

Fishery Management Report No. 05-01

**Annual Management Report for the Shellfish Fisheries
of the Kodiak, Chignik and Alaska Peninsula Areas,
2003**

by

Michael E. Cavin

Michael P. Ruccio

and

Kally Spalinger

January 2005

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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Michael E. Cavin,
Michael P. Ruccio,
and

Kally Spalinger
Division of Commercial Fisheries, Kodiak

Alaska Department of Fish and Game
Division of Sport Fish, Research and Technical Services
333 Raspberry Road, Anchorage, Alaska 99518-1599

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*Michael E. Cavin,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
211 Mission Road, Kodiak, Alaska 99615, USA
Michael P. Ruccio,
Alaska Department of Fish and Game, Division of Commercial Fisheries
211 Mission Road, Kodiak, Alaska 99615, USA
and
Kally Spalinger
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 2003. Commercial fisheries occurred for Tanner crab *Chionoecetes bairdi*, Dungeness crab *Cancer magister*, golden king crab *Lithodes aequispinus*, giant Pacific octopus *Octopus dofleini*, red sea cucumber *Parastichopus californicus*, and various Pandalid shrimp species. Historically, these management areas have supported large red king crab *Paralithodes camtschaticus*, and shrimp fisheries.

Summaries, by species, of active and historic shellfish fisheries within these areas are provided. These summaries provide descriptions of the management area, a brief overview of the regulations, historic backgrounds, harvest strategies, management practices, summaries of the 2003 fisheries, and status of stocks.

Key words: Tanner crab, *Chionoecetes bairdi*, Dungeness crab, *Cancer magister*, golden king crab, *Lithodes aequispinus*, red sea cucumber, *Parastichopus californicus*, red king crab, *Paralithodes camtschaticus*, 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 of Alaska in Pacific Ocean waters south of the latitude of Cape Douglas (58° 51.10' N lat.), west of the longitude of Cape Fairfield (148° 50.25' W long.), and east of Scotch Cap Light (164° 44' W long.). The three primary management divisions within this report are Kodiak, Chignik, and the Alaska Peninsula Areas (Figure 1).

During 2003, 154 catcher vessels, two catcher-processors, 15 shorebased processors, two floating processors, and three catcher-sellers were involved in harvesting and processing approximately 1.6 million pounds of shellfish from the Kodiak, Chignik, and South Peninsula Areas. The harvest was worth an estimated exvessel value of approximately \$2.5 million.

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. 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. The specific divisions are detailed in each fishery description that follows.

Historically, the Kodiak area supported large red king crab *Paralithodes camtschaticus* and trawl-caught shrimp fisheries. King crab stocks are currently depressed and no fishing has occurred since the early 1980s for red king crab. Minor harvests of green sea urchins *Strongylocentrotus droebachiensis* and grooved Tanner crabs *Chionoecetes tanneri* have also occurred sporadically. Various clam species, primarily razor clams *Siliqua* were once harvested in large quantities.

Tanner crab *Chionoecetes bairdi*, Dungeness crab, giant Pacific octopus *Octopus dofleini*, golden king crab *Lithodes aequispinus*, and red sea cucumber *Parastichopus californicus* were the principal commercial shellfish species harvested from the Kodiak area in 2003. A small harvest of trawl-caught shrimp and scarlet king crab *Lithodes couesi* occurred during 2003. Minor

harvest of Pacific littleneck clams *Protothaca staminea* and Butter clams *Saxidomus giganteus* were harvested in 2003 as bait in the Dungeness crab fishery. Tanner crabs were the single most valuable shellfish species harvested, worth an estimated \$1,173,440 to the fleet. Occasionally, shellfish harvested from management areas other than the Kodiak and Alaska Peninsula Areas are landed at the Port of Kodiak. In 2003, harvests of Bering Sea snow crabs and Bristol Bay red king crabs were landed in Kodiak. More than 2.0 million pounds of shellfish were landed at the Port of Kodiak during 2003, with an estimated exvessel value exceeding \$ 6.6 million. A discussion of each fishery that was active during 2003 is provided. The Kodiak area weathervane scallop fishery will be summarized in a separate regional information report.

The Alaska Department of Fish and Game (ADF&G) issues emergency orders (EOs) to enact regulatory actions for time and area changes to commercial fisheries. These changes effect commercial fishery openings, closures, and modifications of fishing periods, or fishing areas. For the fisheries mentioned in this report, seventeen EOs were issued during 2003 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.). However, in some fisheries the eastern boundary is located at the longitude of Cape Kumlik (157° 27' W long.). Depending on the fishery, the Alaska Peninsula Area may be divided into two separate districts, Chignik and Alaska Peninsula. The specific divisions are detailed in each fishery description that follows.

Commercial shellfish fisheries have historically 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 since 1982. Effort did occur in 2003 for Dungeness crab and octopus. For the fisheries mentioned in this report, two EOs were issued in 2003 that pertained to shellfish fisheries 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 or biological considerations occur that warrant closure to protect the long-term health of the stocks.

KODIAK DISTRICT

Description of the Area

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, Westside, North Mainland, and South Mainland (Figure 2).

Overview of Fishery Regulations

The Kodiak District is superexclusive registration 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. The 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.

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.

By the 1969/70 season, over eight million pounds were harvested. The fishery quickly became a major fishery in the North Pacific. 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 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. The 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.

The State of Alaska together with the federal government managed Tanner crab resources around Kodiak beginning in 1978. The state managed the waters from shore to three nautical miles offshore while the federal government managed from three to 200 nmi offshore under a fishery management plan (FMP). This joint-jurisdiction would last 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 pots for crab stock assessment because they are faster and sample a wider range of crab sizes (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. The 1994/95 season 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. During the six-year closure period a harvest strategy was developed which was adopted by the Board of Fisheries (BOF) in 1999.

The following regulations were adopted by the BOF in the 2001/02 cycle, and were in effect for the 2002/03 season: 1) The Kodiak District was designated superexclusive for Tanner crab, 2) criteria was adopted to delay the fishery opening for severe weather, 3) 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 4) daily fishing periods were reduced from 12 hours to 10 hours per day. When the season is 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.

Overview of the 2002/03 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 2003, with a combined GHL of 510,000 pounds; an increase of 10,000 pounds from the 2002 fishery (Tables 4 & 5). The Northeast Section GHL was set at 170,000 pounds while the Eastside Section was set at 340,000 pounds.

The 2003 Kodiak District Tanner crab fishery was the third season operating under the harvest strategy adopted by the BOF in 1999. It was the first season that occurred under CFEC limitation.

CFEC set the end of the qualification period for limited entry as January 1, 2003. Though the actual limitation criteria and reduction of permits had yet to begin by the start of the fishery, the moratorium on qualification was in place and a total of 331 permit holders qualified to participate in 2003. CFEC will develop a point system that will eventually reduce the number of qualified permit holders to 180.

The scheduled opening date for the Kodiak District Tanner crab fishery is January 15 unless the fishery is delayed for weather due to gale force winds, as outlined in 5 AAC 35.510 FISHING SEASONS FOR REGISTRATION AREA J. The 2003 fishery opening was delayed four days due to weather; therefore the fishery began at noon on Sunday, January 19. Seventy-nine permit holders recorded landings on 72 unique vessels during the 2003 fishery. The total harvest was 511,324 pounds from 276 landings. The estimated exvessel fishery value as indicated by the price per pound on fish tickets was \$1,173,440.

The Northeast Section had two partial closures: Kazakof Bay closed during the eighth fishing period, while territorial waters in the Chiniak Bay vicinity to Spruce Island closed after 12 fishing periods. The remaining waters of the section were open until February 23 (Table 6) for a total of 36 fishing periods. The Northeast Section Harvest was 162,494 pounds from 138 landings made by 44 vessels. The Northeast Section catch per unit effort or catch of legal crabs per pot (CPUE) for the 2002/03 season averaged 15 crabs.

The Eastside Section had a partial closure of Ugak Bay during the fourth full fishing period; the remaining waters were open for a total of 14 fishing periods. Thirty-nine vessels were used to harvest 348,830 pounds from 39 landings. The Eastside Section CPUE averaged 22.7 crabs.

Eleven vessels were used in both sections during the 2003 fishery. Vessels 40 to 49 feet in length took the majority of the 2003 harvest (Table 7).

Northeast Section Fishery

Based on the 2002 trawl survey estimate of abundance, the population of mature male Tanner crab was 2,065,971 crabs, well above the regulatory threshold of 1,123,000 crabs for opening the fishery. The regulatory harvest strategy prescribed a 10% exploitation rate on molting mature male abundance because the population estimate was less than the long-term average of mature

male abundance. The harvest strategy also limits the removal of legal-size crabs to no more than 30%. This resulted in a GHF of 170,000 pounds, lower than the 300,000 pound GHF from the 2002 fishery.

Chiniak Bay Vicinity: Approximately 15 vessels were operating in Chiniak and Kalsin Bays at the fishery opening. Five small vessels were believed to be fishing in Womens and Monashka Bays. CPUE in Chiniak Bay began in the mid-twenties. Vessel operators quickly found that very few crabs were to be found in Kalsin Bay and shifted their efforts to areas adjacent to Long Island and Humpback Rock in Chiniak Bay. CPUE in Womens and Monashka Bays was approximately seven crabs; these areas are not surveyed by ADF&G and were not believed to contain large aggregations of legal male crabs.

Periodic weather events slowed effort and after the first four fishing periods, a few vessel operators dropped out of the fishery. CPUE remained in the 20s in Chiniak Bay for the first six fishing periods. CPUE would then begin to fluctuate, ranging from the high to low teens depending on the vessel and location fished. After 10 full fishing periods, it was evident that vessel operators had explored most of the near-shore areas of Chiniak and the surrounding bays. CPUE had fallen to eight crabs so a closure was announced for January 30, twelve days after the fishery opening. To ensure vessels moved away from the concentration of crabs in Chiniak Bay, the closure was made from Cape Chiniak to Long Island, following the territorial sea boundary (3 nmi line) rather than using a cape to cape closure line.

The closure was necessary to preserve the long term health of the stock, maintain an adequate large male to mature female ratio for reproductive success, and foster rebuilding within the inner bay which has been demonstrated by tagging studies to be a key area in the repopulating of areas as the stock rebuilds. Additionally, Chiniak Bay is an important subsistence Tanner crab harvest area.

Approximately 67,200 pounds were harvested from the Chiniak Bay vicinity by 27 vessels. CPUE in the Chiniak Bay vicinity averaged 15 crabs.

Marmot Bay Vicinity: Initial effort in Marmot Bay was by four vessels operating in the vicinity of the Triplet Islands in the middle of Marmot Bay, and three vessels began fishing in Kazakof Bay. The *R/V Resolution* was used to observe fleet locations in the first few days of fishing. Few catch reports were submitted inseason by vessel operators. CPUE was reported as 11 crabs for the first few days of fishing activity.

No vessel operators reported from Kazakof Bay on the first day of fishing. The *R/V Resolution* reported catch per unit effort to be less than 10 crabs when observing vessels working gear in Kazakof Bay.

While a number of boats had moved gear out of the bay, several small (less than 40') vessels continued to work gear in Kazakof Bay. Preseason survey estimates for Kazakof Bay indicated very few legal sized males. Reported CPUE on January 23 was just over five crabs. This is a significant decline from the CPUE seen in the previous two seasons of 20s and mid-teens in the 2001 and 2002 fisheries, respectively. Given this decline in CPUE and decline in population estimates seen in the annual trawl survey from Kazakof Bay, it was necessary to close the area. However, weather over the next two days was such that the small vessels that had gear in Kazakof Bay were unable to leave town. ADF&G waited two full fishing periods to close Kazakof Bay so these vessel operators would have an opportunity to return to the bay and

remove their baited gear. The closure was effective on January 26, seven days after the fishery opening.

After the closure of Chiniak Bay on January 30 and the closure of the Eastside Section on February 1, approximately seven vessels relocated to offshore areas in Marmot Bay (adjacent to Marmot Island). Three vessels also continued to participate in the middle part of Marmot Bay (adjacent to Spruce Island and Izhut Bay). The number of fishery participants would decline over the course of February as several vessels quit to begin participating in Pacific cod fisheries.

Catch data indicates 88,520 pounds were harvested from the Marmot Bay area by 23 unique vessels. CPUE in the Marmot Bay area averaged 15 crabs.

Remaining Northeast Section Waters: Aside from Marmot and Chiniak Bays, some exploration into additional areas of the Northeast Section occurred. In these remaining waters, five vessels landed 6,757 pounds. The Northeast Section of the Kodiak District closed to Tanner crab fishing February 23, 2003.

Eastside Section Fishery

Based on the 2002 trawl survey estimates of abundance, the population of mature male Tanner crabs was 2,458,711 animals, well above the regulatory threshold of 1,552,000 crabs for opening the fishery. The regulatory harvest strategy prescribed a 10% exploitation rate on molting mature abundance because the population estimate was less than the long-term average of mature male abundance. This resulted in a GHF of 340,000 pounds, higher than the 200,000 pound GHF from the 2002 fishery.

Forty-one vessels were registered for the Eastside Section during tank inspections on January 18. Five vessels changed their registrations to the Northeast Section before the fishery opening at noon on the 19th due to sea state in the Cape Chiniak vicinity. Many vessels reported daily during the initial fishing periods of the fishery. Reports gradually declined over the course of the fishery; however, several vessels within key areas continued to report their daily catches, enabling ADF&G to manage the fishery.

Catch projections were made for unique bays and areas within each section. These projections were based on reports from each unique area expanded to the estimated total number of vessels within each specific area. (i.e. Ugak Bay was handled as one area, Kiliuda and North Sitkilidak Bay another, and remaining offshore waters as another). This type of harvest estimation produced accurate projections. Additionally, information provided by the *P/V Woldstad* and discussions with vessel operators reporting catches on satellite phones kept actual vessel counts per area accurate over the course of much of the fishery. Two tenders operated for much of the Eastside Section fishery, which allowed ADF&G to verify inseason reports against actual landing information.

Ugak Bay: Approximately 25 vessels began fishing in Ugak Bay. ADF&G conducted an overflight on the fishery opening to confirm vessel locations and effort within the Eastside Section. All effort within the first three fishing periods was within the inner portion of the bay, near Hidden Basin and Saltery Cove. Inseason reports indicated a CPUE of approximately 20 crabs in the first full day of fishing. This was the same average CPUE seen in the 2001 fishery in Ugak Bay. CPUE fell to 12 legal crabs in the inner portion of the bay during the second full day of fishing. Several vessels moved to areas closer to the mouth of the bay and off the capes during the second fishing period. These vessels reported a CPUE of approximately 35 crabs.

Based on the rather precipitous decline in CPUE and the indications that the fleet was moving their effort in search of higher catches, ADF&G announced the closure of the inner portion of Ugak Bay from Gull Point to Shark Point effective January 22. Inseason catch reports indicated that CPUE from inner Ugak Bay fished prior to the closure continued to decline to approximately eight crabs. During the course of the inner Ugak Bay fishery, several vessels experienced high dead loss (20-80% of their crabs onboard). This was apparently caused by large amounts of fresh water on the surface of inner Ugak Bay that entered vessel holding tanks.

Over the course of the remainder of the Eastside Section fishery, 11 vessels operated outside the closure line in Ugak Bay and off the capes seaward of Ugak Bay. CPUE remained in the low 20s until January 26. Many smaller vessels took advantage of favorable weather at that time to return to Kodiak, deliver crabs, and either transfer to the Northeast Section fishery or quit Tanner crab fishing for the year. In the last five days of the Eastside Section fishery, three to four vessel operators continued to participate in the Ugak Bay vicinity. These vessel operators were working an area two to five miles off the capes of Ugak Bay, in the beginning of the offshore gully. CPUE would decline for these operators from high teens to low teens by the time of the closure.

Several vessel operators commented that very few recruit crabs were seen inside Ugak Bay but noted very large numbers of slightly smaller than legal animals in the outer portion of the bay and off the capes. This is consistent with the results of the most recent ADF&G surveys conducted in these areas.

Catch data indicates 95,460 pounds were harvested from the Ugak Bay vicinity by 22 unique vessels. CPUE in the Ugak Bay vicinity averaged 14 crabs.

Kiliuda/North Sitkalidak Bays: Approximately 12 vessels began fishing in the Kiliuda/North Sitkalidak Bay area. CPUE began at 17 crabs. After the first two full fishing periods, four vessels moved to other portions of the Eastside Section. The remaining eight vessels continued to work within the Kiliuda/North Sitkalidak area. CPUE varied over the course of these explorations ranging from 11 to 17 crabs. Periodic reports from the *P/V Woldstad* and vessel operators within the area confirmed vessel participation and fishing locations within the area.

By January 26, the number of vessels remaining in the area had dropped to five. In the last three full fishing periods, CPUE had fallen to 10 crabs per pot with two vessels continuing to participate. A partial closure was not used given the low participation and the imminent closure of the entire section. Vessel operators had effectively searched the inshore areas within these bays and had the fishery continued a partial closure would have been implemented to protect the long-term health of the stock. Catch and reports of sublegal crab within the area also tracked very closely with the recent ADF&G trawl surveys.

Catch data indicates 56,752 pounds were harvested from the Kiliuda and North Sitkalidak Bay vicinities by 14 unique vessels. CPUE averaged 14 crabs in this area.

Eastside Section Offshore: For the purposes of management, ADF&G defined offshore as the portion of the section outside territorial waters. Catch data indicates 196,618 pounds were harvested from the offshore Eastside Section vicinity by 10 vessels. CPUE averaged 44 crabs.

