 2006/07.

Year/Season	GHL	Number				Pots Lifted	Average CPUE	Average Weight	Average Price ($) Per Pound	Exvessel Value ($; millions)
		Vessels	Landings	Crabs[a]	Pounds[a]					
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	217	710	4,540,114	11,947,696	176,215	26	2.6	$1.96	NA
1985/86	NA	234	603	3,454,957	8,990,612	160,220	22	2.6	$1.97	NA
1986/87	NA	190	506	1,832,962	4,839,446	111,198	16	2.6	$2.64	NA
1987/88	NA	178	560	1,648,064	3,959,504	103,391	16	2.4	$2.27	NA
1988/89	NA	171	566	2,096,540	5,185,563	86,056	24	2.5	$2.84	NA
1989/90	NA	232	547	1,437,905	3,446,937	96,956	15	2.4	$2.64	NA
1990/91	NA	137	445	764,357	1,917,713	54,110	14	2.5	$1.56	NA
1991/92	NA	143	434	982,391	2,400,213	47,384	21	2.4	$2.23	NA
1992/93	NA	140	353	518,982	1,318,446	43,528	12	2.5	$2.11	NA
1993/94	NA	130	379	511,131	1,253,462	41,587	12	2.5	$2.25	NA

-continued-

Table 3.–Page 2 of 2.

Year/Season	GHL	Number				Pots	Average	Average	Average Price	Exvessel Value
		Vessels	Landings	Crabs[a]	Pounds[a]	Lifted	CPUE	Weight	($) Per Pound	($; millions)
1994/95 - 1999/00					NO COMMERCIAL FISHERY					
2000/01	500,000	144	192	193,138	510,407	7,233	27	2.6	$2.08	$1.10
2001/02	500,000	181	279	146,655	361,166	10,446	14	2.5	$2.20	$0.79
2002/03	510,000	72	276	215,594	511,324	11,108	19	2.4	$2.48	$1.26
2003/04	795,000	66	251	254,990	566,218	15,491	16	2.2	$2.31	$1.31
2004/05	1,750,000	86	287	776,188	1,800,197	21,399	36	2.3	$1.71	$3.08
2005/06	2,100,000	67	248	889,748	2,121,384	21,962	41	2.4	$1.44	$3.05
2006/07	800,000	49	95	316,732	765,092	7,753	41	2.4	$1.70	$1.28
5 year average	1,191,00	68	23	490,650	1,152,843	15,54	3	2.	$1.93	$2.00

Note: NA= not available

[a] Includes deadloss

[b] 5 year average is last 5 years of fishery data (2002/03-2006/07)

Table 4.–Tanner crab guideline harvest level, effort, and harvest by section for the Kodiak District, 2003/04 – 2006/07.

Year	Section[a]	GHL	Vessels	Permits	Harvest	Pots Lifted	CPUE[b]
2003/04							
	Northeast	245,000	43	44	259,572	6,281	19
	Eastside	450,000	20	20	219,980	6,781	15
	Southeast	100,000	15	16	86,666	2,429	16
	Southwest	Closed					
	Semidi	Closed					
	Total	795,000	66[c]	68	566,218	15,491	16
2004/05							
	Northeast	550,000	43	43	467,516	6,876	25
	Eastside	650,000	27	27	665,339	8,607	33
	Southeast	100,000	9	9	92,398	1,711	20
	Southwest	450,000	20	20	574,944	4,021	56
	Semidi	NA	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	Total[c]	1,750,000	86[c]	86	1,800,197	21,399	36
2005/06							
	Northeast	550,000	41	42	519,730	8,565	27
	Eastside	1,300,000	43	43	1,302,378	10,478	51
	Southeast	100,000	9	9	130,292	1,489	35
	Southwest	150,000	7	7	168,984	1,108	61
	Semidi	NA	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL	CONFIDENTIAL
	Total[c]	2,100,000	67[c]	68	2,121,384	21,640	41
2006/07							
	Northeast	100,000	22	22	88,584	1,613	24
	Eastside	700,000	39	39	676,508	6,034	45
	Total	800,000	49[b]	49	765,092	7,647	40

[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 5.–Kodiak, Chignik, and South Peninsula districts Tanner crab guideline harvest levels and season dates, 2006/07.

District/Section	GHL (pounds)	Opening date/time	Partial closure/time	Closure date/time
Kodiak				
Northeast	100,000	January 15/ Noon	January 22/6:00 PM[a]	January 28/ 6:00 PM
Eastside	700,000	January 15/ Noon	none	January 20/ Noon
Southeast		NO COMMERCIAL FISHERY		
Southwest		NO COMMERCIAL FISHERY		
Westside		NO COMMERCIAL FISHERY		
North Mainland		NO COMMERCIAL FISHERY		
South Mainland		NO COMMERCIAL FISHERY		
Semidi Island		NO COMMERCIAL FISHERY		
Chignik		NO COMMERCIAL FISHERY		
South Peninsula				
Eastern		NO COMMERCIAL FISHERY		
Western	200,000	January 15/ Noon	none	February 11/ 5:59 PM

[a] Partial closure of the Northeast Section (Chiniak Bay)

Table 6.–Tanner crab commercial catch, effort, and value for the Chignik District, 1968 – 2006/07.

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	2,724,509	11,201,900	52,381	52	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	17	41	269,724	659,043	14,665	18	2.4	$1.09
1984/85	NA	15	27	162,448	375,476	15,708	10	2.3	$1.42
1985/86	NA	6	12	85,697	188,162	7,435	12	2.2	$1.97
1986/87	NA	10	20	89,329	195,060	7,052	13	2.2	$2.28
1987/88	NA	6	11	87,148	183,111	6,544	13	2.1	$2.33
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	23	59	186,706	415,111	7,456	25	2.2	$1.65
2005/06	200,000	4	7	57,547	143,164	2,037	28	2.5	$1.20
2006/07	NO COMMERCIAL FISHERY								
5 year average [a]		10	26	112,640	251,913	6,587	19	2.3	$2.10

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 7.–Tanner crab commercial catch, effort, and value for the South Peninsula District, 1967 – 2006/07.

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	184	1,097,182	2,549,686	47,465	23	2.3	$1.42
1985/86	3,900,000	74	187	1,589,759	3,781,950	65,078	24	2.4	$1.72
1986/87	2,000,000	54	106	950,300	2,400,784	37,511	25	2.5	$2.03
1987/88	3,431,000	73	148	1,359,371	3,328,809	52,516	26	2.4	$2.20
1988/89	700,000	65	87	433,112	1,055,082	27,958	15	2.4	$2.70
1989/90 - 1999/00	NO COMMERCIAL FISHERY								
2000/01	375,000	55	67	107,653	258,631	4,426	24	2.4	$1.24
2001/02 - 2003/04	NO COMMERCIAL FISHERY								
2004/05	300,000	43	68	134,019	295,741	5,710	23	2.2	$1.63
2005/06	290,000	15	47	126,383	287,749	3,703	34	2.3	$1.23
2006/07	200,000	6	15	74,187	165,811	1,959	38	2.2	$1.60
5 year average [a]	373,000	37	57	175,071	412,603	8,751	27	2.3	$1.68

Note: NA = not available

[a] 5 year average is last 5 years of fishery data (1988/89, 2000/01 and 2004/05-2006/07)

Table 8.–Dungeness crab commercial catch, effort, and value for the Kodiak District, 1962 – 2007/08.

Year/Season	Number Vessels	Number Landings	Number Crab	Number 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

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Table 8.-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
5 year average	13	74	196,161	404,347	50,132	5,307	5	$1.55	$657,283

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 9.–Harvest, vessels, and landings by statistical area from the Kodiak District Dungeness crab fisheries, 2003/04 – 2007/08.

	2003/04			2004/05			2005/06			2006/07			2007/08		
Statistical Area	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]
525701	11	46	127,049	4	27	70,299	5	33	69,346	5	18	33,850	3	25	60,622
525703	3	22	48,026	3	14	23,979	3	18	39,331	4	12	12,828	CONFIDENTIAL		
525733	7	32	59,952	4	7	6,641	9	43	17,743	7	30	7,339	3	23	6,483
535705			42,582	3	15	27,425	CONFIDENTIAL			CONFIDENTIAL			3	26	39,082
545601	3	20	138,021	4	17	159,253	3	10	187,078	CONFIDENTIAL			4	34	221,937
545602	0	0	0	CONFIDENTIAL			0	0	0	0	0	0	CONFIDENTIAL		
545632	CONFIDENTIAL			3	10	13,285	4	13	15,576	CONFIDENTIAL			3	27	45,146
Other	11	23	20,825 [b]	5	18	51,104 [c]	10	37	61,473 [d]	5	37	28,156 [d]	12	239	253,255 [e]
Total[f, g]	21	89	436,455	16	59	351,986	23	79	390,547	12	62	82,173	12	374	626,525

[a] Includes deadloss

[b] Total of 8 statistical areas

[c] Total of 7 statistical areas

[d] Total of 9 statistical areas

[e] Total of 9 statistical areas

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

[g] Total does not include confidential data

Table 10.–Dungeness crab commercial catch, effort, and value for the Alaska Peninsula and Chignik districts combined, 1968 – 2007/08.

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	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

Notes: In 2001 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] Harvest combined to maintain confidentiality

Table 11.–Red king crab commercial catch, effort, and value for the Kodiak Area, 1960/61 – 2007/08.

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
NO COMMERCIAL FISHERY SINCE 1982/83 SEASON								

Notes: 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
August 15 – January 15 from 1969/70 – 1982/83

Table 12.–Kodiak Area red king crab harvest composition and seasons, 1960/61 – 2007/08.

Season	Open	Closed	Catch Million Pounds	Percent Recruits[a]	Percent Post -Recruits	Size Limit (Inches)
1960/61	1-Jul	30-Jun	21.1	8	92	6.5
1961/62	1-Jul	30-Jun	29.0	36	64	6.5
1962/63	1-Jul	30-Jun	37.6	26	74	6.5
1963/64	1-Jul	30-Jun	37.7	33	67	7.0
1964/65	1-Jul	30-Jun	41.6	48	52	7.0
1965/66	1-Jul	30-Apr	94.4	35	65	7.0
1966/67	1-Jul	30-Apr	73.8	28	72	7.0
1967/68	1-Jul	30-Apr	43.4	27	73	7.0
1968/69	15-Jun	31-Mar	18.2	61	39	7.0
1969/70	15-Aug	15-Jan	12.2	59	41	7.0
1970/71	15-Aug	15-Jan	11.7	38	62	7.0
1971/72	15-Aug	29-Oct	10.9	75	25	7.0
1972/73	15-Aug	13-Oct	15.5	47	53	7.0
1973/74	15-Aug	25-Oct	14.4	49	51	7.0
1974/75	15-Aug	21-Sep	20.9	52	48	7.0
	15-Oct	15-Jan	2.6	3	97	8.0
1975/76	15-Aug	20-Oct	21.6	48	52	7.0
	20-Oct	1-Dec	2.5	3	97	8.0
1976/77	1-Sep	16-Oct	14.9	33	67	7.0
	1-Dec	15-Jan	3.1	1	100	8.0
1977/78	15-Sep	30-Nov	11.7	37	63	7.0
	1-Dec	15-Jan	1.8	1	99	8.0
1978/79	10-Sep	30-Nov	10.3	44	56	7.0
	1-Dec	15-Jan	1.7	15	85	7.5
1979/80	10-Sep	30-Nov	13.4	70	30	7.0
	1-Dec	15-Jan	1.2	30	70	7.5
1980/81	15-Sep	30-Nov	18.4	69	31	7.0
	1-Dec	15-Jan	2.1	22	78	7.5
1981/82	15-Sep	15-Dec	20.3	61	39	7.0
	15-Dec	15-Jan	3.9	7	93	7.5
1982/83	1-Sep	10-Dec	7.5	46	54	7.0
	10-Dec	19-Dec	1.2	19	81	7.5
NO COMMERCIAL FISHERY SINCE 1982/83 SEASON						

[a] Recruitment after 1963 based on 7" size limit

Table 13.–Golden king crab commercial catch, effort, and value for the Kodiak Area, 1983 – 2007.

