

ANNUAL MANAGEMENT REPORT FOR THE
COMMERCIAL AND SUBSISTENCE SHELLFISH FISHERIES OF
THE ALEUTIAN ISLANDS, BERING SEA AND THE WESTWARD REGION'S
SHELLFISH OBSERVER PROGRAM, 2003



By

Westward Region Shellfish Staff

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ABSTRACT

The Alaska Department of Fish and Game (ADF&G) is tasked with management of all commercial, subsistence and personal use shellfish fisheries occurring in the Territorial Sea and Exclusive Economic Zone (EEZ) of the Aleutian Islands west of Scotch Cap Light (164° 44' W long.) and all Bering Sea waters of the Territorial Sea and EEZ north of Cape Sarichef (58° 39' N lat.). King crab in the Bering Sea north of Cape Romanzof and Tanner crab in Norton Sound are managed by ADF&G's Arctic-Yukon-Kuskokwim Region.

In 2003, three species of king crabs, snow crabs, Tanner crabs, Dungeness crabs, and giant Pacific octopus were taken in the Bering Sea and Aleutian Islands (BSAI) commercial and subsistence fisheries.

This report presents details on the commercial and subsistence harvest, participation and value of shellfish fisheries in the BSAI area. Historical and current fishery management practices, a summary of the most recent commercial fishery and stock status information are presented for each fishery. The Bering Sea king and Tanner crab community development quota (CDQ) crab fisheries and American Fisheries Act (AFA) crab sideboards for Bristol Bay red king crab are summarized.

To enhance shellfish fishery management and collect data that would otherwise be unavailable, ADF&G has operated an observer program in the BSAI for crab since 1988 and for scallop since 1993. Varying levels of observer coverage are required for each crab fishery and observers are deployed on catcher vessels, catcher processors and floating processors. Observer costs are paid by either the vessel or ADF&G. Details of the crab and scallop observer program are presented as well as information on the BSAI pot limit program.

OVERVIEW

The ADF&G Westward Region includes all waters of the Territorial Sea and EEZ south of Cape Douglas (58° 51.1' N lat.) and west of 148° 50.25' W long. to the U.S.-Russia Maritime Boundary. ADF&G in Dutch Harbor is tasked with management of all commercial, subsistence and personal use shellfish fisheries occurring in the Territorial Sea and Exclusive Economic Zone (EEZ) of the Aleutian Islands west of Scotch Cap Light (164° 44' W long.) and all Bering Sea waters of the Territorial Sea and EEZ north of Cape Sarichef (58° 39' N lat.). King crab in the Bering Sea north of Cape Romanzof and Tanner crab in Norton Sound are managed by ADF&G's Arctic-Yukon-Kuskokwim Region. The waters of the BSAI support the largest and most valuable commercial crab fisheries in Alaska.

The BSAI are divided into registration areas for king crab management and include districts of Registration Area J for Tanner crab, Dungeness crab and miscellaneous shellfish management. BSAI king and Tanner crab fisheries are managed under a federal fisheries management plan (FMP) that establishes a cooperative management structure deferring king and Tanner crab management to the state of Alaska with federal oversight. The Bering Sea hair crab fishery is managed solely under state jurisdiction, as are other crab and miscellaneous shellfish fisheries.

Species commercially harvested during 2003 in waters of the Bering Sea and Aleutian Islands (BSAI) include red king crabs *Paralithodes camtschaticus*, golden king crabs *Lithodes aequispinus*, scarlet king crabs *Lithodes couesi*, snow crabs *Chionoecetes opilio*, Tanner crabs *Chionoecetes bairdi*, grooved Tanner crabs *Chionoecetes tanneri*, triangle Tanner crabs *Chionoecetes angulatus*, Dungeness crabs *Cancer magister*, and giant Pacific octopus *Octopus dolfeini*. Historically, waters of the BSAI have supported commercial harvests of blue king crabs *Paralithodes platypus*, green sea urchins *Strongylocentrotus droebachiensis*, pandalid shrimp, hair crab *Erimacrus isenbeckii*, and sea snails of several species, however these fisheries are currently either closed due to low abundance or are not being commercially pursued. In addition, a fishery for weathervane scallops *Patinoplectin caurinus* occurs in the BSAI, however it is summarized in a separate report.

In 2003, 250 catcher vessels, eight catcher processors, six floating processors and 18 shorebased processors were involved in harvesting and processing non-scallop shellfish resources in the BSAI. BSAI shellfish landings totaled approximately 47.6 million pounds generating an approximate exvessel value of \$147 million.

The Bering Sea snow crab fishery was the largest shellfish fishery in Alaska with a total harvest of 28.5 million pounds, followed by the Bristol Bay red king crab fishery with a total harvest of 15.7 million pounds and the Aleutian Islands golden king crab fishery with a total harvest of 5.7 million pounds.

In addition to the fisheries previously mentioned, there was a fishery for golden king crabs in the Pribilof District (0.15 million pounds), a fishery for red king crabs in the Petrel Bank portion of the Aleutian Islands (0.5 million pounds), and a fishery for grooved Tanner crab in the Bering Sea (0.2 million pounds). Scarlet king crabs were taken incidentally in the Aleutian Islands

golden king crab fishery. Fisheries for red and blue king crabs in the Pribilof District, for blue king crabs in the Saint Matthew Island Section and for red king crabs in the eastern Aleutian Islands were closed due to low abundance. Both the Saint Matthew Island and Pribilof blue king crabs stocks are considered overfished.

While the Bering Sea snow crab fishery was open in 2003, the harvest was well below the long-term average and the stock is considered overfished. The Bering Sea Tanner crab fishery was closed due to low abundance, as were the Aleutian Islands Tanner crab fisheries. A commercial test fishery was conducted in the Eastern Aleutian Tanner crab District and 15,000 pounds of Tanner crab were harvested.

Dungeness crab harvests in the BSAI have historically been small. No boats registered to fish for Dungeness crab during the 2003 season in either the Aleutian Islands or North Peninsula Districts.

Relative to other portions of the Westward Region, the BSAI area has never supported large harvests of shrimp. In 2003, one vessel registered to fish for shrimp in the Aleutian Islands, thus all information is confidential.

2003 saw little participation in most BSAI fisheries for miscellaneous shellfish species. The Bering Sea hair crab fishery was closed due to low abundance and there was no effort targeting green sea urchins or sea cucumbers. Giant Pacific octopus were harvested incidentally in BSAI groundfish fisheries.

Both state and federal management agencies and the public have come to rely on shellfish observer data to provide information on the targeted and non-targeted portions of the catch. All vessels that process crabs at sea are required to be observed and catcher vessel observer coverage is either full or partial depending on the fishery. Vessels that process at sea pay for observer coverage themselves, while catcher vessels, depending on the fishery, either pay for coverage themselves or the department pays for the coverage with test fish funds.

Pot limits for BSAI crab fisheries were implemented in 1992. ADF&G currently issues buoy tags to enforce the various pot limits. This report summarizes the activities of the BSAI buoy tag program.