Dockside Sampling

Tanner crabs were sampled at dockside from deliveries during the course of the season. Listed in priority order, samplers obtained the following information: confidential interviews with vessel captains, average weight, and carapace width/shell age data. During confidential interviews,

samplers obtained detailed information regarding effort, location, fishery performance, and bycatch. Thirty-three vessels, or 12% of the deliveries were contacted for confidential interviews during the 2003 fishery. Average weights were obtained from 29 vessels including two tenders. Approximately 41% of the crab delivered in 2003 were accounted for in the average weight sampling. Crabs from the Northeast Section averaged 2.14 pounds. Crabs from the Eastside Section averaged 2.54 pounds. Approximately 1.8% of the crabs delivered were sampled for carapace width data. Within that data, 78.9% of the animals measured were new shelled, 20.9% were old shelled, and 0.1% were very old shelled. The average carapace width for the 2003 fishery was 149 mm (Figure 3).

Status of Kodiak District Tanner Crab Stocks

The 2003 Kodiak District estimate of 73.5 million crabs of all sizes and sex was a decrease from the 106.8 million crabs estimated in 2002. The population of legal Tanner crabs was estimated to be approximately 2.1 million crabs which is the same as the 2002 estimate. Prerecruit males between 92-114 mm CW comprised 37% of the total male population estimate. The highest densities of crabs were found in the Eastside Section (Figure 4); this is similar to the results of recent year's surveys.

Egg clutches of 6,011 mature female Tanner crabs were examined during the survey. Forty-six percent were primiparous. This was a decrease from the 61% in 2002. Forty-one percent of the mature females examined had a clutch fullness of 80% or higher. This was an increase from the 37% in 2002 (Spalinger 2004).

The Northeast, Eastside, and Southeast Sections satisfied the criteria of the harvest strategy for a commercial opening in 2003/04. The GHGs were 245,000 pounds for the Northeast Section, 450,000 pounds for the Eastside Section, and 100,000 pounds for the Southeast Section. The Southwest Section was above the threshold level of mature male abundance in 2003 but was below threshold in 2002. The regulatory harvest strategy requires that the GHG, in a year following survey estimates below threshold, be reduced by ½ as a precautionary measure. This reduction dropped the calculated GHG below the minimum GHG of 100,000 pounds for the Southwest Section. The Westside and North Mainland Sections' mature male abundance estimates remain below their respective harvest strategy thresholds. The remaining sections of the Kodiak District remain below the established mature male abundance thresholds for a commercial fishery opening. The Southwest and the Westside Sections were the two sections closest to the opening thresholds. Complete information on the 2003 trawl survey results is available in the ADF&G Regional Information Report # 4K04-32.

CHIGNIK DISTRICT

Description of the Area

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 5).

Overview of Fishery Regulations

The Chignik District is superexclusive registration 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 GHG must be at least 200,000 pounds for a commercial fishery to occur. Additionally, the South Peninsula District must also open before a commercial fishery

in the Chignik District can occur. The Chignik District has a fixed pot limit regardless of the district GHL. No more than 30 pots per vessel may be used.

The following regulations were adopted by the BOF in the 2001/02 cycle, and were in effect for the 2002/03 season. 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.

Historic Background

The Chignik District Tanner crab fishery began in 1968 when 21,100 pounds were harvested (Table 8). 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 harvest 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. Many of the most productive areas were offshore between Mitrofanina 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 has remained closed.

2002/03 Chignik District Tanner Crab Season

The 2002 trawl survey indicated the Chignik District was above the established threshold level of molting-mature abundance for a commercial fishery opening in 2003. The established threshold is 973,000 mature males; the survey indicated 1,618,913 mature males in the district. However, the molting-mature abundance was below threshold in 2001. The regulatory harvest strategy requires that the GHL, in a year following survey estimates below threshold, be reduced by $\frac{1}{2}$ as a precautionary measure. This reduction dropped the calculated GHL below the fishery management threshold of 200,000 pounds. Therefore, the fishery remained closed.

Status of Chignik District Tanner Crab Stock

The overall crab abundance in the Chignik District declined from 10.8 million in 2002 to 5.7 million in 2003 (Spalinger 2004). The number of prerecruit males from 70-114 mm CW showed the largest decrease in 2003. Egg clutches of 978 mature female Tanner crabs were examined during the survey. Almost 61% percent of the mature females examined had a clutch fullness of 80% or higher. Complete information on the 2003 trawl survey results is available in the ADF&G Regional Information Report # 4K04-32.

SOUTH PENINSULA DISTRICT

Description of the Area

The South Peninsula District for Tanner crab includes 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 5).

Overview of Fishery Regulations

The South Peninsula District is nonexclusive registration 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 regulations were adopted by the BOF in the 2001/02 cycle, and were in effect for the 2002/03 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 9). The fishery grew quickly and, by the 1972/73 season, the 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. The fishery peaked during the 1978/79 season when slightly less than nine million pounds of crab were caught. From 1979 to 1984, harvest and CPUE declined as a result of low recruitment and in the 1983/84 season the fleet only landed two million pounds. Recruitment improved in the years 1985 through 1988 and the harvest ranged from two million to almost four million pounds. The harvest decreased to one million pounds in the 1988/89 season and indications from the ADF&G trawl survey predicted a decline in recruitment. The fishery was closed from 1990 to 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 2001. 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 fishing periods (44 hours total fishing time).

2002/03 South Peninsula District Tanner Crab Season

The 2002 trawl survey indicated the South Peninsula District was above the established threshold level of molting-mature abundance for a commercial fishery opening in 2003. The established threshold is 1,375,000 mature males; the survey indicated 1,586,397 mature males in the district. However, the number of molting-mature abundance was below threshold in 2001. The regulatory harvest strategy requires that the GHL, in a year following survey estimates below threshold, be reduced by $\frac{1}{2}$ as a precautionary measure. This reduction dropped the calculated GHL below the fishery management threshold of 200,000 pounds. Therefore, the abundance of mature males did not satisfy the threshold criteria of the harvest strategy and the fishery remained closed.

Status of South Peninsula District Tanner Crab Stock

The 2003 trawl survey completed 93 tows in the South Peninsula District (Figure 6). The abundance estimate for the South Peninsula District decreased from 20.7 million animals of all sizes and sexes in 2002 to 11.3 million in 2003. The decrease was largely due to the decrease of sublegal males less than 70 mm and juvenile females. The 2003 population estimate of legal

crabs decreased from 0.48 million crabs in 2002 to 0.37 million crabs (Spalinger 2004). Egg clutches of 80% or higher were found in only 26.5% of the 1,680 mature females examined. Complete information on the 2003 trawl survey results is available in the ADF&G Regional Information Report # 4K04-32.

DUNGENESS CRAB

INTRODUCTION

The Dungeness crab fisheries that occur in the Kodiak, Chignik, and Alaska Peninsula Districts are part of Registration Area J. There is no established GHL for Dungeness crab. Management is achieved by '3-S' management wherein the sex, size, and season are regulated. 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 any 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 7).

Overview of Fishery Regulations

The Kodiak District is nonexclusive registration for Dungeness crab fishing. In most waters of the Kodiak District, male Dungeness crab 6.5" in CW or greater 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, male Dungeness crab may be taken only from June 15 through January 1.

Historic Background

Dungeness crabs were first harvested commercially in 1962 when 1.9 million pounds were taken (Table 10). 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 in the winter due to storms. This season change was aimed at reducing the amount of gear left fishing with extremely long soak times. 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.

During the early 1980s, declines in abundance of other commercially harvested Alaskan shellfish occurred and 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 8). 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 the ADEC restrictions took effect. ADEC restrictions have remained in place since their initial implementation in the early 1990s. Prices have fluctuated and reached a high of \$2.04 in 1997.

2003/04 Kodiak District Dungeness Crab Season

The 2003 fishery opened on May 1 in all areas except Kodiak's south end, which opened on June 15. Seventeen vessels harvested 467,623 pounds from 89 landings (Table 10). All vessels that participated in the 2003 fishery were less than 90 feet overall length; over half of the fleet consisted of vessels less than 50 feet overall length (Table 11).

Harvest peaked in July though effort remained relatively constant through September (Figure 9). As in 2001 and 2002, the majority of harvest during 2003 came from statistical area 545601, south of Sitkinak and Tugidak Islands. (Table 12).

An average of five legal crabs per pot were landed during the 2003/04 season. This is the highest average since the 1989/90 season that produced an average CPUE of eight. The CPUE has remained almost constant over the course of the commercial fishery. 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 2003 averaged \$1.50, up from \$1.46 in 2002 and down from \$1.95 in 2001. The estimated exvessel value for the 2003/04 season was \$695,000 (Table 10).

Dungeness crabs harvested in the Kodiak District had a mean CW of 175 mm in 2003, nearly identical to the 174 mm CW in the 2002 (Figure 8). The percentage of post-recruit crabs taken in the commercial harvest during the 2003/04 season was 22%, which was comparable to 21% from the 2002/03 season.

CHIGNIK DISTRICT

Description of the Area

The Chignik District for Dungeness crab includes waters of Registration Area J that are west of the longitude 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 10).

Overview of Fishery Regulations

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

2003/04 Chignik District Dungeness Crab Season

Only one vessel registered for the Chignik District in 2003, therefore harvest data is confidential (Table 13). Since the creation of the Chignik District, less than three vessels or processors have participated annually. Therefore, all harvest information remains confidential, and is combined with the Alaska Peninsula District.

ALASKA PENINSULA DISTRICT

Description of the Area

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 10).

Overview of Fishery Regulations

The Alaska Peninsula District is a superexclusive registration area for Dungeness crab fishing. Male Dungeness crab 6.5" in 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 13). 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 superexclusive registration in 1983. Since then effort in the district has declined and recent catches have been small.

2003/04 Alaska Peninsula District Dungeness Crab Fishery

The 2003/04 Alaska Peninsula District Dungeness crab season opened May 1. Four vessels participated in the fishery; however less than three processors purchased Dungeness crab. Therefore, harvest information remains confidential.

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 activity has been 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 open by regulation on September 25 if biomass estimates meet or exceed threshold levels contained in the Harvest Strategy for Kodiak and Bristol Bay Red King Crab and Saint Matthew Island and Pribilof Blue King Crab, Special Publication Number 7 (Pengilly and Schmidt, 1995). In the Kodiak Area, a threshold of 5.12 million fertilized females was established in this harvest strategy. The female threshold is further broken down by individual Kodiak management sections. 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 Alaska Peninsula Area. If stock status of red king crabs were healthy enough to allow for a commercial fishery, GHs would be established utilizing similar criteria for other Westward Region king crab districts. Red king crab fisheries in the Kodiak and Alaska Peninsula Areas would be managed inseason until

the GHL was attained or biological considerations occurred that warranted closure of the fishery to protect the long-term health of the stocks.

GENERAL GOLDEN KING CRAB INFORMATION

Minor harvest of golden king crabs, previously called ‘brown’ king crab, has 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. Conditions of the commissioner’s permit for golden king crabs state that (1) a valid CFEC permit card is required, (2) tank inspection is required, (3) gear must comply with 5 AAC 34.425 LAWFUL GEAR FOR REGISTRATION AREA K, (4) only male golden king crab 6-1/2” carapace width or greater may be retained, (5) pots may not be longlined, (6) a 75 pot limit is in effect, and buoy tags supplied by ADF&G are required, (7) logbooks are required, (8) ADF&G must be notified of all deliveries, (9) pots must be fished 125 fathoms or deeper in all areas except Shelikof Strait and the Southeast and Eastside Districts of the Kodiak Area where they may be fished up to 100 fathoms, (10) retention of Pacific cod for sale is not permitted, nor is simultaneous participation in the state-waters Pacific cod fishery, (11) weekly radio schedule updates may be required, and (12) the department reserves the right to deploy ADF&G personnel on board the vessel as an onboard observer with cost borne by the department. No GHL is established for the golden king crab fishery.

KODIAK AREA

Description of the Area

The Kodiak King Crab Management Area has its northern boundary the latitude of Cape Douglas (58° 51.10’ N lat.), and its western boundary 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 11).

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 14). The development period 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 been 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 inches occurred (Table 15). Often, second fishing seasons occurred that targeted larger, older crabs. Harvest ranged from 10.9 million pounds during the 1971/72 season to 24.0 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 established threshold levels of legal males needed before considering any future fishery openings. The threshold of 10.3 million pounds of legal crabs was nearly twofold the 5.5 million pound estimate of the 1983 survey. The king crab season has not opened since the 1982/83 season.

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 since 1988. The Kodiak Area remains closed because the abundance estimates of females are well below threshold levels. Complete information on the Westward Region trawl survey catches can be obtained from ADF&G in the Regional Information Report series.

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 did reopen.

STATUS OF KODIAK AREA RED KING CRAB STOCKS

The Kodiak red king crab population remains at historically low levels, and fishing seasons for red king crabs have remained closed since the 1982/83 season. During the 2003 Kodiak trawl survey, ADF&G completed 211 hauls in known king crab habitat. The red king crab population was estimated to be 72,245 animals, of which 10,260 were legal-sized males. As seen in Figure 12, the majority of king crabs were found in the Southwest Section (Spalinger 2004). The mature red king crab female population was estimated to be 13,172 animals, well below the 5.1 million threshold required for a fishery opening. Fifty six percent of the mature female crab sampled had an estimated ovigerity of 70% or greater. In 2002, 70% of the mature female crab sampled had an estimated ovigerity of 80% or greater.

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 crab 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 16). 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.

2003 KODIAK AREA GOLDEN KING CRAB FISHERY

Two vessels registered to fish golden king crab in the Kodiak Area during 2003; harvest information remains confidential.

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 has as its eastern boundary the longitude of Cape Kumlik (157° 27' W long.), and as its western boundary the longitude of Scotch Cap Light (164° 44' W long.). The Alaska Peninsula is further divided into the Unimak Bight, Central, and West Chignik Districts (Figure 13).

RED KING CRAB

Overview of Fishery Regulations

The Alaska Peninsula Area is superexclusive registration for red king crab. The area has a sliding scale pot limit based on the GHJ 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 17). 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 five 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 stocks since 1988 with the *R/V Resolution*. The 2003 survey consisted of 138 tows in king crab habitat throughout the registration area. Data from the survey indicate the red king crab population remains at very low levels. The estimated population from the 2003 survey was 39,859 crabs, a decrease from the estimated 185,072 crabs from the 2002 survey (Spalinger 2004). Because the stock is at a very low level, with patchy distribution, population estimates can vary widely each year. As has been the case with previous surveys in the Alaska Peninsula Area, wide ranges in sizes of both sexes were captured.

GOLDEN KING CRAB

Overview of Fishery Regulations

The Alaska Peninsula Area is superexclusive registration for golden king crab. An aggregate of no more than 75 pots may be operated 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 carapace width may be taken from January 1 through December 31 under a permit issued by the commissioner.

2003 ALASKA PENINSULA AREA GOLDEN KING CRAB FISHERY

No vessels registered to fish for golden king crab in the Alaska Peninsula Area during 2003.

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 to sustain a commercial fishery in this area.

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 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). Sections with MABI thresholds open and close by EO. An EO 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 Area

The Kodiak District for shrimp includes waters of shrimp Registration Area J that are 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 14).

Historic Background

The Kodiak trawl shrimp fishery began with a harvest of 31,886 pounds in 1958 (Jackson and Ruccio 2003). 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 (Table 18). As Kodiak shrimp catches declined in the 1970s, much of the vessel effort shifted into the Chignik and South Peninsula Districts (Jackson and Ruccio 2003). The Westward Region harvest peaked in 1976 at 120 million pounds. Stock abundance and fisheries declined sharply thereafter. The northern pink shrimp *Pandalus borealis* has been the most prevalent species in the harvest contributing over 95% by weight. 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 a fishery during rebuilding periods. A minimum level at which any harvest would occur was established and termed the "minimum acceptable biomass index" (MABI) (Table 19).

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 in 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 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. The largest landing of product was less than 19,000 pounds of spot shrimp tails in 1983 (Table 20).

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 EO. 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 EO. 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 North Afognak, West Afognak, and Mainland Sections.

2002/03 KODIAK DISTRICT SHRIMP POT AND TRAWL SEASONS

There was no fishing effort for pot shrimp in 2003. Only one vessel participated in the trawl shrimp fishery during the 2002/03 season, therefore harvest information is confidential.

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 will be surveyed on an annual basis. Most of the General Section is not surveyed; nor is there any established MABI in the General Section. In 2003, no sections in the Kodiak District produced shrimp population estimates above the department's established MABI. In the Kodiak District, the highest catch of shrimp per mile towed was found in Marmot and Wide Bays (Jackson 2004). Wide Bay is part of the territorial waters closed to non-pelagic trawl gear, including shrimp beam and otter trawls. Therefore, no commercial trawl fishery occurred in Wide Bay in 2003. Table 19 contains the population estimates and MABIs established for the Kodiak District Sections surveyed in 2003. Most sections remain well below historic population levels, but have shown some increases in recent years.

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. It is reasonable to expect, based on the general population trends exhibited by pink shrimp through the trawl survey, that all shrimp populations remain stable at lower than historic levels.

SOUTH PENINSULA AND CHIGNIK DISTRICTS

Description of the Areas

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, Mitrofanina 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, Kenoy's 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 19.6 million pounds were harvested (Table 21). The historic high catch of 71.5 million pounds was reached in the 1977/78 season from the two districts. 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. This new regulation contains conservative management tools to allow pot shrimp fishing opportunities in these three sections. Season dates, a GHR, and a mandatory logbook requirement was created. 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

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 EO 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 EO. 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.

2002/03 SOUTH PENINSULA AND CHIGNIK DISTRICTS SHRIMP POT AND TRAWL SEASON

There was no fishing effort for pot shrimp during the 2003 season and no fishing effort for shrimp with trawl gear for the 2002/03 season.

STATUS OF SOUTH PENINSULA AND CHIGNIK DISTRICTS SHRIMP STOCKS

The South Peninsula and Chignik Districts were not surveyed in 2003. In 2002, ADF&G conducted a trawl survey in the South Peninsula and Chignik Districts for the first time since 1995. Shrimp abundance indices from the 2002 survey were below MABI levels in all South Peninsula and Chignik District sections that were surveyed (Table 19). Shrimp densities within the South Peninsula and Chignik Districts were similar to those found during a 1995 survey (Jackson and Ruccio 2003). The South Peninsula and Chignik Districts are scheduled to be surveyed again in October, 2004.