Year	Vessels	Landings	No. of Crab[a]	No. of Pounds[a]	Pots Lifted	Average CPUE	Average Weight of Crab	Average Price Per ($) Pound	Exvessel Value ($; Millions)
1983	12	36	16,349	111,398	8,490	2.0	6.8	$3.00	$0.3
1984	6	8	3,513	22,066	1,950	2.0	6.3	$2.50	$0.1
1985	4	19	10,005	63,641	2,693	4.0	6.4	$1.95	$0.1
1986	4	31	21,862	146,478	5,463	4.0	6.7	$3.00	$0.4
1987	5	38	9,484	67,191	3,187	3.0	7.1	$3.44	$0.2
1988					CONFIDENTIAL				
1989					CONFIDENTIAL				
1990	6	6	1,214	7,314	1,090	1.0	6.0	$3.00	$0.2
1991	0	0	0	0	0	NA	NA	NA	NA
1992					CONFIDENTIAL				
1993					CONFIDENTIAL				
1994	0	0	0	0	0	NA	NA	NA	NA
1995					CONFIDENTIAL				
1996	0	0	0	0	0	NA	NA	NA	NA
1997	0	0	0	0	0	NA	NA	NA	NA
1998	0	0	0	0	0	NA	NA	NA	NA
1999	0	0	0	0	0	NA	NA	NA	NA
2000					CONFIDENTIAL				
2001					CONFIDENTIAL				
2002					CONFIDENTIAL				
2003					CONFIDENTIAL				
2004					CONFIDENTIAL				
2005	0	0	0	0	0	NA	NA	NA	NA
2006	0	0	0	0	0	NA	NA	NA	NA
2007	0	0	0	0	0	NA	NA	NA	NA

Notes: NA = not available

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

[a] Includes deadloss

Table 14.–Red king crab commercial catch, effort, and value for the Alaska Peninsula Area, 1947 – 2007/08.

	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 - 2007/08	NO COMMERCIAL FISHERY SINCE 1982/83 SEASON							

Note: NA= not available

[a] Combined 6.5 inch and 7.5 inch seasons

Table 15.–Shrimp trawl fishery catch, and value for the Kodiak District, 1958 – 2007/08.

Year/Season	Vessels	Landings	Harvest in Pounds	Average Price ($) Per Pound
1958	NA	NA	31,886	$0.04
1959	NA	NA	2,861,900	$0.04
1960	11	94	3,197,985	$0.04
1961	12	203	11,083,500	$0.04
1962	11	204	12,654,027	$0.04
1963	NA	NA	10,118,472	$0.04
1964	6	NA	4,339,114	$0.04
1965	11	320	13,823,061	$0.04
1966	17	551	24,097,141	$0.05
1967	23	NA	38,267,856	$0.05
1968	16	NA	34,468,713	$0.04
1969	26	935	41,353,461	$0.06
1970	18	1,024	62,181,204	$0.04
1971	49	1,746	82,153,724	$0.04
1972	63	1,398	58,352,319	$0.04
1973	50	1,283	70,511,477	$0.06
1973/74	63	1,029	56,203,992	$0.08
1974/75	75	1,100	58,235,982	$0.08
1975/76	58	884	49,086,591	$0.08
1976/77	62	762	46,712,083	$0.10
1977/78	58	653	26,409,366	$0.13
1978/79	50	328	20,506,021	$0.17
1979/80	37	242	12,863,536	$0.23
1980/81	67	462	27,101,218	$0.29
1981/82	55	298	19,112,367	$0.27
1982/83	40	224	10,391,207	$0.27
1983/84	14	63	2,779,030	$0.35
1984/85	13	59	2,942,922	$0.33
1985/86			CONFIDENTIAL	
1986/87			CONFIDENTIAL	
1987/88			CONFIDENTIAL	
1988/89	0	0	0	0
1989/90	0	0	0	0

-continued-

Table 15.–Page 2 of 2.

Year/Season	Vessels	Landings	Harvest in Pounds	Average Price ($) Per Pound
1990/91	0	0	0	0
1991/92	0	0	0	0
1992/93	0	0	0	0
1993/94	3	3	1,704	NA
1994/95	0	0	0	0
1995/96	0	0	0	0
1996/97			CONFIDENTIAL	
1997/98			CONFIDENTIAL	
1998/99	5	8	12,724	NA
1999/00	3	4	4,325	NA
2000/01			CONFIDENTIAL	
2001/02			CONFIDENTIAL	
2002/03			CONFIDENTIAL	
2003/04			CONFIDENTIAL	
2004/05	0	0	0	0
2005/06	0	0	0	0
2006/07	0	0	0	0
2007/08	0	0	0	0

Notes: NA = Not available
Confidential = less than 3 vessels participated or less than 3 processors purchased product

Table 16.–Shrimp minimum acceptable biomass indices (MABI) and population estimates in metric tons from surveyed districts and sections, 1998 – 2007.

District	Section	MABI [a]	2007	2006	2005	2004	2003	2002	2001	1998
Kodiak	Inner Marmot Bay	1,652	502	714	445	498	423	604	1,089	247
	Marmot Island	11,615	1,152	1,631	1,182	809	1,407	1,315	1,703	230
	Chiniak Bay	658	12	-	31	14	84	52	311	44
	Ugak Bay	1,815	8	-	10	-	2	-	46	0
	Kiliuda Bay	2,405	27	-	19	-	146	198	51	74
	Two Headed Island	3,312	81	-	81	-	4	-	66	65
	Alitak Bay	1,942	57	-	120	-	130	-	282	107
	Uyak Bay	1,447	102	-	326	-	439	-	306	163
	Uganik Bay	1,175	68	-	297	-	403	-	704	129
	Kukak Bay[b]	NA	34	-	41	-	68	-	187	44
	Wide Bay[b]	476	**670**	168	217	365	384	**880**	**967**	-
	Puale Bay[b]	540	3	-	22	-	40	-	47	-
	Shelikof Strait	NA	-	1,065	7,732	1,362	8,527	-	1,062	-
	Alitak Flats	577	-	-	-	-	30	-	-	-
Chignik	Kujulik Bay	1,715	-	143	-	-	-	11	-	-
	Chignik Bay	2,064	-	911	-	580	-	506	-	-
	Chiginagak Bay	314	-	-	-	44	-	-	-	-
	Nakalilok Bay	373	-	-	-	40	-	-	-	-
	Kuiukta Bay	862	-	180	-	226	-	167	-	-
	Mitrofania Island	2,341	-	-	-	3	-	97	-	-
	Ivanof Bay	2,586	-	-	-	-	-	8	-	-
South	Stepovak Bay	10,526	-	1,095	-	101	-	370	-	-
Peninsula	Unga Strait	3,412	-	944	-	272	-	115	-	-
	Beaver Bay	1,978	-	-	-	1	-	10	-	-
	Pavlof Bay	8,221	6	10	61	64	8	38	30	59
	Morzhovoi Bay	NA	-	19	-	-	-	-	-	-

Notes: NA = No MABI established for survey area

- = Not surveyed

BOLD indicates population estimate above established MABI

[a] Minimum acceptable biomass index

[b] Kukak, Wide, and Puale bays are part of the Mainland Section; MABIs are established for each bay

Table 17.–Shrimp pot fishery catch and effort for the Kodiak District, 1985 – 2007.

Year	Vessels	Landings	Pounds[a]
1985	8	37	1,164,244
1986	4	18	457,063
1987	0	0	0
1988	3	4	11,372
1989		CONFIDENTIAL	
1990		CONFIDENTIAL	
1991	0	0	0
1992	0	0	0
1993	3	3	1,704
1994			
1995	0	0	0
1996		CONFIDENTIAL	
1997		CONFIDENTIAL	
1998	5	8	11,919
1999	4	6	5,824
2000		CONFIDENTIAL	
2001		CONFIDENTIAL	
2002		CONFIDENTIAL	
2003		CONFIDENTIAL	
2004		CONFIDENTIAL	
2005		CONFIDENTIAL	
2006	0	0	0
2007	0	0	0
Total[b]			77,997

Notes: NA = not available

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

[a] Pounds are weight of shrimp tails

[b] Does not include confidential pounds

Table 18.–Trawl shrimp fishery catch, effort, and value for the South Peninsula and Chignik districts, 1968 – 2007/08.

	SOUTH PENINSULA				CHIGNIK			
	Number			Average Price	Number			Average Price
Year	Vessels	Landings	Pounds	($) Per Pound	Vessels	Landings	Pounds	($) Per Pound
1968			CONFIDENTIAL				CONFIDENTIAL	
1969			CONFIDENTIAL				CONFIDENTIAL	
1970	4	173	4,398,800	$0.04	NA	NA	890,705	NA
1971			CONFIDENTIAL				CONFIDENTIAL	
1972/73	NA	NA	14,740,801	$0.07	NA	NA	4,829,117	NA
1973/74	12	347	19,987,246	$0.07	33	277	51,673,788	$0.08
1974/75	22	387	26,145,720	$0.08	37	323	23,392,352	$0.08
1975/76	24	326	20,044,112	$0.09	50	334	24,435,480	$0.08
1976/77	19	424	37,148,932	$0.09	48	303	27,232,630	$0.10
1977/78	48	409	45,003,794	$0.13	50	271	26,512,791	$0.13
1978/79	23	108	9,418,276	$0.16	40	201	23,257,869	$0.17
1979/80	10	41	3,134,367	$0.21	35	195	23,722,330	$0.23
1980/81[a]			CLOSED		54	148	12,843,270	$0.29
1981/82			CLOSED		3	4	70,948	$0.27
NO COMMERCIAL FISHING ACTIVITY SINCE 1981/82								

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 19.–Red sea cucumber commercial catch, effort, and value for the Kodiak and Chignik districts, 1991 – 2007/08.

Year/Season	Number		Pounds Harvested[a]	Average Price ($) Per Pound
	Dive Permits	Landings		
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	

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

Table 20.–Red sea cucumber guideline harvest levels, 2007/08.

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		5,000
Totals		170,000

[a] Pounds of eviscerated product.

Table 21.–Green sea urchin commercial catch, effort, and value for the Kodiak District, 1980 – 2007/08.

Year	Number		Pounds Harvested (Live Weight)	Average Price ($) Per Pound
	Permits	Landings		
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

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

Table 22.–Octopus commercial catch, effort, and value for the Kodiak District, 1985 – 2007.