ANNUAL MANAGEMENT REPORT FOR THE
COMMERCIAL AND SUBSISTENCE SHELLFISH FISHERIES OF
THE ALEUTIAN ISLANDS, 2003/04

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ALEUTIAN ISLANDS KING CRAB MANAGEMENT AREA

Description of Area

The Aleutian Islands king crab Registration Area O has as its eastern boundary the longitude of Scotch Cap Light (164° 44' W long.), its northern boundary a line from Cape Sarichef (54° 36' N lat.) to 171° W long., north to 55° 30' N lat., and as its western boundary the Maritime Boundary Agreement Line as that line is described in the text of and depicted in the annex to the Maritime Boundary Agreement between the United States and the Union of Soviet Socialist Republics signed in Washington, June 1, 1990 (Figure 1-1). Area O encompasses both the waters of the Territorial Sea (0-3 nautical miles) and waters of the Exclusive Economic Zone (3-200 nautical miles).

ALEUTIAN ISLANDS RED KING CRAB

Historical Background

Historically, the red king crab *Paralithodes camtschaticus* resource in the Aleutian Islands was harvested in two registration areas. The Adak Registration Area consisted of those waters in the Aleutian Islands west of 171° W long., while the Dutch Harbor Registration Area encompassed waters east of 171° W long., (Figure 1-2). In addition, as the fleet moved westward, a third Registration Area (Area S) was established for the waters around Amchitka Island and the Petrel Bank. Area S was created in 1967 and was merged into Area R in 1978 (ADF&G 1991). In March of 1996, the Alaska Board of Fisheries (BOF) established the Aleutian Islands king crab Registration Area (Area O) by combining the existing Dutch Harbor and Adak Registration Areas. The BOF adopted this change to improve management of the increasingly important golden king crab *Lithodes aequispinus* resource in the Aleutian Islands. Combining the Adak and Dutch Harbor Areas was not expected to impact management of red king crabs in the Aleutian Islands (ADF&G 1999a).

Domestic fisheries for red king crabs in both the Adak and Dutch Harbor Registration Areas began in 1961, with effort and harvest increasing rapidly in both areas. The Adak Area reached a peak harvest of 21 million pounds in 1964/65, while maximum production of 33 million pounds in the Dutch Harbor Area was reached in 1966/67 (Table 1-1, Figure 1-3). Fluctuating harvest levels from one year to the next characterized the fisheries in the Dutch Harbor and Adak areas, and by the 1982/83 season the Dutch Harbor fishery had declined to a harvest of 430,000 pounds. Commercial fishing for red king crabs in the Dutch Harbor Area was closed on an annual basis after the 1982/83 season. The Adak fishery remained open through the 1995/96 season when only 39,000 pounds were harvested. After the 1995/96 season the fishery was closed for several years. Portions of the area were opened during the 1998/99, 2000/01, and 2001/02 seasons in order to assess the status of red king crab stocks. In 2002/03 the Petrel Bank portion of Area O was reopened to commercial fishing with a guideline harvest level (GHL) of

500,000 pounds. The Aleutian Islands red king crab fishery had a maximum fishery value of nearly \$20 million in the 1980/81 season (Table 1-2).

Observers have been required on all crab catcher-processor vessels since 1988 and on catcher vessels targeting red and golden king crabs in the Aleutian Islands since 1995. Observer coverage on golden king crab vessels provides red king crab bycatch data from that fishery, although red king crab bycatch in golden king crab gear is minimal due to the limited overlap in distribution of the two species. Observer coverage provides data on retained and non-retained crabs as well as information related to fishing patterns.

In 1996 and 1997, a catcher-processor vessel was permitted to target red king crabs on the Petrel Bank during directed golden king crab fishing. The goals of this project were to enumerate, tag, and collect biological data from all red king crabs captured and to recapture tagged individuals. During this two-year period, a total of 926 crabs were tagged along the north side of Amchitka Island and along the south side of Semisopochnoi Island. Of the tagged crabs, 440 were legal males and 160 were females; 89% of legal crabs were new shell. Recovery efforts yielded 15 tagged crabs, 6 of which were legal males. While the tagging was too limited to provide quantitative stock assessment data, it did provide some information related to migration, molting cycle, and seasonal distribution (Byersdorfer 1998).

In order to assess the status of red king crab stocks in portions of the Aleutian Islands where the department has gained little recent abundance information, a limited commercial fishery was opened on November 1, 1998 in two areas of the Aleutian Islands with the provision that crabs not harvested be tagged and released. In addition, vessel operators were required to document all red king crab fishing activities in a pilot house log book. East of 179° W long., a GHL of 5,000 pounds was established and west of 179° E long., a GHL of 10,000 pounds was set; these GHLS were set using historic catch information. Closed waters included the Petrel Bank, or the area between 179° E long. and 179° W long. The department did not open the Petrel Bank area in 1998/99 since prior efforts had provided some population data from that area (Byersdorfer 1998).

Three vessels registered to harvest red king crabs in the Aleutian Islands during the 1998/99 season, but only one recorded any landings. The GHL was not reached in either open area and the fishery was closed by emergency order on July 31, 1999. Observers were required on all vessels participating in the 1998/99 fishery.

In order to address concerns for red king crab abundance in the Petrel Bank area, two surveys were conducted in January/February and November, 2001. Due to budget constraints, the survey was designed so fishers could retain and sell all legal male red king crabs captured to cover survey expenses. The commissioner's permit specified stations to be fished, soak times and effort levels.

Capture of red king crabs from both of the 2001 surveys in the Petrel Bank area indicated healthy levels of legal males. CPUE (catch per unit of effort, defined as number of legal crabs per pot lift) for the combined surveys was 28. Survey CPUEs are not directly comparable to previous commercial fishery CPUEs because pot lifts in prior commercial fisheries were not conducted in

a systematic manner and may have occurred in different fishing locations (Bowers et al. 2002). Sublegal male and female CPUE for the combined surveys was two and three, respectively.

Size frequency data from the 2001 surveys were comparable to the size composition that was found in catches prior to the 1995/96 fishery closure. The size frequency indicates that approximately 61% of the sampled legal-size crabs were post recruits. Of the crabs sampled 77% were new-shell. Similar to the surveys conducted in the mid 1990s, very few sublegal crabs were captured during the 2001 surveys.

The surveys conducted in 2001 indicate that legal male abundance has increased since the fishery was closed, however, red king crab female and sublegal abundance remains low. Given the legal male abundance, a limited commercial fishery on the Petrel Bank was re-opened during the 2002/03 season with a GHL of 500,000 pounds. With current effort levels, this is considered the minimum GHL that can be managed inseason. Because of the uncertainty in the status of sublegal and female red king crabs and to provide for overall stock protection, the department adopted a management strategy that would close the fishery prior to achieving the GHL if legal male CPUE drops below 10 crabs/pot. Establishing a low GHL with a moderate CPUE threshold level should help prevent the stock from declining to levels seen in the mid-90s. Trends in fishery performance will be used to evaluate future GHLS and having a defined threshold for closing the fishery will permit clearer understanding of the management strategy. Prior to opening a commercial fishery in other portions of the western Aleutians, the department will need to conduct surveys similar to those performed on the Petrel Bank.

In addition to commercial fisheries, long-standing subsistence and sport fisheries have targeted red king crabs in the vicinity of Unalaska Island. To gather subsistence harvest data, the department has periodically required fishers to obtain a harvest permit and log sheet. Historically, few of the permits were returned and the program was discontinued in 1994. On average, 15 permits were returned per year. The reported average annual harvest was 135 king crabs.

To address conservation concerns for the eastern Aleutian Islands red king crab stock, the BOF took action at the March 1999 meeting regarding the subsistence and sport king crab fisheries in that portion of the Aleutian Islands between 168° and 164° 44' W long. Regulations were adopted by BOF that closed the sport fishery and reduced the daily bag limit of subsistence king crabs from six to one per person per day. BOF also adopted regulations requiring that subsistence king and Tanner crab fishers operating in the Aleutian Islands between 168° and 164° 44' W long, obtain a subsistence permit before fishing.