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. 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. GHs are established annually and fisheries remain open until section GHs are attained or the biological closure begins. Weekly fishing periods are announced and established by EO. Fishing periods begin on or about October 1 and continue until the established GHs are attained. In recent years, most sections that have received fishing activity have been open 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. Dive logs are required to be submitted 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 Area

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 5). 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. 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 Kodiak in an attempt to spread the 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 1998-2001, 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 Area Management Report.

2003/04 KODIAK AND CHIGNIK DISTRICTS RED SEA CUCUMBER SEASON

The 2003/04 fishery opening was Thursday, October 2, 2003. In recent years, the first fishing period has been scheduled on the first Thursday of October to allow management decisions to be made during the early portion of the following work week.

The 2003/04 GHL for the Kodiak Area totaled 150,000 pounds of eviscerated product. The Chignik District GHL was 25,000 pounds (Table 22). Twenty-one permit holders made landings from the Kodiak and Chignik Districts, with most of the harvest occurring in the Kodiak District. To prevent overexploitation in the Uganik Bay area, a separate commissioner's permit was required to harvest sea cucumbers. Uganik Bay, which is part of the Westside Section, was assigned a GHL of 10,000 pounds. The Eastside, Southeast, Southwest, Westside Sections, and the Uganik Bay area of the Westside Section of the Kodiak Area were closed by EO to prevent

divers from exceeding the GHLs. Only one processor purchased product; therefore, harvest information is confidential.

First Fishing Period, October 2 to October 5

The first dive fishing period was established as a two-day opening October 2-3. Due to weather conditions, no divers participated during the scheduled opening; therefore, the opening was extended for two additional days on October 4 and 5.

The majority of effort occurred in the Eastside Section where 10 divers harvested sea cucumbers. The average harvest per diver per day was 751 pounds. Historically, divers tend to target the Eastside Section during the first fishing period. Nine divers harvested sea cucumbers from the Southeast Section in the first period with an average harvest per diver per day of 640 pounds. In previous seasons, more effort occurred in the Southeast Section in the first period. Divers stated that weather and visibility hampered dive operations during this period.

Second Fishing Period, October 10 to October 11

Based on harvest in the first period, the Eastside Section was opened for one day in the second fishing period. All remaining sections were scheduled to open for two days. The second opening had originally been scheduled to begin on October 9. However, a 24-hour walleye pollock opener was scheduled to occur at the same time and the sole sea cucumber processor requested that the dive fishery opening be moved to October 10-11 to allow the pollock fleet to deliver and processing to be completed before sea cucumber deliveries began. The dive fleet was contacted and unanimously supported moving the opening to begin on Friday, October 10.

Eight divers harvested sea cucumbers from the Eastside Section, with an average harvest per diver for the one-day fishery of 1,840 pounds. Twelve divers harvested sea cucumbers from the Southeast Section, averaging 877 pounds of sea cucumbers per diver per day. The Southeast Section was closed for the remainder of the season after the GHL had been exceeded. Minor harvest occurred in the Westside Section and the Uganik Bay area. One diver explored the Uganik Bay area and reported to ADF&G that there were not many red sea cucumbers in the explored area. The Uganik Bay area was closed after the second fishing period.

Third Fishing Period, October 16 to October 18

The third fishing period was originally set for October 16 and 17. The Eastside Section was scheduled for a 12-hour opening on October 16, and all other sections not previously closed were opened for the full two-day fishing period. Due to poor weather, the dive fleet voluntarily stood down on the first day of the opening. The department extended the third period through October 18 so that the dive fleet would have two full days of dive time in most sections. The 12-hour opening in the Eastside Section was not adjusted, therefore, no effort occurred in that section in the third opening due to time constraints. The majority of the dive fleet participated in the Westside Section during the third fishing period. Minimal effort occurred in the Southwest Section.

Significant feedback from the fleet occurred regarding the Uganik Bay area closure. Many divers wanted an opportunity to explore the area. Most cited the unique dive characteristics (i.e. deeper dives in cobble fields; animals often obscured by rocks and kelp requiring more active searching) of the area necessary to obtain quantities of sea cucumbers. Based on these discussions, the department reopened the Uganik Bay area for the fourth fishing period.

Fourth Fishing Period, October 23 to 24

As several sections had only a small portion of the GHL remaining, the dive fleet approached the department to structure the fourth opening so that dive time was optimized and the GHLs were attained. Fishery participants reported that five divers would return to the Eastside Section. The remaining 10 divers would participate in the Southwest Section. Based on anticipated levels of participation and harvest, the fleet was given a 42-hour opening in the Eastside Section, a one-day opening in the Westside Section, and two days for all remaining open sections.

One vessel with four divers that had planned to participate in the Southwest Section was unable to travel the distance, citing poor weather. This group participated in the Eastside Section. The GHL in the Eastside Section was attained, therefore the section was closed for the remainder of the year. Only two vessels participated in the Southwest Section. To ensure the GHL would not be exceeded, the Southwest Section was closed for the remainder of the year.

Fifth Fishing Period, October 30 to November 2

Prior to the fifth opening, the sole processor purchasing sea cucumbers indicated that the fifth opening would be the last in which they would buy product until spring. The dive fleet again approached the department to indicate how many divers would participate. Based on the number of remaining divers and anticipated harvest rates, one and a half days were given for the Westside Section. The Uganik Bay area was open for two days following the closure of the Westside Section. The Northeast Section was opened for one day following the closure of the Uganik Bay area. This staggered, four-day opening was designed to allow the dive fleet to participate in each section and fully attain the remaining GHLs before the processor withdrew.

Minor harvest occurred in the Northeast Section during this fishing period. Nine divers harvested sea cucumbers in the Westside Section, and eleven divers made landings in the Uganik Bay area of the Westside Section. The Westside Section, and the Uganik Bay area were closed for the remainder of the season.

Additional Fishing Effort Information

In April 2004, five divers registered to fish for sea cucumbers in the Chignik District. Divers were required to report daily harvest to ADF&G. The divers fished in the Chignik District for three days, citing poor visibility. Also during April, five divers on one vessel registered to fish sea cucumbers in the Mainland Sections. The divers fished for three days but did not find large numbers of sea cucumbers. Minimal harvest did occur in the North Mainland Section. No effort occurred in the South Mainland or Semidi Island Section of the Kodiak Area during the 2003/04 season.

Dockside Sampling

Over the course of the fishery, dockside samplers conducted interviews with vessel operators at each delivery, and obtained average weights of sea cucumbers. Nineteen landings were sampled for average weights. The average eviscerated weight for Kodiak Area red sea cucumbers that were sampled was 0.62 pounds per animal.

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. Funding from a federal grant has been utilized for preliminary dive and video assessment of red

sea cucumber populations in the Eastside Section of Kodiak. Results of this pilot study have not been completed.

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 a line extending south from Scotch Cap Light (Figure 5).

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.

2003/04 SOUTH PENINSULA DISTRICT RED SEA CUCUMBER SEASON

No fishing occurred during the 2003/04 season in the South Peninsula District sea cucumber fishery. The season was open from October 1 through April 30 with a GHF 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; however, 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 regulations set the season at October 1 to January 31. Dive and handpicking are the only legal means to harvest sea urchins. The use of 4-foot rakes is also allowed. 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 2¼ 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 23). Kodiak green sea urchins are usually shipped live to Japan for processing.

Red sea urchins *Strongylocentrotus franciscanus* are widely harvested in Southeast Alaska and along the west coast of Canada and the lower 48 states. Red sea urchins are found in small

quantities in the Kodiak Area, however their abundance is insufficient to support a commercial fishery.

In 2000, ADF&G worked to develop conservative GHGs 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 GHG. Sections that had been previously explored and had some prior harvest were assigned a 10,000 pound GHG to help prevent local depletion. ADF&G will work closely with fishery participants to collect baseline biological data from the green sea urchin fishery.

2003/04 GREEN SEA URCHIN SEASON

No vessels were registered for the 2003/04 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, and South Peninsula Districts of miscellaneous shellfish Registration Area J. There is no closed season for directed fisheries for octopus; 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 an octopus commissioner's permit, 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 GHGs 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. 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 *Gadus macrocephalus* 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.

The majority of octopus harvest in the Kodiak, Chignik, and South Peninsula Districts has occurred within state waters (Table 24 & 25). In 1991, there were 106,748 pounds of octopus harvested from state waters in the Kodiak Area. In that same year, 22,657 pounds of octopus were harvested from federal waters in the Kodiak Area. Octopus harvest decreased substantially in the mid-1990s, only to increase sharply with the advent of the state-waters Pacific cod fisheries in 1997. In 1997, a total of 338,305 pounds of octopus were harvested in state and federal waters in the Kodiak, Chignik and South Peninsula Districts. In the Kodiak District, harvest reached a record high in 1998 with a combined state and federal harvest of 379,941 pounds.

2003 KODIAK DISTRICT OCTOPUS FISHERY

Six vessels were registered to target octopus in 2003, however no directed effort occurred. The 2003 incidental harvest of octopus in the Kodiak District totaled 73,027 pounds from state and federal waters. Forty-two vessels harvested 56,008 pounds from 121 landings in state waters. A total of 17,019 pounds were harvested from federal waters by 29 vessels making 58 landings. Fish tickets with price information listed an average of \$0.35 per pound for an estimated exvessel fishery value of \$23,198 for the state and federal water harvest combined.

2003 ALASKA PENINSULA AND CHIGNIK DISTRICTS OCTOPUS FISHERIES

One vessel registered for directed fishing of octopus in the Chignik District in 2003, however no directed effort occurred. The 2003 incidental harvest of octopus in the Alaska Peninsula Area totaled 64,423 pounds from state and federal waters. Twenty-five vessels harvested 18,333 pounds from 54 landings in state waters. A total of 46,090 pounds were harvested from federal waters by 26 vessels making 85 landings. Fish tickets with price information listed an average of \$0.61 per pound for an estimated exvessel fishery value of \$39,298 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 fishing.

HISTORIC BACKGROUND

Razor clams have been harvested in the Kodiak Management Area from the early 1920s through 1986. 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 stock status at this time. No commercial activity has occurred in this area since 1986 (Table 26).

OTHER MISCELLANEOUS SHELLFISH FISHERIES

Periodic interest has arisen 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 any undescribed shellfish species is best obtained by contacting ADF&G directly. 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, 2003.

Emergency Order	Effective Date	Explanation
<u>Tanner Crab</u>		
4-S-02-03	January 15, 2003	Delayed fishery opening in the Northeast and Eastside Sections of the Kodiak District to Tanner crab fishing due to weather forecast.
4-S-03-03	January 16, 2003	Delayed fishery opening in the Northeast and Eastside Sections of the Kodiak District to Tanner crab fishing due to weather forecast.
4-S-04-03	January 17, 2003	Delayed fishery opening in the Northeast and Eastside Sections of the Kodiak District to Tanner crab fishing due to weather forecast.
4-S-05-03	January 18, 2003	Delayed fishery opening in the Northeast and Eastside Sections of the Kodiak District to Tanner crab fishing due to weather forecast.
4-S-07-03	January 22, 2003	Closed Ugak Bay to Tanner crab fishing for remainder of 2002/03 season.
4-S-08-03	January 26, 2003	Closed Kazakof Bay to Tanner crab fishing for the remainder of 2002/03 season.
4-S-09-03	January 29, 2003	Clarification of Ugak Bay closure line for the 2002/03 Tanner crab fishery.
4-S-10-03	January 30, 2003	Closed Chiniak and Monashka Bay state waters to Tanner crab fishing for the remainder of the 2002/03 season.
4-S-11-03	February 1, 2003	Closed all remaining open waters of the Eastside Section of the Kodiak District to Tanner crab fishing for remainder of the 2002/03 season.
4-S-14-03	February 23, 2003	Closed all remaining open waters of the Northeast Section of the Kodiak District to Tanner crab fishing for remainder of the 2002/03 season.

-Continued-

Table 1.-(page 2 of 2)

Emergency Order	Effective Date	Explanation
<u>Sea Cucumber</u>		
4-S-22-03	October 3, 2003	Extended the first sea cucumber dive fishing period for the Kodiak Area.
4-S-23-03	October 8, 2003	Opened the sea cucumber dive fishery in the Eastside Section of the Kodiak Area for a one-day fishing period.
4-S-24-03	October 16, 2003	Closed the Southeast Section of the Kodiak Area for the remainder of the 2003/04 season, and the Uganik Bay portion of the Westside Section for the third fishing period.
4-S-26-03	October 22, 2003	Opened the sea cucumber dive fishery in the Eastside Section of the Kodiak Area for a 42-hour fishing period. Reopened Uganik Bay area in the Westside Section for a two-day period. All remaining sections not previously closed in the Kodiak District opened for two days.
4-S-27-03	October 28, 2003	Closed the Eastside and Southwest Sections of the Kodiak Area to commercial fishing for red sea cucumbers for the remainder of the 2003/04 season. Opened the sea cucumber dive fishery in the Westside Section for a 7-hour period. Opened the Uganik Bay area within the Westside Section for a 1.5-day period. Opened the Northeast Section for one day.
<u>King Crab</u>		
4-S-21-03	September 24, 2003	Closed Registration Areas 'K' and 'M' to red and blue king crab fishing for the 2003/04 season.

Table 2.-Shellfish emergency orders issued for the Alaska Peninsula Area, 2003.

Emergency Order	Effective Date	Explanation
<u>Tanner Crab</u>		
4-S-01-03	January 15, 2003	Closed the Chignik and South Peninsula Districts to commercial Tanner crab fishing for the 2002/03 season.
<u>King Crab</u>		
4-S-21-03	September 24, 2003	Closed Registration Areas 'K' and 'M' to red and blue king crab fishing for the 2003/04 season.

Table 3.-Tanner crab commercial catch, effort, and value for the Kodiak District, 1967 - 2002/03.

Year/Season	Number of				Pots Lifted	CPUE	Average Weight	Price Per Pound
	Vessels	Landings	Crabs ^a	Pounds ^a				
1967	NA	83	NA	110,961	NA	NA	NA	\$0.07
1968	NA	817	NA	2,560,687	NA	NA	NA	\$0.10
1969	85	955	NA	6,827,312	72,748	43	NA	\$0.11
1969/70	67	833	3,237,244	8,416,782	78,266	42	2.6	\$0.11
1970/71	82	453	2,686,067	6,744,163	60,967	44	2.5	\$0.11
1971/72	46	505	3,878,618	9,475,902	65,907	59	2.4	\$0.13
1972/73	105	1,466	13,609,688	30,699,777	188,158	72	2.3	\$0.17
1973/74	123	1,741	11,857,573	29,820,899	217,523	55	2.5	\$0.20
1974/75	74	471	5,459,940	13,649,966	73,826	74	2.5	\$0.17
1975/76	104	1,168	10,748,958	27,336,909	199,304	54	2.5	\$0.20
1976/77	102	998	7,830,727	20,720,079	164,213	48	2.6	\$0.33
1977/78	148	1,483	12,401,243	33,281,472	251,621	49	2.6	\$0.43
1978/79	218	1,225	10,702,829	29,173,807	275,455	38	2.7	\$0.55
1979/80	211	1,385	6,813,128	18,623,875	282,946	24	2.7	\$0.55
1980/81	188	771	4,398,631	11,748,629	174,351	25	2.7	\$0.65
1981/82	221	950	5,413,467	13,756,159	230,403	24	2.5	\$1.65
1982/83	348	1,439	7,744,812	18,927,061	377,562	21	2.4	\$1.25
1983/84	303	1,229	5,891,968	14,478,066	303,764	19	2.5	\$1.20
1984/85	217	710	4,540,114	11,947,696	176,215	26	2.6	\$1.96
1985/86	234	603	3,454,957	8,990,612	160,220	22	2.6	\$1.97
1986/87	190	506	1,832,962	4,839,446	111,198	16	2.6	\$2.64
1987/88	178	560	1,648,064	3,959,504	103,391	16	2.4	\$2.27
1988/89	171	566	2,096,540	5,185,563	86,056	24	2.5	\$2.84
1989/90	232	547	1,437,905	3,446,937	96,956	15	2.4	\$2.64
1990/91	137	445	764,357	1,917,713	54,110	14	2.5	\$1.56
1991/92	143	434	982,391	2,400,213	47,384	21	2.4	\$2.23
1992/93	140	353	518,982	1,318,446	43,528	12	2.5	\$2.11
1993/94	130	379	511,131	1,253,462	41,587	12	2.5	\$2.25
1994/95 to 1999/00				No Commercial Fishery				
2000/01	144	192	193,138	510,407	7,233	27	2.6	\$2.29
2001/02	181	279	146,655	361,166	10,446	14	2.5	\$2.03
2002/03	72	276	215,594	511,324	11,108	19	2.4	\$2.32
TOTAL	NA	NA	131,017,683	342,994,995	3,966,446	NA	NA	NA

^aIncludes deadloss.

NA = Not available

Table 4.-Tanner crab guideline harvest level, effort, and harvest by section for the Kodiak District, 2001/02.

Section	GHL	Vessels	Permits	Harvest	Pots Lifted	CPUE
Northeast	300,000	104	118	127,818	6,005	10
Eastside	200,000	88	103	233,348	4,441	20
<i>Total</i>	500,000	181 ^a	211	361,166	10,446	14

^aTotal unique vessels; several vessels participated in both sections.

Table 5.-Tanner crab guideline harvest level, effort, and harvest by section for the Kodiak District, 2002/03.

Section	GHL	Vessels	Permits	Harvest	Pots Lifted	CPUE
Northeast	170,000	44	46	162,494	5,036	15
Eastside	340,000	39	43	348,830	6,072	23
<i>Total</i>	510,000	72 ^a	79	511,324	11,108	19

^aTotal unique vessels; several vessels participated in both sections.