	State waters			Federal waters			Combined				
Year	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels[b]	Landings	Pounds[a]	Ave. Price ($) per Pound	Fishery ($) Value
1985		Confidential			Confidential				Confidential		
1986		Confidential			Confidential		4	8	643	$0.87	$559
1987		Confidential			Confidential		8	15	14,151	$1.07	$15,142
1988		Confidential			Confidential				Confidential		
1989		Confidential			Confidential				Confidential		
1990	25	95	56,052	15	51	20,127	31	140	76,179	$1.13	$76,180
1991	56	260	106,748	29	85	22,607	70	342	129,355	$1.07	$138,410
1992	64	252	103,230	34	153	44,551	75	394	147,781	$0.94	$139,000
1993	16	51	95,889	24	42	8,453	33	89	104,342	$0.71	$73,379
1994	5	7	4,504	4	9	613	8	15	5,117	NA	NA
1995	38	293	66,855	21	90	3,673	46	327	70,528	$0.49	$31,489
1996	35	194	67,898	27	143	20,670	44	257	88,568	$0.45	$36,943
1997	63	526	230,606	58	279	46,296	87	658	276,902	$0.46	$125,702
1998	54	407	258,047	57	291	117,332	76	670	375,379	$0.43	$144,908
1999	50	307	198,116	32	149	54,889	67	440	253,005	$0.33	$73,718
2000	49	292	98,833	46	239	61,551	71	482	160,384	$0.39	$51,113
2001	28	206	99,665	31	80	12,712	45	252	112,377	$0.38	$39,951
2002	31	213	206,748	29	97	23,078	46	278	229,826	$0.48	$100,072
2003	40	119	55,918	29	58	17,019	66	165	72,937	$0.35	$23,198
2004	14	41	11,816	21	64	32,291	34	105	44,107	$0.35	$15,437
2005	39	111	37,210	37	207	99,335	61	318	136,545	$0.42	$57,349
2006	41	185	69,086	43	245	168,808	66	398	237,894	$0.57	$135,600
2007	35	116	122,192	44	220	189,939	59	298	312,131	$0.40	$124,852

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

[a] Includes discards

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

Table 23.–Octopus commercial catch, effort, and value for the Chignik and South Peninsula districts combined, 1980 – 2007.

	State waters			Federal waters			Combined				
Year	Vessels	Landings	Pounds[a]	Vessels	Landings	Pounds[a]	Vessels[b]	Landings	Pounds[a]	Ave. Price ($) per Pound	Fishery ($) Value
1980-1985			CONFIDENTIAL			CONFIDENTIAL			CONFIDENTIAL		
1986-1987			NO EFFORT			NO EFFORT			NO EFFORT		
1988	22	58	9,946	16	132	34,622	31	190	44,568	$0.92	$41,003
1989	12	41	5,309	15	82	9,581	23	123	14,890	$1.00	$14,890
1990	7	45	6,746	14	33	2,393	19	78	9,139	$1.00	$9,139
1991	18	72	15,103	14	36	4,392	29	108	19,495	$1.00	$19,495
1992	38	183	38,651	39	100	6,579	72	283	45,230	$1.00	$45,230
1993	9	23	9,017	28	59	3,007	35	82	12,024	$1.00	$12,024
1994	16	36	15,621	8	14	1,171	23	50	16,792	$0.59	$9,907
1995	15	49	5,939	15	18	2,140	24	67	8,079	$0.45	$3,636
1996	20	52	11,258	18	22	4,667	26	74	15,925	$0.49	$7,803
1997	27	143	48,286	15	20	3,826	34	163	52,112	$0.49	$25,535
1998	13	15	4,554	13	22	4,638	15	37	9,192	$0.53	$4,872
1999	9	10	2,051	10	19	1,710	18	29	3,761	$0.50	$1,881
2000	18	17	1,507	19	19	5,235	30	36	6,742	NA	NA
2001	3	5	345	7	17	2,221	7	22	2,566	NA	NA
2002	6	15	3,132	19	50	13,454	20	65	16,586	NA	NA
2003	26	55	18,333	28	88	46,090	41	119	64,423	$0.61	$39,298
2004	69	342	138,521	44	168	191,671	85	495	330,192	$0.52	$171,700
2005	43	110	33,332	23	98	83,347	58	208	116,679	$0.41	$47,838
2006	44	167	52,663	21	61	22,941	53	217	75,604	$0.51	$38,558
2007	55	268	98,000	28	57	25,047	68	317	123,047	$0.41	$50,449

Notes: NA = not available

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

[a] Includes discards

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

Table 24.–Razor clam commercial catch, effort, and value for the Kodiak District, 1960-2007.

Year	Number		Pounds		Ave. Price	Est. Fishery
	Registered Diggers[a]	Landings	Ave. per landing	Total	($) Per Pound	($) Value
1960	76	NA	NA	420,636	$0.11	$44,000
1961	95	NA	NA	381,971	$0.11	$40,000
1962	66	NA	NA	297,516	$0.11	$31,000
1963	39	NA	NA	323,757	$0.11	$35,600
1964	2	NA	NA	0	$0.00	$0
1965	4	NA	NA	20,000	$0.25	$5,000
1966	29	NA	NA	15,429	$0.38	$6,000
1967	9	NA	NA	2,155	$0.40	$900
1968	19	NA	NA	6,384	$0.40	$2,600
1969	5	6	2,005	12,029	$0.40	$4,812
1970	6	32	4,133	132,261	$0.40	$53,000
1971	73	82	2,322	190,394	$0.30	$57,000
1972	95	128	1,188	152,116	$0.35	$53,000
1973	64	140	1,181	165,282	$0.40	$66,000
1974	58	74	2,681	198,381	$0.50	$99,000
1975	18	5	1,238	6,188	$0.50	$3,000
1976	9	0	0	0	$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
NO COMMERCIAL HARVEST SINCE 1986						

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

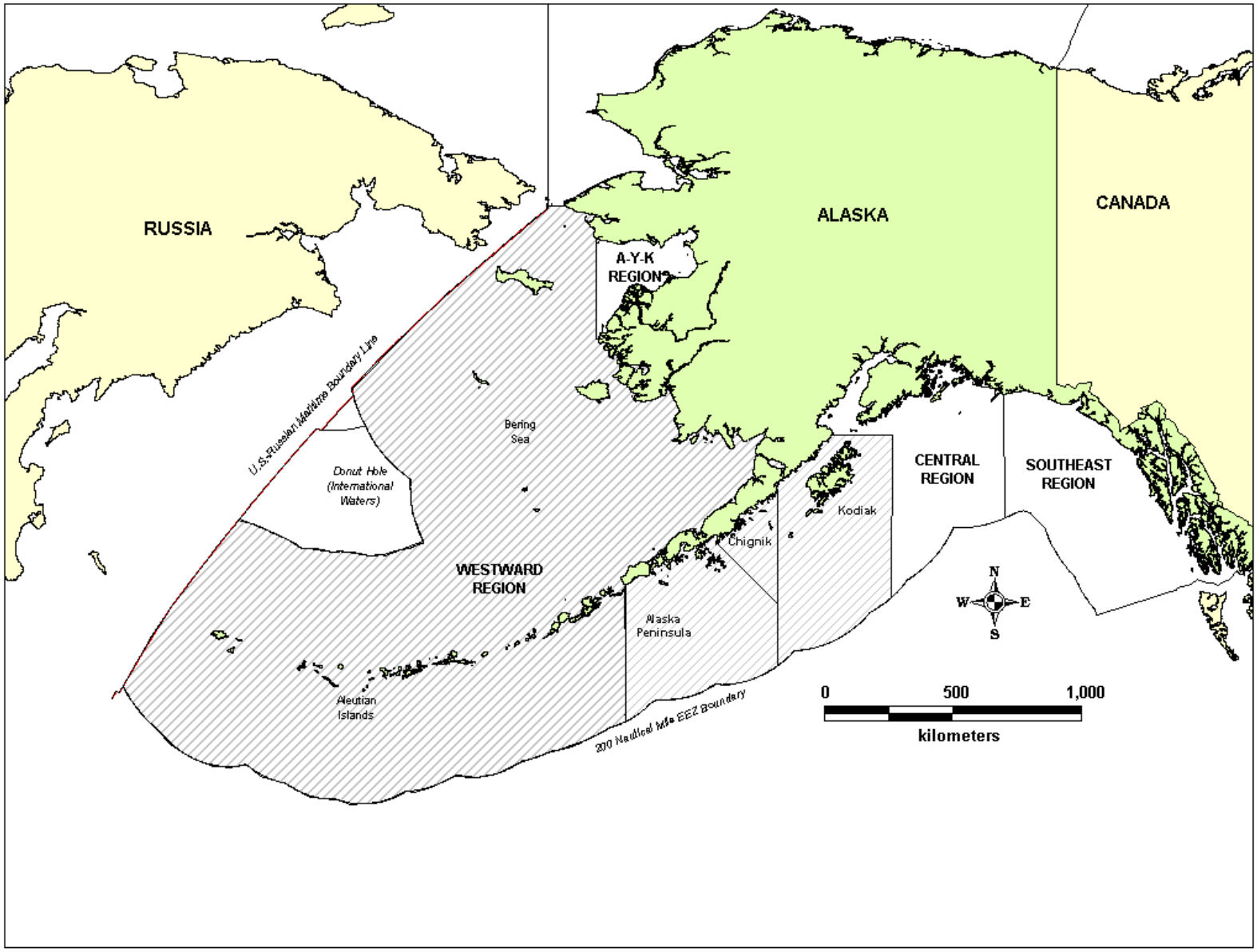

Figure 1.–Alaska Department of Fish and Game shellfish management regions, 2007.