In 2002, ADF&G issued 237 subsistence permits and harvest logsheets, of which 231, or 97.5%, were returned. The returned permits accounted for a harvest of 1,080 king crabs (Table 1-3). Estimates generated from the subsistence harvest logsheets indicate that approximately 1,108 king crabs were taken with harvest ranging from zero to 76 king crabs per permit. The majority of subsistence caught king crabs were taken from Captains Bay (48%) and adjacent to the Dutch Harbor spit (33%). There were 24 king crabs taken with dive gear (2%) and the remaining 1,056 crabs were taken with 1,902 pot lifts for an average CPUE of <1 legal crab per pot. Seventy-seven percent of the king crabs were harvested in June. These harvest figures are substantially

less than estimates generated by a 1994 survey of 15.1% of households in Unalaska, where 6,892 king crabs were estimated to have been taken (ADF&G 1999b).

2003/04 Commercial Fishery

The Aleutian Islands king crab Registration Area O opened to commercial fishing for red king crabs by emergency order at NOON Alaska daylight time, October 25, 2003. The fishery occurred in the Petrel Bank area, which is defined as those waters of king crab Registration Area O west of 179° W long., east of 179° E long., and north of 51° 45' N lat. Based on historic catch information and results from the 2001 Petrel Bank pot surveys, the department established a GHL of 500,000 pounds.

Preseason registrations were received from 34 vessels and based on this number, pot limits were set at 34 pots for vessels less than or equal to 125 feet in overall length, and 43 pots for vessels greater than 125 feet in overall length. Thirty vessels participated in the Petrel Bank red king crab fishery. The fleet pulled 5,774 pots, an average of 192 pots per vessel.

Fishing effort was heavily concentrated on the west side of the Petrel Bank, north of Semisopchnoi Island. Catch rates tended to be higher during the day and dropped off slightly during the evening when the buoys were down as a result of strong currents. CPUE for the Petrel Bank was 10 legal crabs per pot lift and legal crabs averaged 8.0 pounds. The closure announcement was made at 8:00 PM on October 28, providing ten hours advance notice to the fleet.

Area O was closed to commercial fishing for red king crabs by emergency order at 6:00 AM Alaska standard time, October 29, 2003, 91 hours after it opened. Final harvest numbers indicate that 479,113 pounds of red king crabs were landed (Table 1-1). Five shore-based processors in Dutch Harbor, one in King Cove, one in Adak, and two catcher-processors purchased red king crabs. Exvessel price averaged \$5.14 per pound and the 2003 Petrel Bank fishery had a total value of nearly \$2.45 million (Table 1-2).

2003 Subsistence Fishery

In 2003, ADF&G in Dutch Harbor issued 231 subsistence permits and harvest logsheets, of which 105, or 45.5%, have been returned. The returned permits accounted for a harvest of 331 king crabs (Table 1-3). Estimates generated from the subsistence harvest logsheets indicate that approximately 728 king crabs were taken with harvest ranging from zero to 48 king crabs per permit. The majority of subsistence caught king crabs were taken in Captain's Bay (87%) and adjacent to the Dutch Harbor spit (8%). All of the red king crabs were taken with pot gear and the average CPUE was <1 legal crab per pot. Eighty-five percent of the red king crabs were harvested in June.

Fishery Management and Stock Status

A vessel may be registered to fish in the commercial red king crab and golden king crab fisheries concurrently; however, only single line pots may be operated in areas open to red king crab fishing and only longline pots may be operated in areas open to golden king crab fishing. Likewise, red king crab may only be retained from single line pots and golden king crab may only be retained from longline pots. Golden king crab fisheries in the Aleutian Islands are not restricted by pot limits. In the Petrel Bank red king crab fishery the fleet may operate no more than 1,250 total pots.

Western Aleutian Islands pot surveys conducted from 1975 to 1977 provided CPUE, fecundity, and relative abundance information of red king crabs (ADF&G 1978). Pot surveys were conducted on an annual basis in the Dutch Harbor Area until 1990 when trawl surveys were implemented to survey larger areas in a more timely fashion and to reduce gear selectivity inherent to pot fishing activities (Urban 1992). In the late 1970s, GHL ranges were established using a blend of pot survey results and fisheries data. Historic fishery GHLS set in the late 1970s ranged from 8.0 million to 26 million pounds for Dutch Harbor and from 0.5 million to 3.0 million pounds in Adak (ADF&G 1978). GHLS were often modified inseason based on fishery performance.

Most shellfish research in the Aleutian Islands has been directed at crab stocks inhabiting the eastern Aleutian Islands. Bottom trawl surveys of the waters around Unalaska Island were conducted in 1991, 1994, 1995, 1999, 2000, and 2003. Recent bottom trawl surveys have not captured many king crabs. In 1995, only two red king crabs were caught, thus no population estimate could be generated. During the 1999 survey, 72 red king crabs were caught, one of which was a legal male. All others were pre-recruit males and small females captured in a single tow made in Kalekta Bay (Worton 2000). This catch, while encouraging, does not appear to constitute a rebuilding event. The eastern Aleutian Islands were again surveyed by bottom trawl during the summer of 2000 and 2003. A single red king crab was captured during both years (Spalinger 2004 and Worton 2001), indicating that the red king crab population in the eastern Aleutian Islands remains severely depressed.

In November of 2002 the department conducted a survey similar in design to the Petrel Bank surveys of 2001 in the area between 172° W long. and 179° W long. The survey area was developed in consultation with Industry and focused on areas of historic red king crab abundance in the Adak, Atka, and Amlia Islands areas that have been closed to commercial red king crab fishing since the 1998/99 season and had not been previously surveyed. The survey had a total of 116 stations that were divided between state-waters (56 stations) and federal-waters (60 stations).

Ten vessels surveyed a total of 61 stations composed of 1,085 pot lifts. Survey catches were poor and only four legal males were captured during the entire survey. Due to poor survey catches and high operation costs, many vessels were unable to fulfill their survey commitment and only 34% of the survey was completed. The portion of the survey that was completed indicates that the red king crab stocks around Adak, Atka, and Amlia Islands continue to be severely depressed. Therefore, the department does not expect a commercial red king crab fishery to open in this area in the near future (Granath 2003).

Shell-age and size composition data from the 2001 and 2002 fisheries in the Petrel Bank area indicate that primarily older, post-recruit crabs support the fishery. Proportions of sublegal and female red king crabs did not change significantly from the 2001 surveys to the 2002 or 2003 commercial fisheries. Average weight and length of legal male red king crabs continues to increase. Average weight and length of legal male red king crabs increased from the surveys to 7.4 pounds and 162 mm in 2002 and up to 8.0 pounds and 168 mm in 2003.

Cumulative fishery CPUE did not drop below the benchmark of 10 during the 2003 fishery, although final numbers from fish ticket data indicate that the final fishery CPUE was 10 crabs per pot. Fishery CPUE climbed during the first 36 hours from 8.5 to 15.0 crabs per pot and steadily dropped for the remainder of the fishery with the exception of the morning of October 28, when most pots had soaked for an additional 12 hours. Compared to the combined survey CPUE of 28 and 2002 fishery CPUE of 18, performance during the 2003 fishery does not look promising and the stock appears to be in decline.