Table 6.-Kodiak, Chignik, and South Peninsula District Tanner crab guideline harvest levels and season dates, 2002/03.

District/Section	GHL (pounds)	Opening date/ time	Closure date/ time
Kodiak			
Northeast ^a	170,000	Jan. 19/ Noon	Jan. 26/ 5:59 PM
Northeast ^b	-----	-----	Jan. 30/ 5:59 PM
Northeast ^c			Feb. 23/ 6:00 PM
Eastside ^d	340,000	Jan. 19/ Noon	Jan. 22/ 2:00 PM
Eastside ^e	-----	-----	Feb. 01/ 6:00 PM
Southeast		No Commercial Fishery	
Southwest		No Commercial Fishery	
Westside		No Commercial Fishery	
North Mainland		No Commercial Fishery	
South Mainland		No Commercial Fishery	
Semidi Islands		No Commercial Fishery	
Chignik		No Commercial Fishery	
South Peninsula		No Commercial Fishery	

^aPartial closure of the Northeast Section (Inner waters of Kazakof Bay).

^bPartial closure of the Northeast Section (Chiniak and Monashka Bay).

^cRemaining waters of the Northeast Section closed.

^dPartial closure of the Eastside Section (Ugak Bay).

^eRemaining waters of the Northeast Section closed.

Table 7.-Kodiak District Tanner crab harvest by vessel size, 2003.

Vessel Length	Vessels per size class		Harvest per size class		Average harvest per size class
	Number	Percent	Pounds	Percent	
<29'	4	5.6%	2,242	0.4%	561
30-39'	13	18.1%	29,267	5.7%	2,251
40-49'	29	40.3%	202,813	39.7%	6,994
50-59'	19	26.4%	129,197	25.3%	6,800
60-69'	3	4.2%	79,715	15.6%	26,572
70-89 ^a	4	5.6%	68,090	13.3%	17,023
Total	72	100.0%	511,324	100.0%	7,102

^aTwo size classes combined to protect confidentiality.

Table 8.-Tanner crab commercial catch, effort, and value for the Chignik District, 1968 - 2002/03.

Year/Season	Number of				Pots Lifted	CPUE	Average Weight	Price Per Pound
	Vessels	Landings	Crabs	Pounds				
1968	NA	NA	NA	21,100	NA	NA	NA	NA
1969	NA	NA	NA	38,100	NA	NA	NA	NA
1969/70	NA	NA	NA	2,800	NA	NA	NA	NA
1970/71	NA	NA	NA	152,300	NA	NA	NA	NA
1971/72	Confidential							
1972/73	15	56	297,363	747,788	8,080	51	2.5	\$0.16
1973/74	25	115	1,585,560	4,054,873	28,083	57	2.6	\$0.20
1974/75	25	91	1,438,508	3,649,444	22,675	63	2.5	\$0.14
1975/76	35	288	2,724,509	11,201,900	52,381	52	2.5	\$0.19
1976/77	21	141	2,098,226	5,672,919	40,604	52	2.7	\$0.33
1977/78	32	140	1,725,042	4,693,830	38,414	45	2.8	\$0.42
1978/79	39	126	926,253	2,536,105	28,378	33	2.7	\$0.55
1979/80	42	155	2,340,004	3,517,920	54,627	25	2.6	\$0.54
1980/81	24	112	1,534,847	3,653,723	44,022	35	2.4	\$0.64
1981/82	45	174	1,343,500	3,240,476	47,830	28	2.4	\$1.21
1982/83	48	136	1,432,029	3,497,370	60,210	24	2.4	\$1.12
1983/84	17	41	269,724	659,043	14,665	18	2.4	\$1.09
1984/85	15	27	162,448	375,476	15,708	10	2.3	\$1.42
1985/86	6	12	85,697	188,162	7,435	12	2.2	\$1.97
1986/87	10	20	89,329	195,060	7,052	13	2.2	\$2.28
1987/88	6	11	87,148	183,111	6,544	13	2.1	\$2.33
1988/89	6	34	142,470	323,120	9,845	15	2.3	\$3.05
1989/90 to 2002/03	No Commercial Fishery							
TOTAL	NA	NA	18,282,657	48,604,620	486,553	NA	NA	NA

NA = Not available

Table 9.-Tanner crab commercial catch, effort, and value for the South Peninsula District, 1967 - 2002/03.

Year/Season	Number of				Pots Lifted	CPUE	Average Weight	Price Per Pound
	Vessels	Landings	Crabs	Pounds				
1967	NA	NA	NA	3,100	NA	NA	NA	NA
1968	NA	155	36,835	110,610	NA	NA	3	NA
1969	NA	173	221,946	606,178	NA	NA	2.7	NA
1969/70	NA	NA	NA	2,093,600	NA	NA	NA	NA
1970/71	17	242	813,610	2,140,585	NA	NA	2.6	\$0.10
1971/72	NA	NA	NA	3618900	NA	NA	NA	NA
1972/73	36	390	2,213,006	5,615,563	53,573	41	2.5	NA
1973/74	44	386	3,504,668	8,300,578	58,444	60	2.4	NA
1974/75	44	131	2,053,530	5,195,800	38,153	54	2.5	\$0.14
1975/76	36	288	2,724,509	6,926,161	52,381	52	2.5	\$0.20
1976/77	28	289	2,524,565	6,773,838	63,143	40	2.7	\$0.32
1977/78	36	374	2,847,948	7,446,270	70,587	40	2.6	\$0.40
1978/79	48	332	3,267,122	8,684,408	82,374	40	2.7	\$0.51
1979/80	61	363	2,581,544	6,961,251	96,989	27	2.7	\$0.54
1980/81	43	268	1,274,539	3,294,106	59,560	21	2.6	\$0.58
1981/82	72	365	1,815,060	4,589,042	81,008	22	2.5	\$1.05
1982/83	82	230	1,144,096	2,863,798	70,524	16	2.5	\$1.20
1983/84	61	207	775,472	1,789,883	50,726	15	2.3	\$1.04
1984/85	52	184	1,097,182	2,549,686	47,465	23	2.3	\$1.42
1985/86	74	187	1,589,759	3,781,950	65,078	24	2.4	\$1.72
1986/87	54	106	950,300	2,400,784	37,511	25	2.5	\$2.03
1987/88	73	148	1,359,371	3,328,809	52,516	26	2.4	\$2.20
1988/89	65	87	433,112	1,055,082	27,958	15	2.4	\$2.70
1989/90 to 1999/00					No Commercial Fishery			
2000/01	55	67	107,653	258,631	4,426	24	2.4	\$1.24
2001/02					No Commercial Fishery			
2002/03					No Commercial Fishery			
TOTAL	NA	NA	33,077,046	90,385,513	1,012,416	NA	NA	NA

NA = Not available

Table 10.-Dungeness crab commercial catch, effort, and value for the Kodiak District, 1962 - 2003/04.

Year	Number of				Pots Lifted	Average Lbs		CPUE	Average Price	Exvessel
	Vessels	Landings	Crab	Pounds ^a		Per	Landing		Per Pound	Value
1962	NA	149	NA	1,904,567	NA	12,782	NA	\$0.09	\$171,000	
1963	NA	354	NA	2,487,512	NA	7,026	NA	\$0.09	\$224,000	
1964	29	395	NA	4,254,565	NA	10,537	NA	\$0.09	\$375,000	
1965	25	351	NA	3,311,571	NA	9,434	NA	\$0.12	\$397,000	
1966	12	144	NA	1,416,174	NA	7,976	NA	\$0.13	\$149,000	
1967	18	439	NA	6,663,668	NA	15,179	NA	\$0.13	\$866,000	
1968	43	536	NA	6,829,061	NA	12,741	NA	\$0.14	\$956,000	
1969	29	455	NA	5,834,628	190,967	12,823	12	\$0.16	\$934,000	
1970	33	318	NA	5,741,438	249,800	18,005	9	\$0.14	\$804,000	
1971	24	173	515,653	1,445,864	90,913	8,358	6	\$0.18	\$260,000	
1972	34	316	766,960	2,059,536	140,921	6,517	6	\$0.40	\$824,000	
1973	42	487	879,484	2,000,526	251,467	4,108	3	\$0.50	\$1,000,000	
1974	23	172	337,839	750,057	104,062	4,361	3	\$0.47	\$353,000	
1975	15	154	307,272	639,813	76,411	4,154	4	\$0.61	\$390,000	
1976	4	6	38,072	87,110	4,410	14,518	9	\$0.15	\$13,000	
1977					Confidential					
1978	20	173	618,357	1,362,306	93,633	7,875	6	\$0.75	\$1,022,000	
1979	28	237	595,850	1,311,275	137,951	5,543	4	\$0.75	\$943,000	
1980	21	197	968,829	2,011,736	107,261	10,212	9	\$0.45	\$905,000	
1981/82	50	466	2,614,545	5,566,463	295,138	11,945	9	\$0.70	\$3,897,000	
1982/83	111	991	2,004,075	4,546,311	481,542	4,588	4	\$0.75	\$3,410,000	
1983/84	103	1,079	2,044,505	4,752,148	503,464	4,408	4	\$1.05	\$4,989,000	
1984/85	106	1,163	2,393,974	5,303,052	627,441	4,564	4	\$1.45	\$7,689,000	
1985/86	125	1,240	1,786,305	4,146,897	598,027	3,344	3	\$1.48	\$6,127,000	
1986/87	81	577	441,007	967,423	199,356	1,677	2	\$1.21	\$1,168,000	
1987/88	45	379	747,193	1,450,983	150,067	3,828	5	\$1.26	\$1,827,000	

-Continued-

Table 10.-(page 2 of 2)

Year/Season	Number			Pots Lifted	Average Per	CPUE	Average Price/Pound	Exvessel Value	
	Vessels	Landings	Crab Pounds ^a						
1988/89	50	364	1,064,42	2,125,11	203,237	5,838	5	\$1.06	\$2,243,00
1989/90	47	359	1,428,97	3,077,93	185,242	8,574	8	\$1.10	\$3,378,00
1990/91	62	519	1,301,46	2,937,43	296,168	5,660	4	\$1.54	\$4,497,00
1991/92	62	732	695,470	1,414,49	279,872	1,932	2	\$1.37	\$1,931,00
1992/93	46	501	805,215	1,656,79	218,602	3,307	4	\$0.86	\$1,425,00
1993/94	42	263	647,736	1,369,88	180,534	5,209	4	\$0.92	\$1,258,00
1994/95	31	162	426,848	948,461	151,888	5,855	3	\$1.20	\$1,138,00
1995/96	24	106	257,677	527,434	107,506	4,976	2	\$1.72	\$907,000
1996/97	21	113	334,237	668,772	88,682	5,918	4	\$1.00	\$669,000
1997/98	21	123	257,697	529,550	95,066	4,305	3	\$2.04	\$1,070,00
1998/99	12	60	185,249	371,241	63,926	6,187	3	\$1.45	\$534,000
1999/00	13	72	269,277	551,183	65,721	7,655	4	\$1.57	\$862,000
2000/01						Confidential			
2001/02 ^b	21	57	101,371	208,265	41,760	3,654	2	\$1.95	\$399,000
2002/03	18	74	181,698	355,943	71,096	4,810	3	\$1.46	\$516,000
2003/04	17	89	228,309	467,623	48,715	5,254	5	\$1.50	\$695,000

^aIncludes deadloss.

^bThe western boundary of the Kodiak District for Dungeness crab fishing is the longitude located at (156° 19' W long.). Prior to the 2001/2002 season, the western boundary was located at the longitude located at Cape Kumlik, (157° 27' W long.).

Table 11.-Kodiak Dungeness crab fishery, vessel size information, 2003/04.

Vessel Keel Length (feet)	Number of Vessels
<20-29	2
30-39	3
40-49	6
50-59	2
60-69	1
70-79	2
80-89	1
<u>≥ 90</u>	0
TOTAL VESSELS:	17

Table 12.-Harvest, vessels, and landings by statistical area from the Kodiak District Dungeness crab fisheries, 2001/02 - 2003/04.

Statistical Area	2001/02			2002/03			2003/04		
	Pounds ^a	Vessels	Landings	Pounds ^a	Vessels	Landings	Pounds ^a	Vessels	Landings
525701	53,543	10	26	82,850	8	30	127,049	11	46
525703		Confidential		17,350	6	14	48,026	3	22
525733	3,630	5	10	5,773	4	6	59,952	7	32
535705		Confidential		11,963	5	8		Confidential	
545601	113,371	5	13	164,712	5	21	138,021	3	20
545602	0	0	0	10,596	3	4	0	0	0
545632		Confidential			Confidential			Confidential	
Other	37,721 ^b	18	45	62,699 ^c	18	42	94,577 ^d	11	48
Total	208,265			355,943			467,623		

^aIncludes deadloss.

^bTotal of 12 statistical areas.

^cTotal of 16 statistical areas.

^dTotal of 8 statistical areas.

Table 13.-Dungeness crab commercial catch, effort, and value for the Alaska Peninsula and Chignik Districts, 1968 - 2003/04.

Year	Number of			Pounds ^a	Pots Lifted	CPUE	Average Weight	Price per Pound
	Vessels	Landings	Crab ^a					
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				No Commercial Fishing Effort				
1975				No Commercial Fishing Effort				
1976				No Commercial Fishing Effort				
1977				No Commercial Fishing Effort				
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
1998/99-2003/04 ^b	8	79	278,991	580,869	38,656	7	2.0	\$1.45

^aIncludes deadloss.

^bHarvest combined to maintain confidentiality.

NA = Not available.

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

Note: In 2001 part of the Alaska Peninsula District was subdivided to create the Chignik District.

Table 14.-Red king crab commercial catch, effort, and value for the Kodiak Area, 1960/61 - 2003/04.

Fishing Year ^a	Number of				Pots Lifted	Average		Price Per Pound
	Vessels	Landings	Crab	Pounds		CPUE	Weight	
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 ^b	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 ^c	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 has occurred since the 1982/83 season.								
AVERAGE	176	1,364	3,220,765	26,987,806	158,402	20		

^aFishing year defined as May 1 - April 30.

^bJuly 1 - April 30 season established.

^cAugust 15 - January 15 season established.

NA = Not available.

Table 15.-Kodiak red king crab harvest composition and seasons, 1960/61 - 2003/04.

Season	Open	Closed	Catch (Million Lbs)	Percent Recruits ^a	Percent Post-Recruits	Size Limit (Inches)
1960/61	1-Jul	30-Jun	18.9	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	35.0	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	2.2	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	14.6	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 has occurred since the 1982/83 season.

^aRecruitment after 1963 based on 7" size limit.

Table 16.-Golden king crab commercial catch, effort, and value for the Kodiak Area, 1983-2003.

Year	Number of				Pots Lifted	Average			Exvessel Value (Millions)
	Landings	Vessels	Crabs ^a	Pounds ^a		CPUE	Weight	Price Per Pound	
1983	36	12	16,349	111,398	8,490	2.0	6.8	\$3.00	\$0.3
1984	8	6	3,513	22,066	1,950	2.0	6.3	\$2.50	\$0.1
1985	19	4	10,005	63,641	2,693	4.0	6.4	\$1.95	\$0.1
1986	31	4	21,862	146,478	5,463	4.0	6.7	\$3.00	\$0.4
1987	38	5	9,484	67,191	3,187	3.0	7.1	\$3.44	\$0.2
1988					Confidential				
1989					Confidential				
1990	6	3	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				

^aIncludes deadloss.

NA=Not applicable.

Table 17.-Red king crab commercial catch, effort, and value for the Alaska Peninsula Area, 1947 - 2003/04.

Year	Number of			Pots Lifted	CPUE	Average Weight	Price Per Pound	
	Vessels	Landings	Crab Pounds					
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 ^a	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

No commercial fishery has occurred since the 1982/83 season.

^aCombined 6 1/2 inch and 7 1/2 inch seasons.

NA=Not Available.

Table 18.-Shrimp trawl fishery catch, effort, and value for the Kodiak District, 1958 - 2002/03.

Year/Season	Vessels	Landings	Harvest in Pounds	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-

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Year/Season	Vessels	Landings	Harvest in Pounds	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	
Average ^a	36	630	30,728,707	\$0.11

^aAverage calculated from years 1960-1984/85.

NA=Not available.

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

Table 19.-Shrimp minimum acceptable biomass indices (MABI) and population estimates in millions of pounds from surveyed districts and sections, 1992-2003.

District	Section	MABI ^a	2003	2002	2001	1998	1995	1992
Kodiak	Inner Marmot Bay	3.64	1.03	1.26	2.59	0.48	1.14	1.10
	Marmot Island	25.60	3.10	3.0	3.70	0.49	-	-
	Chiniak Bay	1.45	0.19	.13	.73	0.10	0.18	0.38
	Ugak Bay	4.00	.004	-	.09	-	-	-
	Kiliuda Bay	5.30	0.32	.44	0.12	0.16	0.12	0.31
	Two Headed Island	7.30	0.01	-	0.12	0.14	0.12	1.11
	Alitak Bay	4.28	0.27	-	0.51	0.25	0.02	0.18
	Uyak Bay	3.19	0.95	-	0.76	0.34	0.43	0.15
	Uganik Bay	2.59	0.89	-	1.57	0.28	1.07	0.47
	Kukak Bay ^b	NA	0.15	-	0.41	0.10	0.03	-
	Wide Bay ^b	1.05	0.74	1.74	2.00	-	0.07	0.91
	Puale Bay ^b	1.19	0.09	-	0.11	-	-	-
	Shelikof Strait	NA	18.80	-	2.33	-	-	-
	Alitak Flats	1.27	0.07	-	-	-	-	-
Chignik	Kujulik Bay	3.78	-	.03	-	-	-	-
	Chignik Bay	4.55	-	1.12	-	-	1.00	2.01
	Kuiukta Bay	1.90	-	.36	-	-	0.36	0.69
	Mitrofanina Island	5.16	-	.22	-	-	-	-
	Ivanof Bay	5.70	-	.02	-	-	-	-
South Peninsula	Stepovak Bay	23.20	-	.83	-	-	-	-
	Unga Straits	7.52	-	.30	-	-	-	-
	Beaver Bay	4.36	-	.02	-	-	-	-
	Pavlof Bay	18.12	-	.08	.07	0.13	0.03	-
	Belkofski Bay	NA	-	.002	-	-	-	-

^aMinimum acceptable biomass index.