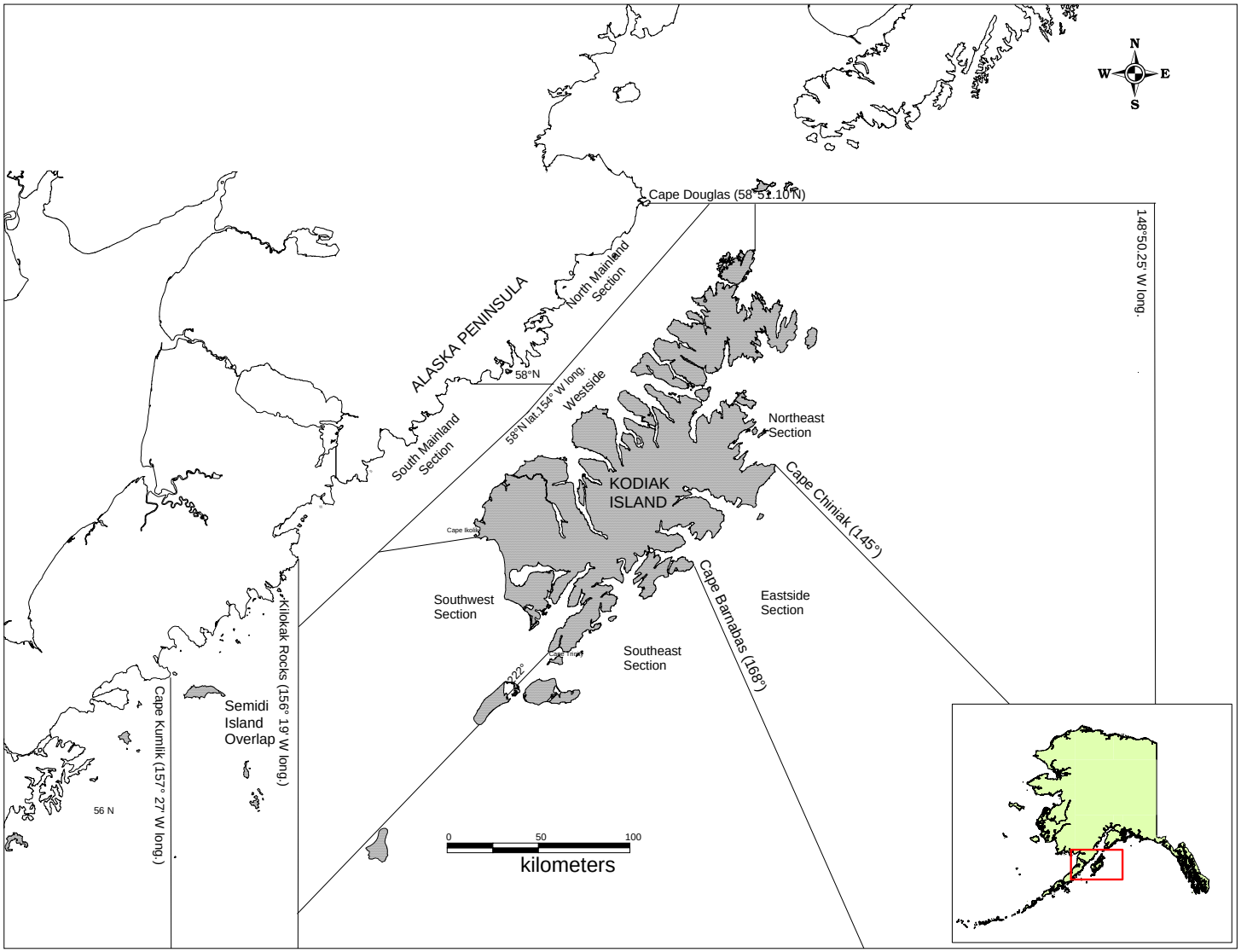

Figure 2.–Kodiak District and sections for Tanner crabs and sea cucumber fishery management, 2007.

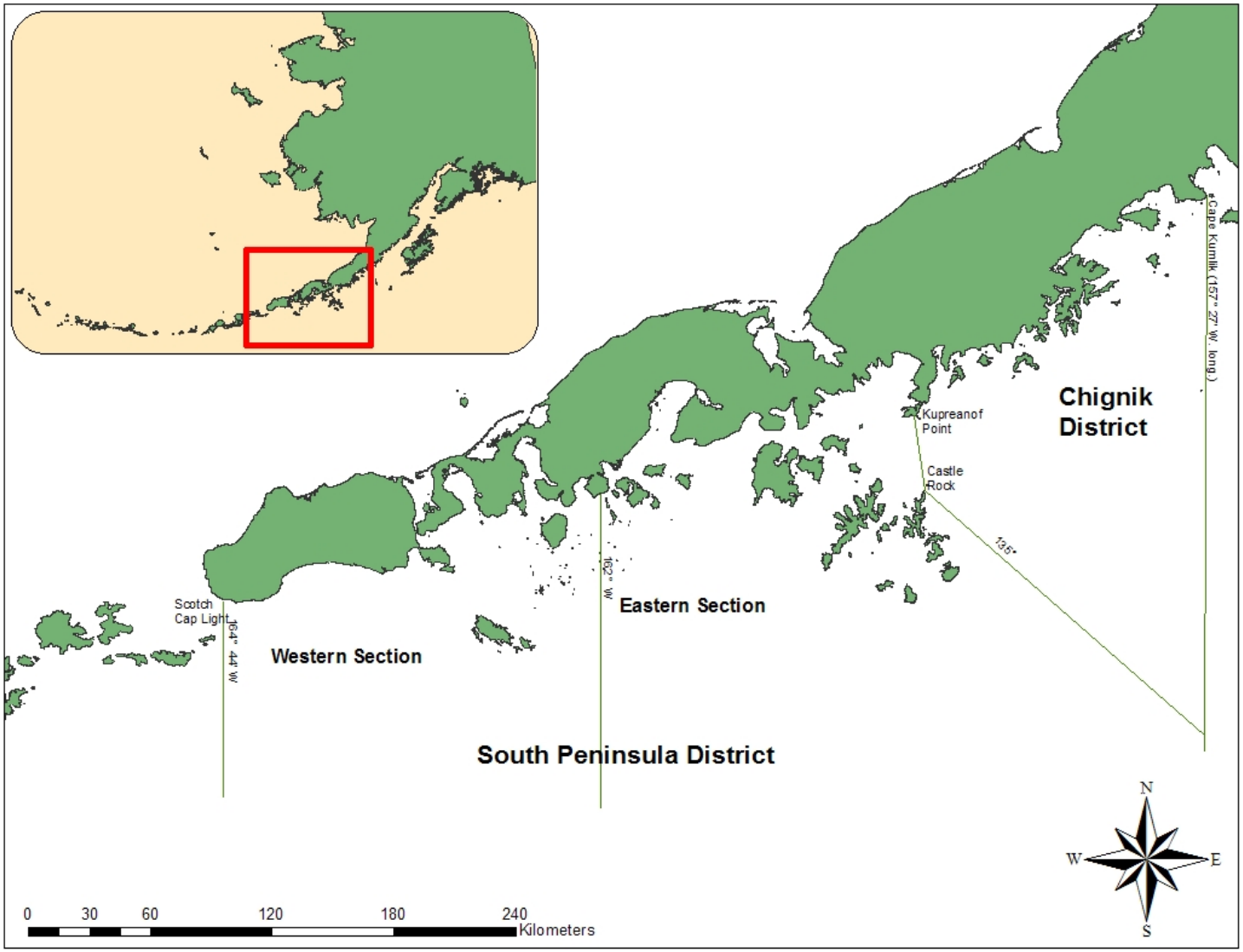

Figure 3.–Chignik and South Peninsula districts for Tanner crab and sea cucumber fishery management, 2007.

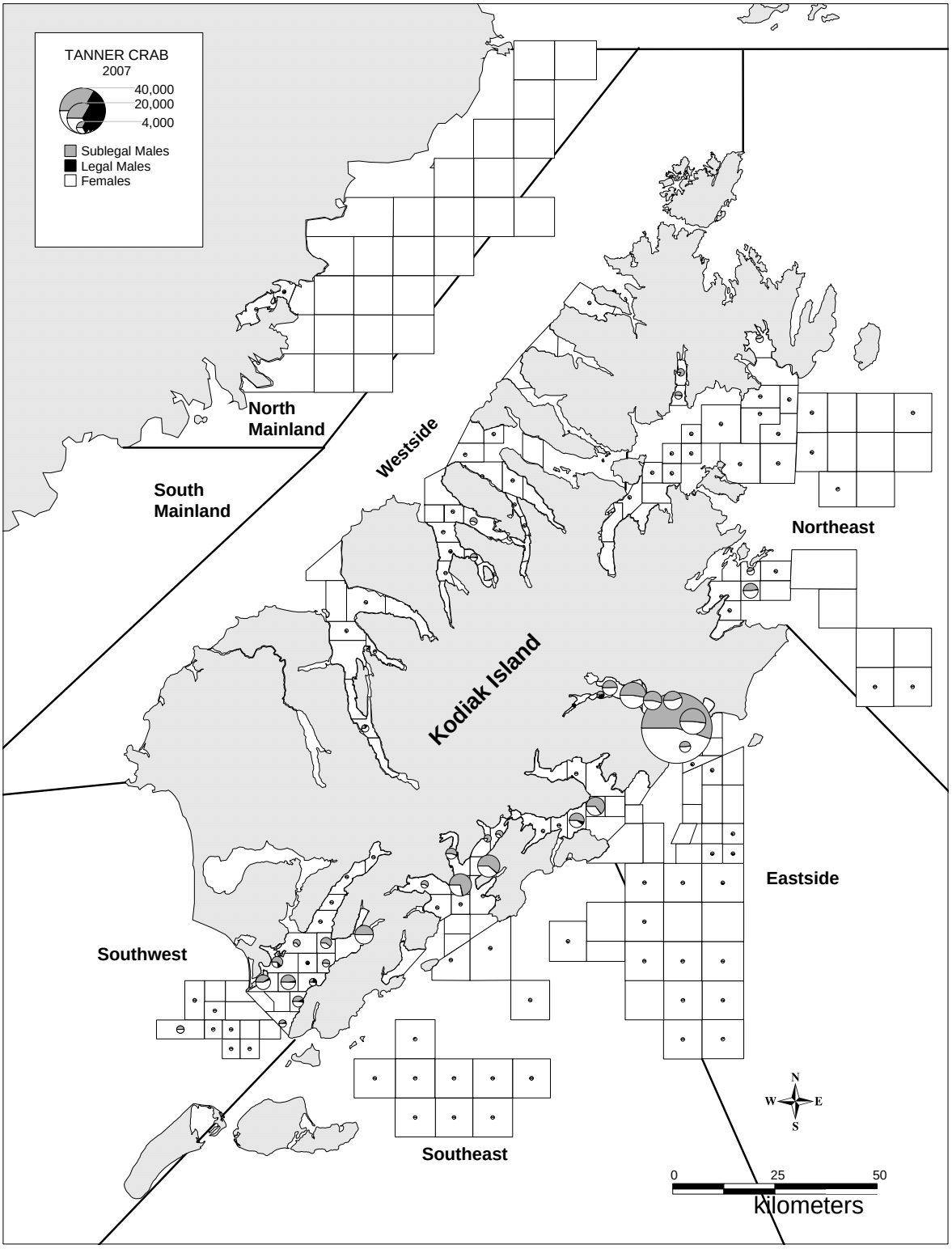

Figure 4.–Number of Tanner crabs per kilometer towed in the 2007 Kodiak District trawl survey.