ALEUTIAN ISLANDS GOLDEN KING CRAB

Historic Background

The golden king crab *Lithodes aequispinus* fishery in the Aleutian Islands has never failed to open due to low stock abundance, making it unique among Westward Region king crab fisheries. Golden king crabs inhabit depths greater than where other commercially exploited king crabs are typically found (Blau et al. 1996). The depths and steep bottom topography of the inter-island passes inhabited by golden king crabs necessitate the use of longline rather than single-pot gear. No other major king crab fisheries in Alaska exist where longline pot gear is the only legal gear type.

Historically, golden king crabs were taken as incidental harvest during red king crab fisheries in the Adak (Area R) and Dutch Harbor (Area O) Registration Areas. One landing of golden king crabs was reported from the Adak Area during the 1975/76 season, but directed fishing for golden king crabs did not occur in either management area until the 1981/82 season (ADF&G 1984). From the 1981/82 season until the 1996/97 season, the golden king crab resource in the Aleutian Islands was harvested in two directed fisheries occurring in the Adak and Dutch Harbor Registration Areas.

During the 1981/82 season, 14 vessels landed 1.2 million pounds of golden king crabs in 76 deliveries from the Adak Area (Table 1-4). By the following season, harvest had reached 8.0 million pounds with 99 vessels participating in the fishery. Between 1981 and 1995, an average of 49 vessels participated in the Adak golden king crab fishery, harvesting an average of 6.9 million pounds annually. Peak harvest in the Adak fishery occurred during the 1986/87 season when 12.8 million pounds of golden king crabs were harvested for an exvessel value of \$37.6 million (Table 1-5). No stock assessment of the golden king crab population was performed in the Adak Area and initially the fishery was managed based on size, sex, and season restrictions. Catches were monitored inseason (ADF&G 1999a) and after the initial fishery, harvest levels

were set based on harvest expectations generated from catch in prior seasons (ADF&G 1983a). The majority of golden king crabs harvested in the Adak Area were taken in the North Amlia and Petrel Bank Districts; however, significant harvest also occurred in the Western Aleutian District (Figure 1-2).

From the 1981/82 season to the 1995/96 season, average weight of golden king crabs harvested in the Adak Area fishery declined from 5.5 to 4.2 pounds and CPUE declined from 10 to five legal crabs per pot pull (Figure 1-4). In July 1985, BOF adopted a regulation reducing the minimum legal size for golden king crabs from 6.5 to 6.0 inches in carapace width (CW). Decreasing the legal size for golden king crabs in this area resulted in an expected decrease in average weight of legal crabs harvested after 1985/86 and increased catch during the 1985/86 and 1986/87 seasons. This regulation change did not, however, reverse the trend of slowly declining catch rates in the area west of 171° W long.

Initial catches of golden king crabs in the Dutch Harbor Area were similar to those observed in the Adak Area fishery (ADF&G 1984). Harvest was incidental to the red king crab fishery and effort in the fishery only increased as red king crab stocks decreased in abundance. Six vessels harvested approximately 116,000 pounds of golden king crabs during the 1981/82 Dutch Harbor red king crab season (Table 1-4). By the following season, 49 vessels were participating in the directed golden king crab fishery, harvesting 1.2 million pounds. Between 1981 and 1995, an average of 18 vessels harvested approximately 1.5 million pounds of golden king crabs annually (Figure 1-5). Peak golden king crab harvest in the Dutch Harbor Area occurred during the 1995/96 season when 2.0 million pounds were harvested for an exvessel value of \$5.2 million (Table 1-5). The Dutch Harbor Area harvest was primarily from the Islands of Four Mountains and Yunaska Island area (Figure 1-1).

In general, average weight of golden king crabs harvested in the Dutch Harbor Area declined during the period from 1981 to 1995, ranging from a high of 7.6 pounds in the 1983/84 season to 4.1 pounds during the 1992/93 season (Figure 1-5). CPUE has slowly declined throughout the history of this fishery, reaching a peak of 14 legal crabs per pot during the 1984/85 season and declining to 6 crabs during the 1994/95 season. The golden king crab stock in the Dutch Harbor Area was not surveyed for abundance prior to 1991 and the fishery was managed based on a historical average catch of 1.5 million pounds annually (ADF&G 1999a). In 1984, BOF adopted an ADF&G staff proposal to lower the legal size for golden king crabs in the Dutch Harbor Area from 6.5 inches to 6.0 inches CW and to establish the area as a permit fishery.

At its March 1996 meeting, BOF chose to restructure management of king crabs in the Aleutian Islands. Formerly, the Aleutian Islands king crab populations had been managed using the Adak and Dutch Harbor Registration Areas that were established for red king crab fisheries. However, during the 1970s and 1980s, red king crab fisheries declined in the Aleutian Islands while the golden king crab fishery gained increasing importance. Consequently, BOF felt that king crab management areas in the Aleutian Islands should be re-designated to more accurately reflect current golden king crab stock distribution and patterns in fishing effort. BOF, therefore, elected to replace the Adak and Dutch Harbor Areas with the newly created Aleutian Islands Registration Area O and directed ADF&G to manage the golden king crab in the areas east and west of 174° W long. as two distinct stocks. It also stipulated that a conservative management

plan be initiated and that all vessels registered for the fishery continue to carry an onboard observer for all of their fishing activities.

In 1996, when the initial golden king crab fishery in the new king crab Registration Area O occurred, a GHL of 3.2 million pounds was established for the area east of 174° W long., and 2.7 million pounds for the area west of 174° W long. Compared to the combined Adak and Dutch Harbor Area fisheries from prior years, there was reduced effort and harvest during the 1996/97 fishery. Eighteen vessels harvested 5.9 million pounds, down from 28 vessels taking 6.9 million pounds in 1995/96. This reduction in effort was likely due to the departure of vessels for the 1996 Bristol Bay red king crab season, which re-opened to commercial fishing for the first time since 1993. The eastern portion of Area O closed by emergency order on December 25, with a harvest of 3.3 million pounds, while the western portion was open for the entire registration year with a harvest of 2.6 million pounds.

During the 1996/97 fishery, the harvest rate east of 174° W long., was six legal crabs per pot pull with an average weight of 4.5 pounds per crab. Most fishing effort was concentrated in the area around Yunaska Island and the Islands of Four Mountains with some effort in the Seguam and Amukta Pass areas (Figure 1-2). In the portion of Area O west of 174° W long., fishery performance was six legal crabs per pot pull with an average weight of 4.2 pounds per crab (Table 1-4). Most harvest occurred between Amchitka Pass and Buldir Island. The 1996/97 golden king crab fishery in the Aleutian Islands had an estimated exvessel value of \$12.5 million (Table 1-5).

Since the 1996/97 season, effort and harvest in the Aleutian Islands east of 174° W long have remained relatively stable. During the 1997/98 season, 13 vessels harvested 3.5 million pounds in an 84-day season. CPUE averaged seven legal crabs per pot lift and harvested crabs averaged 4.5 pounds each. The fishery west of 174° W long., has experienced greater variability in catch and effort. During the 1997/98 season, eight vessels participated in the fishery and harvested 2.4 million pounds. The GHL west of 174° W long. was not reached and the fishery was not closed. The fleet averaged seven legal crabs per pot lift with landed crabs averaging 4.3 pounds each. The 1997/98 Aleutian Islands golden king crab fishery had an exvessel value of \$12.5 million.