^bKukak, Wide, and Puale Bays are part of the Mainland Section; MABIs are established for each bay.

NA = No MABI established for survey area.

- = Not surveyed.

Bold indicates population estimate above established MABI.

Table 20.-Shrimp pot fishery catch and effort for the Kodiak District, 1969-2003.

Year	Vessels	Landings	Pounds ^a
1969		Confidential	
1970	NA	20	12,302
1971	0	0	0
1972		Confidential	
1973		Confidential	
1974	6	73	10,336
1975	7	77	12,782
1976		Confidential	
1977	3	26	2,565
1978		Confidential	
1979		Confidential	
1980	4	25	4,700
1981	4	6	2,511
1982	6	18	9,754
1983	12	31	18,686
1984	6	21	4,361
1985		Confidential	
1986		Confidential	
1987	0	0	0
1988		Confidential	
1989		Confidential	
1990		Confidential	
1991	0	0	0
1992	0	0	0
1993	0	0	0
1994		Confidential	
1995	0	0	0
1996	0	0	0
1997		Confidential	
1998		Confidential	
1999	0	0	0
2000	0	0	0
2001		Confidential	
2002	0	0	0
2003	0	0	0
Total ^b			77,997

^aPounds are weight of shrimp tails.

^bDoes not include confidential pounds.

NA=Not available.

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

Table 21.-Trawl shrimp fishery catch, effort, and value for the South Peninsula and Chignik Districts, 1968 - 2002/03.

Year	SOUTH PENINSULA				CHIGNIK			
	Vessels	Number of Landings	Pounds	Price per Pound	Vessels	Number of Landings	Pounds	Price 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			0		54	148	12,843,270	\$0.29
1981/82			0		3	4	70,948	\$0.27

No commercial fishing activity occurred in these districts after 1981/82.

^aSouth Peninsula District closed to trawl gear after the 1979/80 fishery.

NA=Not available.

Table 22.-Red sea cucumber guideline harvest levels, 2003/04.

Area	Guideline ^a Harvest Level
Kodiak District	
Northeast Section	5,000
Eastside Section	40,000
Southeast Section	30,000
Southwest Section	20,000
Westside Section	
Uganik Bay	10,000
Remainder of Westside	30,000
North Mainland Section	5,000
South Mainland Section	5,000
Semidi Island Section	5,000
Chignik District	25,000
South Peninsula District	5,000
Totals	180,000

^aIn pounds, eviscerated product.

Table 23.-Green sea urchin commercial catch, effort, and value for the Kodiak District, 1980 - 2003/04.

Year	Number of		Pounds Harvested (Live Weight)	Average Price Per Pound
	Permits	Landings		
1980		Confidential		
1985		Confidential		
1986		Confidential		
1987	15	78	104,139	\$0.64
1988	28	260	190,509	\$0.80
1989	29	81	44,862	\$0.85
1990	26	88	84,261	\$0.84
1991	6	23	29,947	\$0.92
1992		Confidential		
1993		Confidential		
1994	9	32	23,370	\$1.35
1995	8	50	38,437	\$1.34
1996	7	31	36,147	\$1.14
1997-2001/02 ^a	7	23	23,758	\$0.95
2002/03	0	0	0	0
2003/04	0	0	0	0

^aHarvest combined to protect confidentiality.

Table 24.—Octopus commercial catch, effort, and value for the Kodiak District, 1985-2003.

Year	State Waters			Federal Waters			Combined			Ave. Price Per Pound	Fishery Value
	Vessels	Landings	Pounds ^a	Vessels	Landings	Pounds ^a	Vessels ^b	Landings	Pounds ^a		
1985		Confidential			Confidential				Confidential		
1986		Confidential			Confidential		4	8	643	\$0.87	\$624
1987		Confidential			Confidential		8	15	14,151	\$1.07	\$16,698
1988		Confidential			Confidential				Confidential		
1989		Confidential			Confidential				Confidential		
1990	25	95	56,052	15	51	20,127	31	140	76,179	\$1.13	\$86,082
1991	56	260	106,748	29	85	22,657	70	343	129,405	\$1.07	\$138,410
1992	65	258	104,507	40	174	46,945	84	423	151,452	\$0.94	\$138,893
1993	17	55	96,399	35	69	10,401	45	120	106,800	\$0.71	\$73,379
1994	15	45	9,899	8	19	1,320	19	60	11,219	NA	NA
1995	48	355	92,852	35	146	6,432	64	432	99,284	\$0.49	\$31,489
1996	39	214	70,857	38	173	23,805	55	303	94,662	\$0.45	\$36,943
1997	65	531	231,078	62	294	47,863	90	678	278,941	\$0.46	\$125,702
1998	55	408	259,126	62	307	120,815	82	687	379,941	\$0.43	\$144,908
1999	48	315	198,858	35	171	58,241	71	472	257,099	\$0.33	\$73,718
2000	47	294	99,473	50	271	67,636	74	517	167,109	\$0.39	\$51,113
2001	28	206	99,671	38	113	14,606	53	286	114,277	\$0.38	\$39,951
2002	34	217	209,017	36	120	24,276	55	305	233,293	\$0.48	\$101,196
2003	42	121	56,008	29	58	17,019	63	175	73,027	\$0.35	\$23,198

^aIncludes discards.

^bSome vessels made landings from both state and federal waters.

NA = Not available, or not enough price information on fish tickets for an accurate average.

Table 25.—Octopus commercial catch, effort, and value for the Chignik and South Peninsula Districts, 1980-2003.

Year	State waters			Federal waters			Combined			Ave. Price per Pound	Fishery Value
	Vessels	Landings	Pounds ^a	Vessels	Landings	Pounds ^a	Vessels ^b	Landings	Pounds ^a		
1980-1985		Confidential			Confidential				Confidential		
1986-1987		Confidential			Confidential				Confidential		
1988	22	58	9,946	16	132	34,622	31	190	44,568	\$0.99	\$44,122
1989		Confidential			Confidential				Confidential		
1990		Confidential			Confidential				Confidential		
1991	18	71	15,103	16	37	4,452	31	110	19,555	\$1.00	\$19,370
1992	40	184	45,913	48	137	19,068	76	321	64,981	\$0.95	\$53,687
1993	17	64	20,798	29	61	3,797	43	125	24,595	\$0.89	\$20,061
1994	22	50	19,404	10	17	1,469	31	67	20,873	\$0.66	\$13,776
1995	16	46	6,290	16	24	2,141	27	64	8,431	\$0.45	\$1,435
1996	20	52	11,367	20	52	4,983	36	103	16,350	\$0.48	\$5,146
1997	30	163	55,155	18	48	4,209	46	211	59,364	\$0.42	\$21,382
1998	15	25	4,831	15	38	4,853	26	59	9,684	\$0.20	\$1,091
1999	11	15	2,192	11	39	2,417	21	53	4,609	NA	NA
2000	19	19	1,602	20	70	5,332	32	85	6,934	NA	NA
2001	9	18	1,359	12	77	4,907	15	95	6,266	NA	NA
2002	6	15	3,132	19	50	13,541	20	59	16,673	NA	NA
2003	25	54	18,333	26	85	46,090	39	119	64,423	\$0.61	\$39,298

^aIncludes discards.

^bSome vessels made landings from both state and federal waters.

NA = Not available, or not enough price information on fish tickets for an accurate average.

Table 26.-Razor clam commercial catch, effort, and value for the Kodiak District, 1960-2003.

Year	Number of		Pounds		Ave. Price Per Pound	Est. Fishery Value
	Diggers ^a	Landings	Ave. per landing	Total		
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 has occurred since 1986.

^aRepresents registered diggers not actual diggers. No data available after 1977 due to statewide issuance of Interim Use Permits.

^bAdditional 1,985 pounds of hardshell clams harvested.

^cAdditional 1,506 pounds of hardshell clams harvested.

^dAdditional 1,496 pounds of hardshell clams harvested.

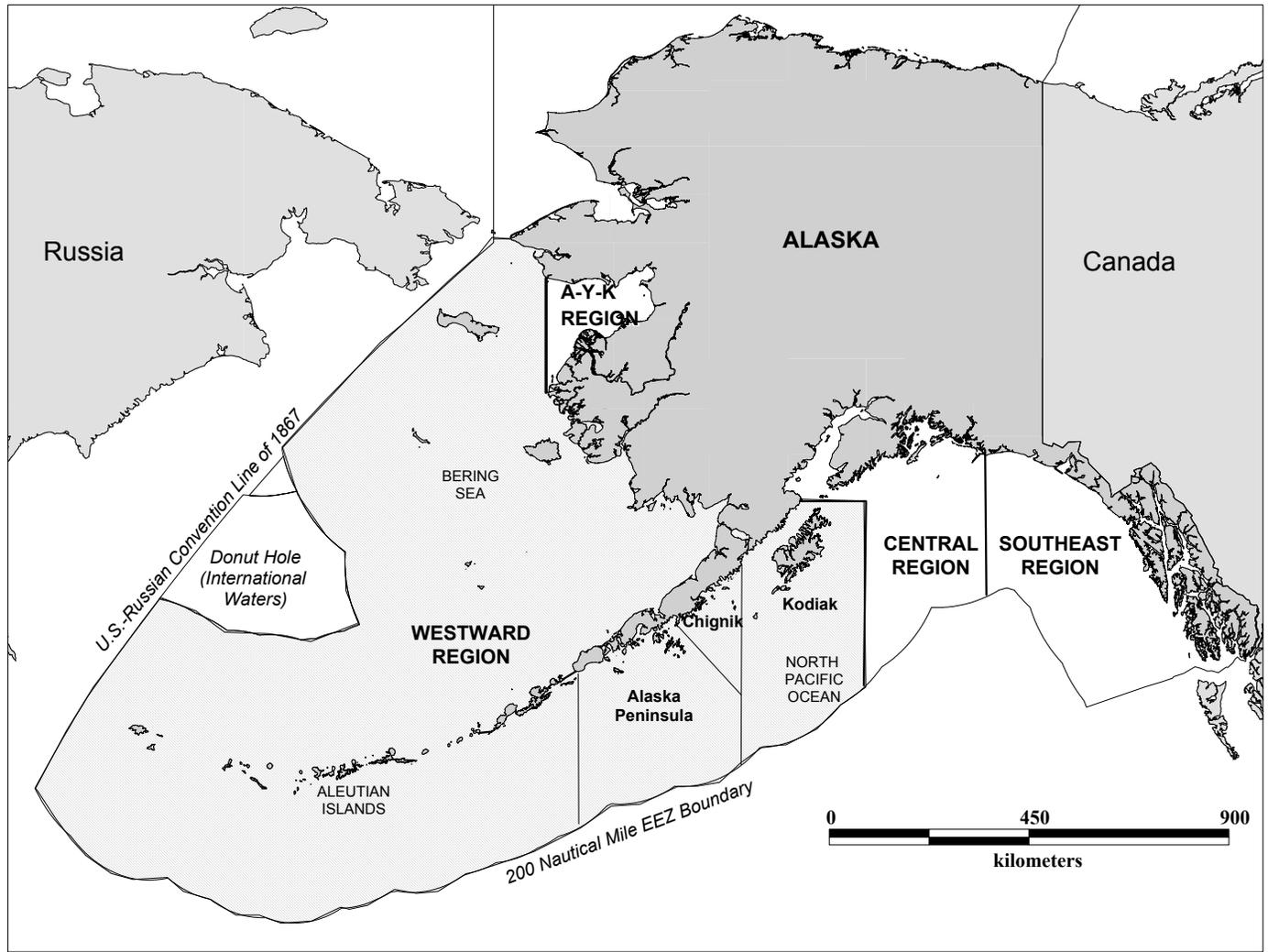


Figure 1.-Alaska Department of Fish and Game shellfish management regions, 2003.

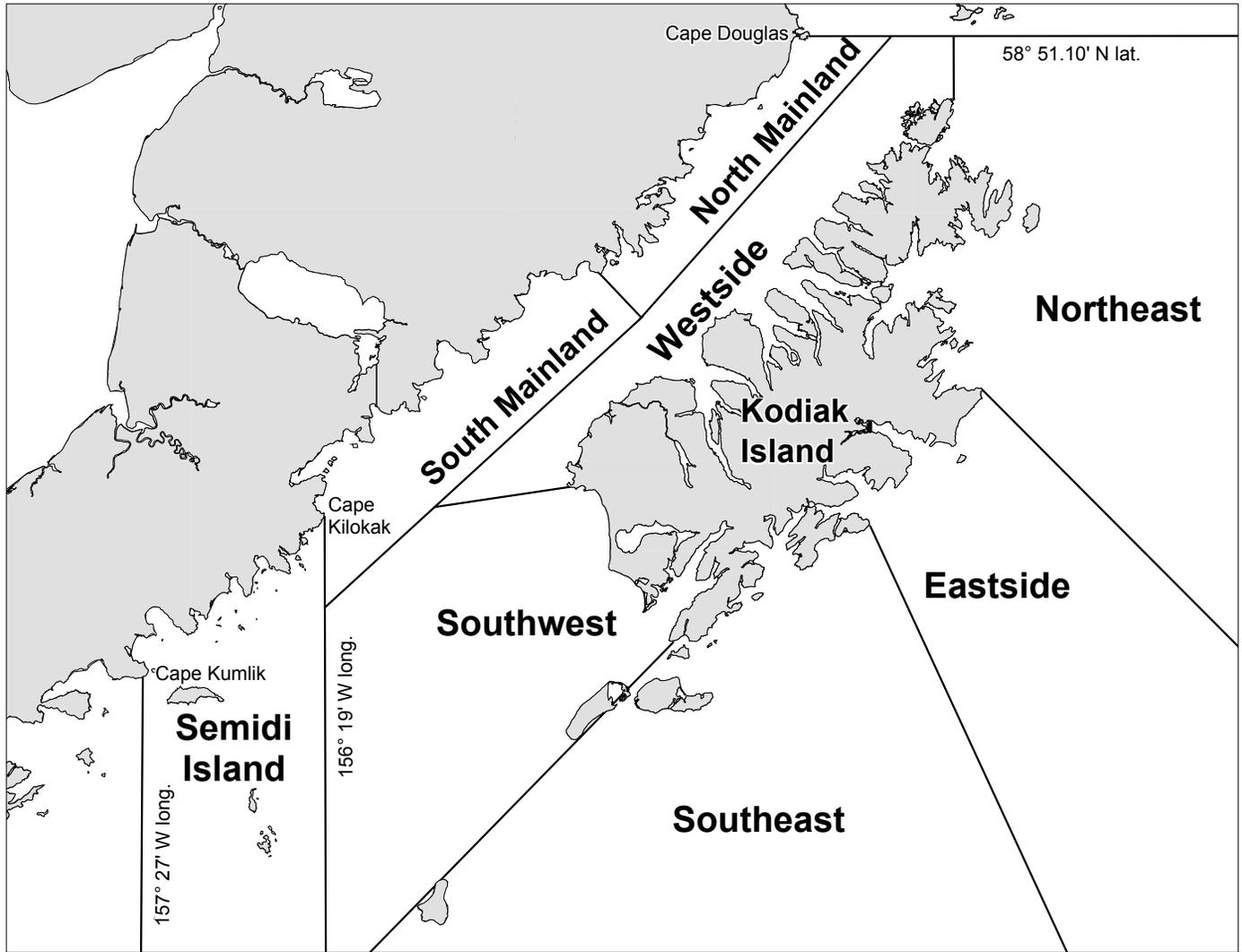


Figure 2.-Kodiak District and sections for Tanner crabs and sea cucumber fishery management, 2003.