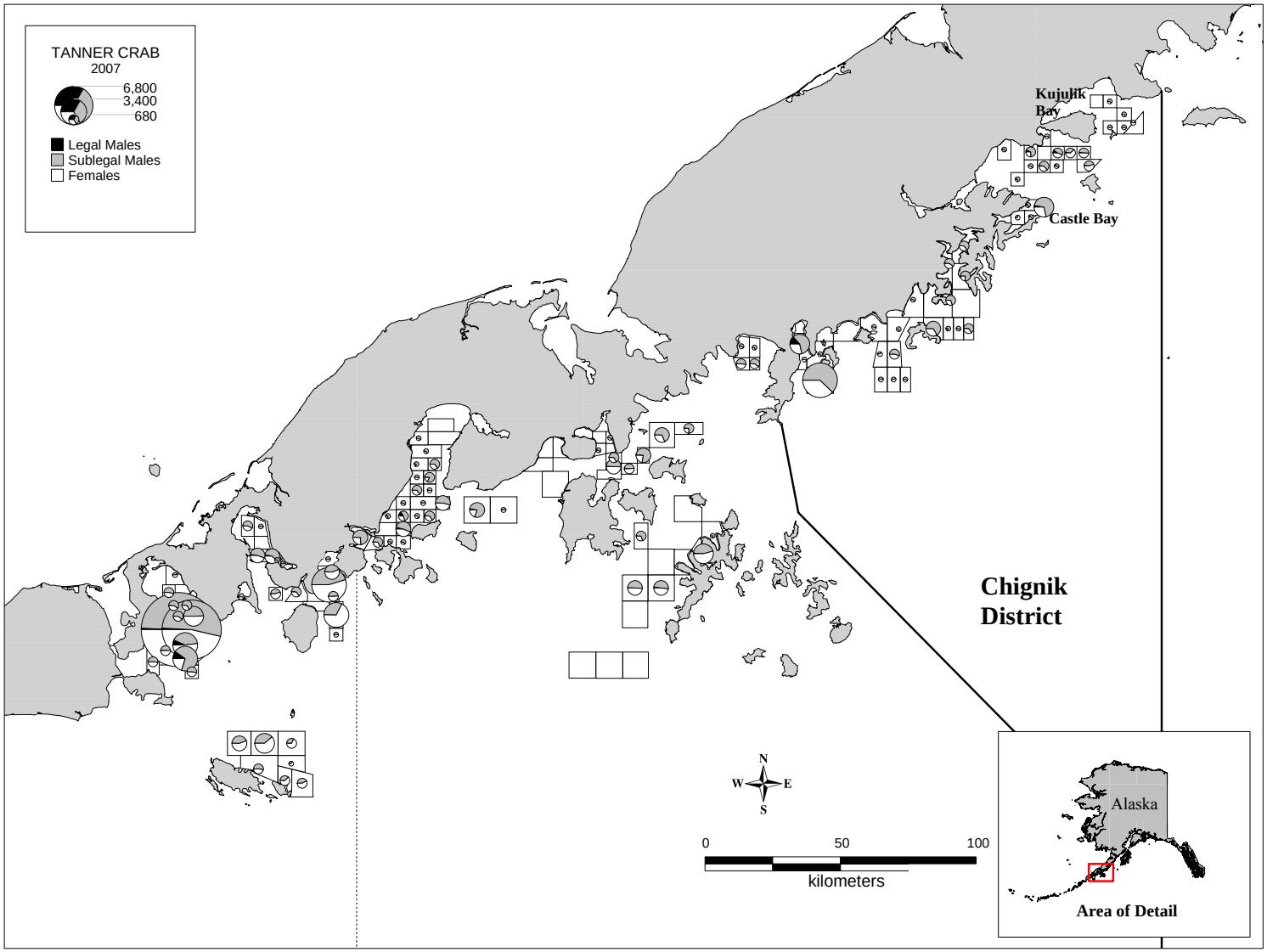

Figure 5.–Number of Tanner crabs per kilometer towed in the 2007 Chignik and South Peninsula districts trawl survey.

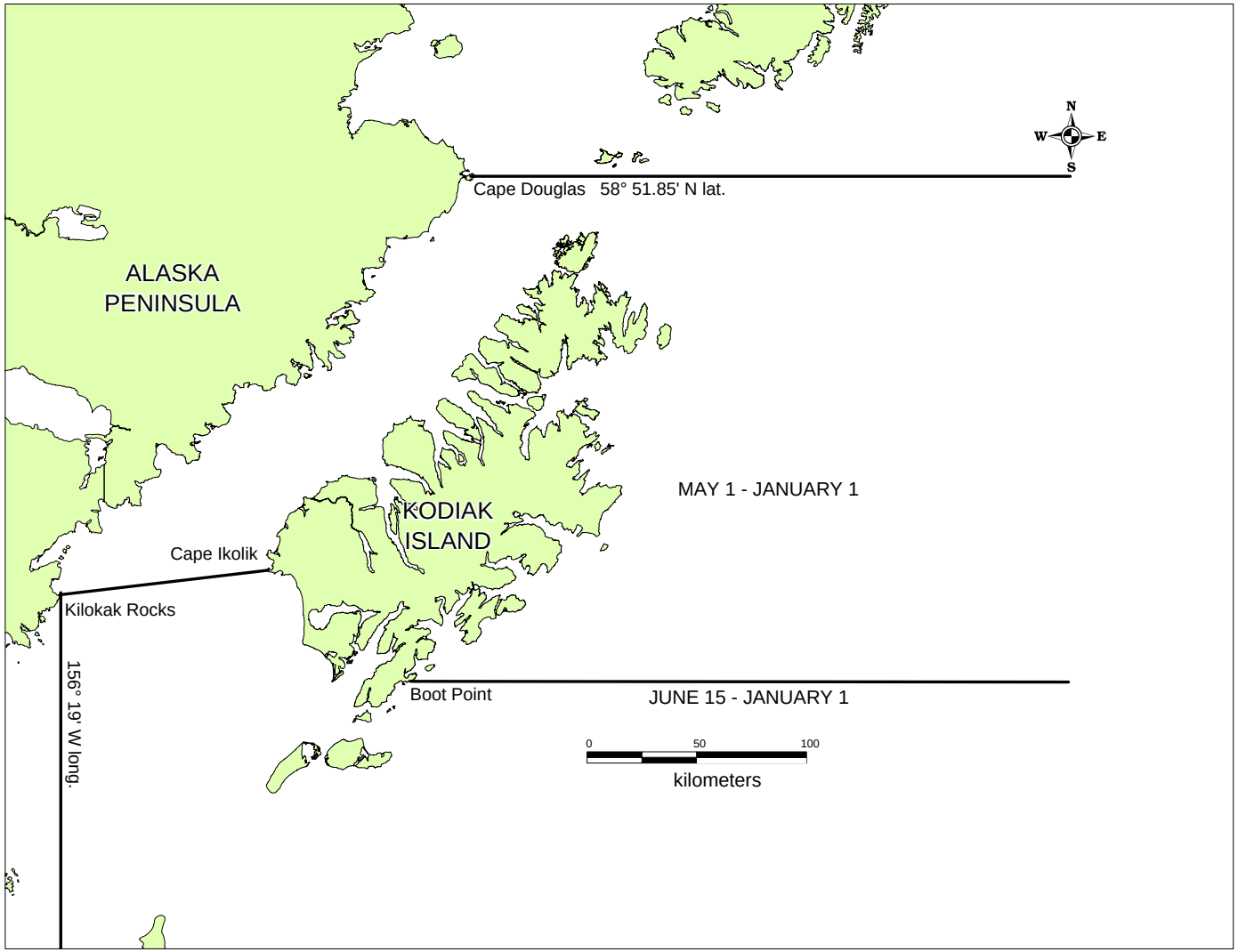

Figure 6.–Kodiak District Dungeness crab boundaries and fishing seasons, 2007.

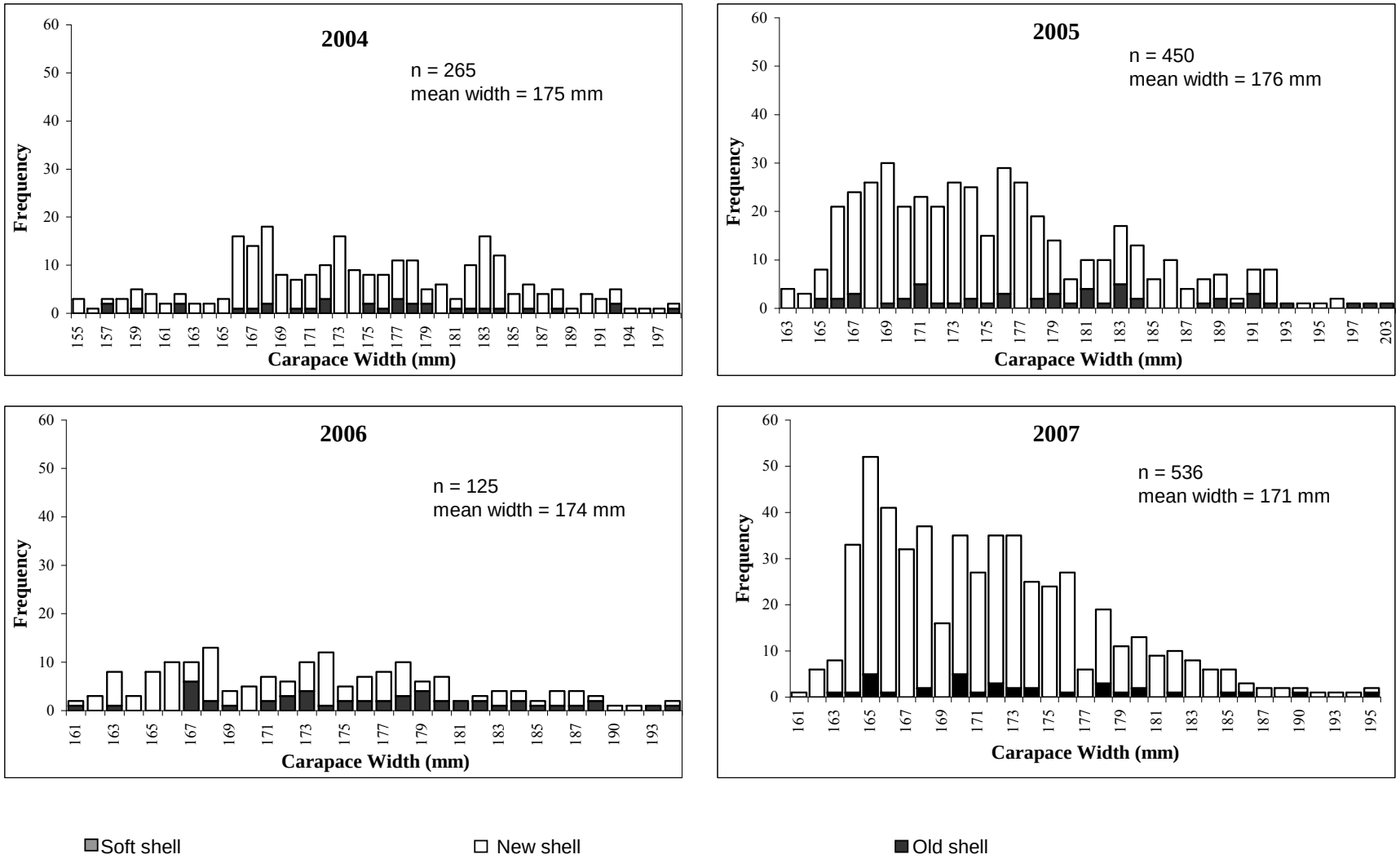

Figure 7.–Kodiak District Dungeness crab carapace width frequencies and shell condition from dockside samples, 2004-2007.