Prior to the 1998/99 season, the Aleutian Islands golden king crab GHL east of 174° W long. was reduced from 3.2 million pounds to 3.0 million pounds. Fishery performance trends and data from tag recoveries indicated that the 200,000 pound GHL reduction for the area east of 174° W long. was necessary in order to comply with the overfishing definition specified in the Fishery Management Plan (FMP) for the king and Tanner crab fisheries of the Bering Sea and Aleutian Islands (NPFMC 1998).

The 1998/99 fishery east of 174° W long. was similar to the prior two fisheries. Fourteen vessels registered and harvested 3.2 million pounds in a 68-day season. The catch accrued at a rate of nine legal crabs per pot lift with landed crabs averaging 4.4 pounds each. West of 174° W long., effort declined significantly from the prior two seasons. A fleet of three vessels harvested 1.7 million pounds, or 63% of the GHL. The fleet averaged 12 legal crabs per pot lift with landed crabs averaging 4.1 pounds each. The 1998/99 fishery had an exvessel value of \$9.3 million, the lowest in 14 years.

In July 1999, BOF adopted a regulation to move the Registration Area O golden king crab fishery from September 1 to August 15 in order to accommodate fishers that participate in both the golden king and Bristol Bay red king crab (BBRKC) fisheries. The BBRKC fishery opening date had been moved from November 1 to October 15, which reduced the amount of fishing time available to the golden king crab fleet prior to the Bristol Bay opening. The change in opening date for Area O was designed to provide adequate fishing time for the golden king crab fleet to harvest the GHL east of 174° W long., prior to the opening of the BBRKC fishery.

In 2000/01, the fishery east of 174° W long. continued the stable trend seen in the previous four years. Fifteen vessels registered and harvested 3.1 million pounds. The CPUE was 10 legal crabs per pot, with a 4.5-pound average weight per crab. West of 174° W long., a fleet of 12 vessels harvested 2.9 million pounds. The CPUE was seven legal crabs per pot, while the average weight per crab was 4.1 pounds. With an exvessel value of just under \$19.5 million, the 2000/01 season was the most valuable golden king crab fishery in six years (Table 1-5).

These trends continued during the 2001/02 and 2002/03 fisheries. In the area east of 174° W long., 19 vessels participated both seasons and harvested 3.16 million pounds in 2001/02 and 2.77 million pounds in 2002/03. The CPUE and average weight remained the same for both years with an average of 12 crab per pot lift and legal males averaged 4.4 pounds each. In the area west of 174° W long., nine vessels harvested 2.73 million pounds in 2001/02 and six vessels harvested 2.64 million pounds in 2002/03 (Table 1-4). Again, the CPUE and average weight remained constant for both years with an average of seven crabs per pot lift and legal males averaged 4.0 pounds each. Exvessel values for the 2001/02 and 2002/03 seasons were \$18.13 and \$18.26 million pounds, respectively (Table 1-5).

The number of vessels fishing and the average number of pots per vessel in the eastern portion of the Aleutian Islands golden king crab fishery has remained fairly constant during the past ten years (Figure 1-6). In the western portion of the Aleutian Islands golden king crab fishery, there has been a decrease in the number of vessels registered per season with a dramatic increase in the number of pots registered per vessel, especially in the past five years (Figure 1-7). With the adoption of longline gear in 1986, vessels became more specialized in fishing for golden king crabs and were able to more efficiently operate gear. In recent years, with shorter Bristol Bay red king and Bering Sea snow crab fisheries, those longline vessels that also fish in the Bering Sea have increased their effort in the Aleutian Islands. While the total number of vessels registered has remained relatively low since the early 1990s, the amount of time relative to other crab fisheries that these vessels spend fishing in the Aleutian Islands has increased, resulting in shorter golden king crab fisheries. The expansion of processing facilities in Adak has also contributed to the shorter seasons, especially in the western Aleutians. Vessels can now deliver closer to the fishing grounds, which saves approximately a week in transit time for each delivery.

2003/2004 Fishery

The 2003/04 Aleutian Islands golden king crab fishery opened by regulation at 12:00 NOON August 15 with a GHL of 5.7 million pounds, 3.0 million pounds of which was apportioned to the area east of 174° W long., and 2.7 million pounds apportioned to the area west of 174° W

long. Twenty-one vessels participated in the fishery and landed 5.67 million pounds. The fleet averaged 11 legal crabs per pot lift, up from nine the prior season, and landed crabs averaged 4.3 pounds each which is also higher than the 2002/03 season (Table 1-4).

East of 174° W long.

The commercial fishery for golden king crabs in the Aleutian Islands east of 174° W long. began with 18 vessels registered. The fleet registered 12,518 pots, or 699 pots per vessel, a five percent increase from the 2002/03 fishery when 11,834 pots, or 623 pots per vessel, were registered. Most fishing effort was concentrated around Yunaska Island, Islands of Four Mountains, and in Seguam and Amukta Passes. Catch rates tended to be highest around the Islands of Four Mountains, in Amukta Pass and north of Amlia Island, with the most productive grounds yielding up to 15 legal crabs per pot lift, compared to 16 crabs per pot lift in this area the pervious season (Table 1-6, Figure 1-8). The average catch rate for the entire eastern portion was 11 crabs per pot lift, down from 12 crabs per pot lift the previous season. The average weight of legal crabs was 4.6 pounds, an increase from 4.4 pounds during the 2002/03 season, with the largest crabs encountered east of the Islands of Four Mountains (170° W long.) (Table 1-6).

The fleet harvested 2.98 million pounds of golden king crabs in three and a half weeks of fishing. Landings averaged 869,000 pounds per week. Three shore-based processors in Dutch Harbor and one in Adak processed golden king crabs from the eastern Aleutian Islands. Exvessel price paid for live, whole crabs averaged \$3.46 per pound, leading to a fishery value of \$10.05 million, making it the third most valuable eastern Aleutian Islands golden king crab fishery on record (Table 1-5). A fishery closure announcement was issued to the fleet on September 3, providing the fleet with five days advance notice of the September 8 closure.

West of 174° W long.

A total of six vessels participated in the fishery west of 174° W long., three vessels began at the fishery opening on August 15, and an additional three joined the fishery after the closure in the east. The fleet registered 7,140 pots, an average of 1,190 pots per vessel, an increase from the previous season when 6,225 pots or an average of 1,038 pots per vessel were registered (Table 1-4). Fishing effort was concentrated around Kanaga Island, Tanaga Island, and the Delarof Islands. Weekly catch rates ranged from six to 14 crabs per pot lift and averaged ten which is up from seven crabs per pot lift the previous season. The average weight of legal crab was 4.0 pounds and has remained unchanged for the past three seasons. The largest crab were harvested from around Tanaga Island (Table 1-6).

The fleet harvested 2.69 million pounds of golden king crab in 25 weeks of fishing, four weeks faster than the previous season, and the shortest season west of 174° W long., on record. Landings averaged 113,000 pounds per week with a maximum weekly landing of 187,880 pounds. Golden king crabs were purchased/processed by one catcher-processor and by three shore-based processors, one in Adak and two in Dutch Harbor. Exvessel price was \$3.83 per pound for live, whole crabs, yielding a total fishery value of \$10.11 million, making it the most valuable western Aleutian Island golden king crab fishery since the 1994/95 season (Table 1-5).

A fishery closure announcement was issued to the fleet on January 30, providing one-week advance notice to the fleet of the February 6 closure.