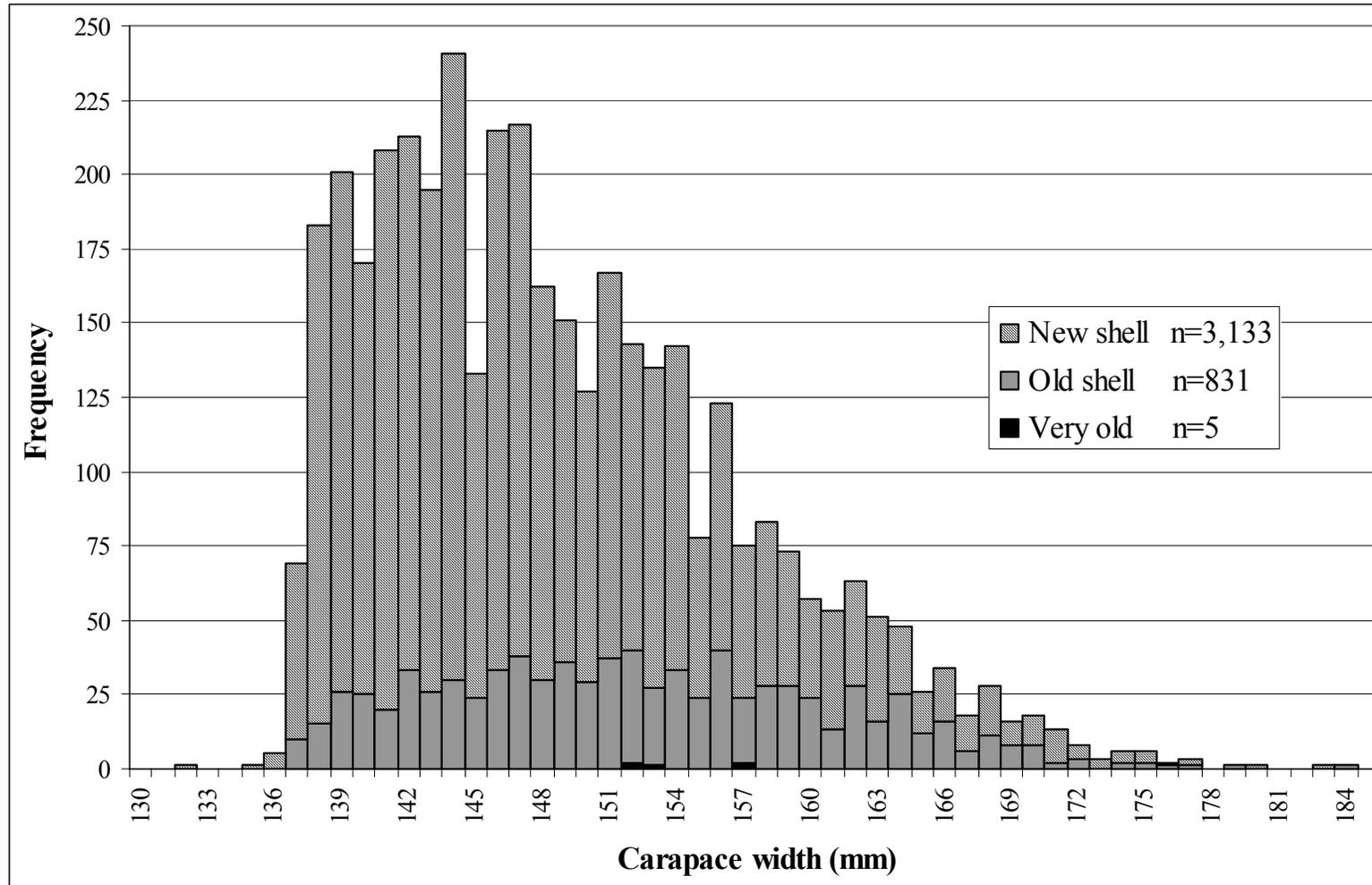


Figure 3.-Carapace width and shell condition from the Kodiak District Tanner crab fishery, 2003.

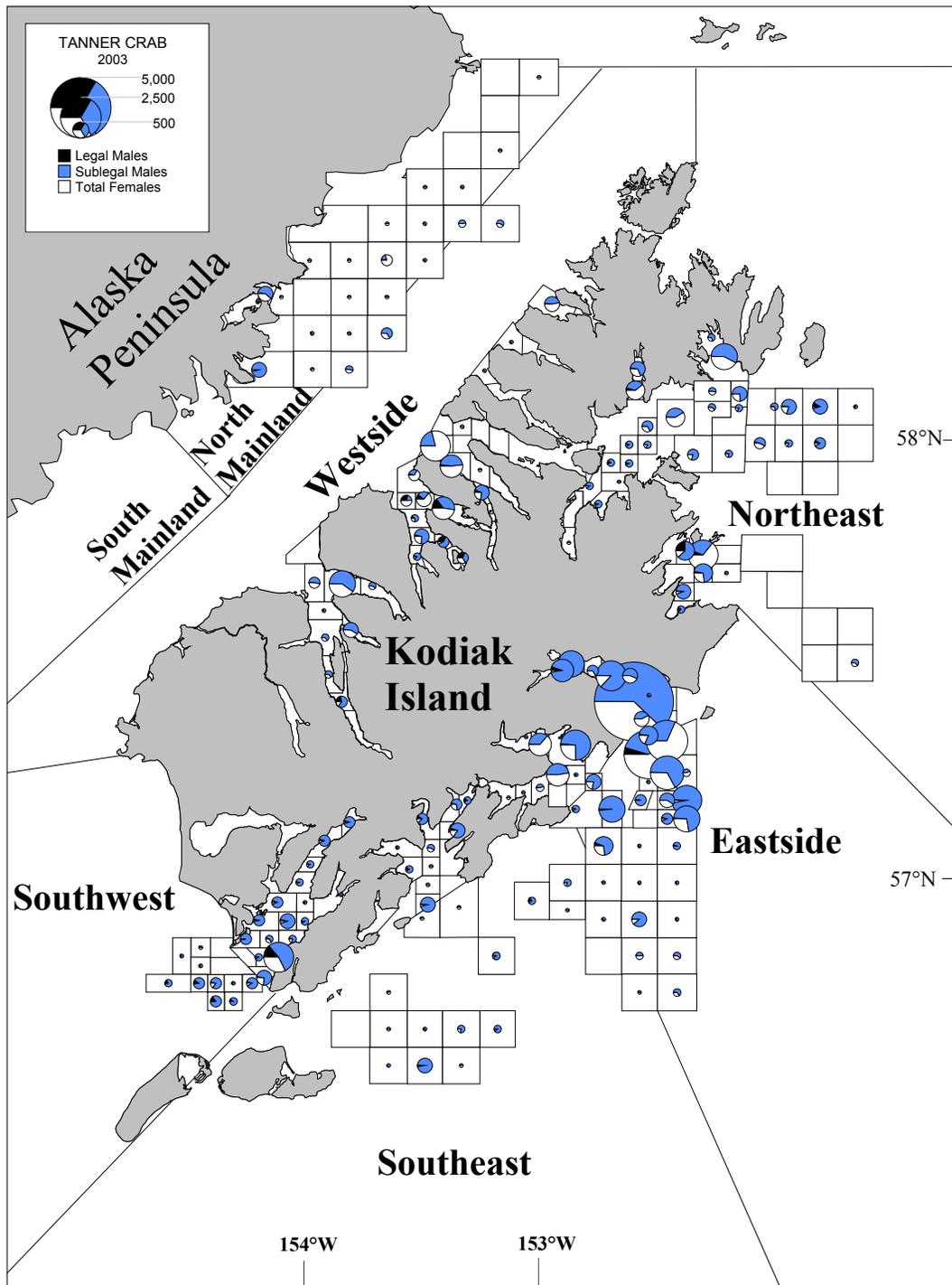


Figure 4.-Number of Tanner crabs per kilometer towed in the 2003 Kodiak District trawl survey.

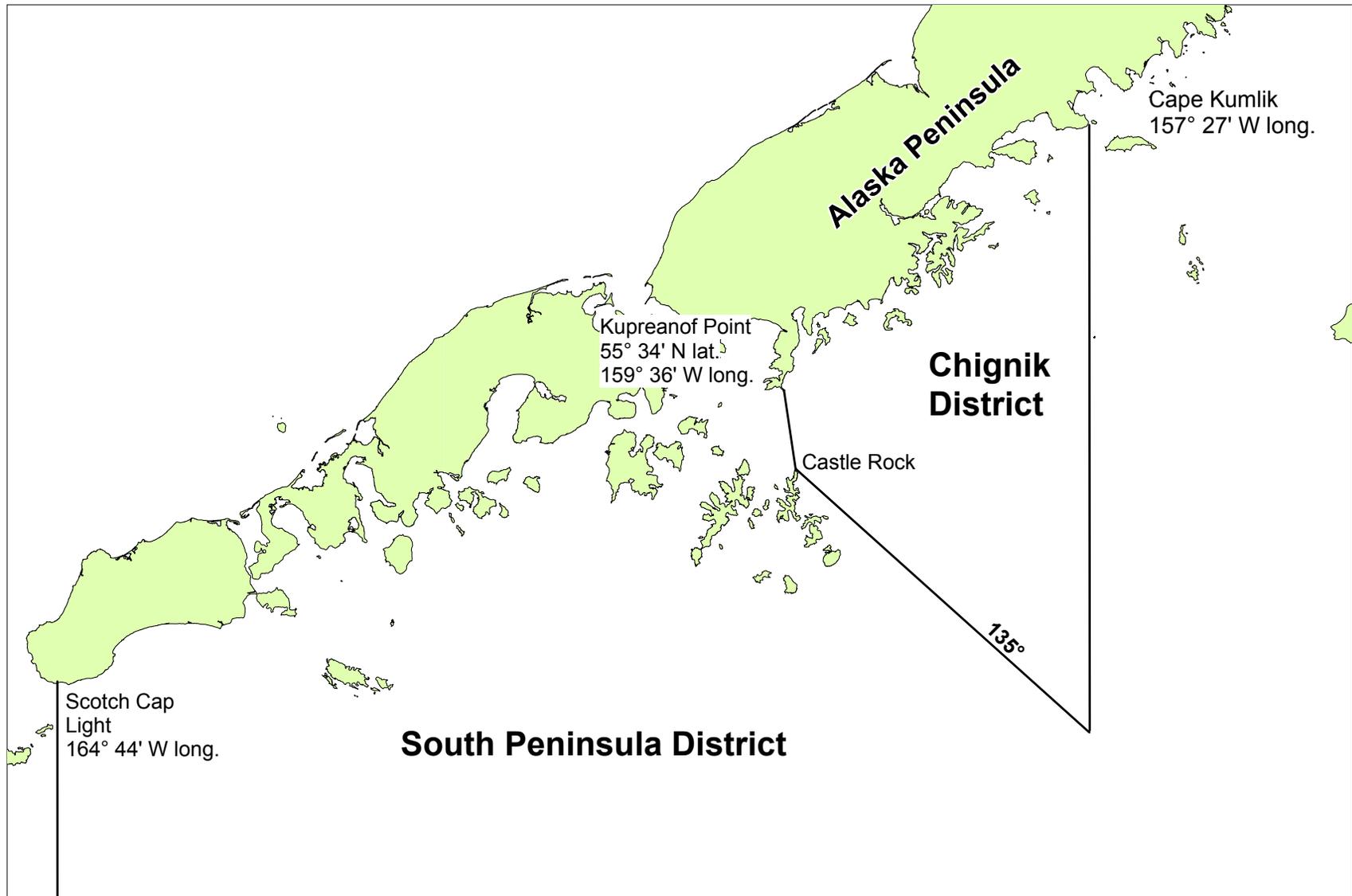


Figure 5.-Chignik and South Peninsula Districts for Tanner crab and sea cucumber fishery management, 2003.

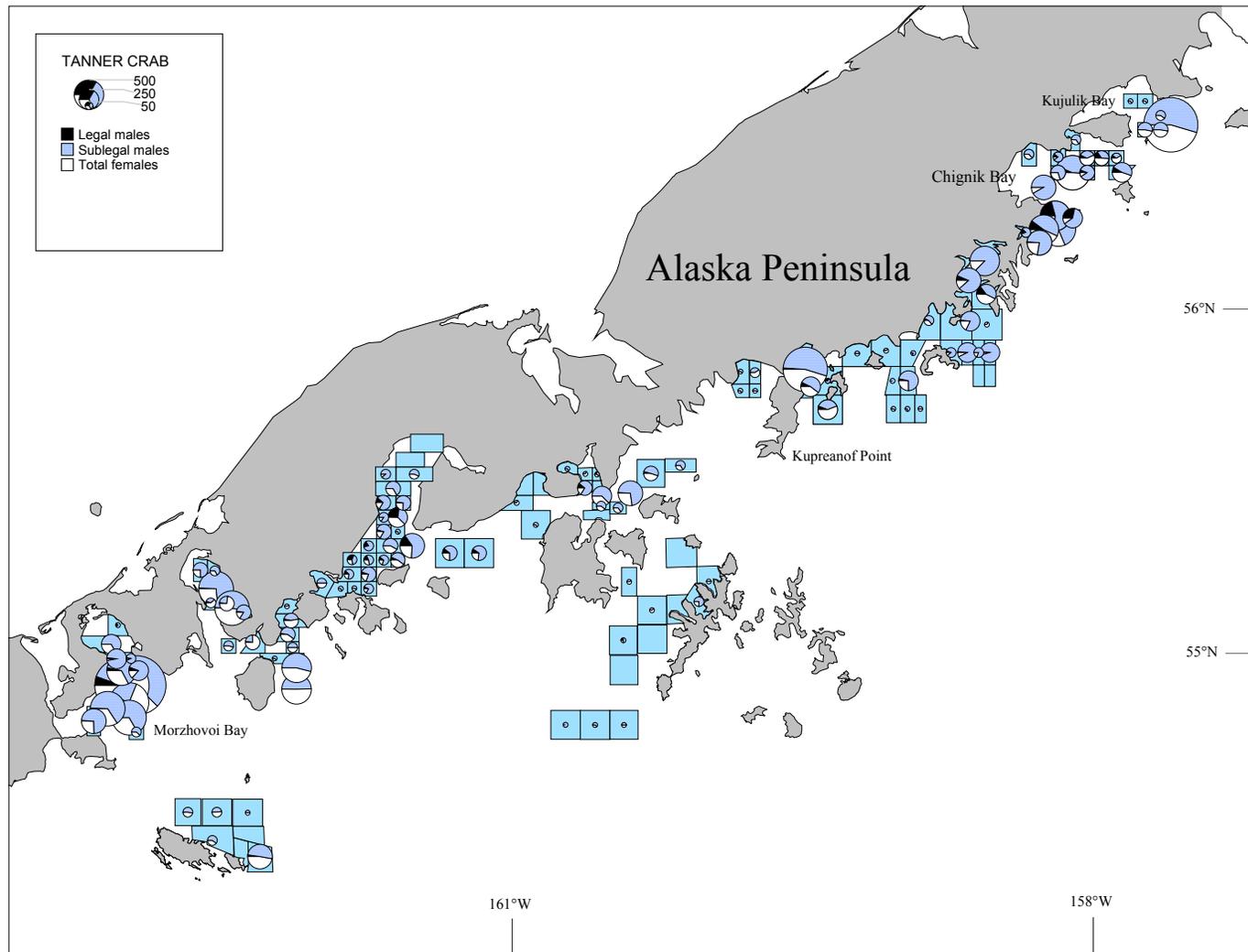


Figure 6.-Number of Tanner crabs per kilometer towed in the 2003 Chignik and South Peninsula Districts trawl survey.