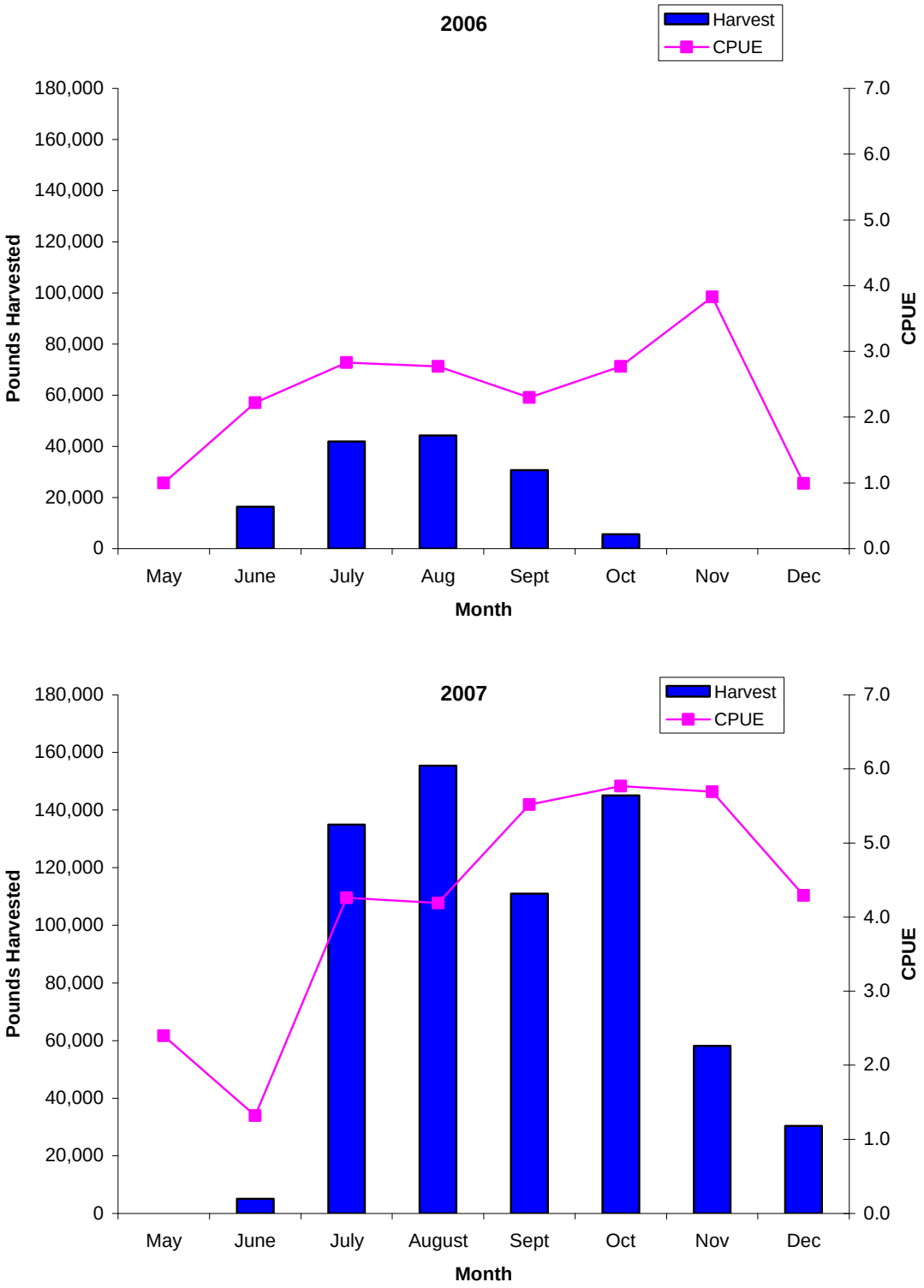

Figure 8.–Kodiak District Dungeness crab harvest, in pounds, CPUE by month for the 2006 and 2007 seasons.

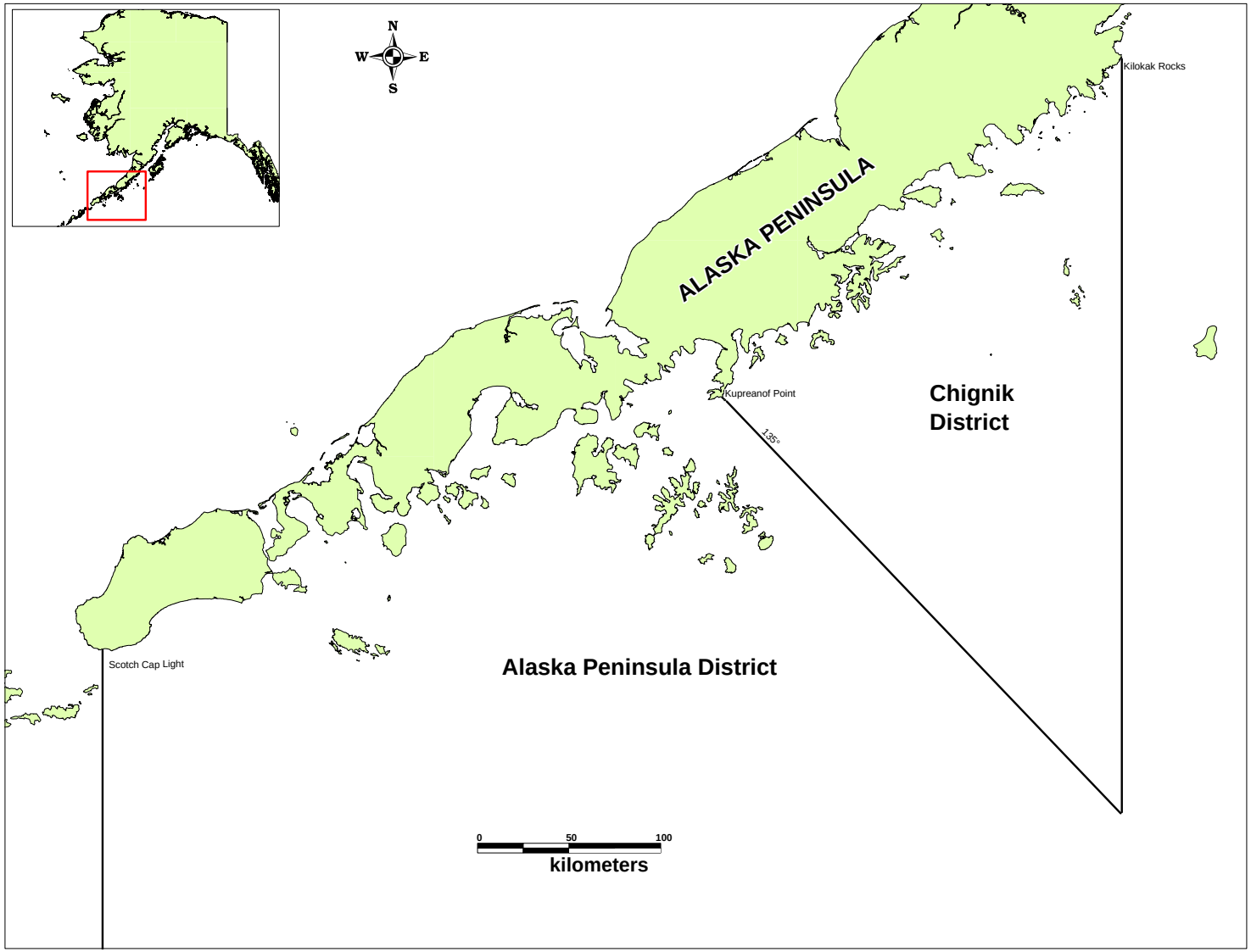

Figure 9.–Chignik and Alaska Peninsula districts for Dungeness crab fishery management, 2007.

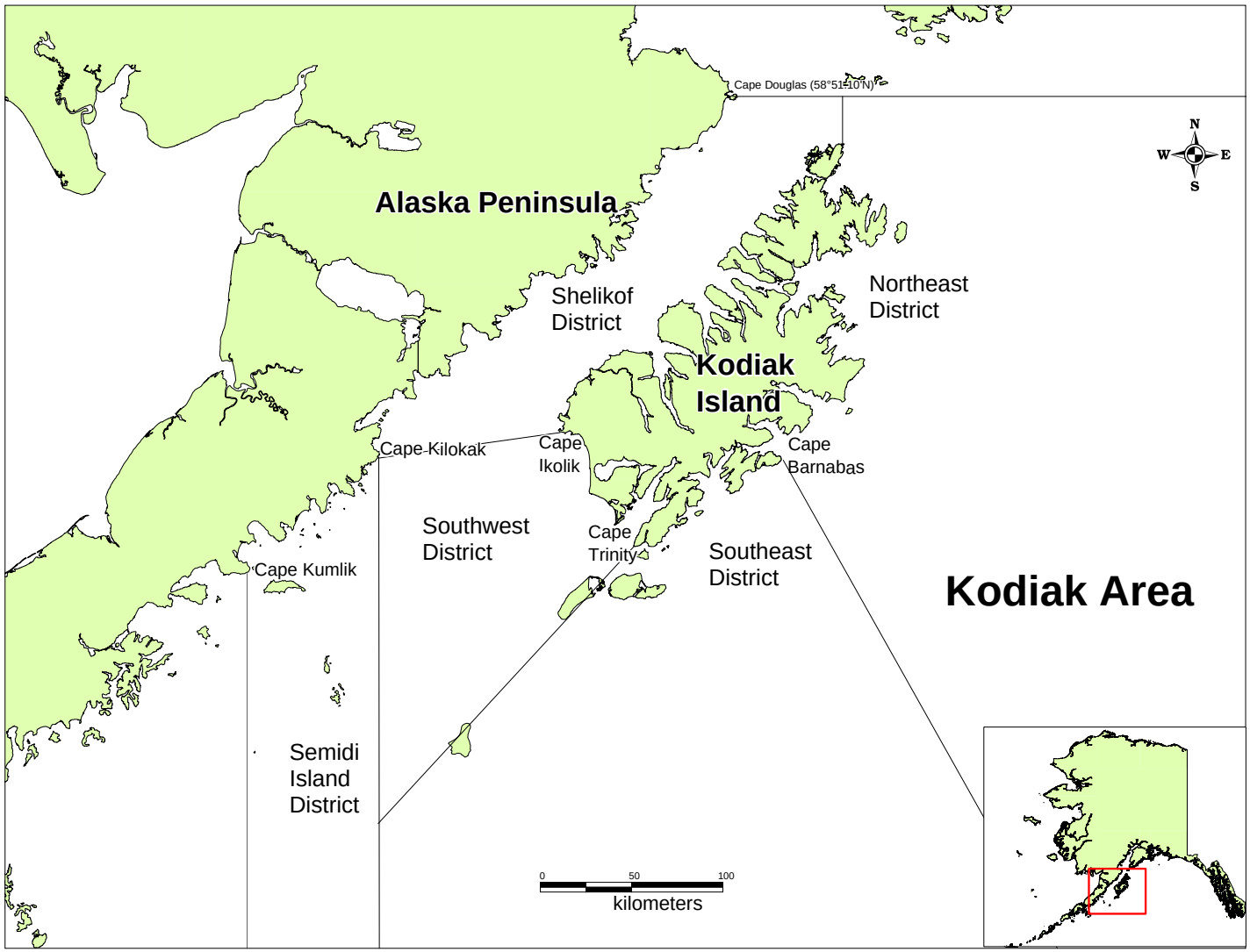

Figure 10.–Kodiak Area districts for king crab fishery management, 2007.