Fishery Management and Stock Status

The Aleutian Islands golden king crab fishery is managed using two sources of inseason fishery data. Processors report landed catch to ADF&G weekly or more frequently as requested. These reports are the primary source of inseason harvest information. Observers stationed on each vessel participating in the fishery report average weight and catch rate information that is used in conjunction with landed catch to develop inseason projections of fishery length.

The department surveyed a small portion of the golden king crab habitat in the Aleutian Islands during the summer of 1997 (Blau et al. 1998). Prior to that, the department performed the only survey of this area in 1991 (Blau and Pengilly 1994). Only a small portion of the area in which golden king crabs are commercially important is currently surveyed. Mark-recapture data from the 1997 survey suggested that the commercial fishery was annually removing a minimum of 20% of the legal male crabs present in the area surveyed. The Fishery Management Plan (FMP) for king and Tanner crabs in the Bering Sea and Aleutian Islands specifies that the golden king crab stock in the Aleutian Islands is considered overfished when fishing mortality (F) exceeds 0.2 (NPFMC 1998). A fishing rate of $F=0.2$ corresponds to an annual mature male removal rate of approximately 18%. During the 1997/98 season, the GHL of 3.2 million pounds in the area east of 174° W long. was exceeded by approximately 300,000 pounds. Therefore, to maintain a long-term average harvest at 3.2 million pounds, the 1998/99 GHL in this area was reduced to 3.0 million pounds (D. Pengilly, ADF&G, Kodiak, personal communication).

The stations surveyed in 1997 were surveyed again in 2000 and 2003. Tag recovery rates changed only slightly even though approximately one-third fewer legal-sized male crabs were tagged in 2000 than in 1997. Harvest rates as indicated by tag returns in the 2000/2001 season were similar to those in 1997/98. Shell-age composition data indicated the stock is healthy, while size composition of the retained catch has changed very little (Watson and Gish 2002). Preliminary results from the 2003 survey indicate that overall approximately 22% fewer crab were tagged compared to the 2000 survey although numbers of tagged legal males were similar. Results from the 2003 survey and subsequent tag recoveries will be available in a report later this year.

Even though the harvest rates are at or near the allowable maximum in some areas, the Aleutian Islands golden king crab population is believed to be healthy. Portions of the stock occur at depths greater than those fished. Additionally, the area surveyed receives more fishing pressure than many other areas in the entire Aleutian Islands, so golden king crabs in other less heavily fished locales may have a lower harvest rate. In order to operate their gear more efficiently, fishers tend to utilize the shallowest waters in which crabs may be found in abundance. Distribution of legal males extends to depths greater than those fished, so the entire depth range distribution of legal males is not exploited. Recent fishery data also indicates that the stock is healthy. Average size of crabs harvested has remained nearly constant for the last six seasons. Average weight has been between 4.3 and 4.6 pounds per crab for the last ten years. Catch per

unit of effort has also been stable and has been above the 10-year average during the last four seasons. All this information suggests that the 3.0 million-pound GHL has provided a stable fishery and protects against overfishing as defined in the FMP. Currently, the department intends to survey the area around Amukta and Yunaska Islands every three years, with the next survey scheduled for the summer of 2006.

In the Aleutian Islands west of 174° W long., no surveys are conducted. The 2.7 million-pound GHL has been in effect since the 1996/97 season and was determined on the basis of the preceding 5-year average harvest in the waters west of 174° W long. Fishery and observer data do not demonstrate a compelling reason to change the GHL from 2.7 million pounds as fishery statistics have not markedly changed since it was developed in 1996/97.

ALEUTIAN ISLANDS SCARLET KING CRAB

Historic Background

Scarlet king crabs *Lithodes couesi* are currently harvested under authority of a permit issued by the commissioner of ADF&G and authorized in 5 AAC 34.082. PERMITS FOR *LITHODES COUESI* KING CRAB. These permits are usually issued in conjunction with an Aleutian Islands golden king crab registration. Scarlet king crabs are typically found in waters deeper than 200 fathoms and have been taken as incidental harvest in the golden king crab and deepwater Tanner crab fisheries in the Aleutian Islands. Limited directed fishing has occurred; however, exploratory fishing does not indicate that a large biomass is present. Since 1992, annual harvest of scarlet king crabs in the Aleutian Islands has ranged from less than 5,000 pounds to a peak of nearly 63,000 pounds in 1995, when eight vessels made 21 landings. Exvessel value was at a maximum in 1995 when the fishery was worth approximately \$110,000 (Table 1-7). Since 1996, effort and harvest in this fishery have been minimal and catch information has been confidential in all years except 1997 when 6,700 pounds were harvested. When BOF combined the Adak and Dutch Harbor king crab Registration Areas to create Area O, management of scarlet king crabs was not impacted (ADF&G 1999a).

2003 Fishery

In 2003, only two vessels registered to fish for scarlet king crabs in the Aleutian Islands, therefore all harvest information is confidential.

Fishery Management and Stock Status

No surveys are conducted, nor are any estimates of population abundance made for scarlet king crabs in the Aleutian Islands; consequently, stock status and distribution are not well known. Scarlet king crab males larger than or equal to five and one-half inches in CW may be taken as incidental harvest under the conditions of a commissioner's permit. No directed fishing for

scarlet king crabs is anticipated prior to adoption of a plan for new and developing fisheries by the BOF. Future directed fisheries for scarlet king crabs would be conducted in accordance with the provisions of that plan. Observer coverage on each vessel registered for the king crab fisheries of the Aleutian Islands has provided biological information that will be used by the department to develop future management measures for scarlet king crab.

EASTERN ALEUTIAN TANNER CRAB DISTRICT

Description of Area

The Eastern Aleutian Tanner crab District encompasses all waters of Registration Area J between the longitude of Scotch Cap Light at 164° 44' W long., west to 172° W long., and south of the latitude of Cape Sarichef at 54°36' N lat. (Figure 1-9). Area J encompasses both waters of the Territorial Sea (0-3 nautical miles) and waters of the Exclusive Economic Zone (3-200 nautical miles).

TANNER CRAB

Historic Background

The Eastern Aleutian District has not supported harvests of Tanner crabs *Chionoecetes bairdi* as large as those recorded in other districts of Area J. Tanner crabs are found only in a few major bays and inlets of the eastern Aleutians and the directed fishery was relatively small in volume and geographically limited until the late 1970s. The fishery began in Akutan and Unalaska Bays and subsequently expanded to include all areas of known Tanner crab distribution in the Eastern Aleutian District. Harvest of Tanner crabs over the last 26 years has typically remained under one million pounds per year. Only in the three consecutive seasons from 1976/77 to 1978/79 did the harvest exceed one million pounds, reaching a peak of 2.5 million pounds in the 1977/78 season (Table 1-8). Vessel participation was low in 1973/74, with only six vessels registered and reached a high of 31 vessels in 1982 when the fishery was in decline. Vessel participation declined in 1991 to five vessels and consequently the harvest reached a low of 50,038 pounds. The Eastern Aleutian Islands Tanner crab fishery reached a maximum exvessel value of approximately \$950,000 in 1977/78 (Table 1-9). Commercial fishing for Tanner crabs has not been permitted in the Eastern Aleutian District since 1994 due to low stock abundance.