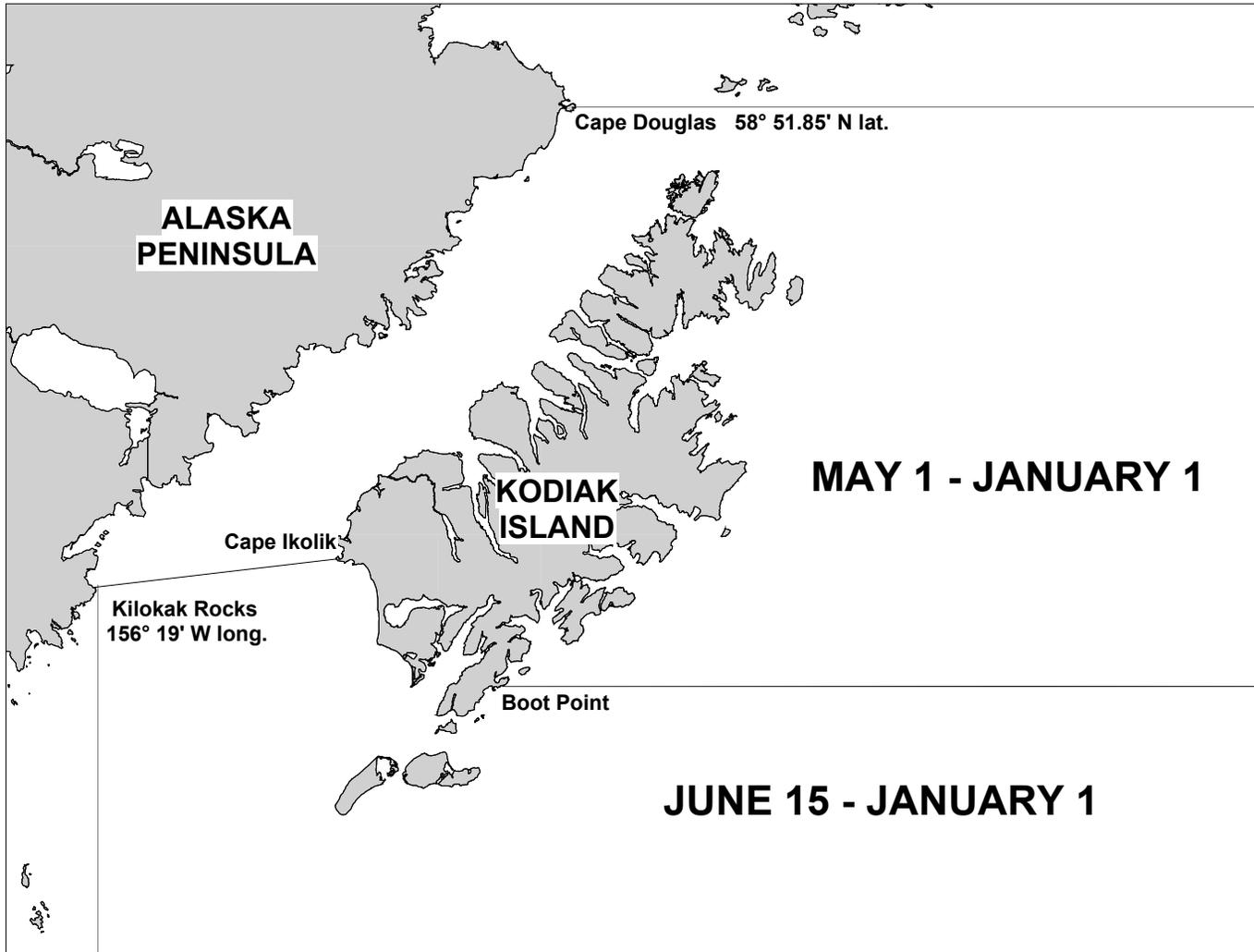
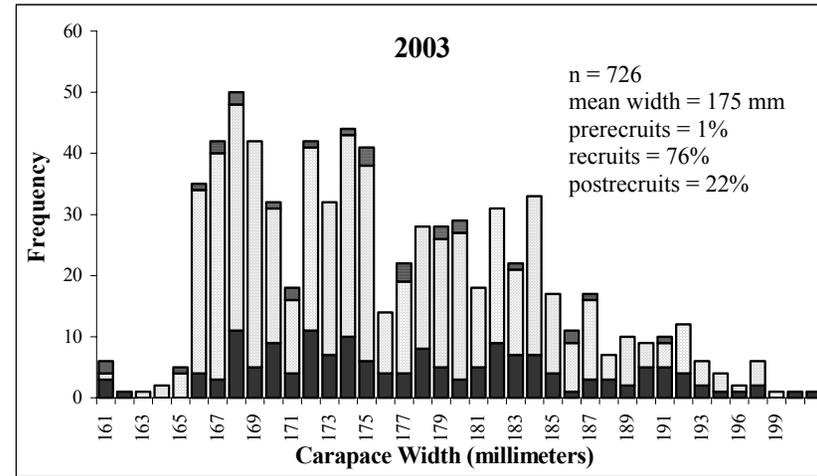
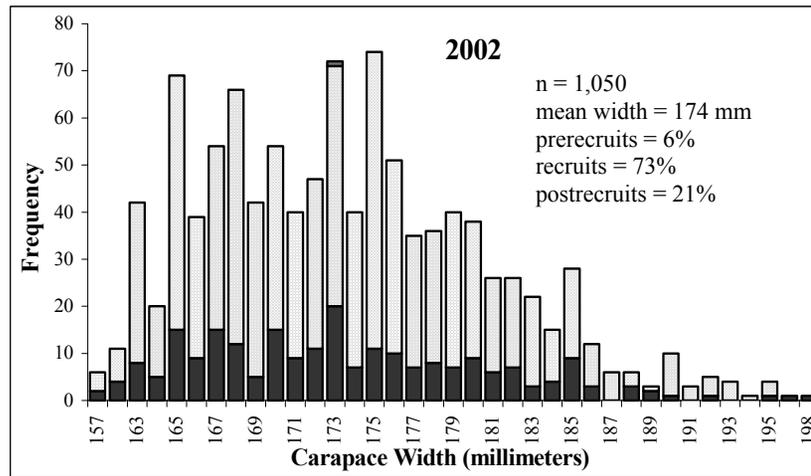
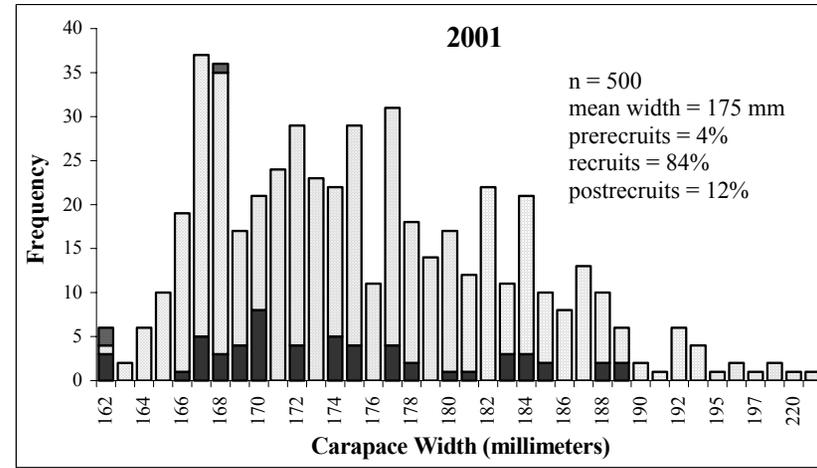
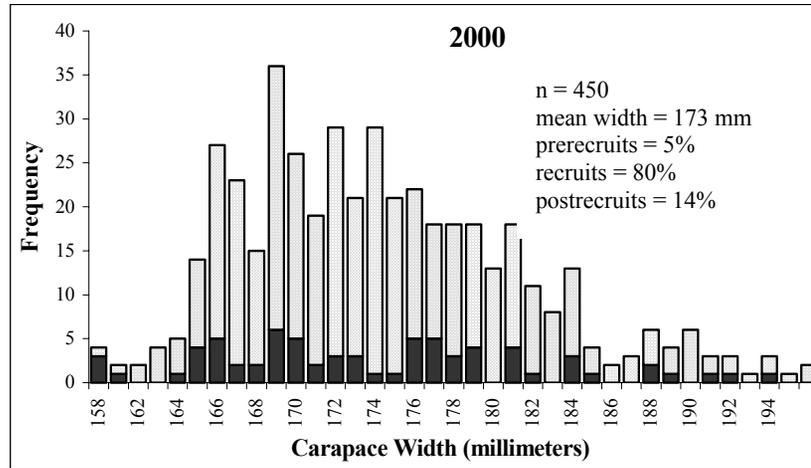


Figure 7.-Kodiak District for the Dungeness crab fishery and fishing seasons, 2003.



SOFT SHELL
 NEW SHELL
 OLD SHELL

Figure 8.-Kodiak District Dungeness crab carapace width frequencies and shell condition from dockside samples, 2000-2003.

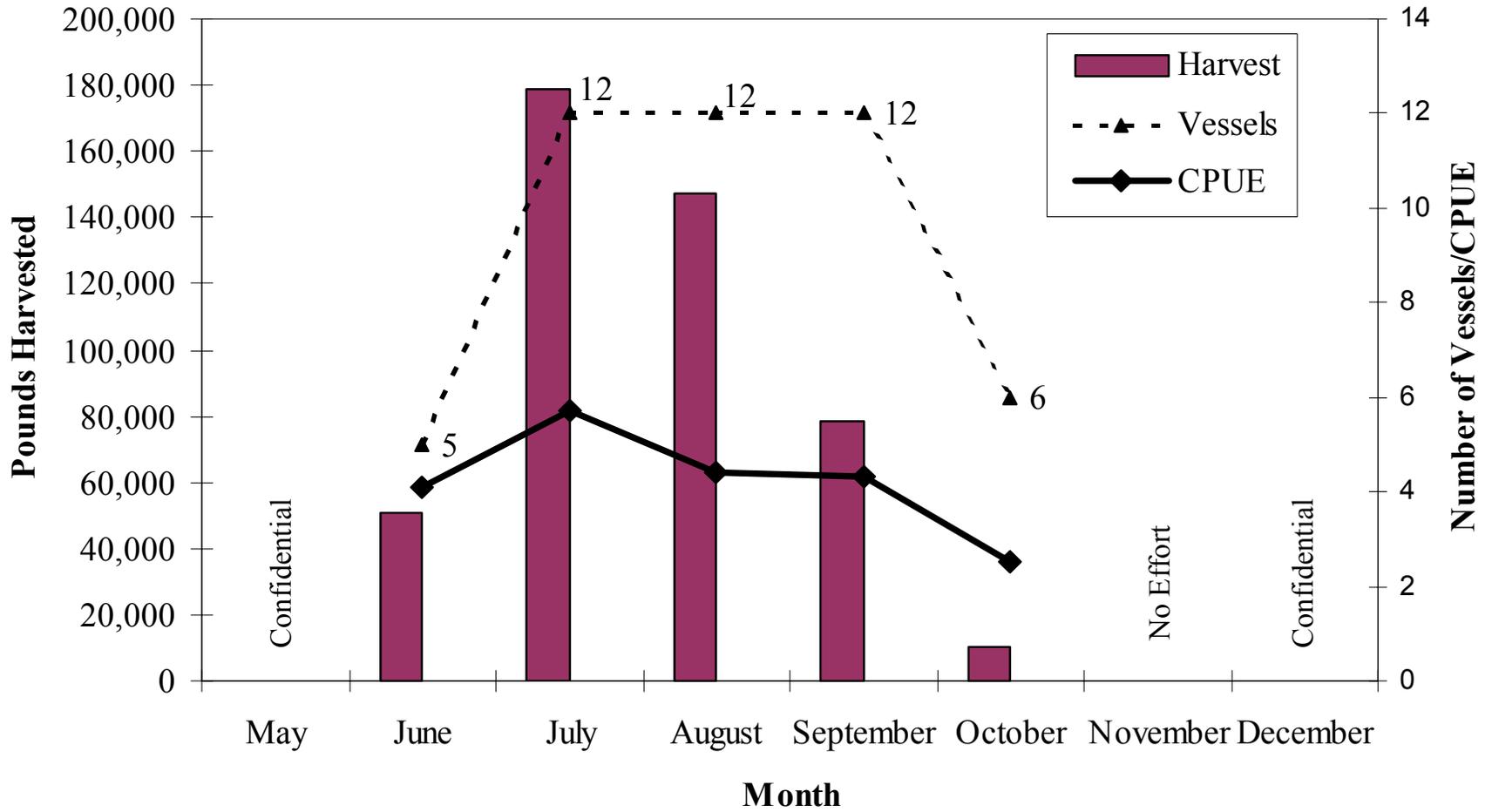


Figure 9.-Kodiak District Dungeness crab harvest, CPUE, and vessels participating by month for the 2003 fishery.

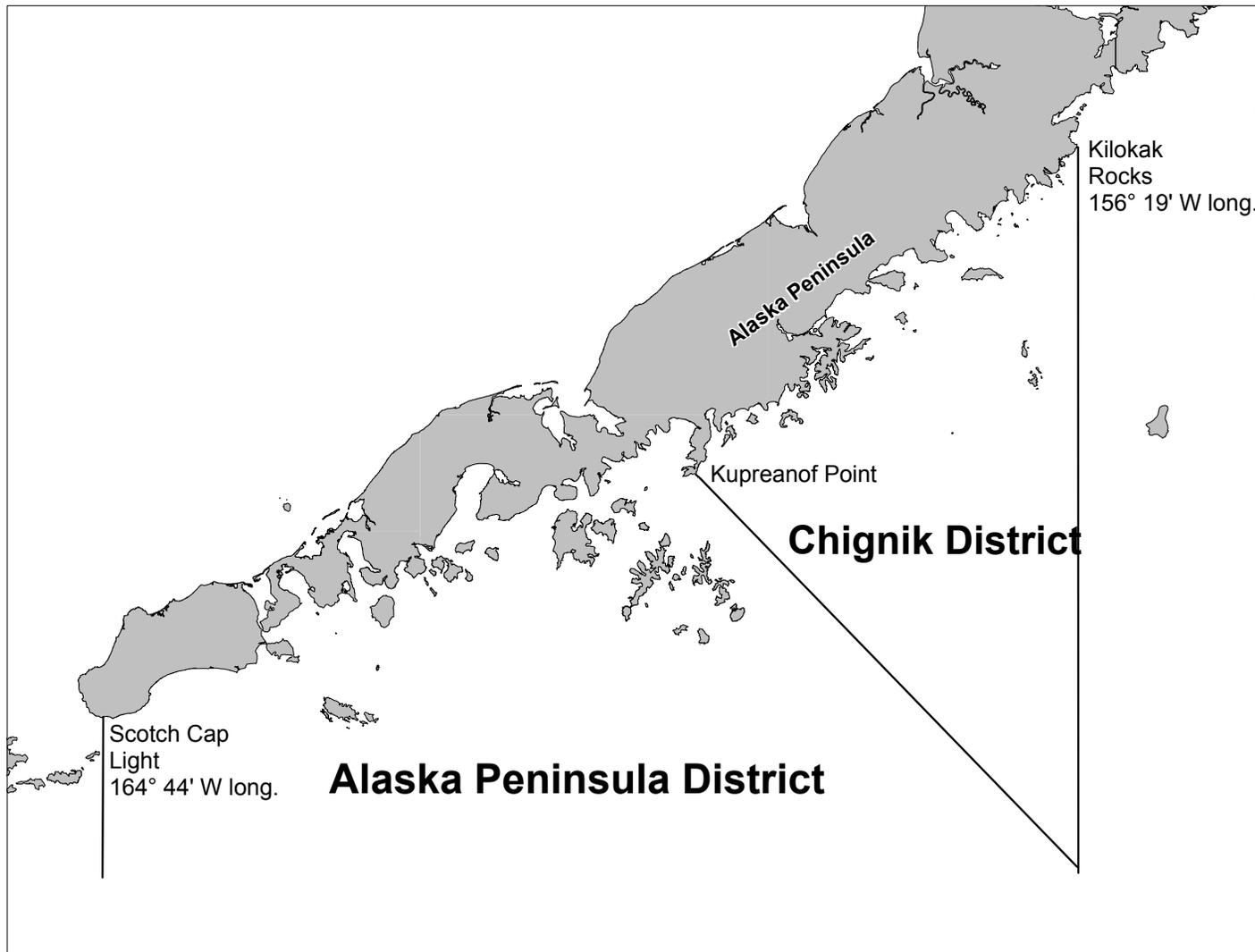


Figure 10.-Chignik and Alaska Peninsula Districts for Dungeness crab fishery management, 2003.

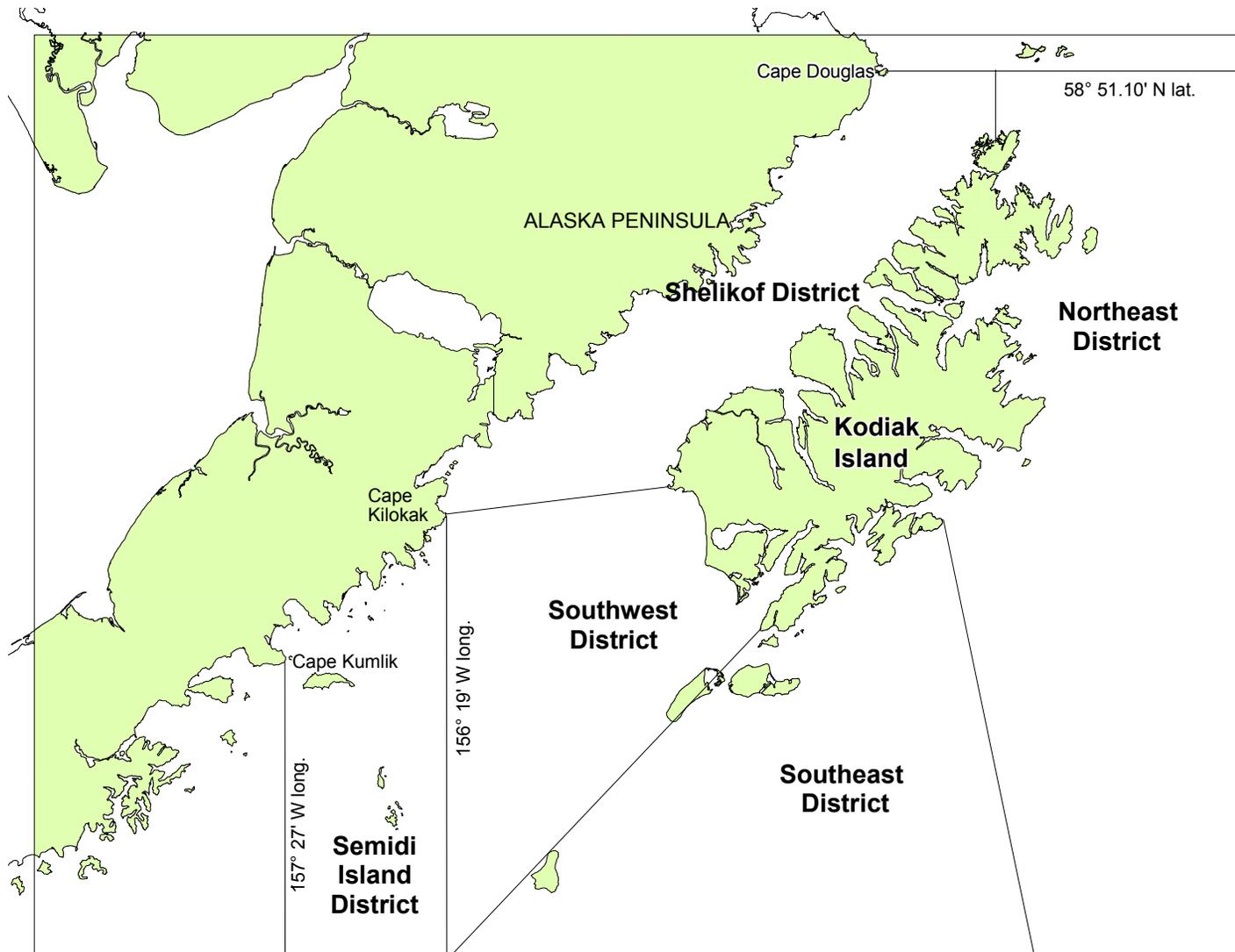


Figure 11.-Kodiak Area districts for king crab fishery management, 2003.