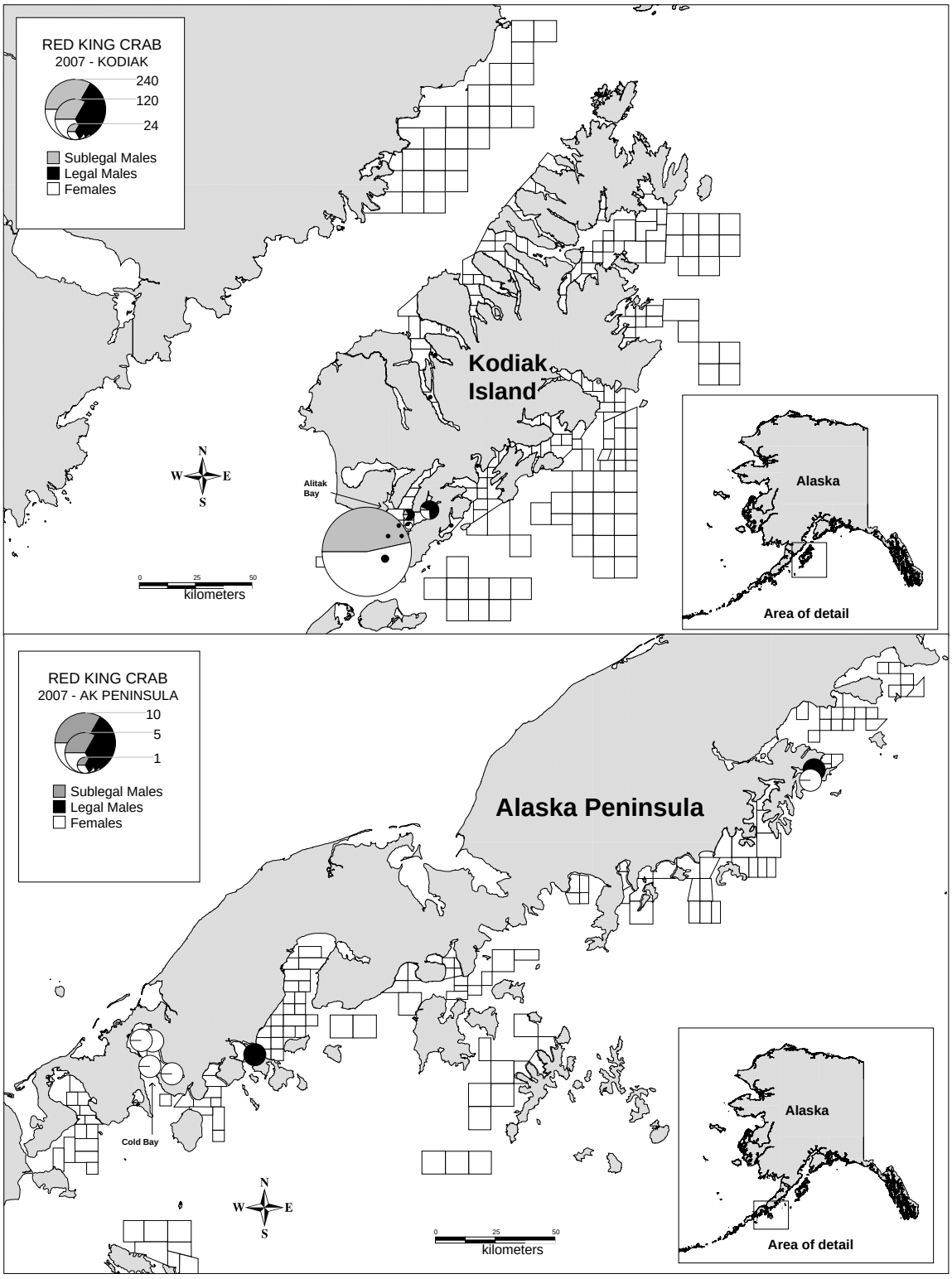

Figure 11.–Number of red king crabs per kilometer towed from the 2006 Kodiak and Alaska Peninsula Area trawl survey.

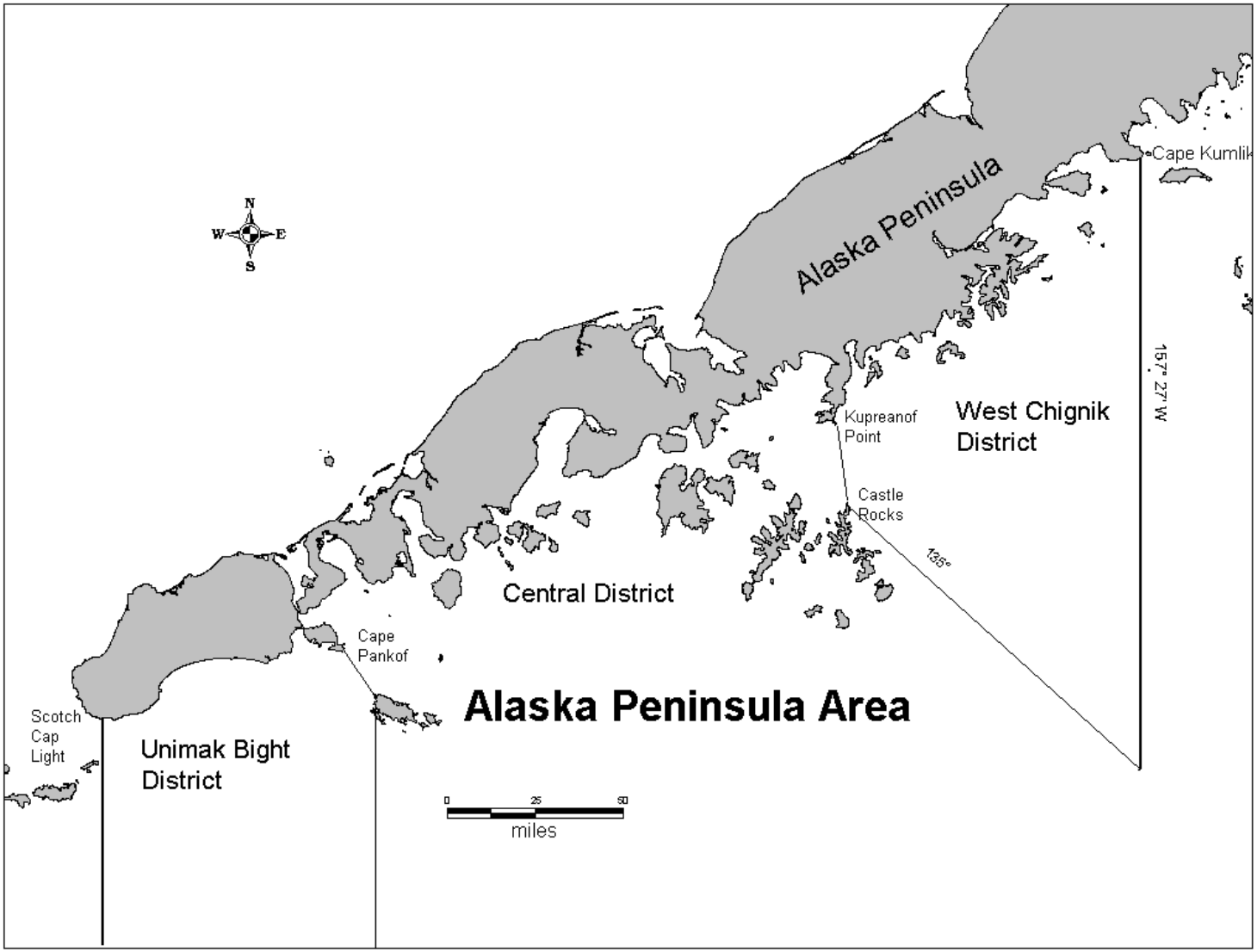

Figure 12.–Alaska Peninsula Area and districts for king crab fishery management, 2007.

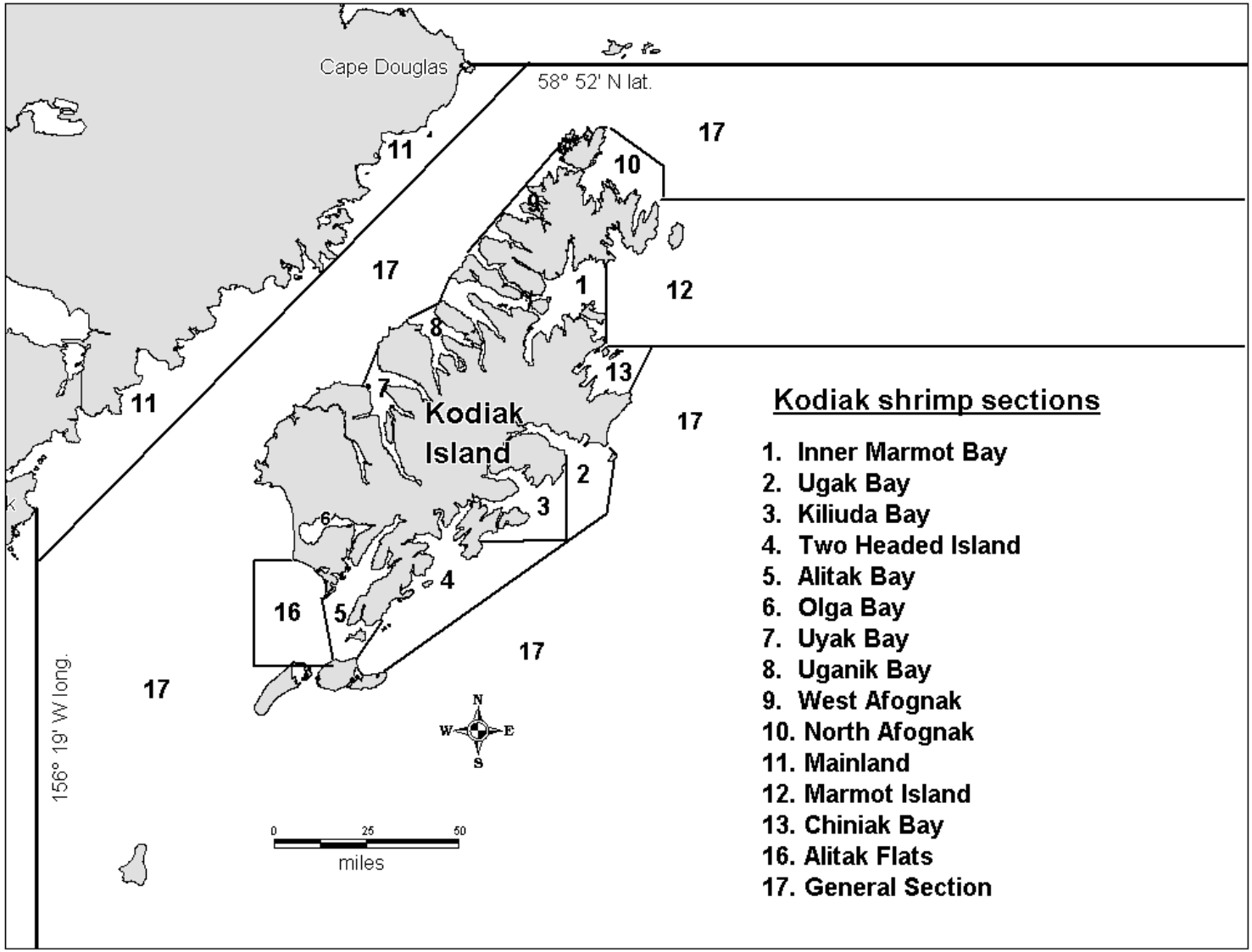

Figure 13.–Kodiak District and sections for shrimp fishery management, 2007.