Subsistence harvest limit reductions applied to the Eastern Aleutian Islands red king crab fishery in 1999 were not applied to Tanner crabs. However, the permit and reporting requirements for subsistence harvest were reinstated. Between 1988 and 1994, an average of 15 subsistence permits per year were returned and accounted for approximately 121 Tanner crabs annually. A survey of 15.1% of Unalaska households in 1994 generated an estimated total subsistence Tanner crab harvest of 10,957 crabs (ADF&G 1999b). ADF&G staff issued 179 subsistence permits in 1999, of which 80 were returned. Returned permits accounted for a Tanner crab harvest of 1,430

crabs and the estimated total harvest was 3,200 crabs (Table 1-3). The majority of Tanner crab harvest occurred in Iliuliuk and Captain's Bays. Tanner crab harvest peaked in early July and continued until the permits expired on January 31.

In 2001, out of the 201 subsistence permits and harvest logsheets issued, 200, or 99.5%, were returned. The returned permits accounted for a harvest of 1,701 Tanner crabs (Table 1-3). Estimates generated from the subsistence harvest logsheets indicate that approximately 1,710 Tanner crabs were taken and harvest ranged from zero to 568 Tanner crabs per permit. The majority of Tanner crabs were taken adjacent to the Dutch Harbor spit (45%) and adjacent to the landfill (24%). Tanner crabs were harvested throughout the year with peak catches occurring in June.

During 2002, ADF&G in Dutch Harbor issued 237 subsistence permits and harvest logsheets, of which 231, or 97.5% were returned. The returned permits accounted for a harvest of 2,451 Tanner crabs (Table 1-3). Estimates generated from the subsistence harvest logsheets indicate that approximately 2,515 Tanner crabs were taken and harvest ranged from zero to 363 Tanner crabs per permit. The majority of Tanner crabs were taken in Captains Bay (40%) and in Iliuliuk Bay adjacent to the landfill and spit (30%). The greatest number were harvested in May, although catch continued throughout the year.

2003 Commercial Fishery

The Tanner crab fishery in the Eastern Aleutian District was not opened during the 2003 season due to low stock abundance.

2003 Subsistence Fishery

In 2003, ADF&G issued 231 subsistence permits and harvest logsheets, of which 105, or 45.5%, have been returned. The returned permits accounted for a harvest of 3,953 Tanner crabs (Table 1-3). Estimates generated from the subsistence harvest logsheets indicate that approximately 8,697 Tanner crabs were taken and harvest ranged from zero to 915 Tanner crabs per permit. The majority of Tanner crabs were taken in Unalaska Bay (66%) and in Iliuliuk Bay adjacent to the landfill and spit (13%), with peak harvest in July although catch continued throughout the year.

Fishery Management and Stock Status

In 2002 the BOF adopted new management measures for the Eastern Aleutian Tanner crab District including pot limits, daily fishing periods and reporting requirements. A total of 300 pots are allowed in the fishery with no more than 50 pots per vessel. Pots may be operated to take Tanner crab only from 8:00 AM until 5:59 PM with a soak time of 14 hours from 6:00 PM until 7:59 AM. Fishers must report daily the number of pot lifts, number of crab retained and any other information considered necessary for the management and conservation of the fishery.

Prior to 1990, sporadic pot surveys were utilized to generate a Tanner crab abundance index in the eastern Aleutian Islands (Urban 1992). The pot surveys were not utilized to generate a GHL; instead they were used to monitor trends in abundance and recruitment. Pot surveys and fishery data were used to establish harvest levels of zero to 250,000 pounds (ADF&G 1983b). Since 1990, trawl surveys have been used to estimate abundance and are used in conjunction with fishery data for management purposes.

Trawl surveys in 1990 and 1991 indicated that a surplus of 100,000 pounds of Tanner crab were available for harvest. Commercial fisheries that opened in 1991 and 1992 based on those surveys resulted in legal male harvests of 50,038 and 98,703 pounds respectively (Table 1-9). A 1994 trawl survey of the same location revealed an 87% decrease in abundance of Tanner crabs since 1991. Results of the 1994 survey prompted the department to issue an emergency order closing the 1995 season (ADF&G 1999b). A trawl survey conducted by the department in 1995 indicated that the abundance of Tanner crabs had increased slightly over the 1994 level, but was still well below levels observed on the 1990 and 1991 surveys. The 1995 survey found an increase in juvenile male and immature female crabs. However, the abundance of legal male crabs was still very low (Urban 1996); thus, the fishery closure was extended.

A trawl survey conducted in 1999 indicated that the biomass of Tanner crabs in the eastern Aleutian Islands had increased. Abundance increases were recorded for all size classes, with females and large males showing the greatest change. Female abundance more than doubled from the 1995 survey estimate to 2.2 million crabs, and male crab abundance increased nearly four-fold to just over 4.0 million crabs of which approximately 0.4 million were legal size. The majority of the recruitment was observed in Akutan, Unalaska, and Makushin Bays (Worton 2000).

Because encouraging recruitment was noted during the 1999 trawl survey, the department surveyed the eastern Aleutian Islands again in 2000. Much of the recruitment observed in Akutan Bay in 1999 was not encountered in 2000; thus the Tanner crab abundance estimate declined (Worton 2001).

A commissioner's-permit survey using pot gear, similar in design to the pot surveys for red king crab in the western Aleutians, was conducted in the eastern Aleutian District during January/February of 2003. The survey focused on areas of historic Tanner crab abundance in Unalaska Bay, Beaver Inlet and Akutan Bay. The pot survey included areas that are inaccessible to the trawl survey. Results from the 2003 pot survey show an increase in the abundance of Tanner crabs in Unalaska Bay and Akutan Bay when compared to historic catch at the same survey locations (Bon 2004).

The 2003 trawl survey estimated total abundance at 6.4 million crabs, the third largest abundance estimate since 1990. Population estimates for legal males, post-recruit males, and adult females were the highest on record (Spalinger 2004). Based on trawl survey estimates, the Eastern Aleutian District Tanner crab stock appears capable of supporting a small harvest of legal males in 2004.

GROOVED TANNER CRAB

Historic Background

In a manner similar to other deep-water crab fisheries in the Aleutian Islands, the first harvest of grooved Tanner crabs *Chionoecetes tanneri* in the Eastern Aleutian District occurred in the early 1980s as incidental harvest in the Dutch Harbor golden king crab fishery. Directed fishing for this species did not begin until 1993, when one vessel participated in a fishery that lasted from July until December. The grooved Tanner crab fishery in the Eastern Aleutian District typically occurred between March and December. Peak harvest in the Eastern Aleutian District occurred in 1995 when seven vessels landed approximately 850,000 pounds (Table 1-10).

Limited data has been collected regarding the abundance, distribution, and stock status of deep-water crab species in the Bering Sea and Aleutian Islands. During the 1993 season, the department utilized data collected by onboard observers to restrict harvest to males of five inches or greater CW. In 1994, pursuant to permit provisions described in 5 AAC 35.511. PERMITS FOR TANNERI AND ANGULATUS TANNER CRAB IN REGISTRATION AREA J, the department required that vessels registered for this fishery carry an observer for all of their fishing activities. Data collected by observers has documented bycatch as well as fishing practices and has aided the department in developing further management measures.

In 1997, the department established GHs for grooved Tanner crabs in the Eastern Aleutian, Bering Sea, and Alaska Peninsula Districts where most historical harvests had occurred. Harvest levels in this fishery were derived using catch information from previous seasons and data collected by onboard observers. A GH of 200,000 pounds was established for each of the aforementioned areas, while smaller harvest levels of 100,000 pounds were established for the Kodiak and Western Aleutian Districts to allow for exploratory fishing. In addition, the department required that all pots be equipped with at least two escape rings of 4.5 inches minimum diameter (ADF&G 1999a).