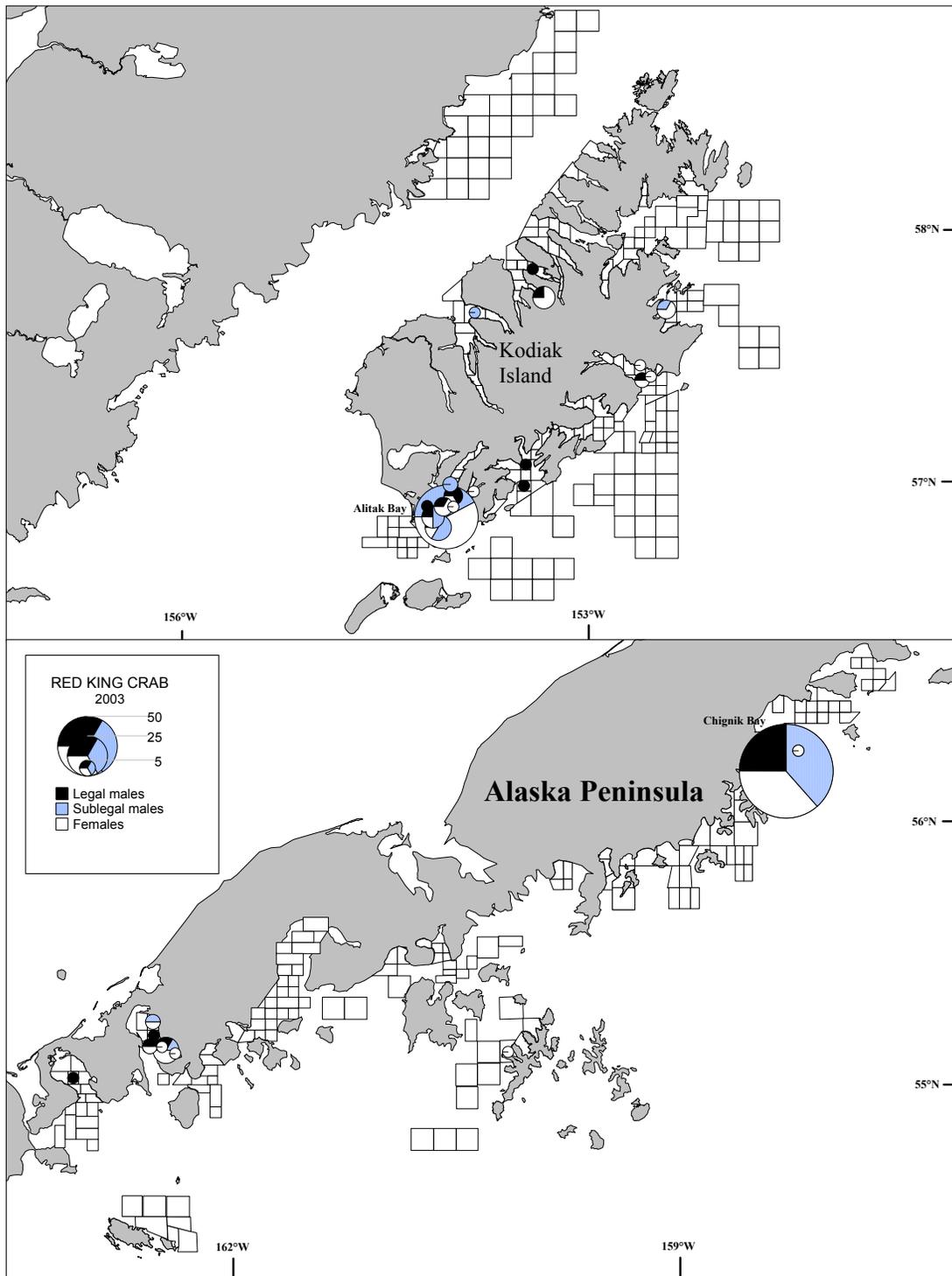


Figure 12.-Number of red king crabs per kilometer towed from the 2003 Kodiak and Alaska Peninsula Area trawl survey.

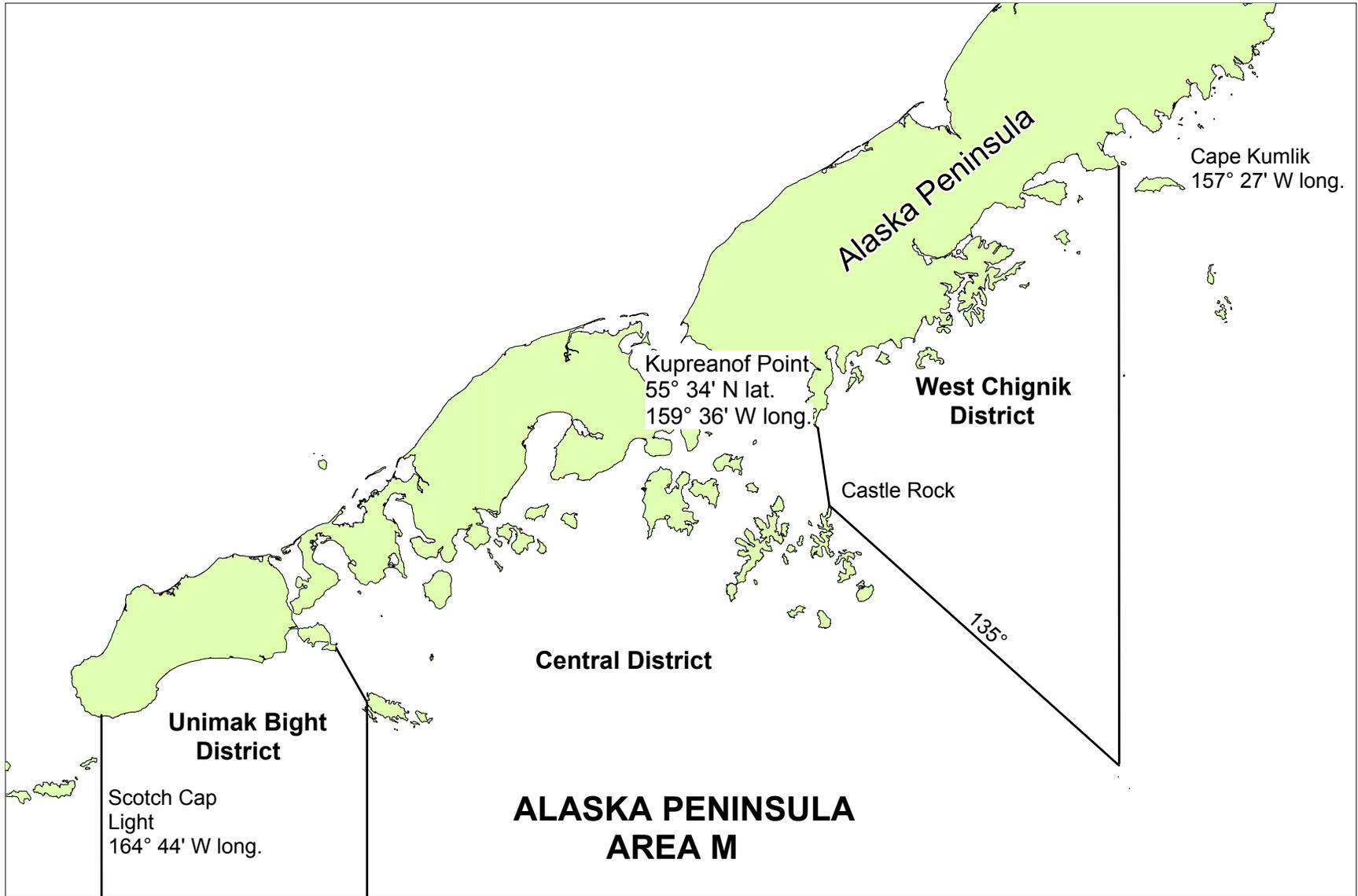


Figure 13.-Alaska Peninsula Area and districts for king crab fishery management, 2003.

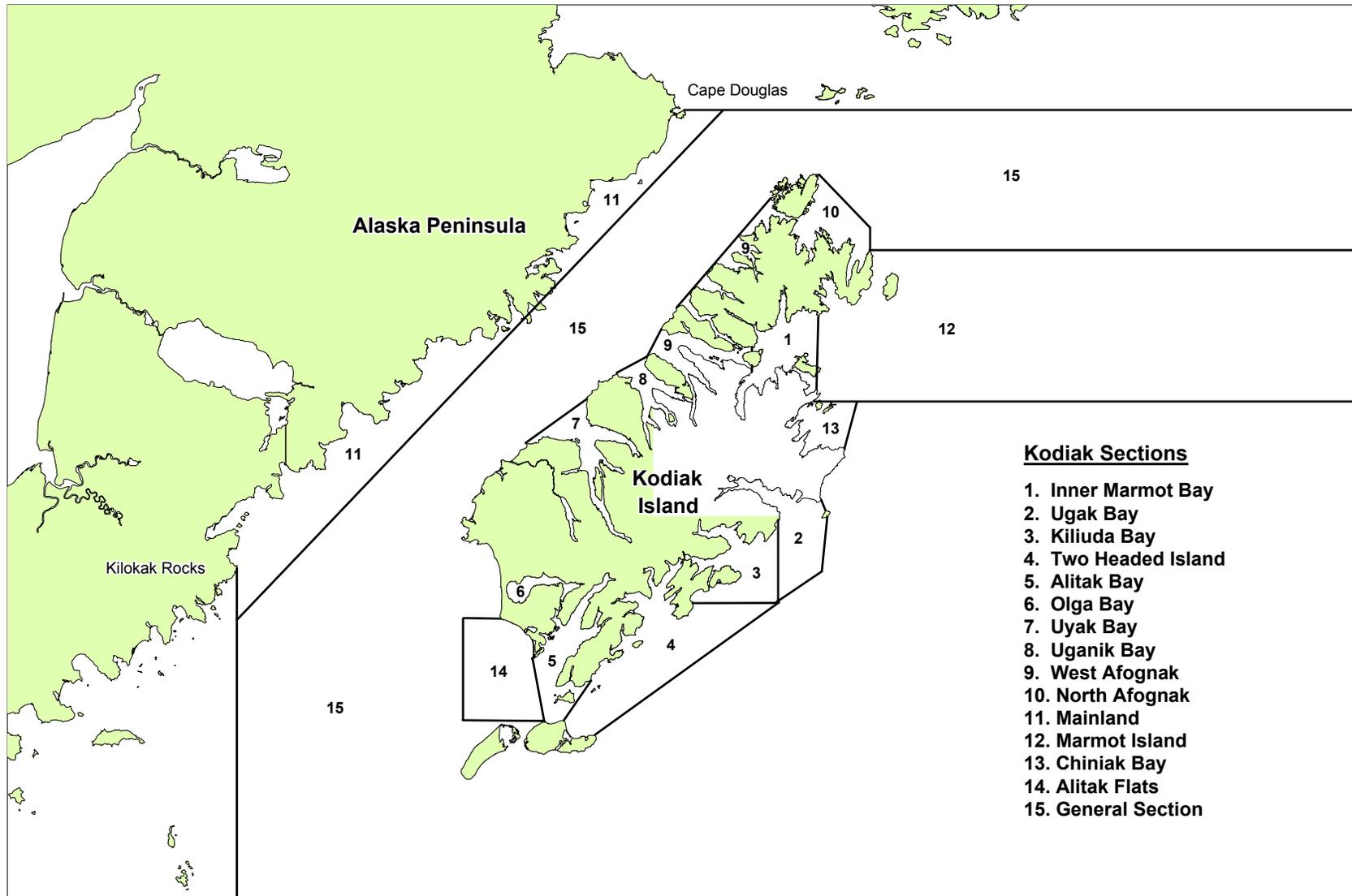


Figure 14.-Kodiak District and sections for shrimp fishery management, 2003.

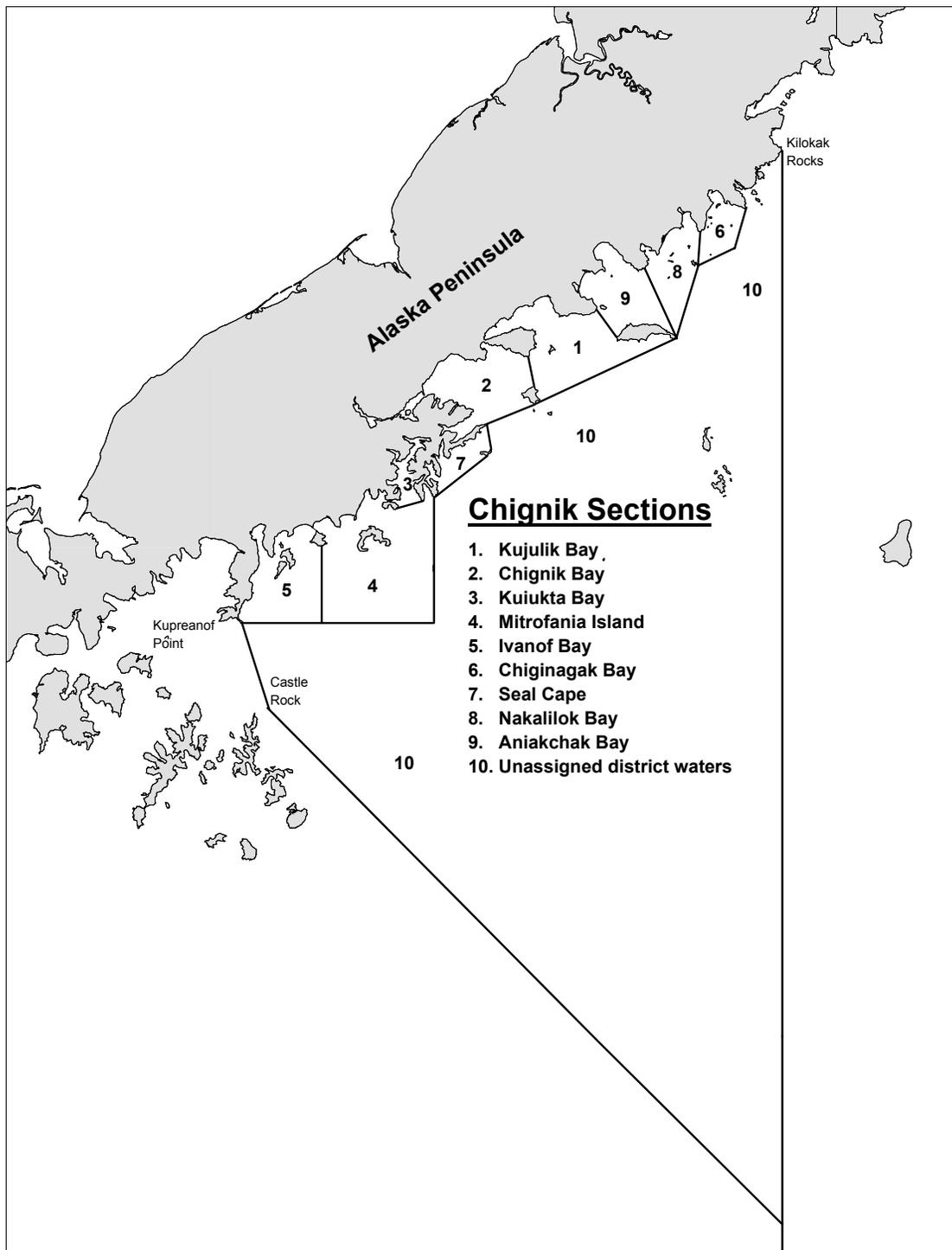


Figure 15.-Chignik District and sections for shrimp fishery management, 2003.

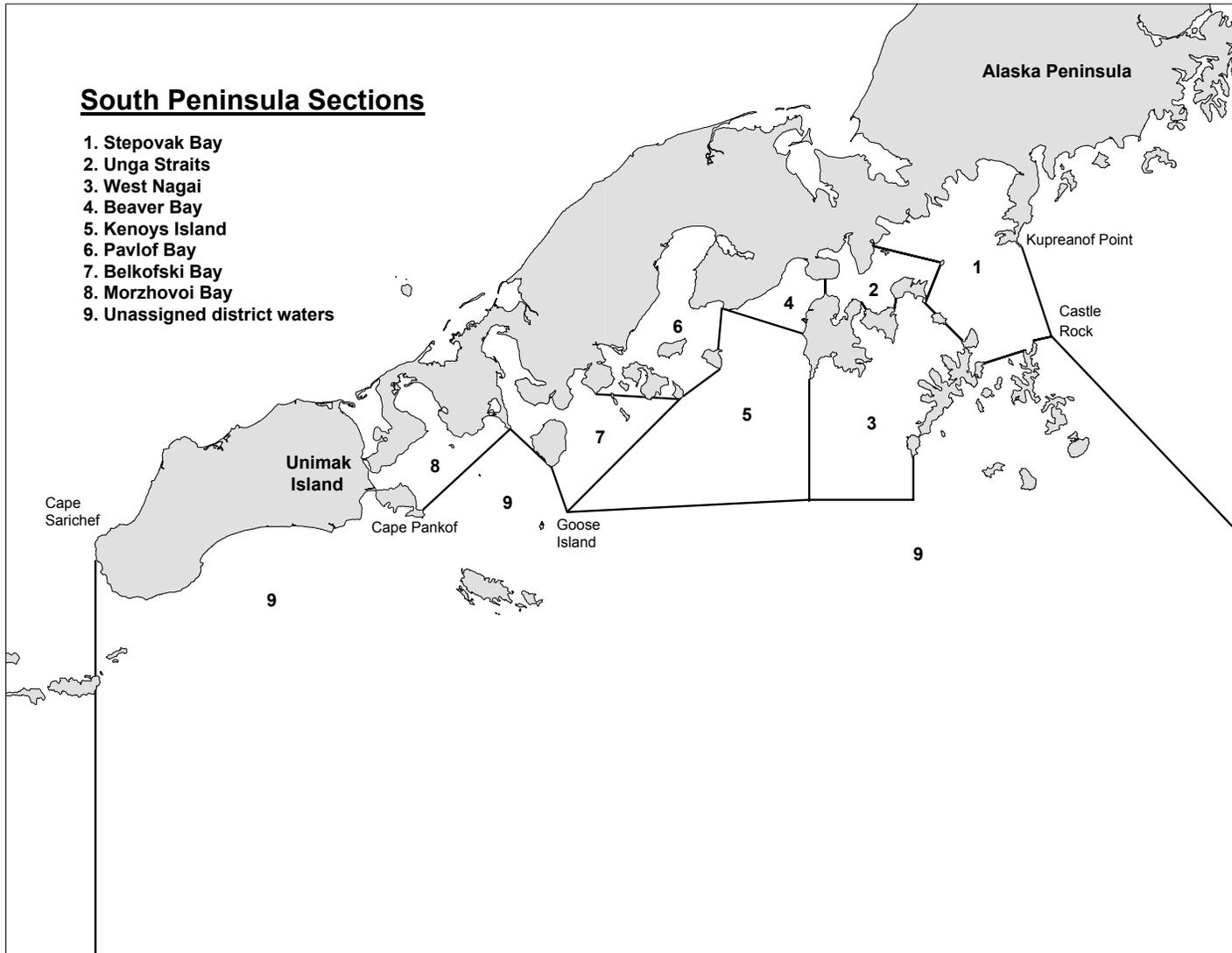


Figure 16.-South Peninsula District and sections for shrimp fishery management, 2003.