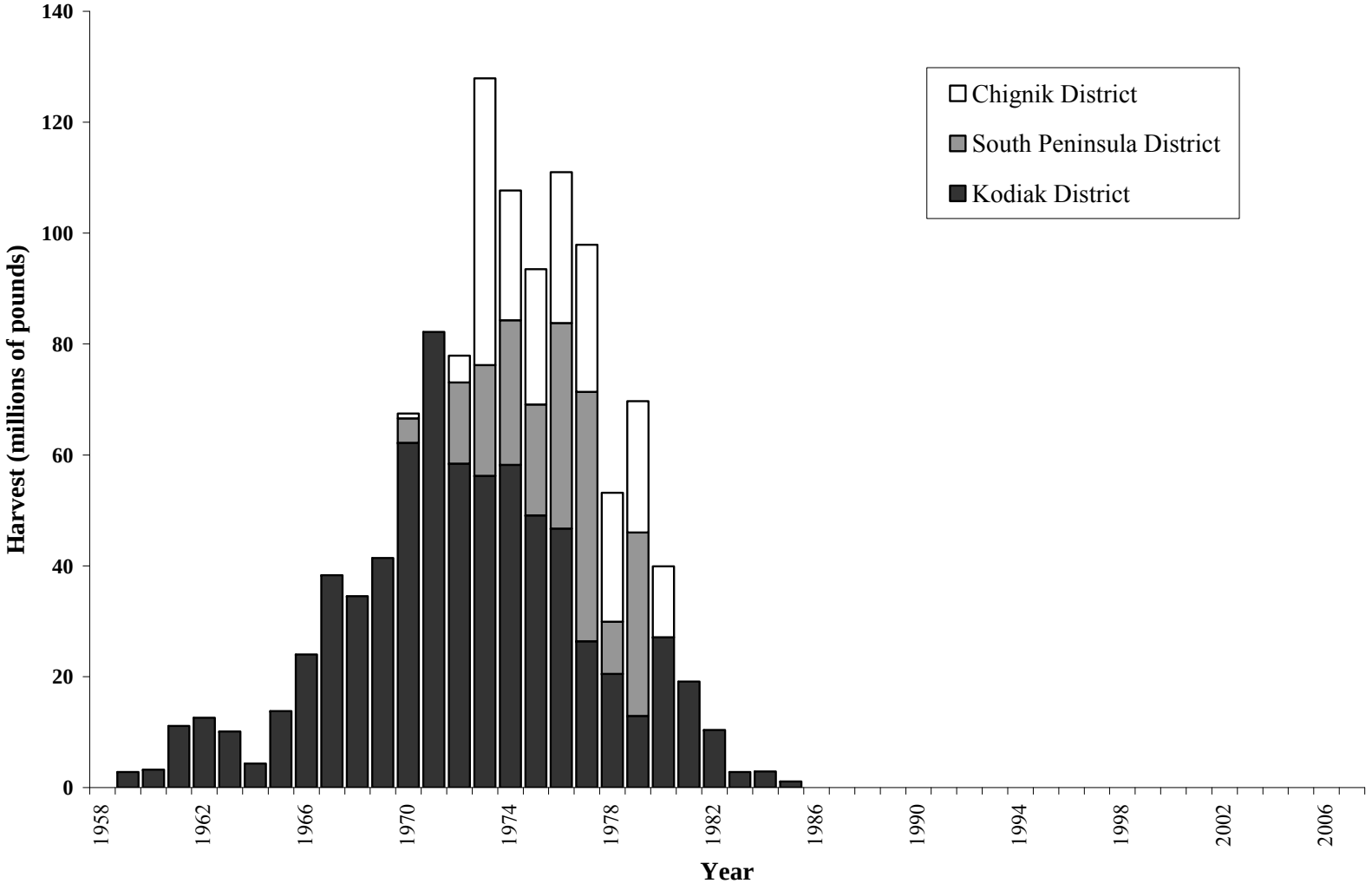

Figure 14.–Shrimp harvests from the Kodiak, Chignik, and South Peninsula districts, 1958-2007.

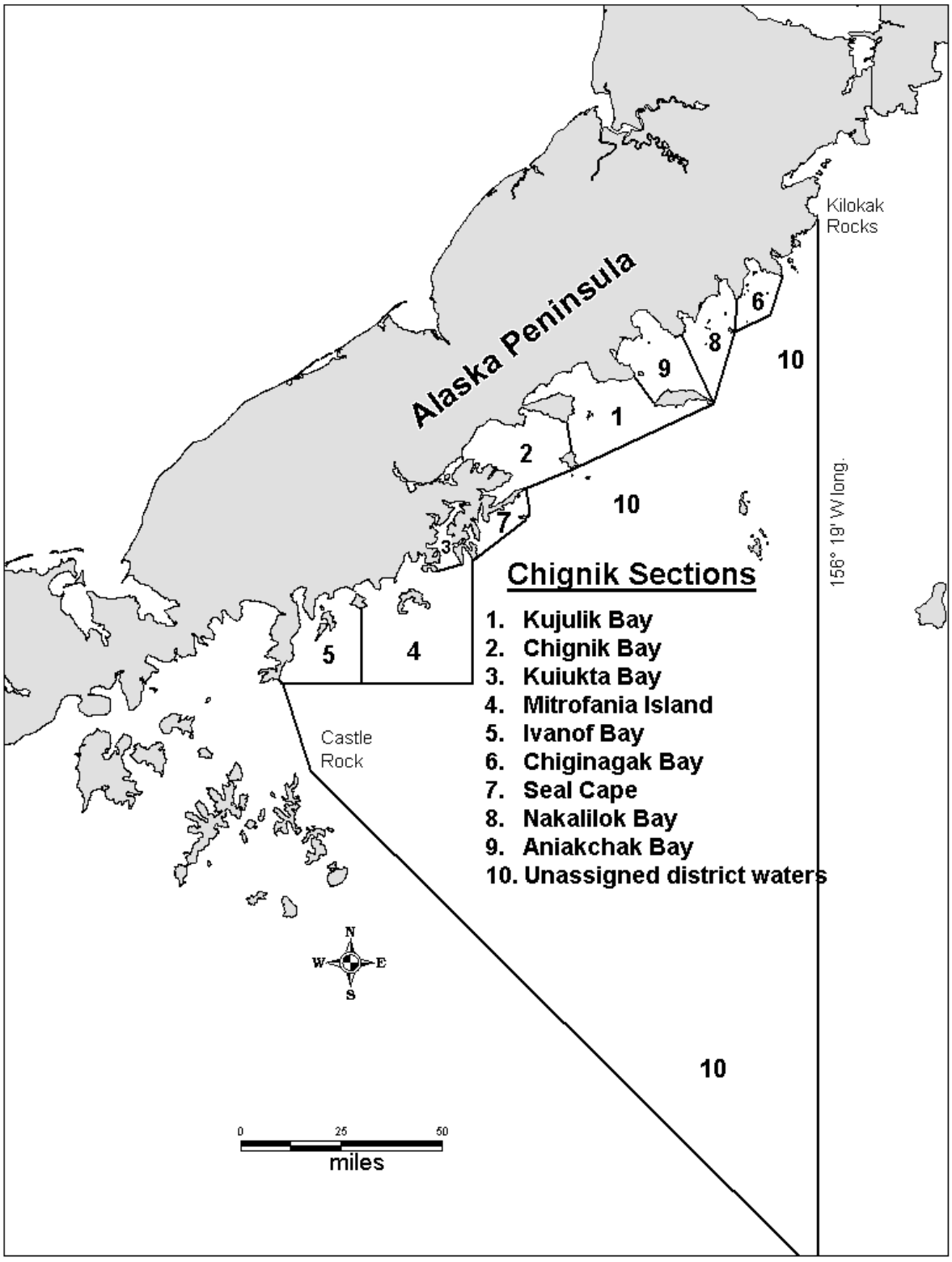

Figure 15.–Chignik District and sections for shrimp fishery management, 2007.

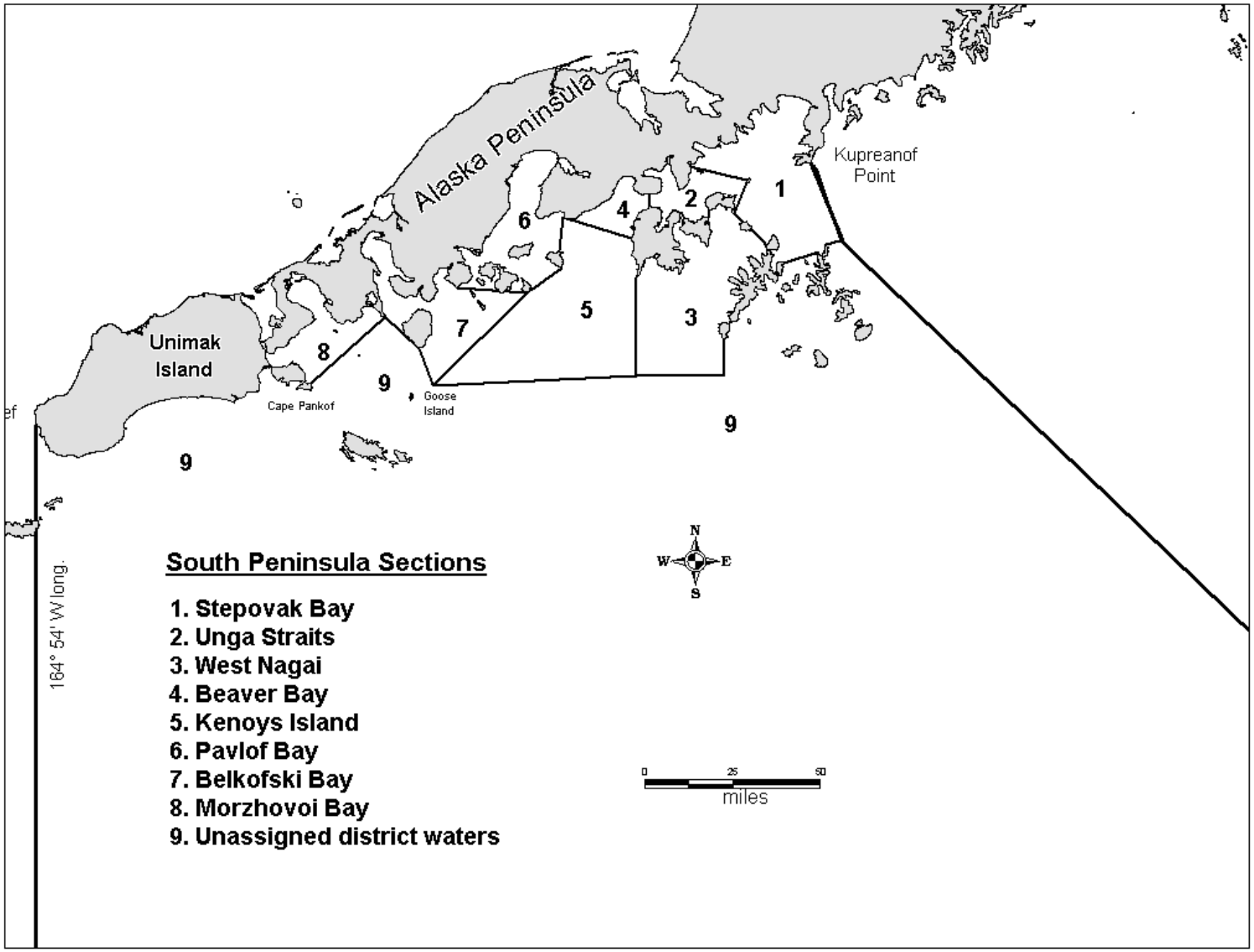

Figure 16.–South Peninsula District and sections for shrimp fishery management, 2007.