2003 Fishery

No vessels registered to harvest grooved Tanner crabs in the Eastern Aleutian District during 2003.

Fishery Management and Stock Status

The grooved Tanner crab population in the Eastern Aleutian District is not surveyed; consequently, no estimates of population abundance are available for this stock. Fishery data from the mid 1990s is the primary source of information regarding abundance and stock status. Catch per unit of effort declined from 15 legal crabs per pot lift in 1993 to two in 1996 and catches decreased from over 850,000 pounds in 1995 to 106,000 pounds in 1996. In addition, fishing effort was concentrated in three statistical areas immediately to the south of Unalaska

Island. This information indicates that at least in the area historically fished, the population was heavily exploited.

Given poor fishery performance and declining harvests of the mid 1990s, the department re-evaluated deepwater Tanner crab harvest levels in 2000. A GHM range of 50,000 to 200,000 pounds was established for the Eastern Aleutian District. The GHM was set as a range to provide greater flexibility for inseason management and to better inform the public of the department's management goals for the fishery. The fishery will be managed so that the upper end of the GHM range is reached only when catch rates similar to, or greater than those documented prior to the harvest declines of the mid 1990s are observed. In addition to new GHM requirements, the department specified that four 4.5-inch escape rings be placed on the lower third of each pot and required that pots be fished over multiple depth strata. Observers required on all vessels registered for the fishery will collect biological and fishery data.

TRIANGLE TANNER CRAB

Historic Background

In the Eastern Aleutian District triangle Tanner crab *Chionoecetes angulatus* is harvested under a permit authorized in 5 AAC 35.511. PERMITS FOR TANNERI AND ANGULATUS TANNER CRAB IN REGISTRATION AREA J. Triangle Tanner crabs were incidentally harvested in the eastern Aleutian grooved Tanner crab fishery, where the species has occurred in small numbers. Prior to 1995 and the beginning of the directed fishery, no harvest of triangle Tanner crabs was reported on fish tickets; however, shellfish observers stationed on board vessels participating in the grooved Tanner crab fishery observed small numbers of triangle crabs harvested in 1994 (ADF&G 1999a). Two vessels targeted triangle Tanner crabs in the Eastern Aleutian District during the 1995 and 1996 seasons, thus harvest information from those fisheries is confidential (Table 1-11). From 1997 to 2000, no vessels registered to harvest triangle Tanner crabs in the Eastern Aleutian District.

2003 Fishery

No vessels registered to harvest triangle Tanner crabs in the Eastern Aleutian District during 2003.

Fishery Management and Stock Status

Surveys of population abundance are not conducted for triangle Tanner crabs; thus the status of this stock is unknown. Because of the paucity of population level data for this species and the history of the fishery, additional fishing for triangle Tanner crabs in the Eastern Aleutian District will be limited to incidental harvest during the grooved Tanner crab fishery. Vessels registered to fish for grooved Tanner crabs will be permitted to harvest triangle Tanner crabs at up to 50% of

the weight of the target species. This harvest level is consistent with the historic development of the fishery and allows retention of a deepwater species that is believed to have a high mortality rate when taken incidentally in pot gear.

WESTERN ALEUTIAN TANNER CRAB DISTRICT

Description of Area

The Western Aleutian District of Registration Area J includes all waters west of 172° W long., east of the United States-Russia Maritime Boundary Line of 1991, and south of 54° 36' N lat. (Figure 1-9). Area J encompasses both waters of the Territorial Sea (0-3 nautical miles) and waters of the Exclusive Economic Zone (3-200 nautical miles).

TANNER CRAB

Historic Background

Harvest of Tanner crabs *Chionoecetes bairdi* from the Western Aleutian District has, in general, been incidental to the directed red king crab fishery in that area. Commercial harvest has ranged from a high of over 800,000 pounds during the 1981/82 season to less than 8,000 pounds in 1991/92 (Table 1-12). No commercial harvest of Tanner crabs has occurred in the Western Aleutian District since 1995/96. The Western Aleutian District Tanner crab fishery reached a maximum value of just over \$1 million in the 1981/82 season (Table 1-13). Tanner crab abundance in the Western Aleutian District is probably limited by available habitat. Most of the historical harvest occurred within a few bays in the vicinity of Adak and Atka Islands.

2003/04 Fishery

The Western Aleutian District Tanner crab fishery has a regulatory opening date of November 1, however, the fishery was not opened during the 2003/04 season. The fishery was not opened because there is no BOF approved management plan in place, nor has sufficient population data been collected to develop a GHL.

Fishery Management and Stock Status

No stock assessment surveys are conducted for Tanner crabs in the Western Aleutian District; thus no population estimates are available. Stock status is currently unknown. Historic fisheries were managed using GHLs set from commercial catch data (ADF&G 1985).

GROOVED TANNER CRAB

Historic Background

In the Western Aleutian District, harvest of grooved Tanner crab first occurred in conjunction with the developing golden king crab fishery in the Adak king crab management area during the late 1970s. Effort in this fishery has been minimal with two or fewer vessels participating during most years. Only in 1995 did significant fishing effort occur, when six vessels harvested approximately 146,000 pounds of grooved Tanner crabs (Table 1-14).

To prevent overharvest of this population where little abundance information is available, the ADF&G restricted harvest to males of five inches or greater CW in 1993. In addition, beginning in 1994, and according to provisions provided in 5 AAC 35.511 PERMITS FOR TANNERI AND ANGULATUS TANNER CRAB IN REGISTRATION AREA J, all vessels registered for the fishery were required to carry an onboard observer for all of their fishing activities. Using information collected by onboard observers and historic catch information, the department established GHLS for grooved Tanner crabs in the Western Aleutian District in 1997. The GHL was set at 100,000 pounds; this level was believed to be adequate to allow for exploratory fishing and incidental harvest (ADF&G 1999a). Since 1997, the department has reevaluated harvest levels for deepwater Tanner crabs. Because commercial fishing for grooved Tanner crabs in the Western Aleutian District has only occurred during four seasons and no survey data is available, confidence was not as high in the GHL for this district as in other districts where grooved Tanner crab harvest has occurred. In order to prevent overharvest of this stock, no GHL was set in 2000 when new deepwater Tanner crab GHLS were announced and the fishery will remain closed until further notice.

In addition to harvests of *C. bairdi* and grooved Tanner crab, fishers have anecdotally reported incidental triangle Tanner crab catch in the grooved Tanner crab and golden king crab fisheries in the Western Aleutian District. There have not been any landings of triangle Tanner crab from this area and there is currently no fishery.

2003 Fishery

The Western Aleutian District was not open to commercial fishing for grooved Tanner crabs in 2003.

Fishery Management and Stock Status

No stock assessment surveys have been conducted for grooved Tanner crabs in the Western Aleutian District; therefore, no estimates of population abundance are available. Fishery data from the mid 1990s indicates that the western Aleutian Islands may not support grooved Tanner crab populations as large as the eastern Aleutian Islands and the Bering Sea. Commercial fishery

data from the mid 1990s indicates that neither catch nor CPUE were large when compared to those observed in other districts.

ALEUTIAN DISTRICT DUNGENESS CRAB

Description of Area

The Aleutian District for Dungeness crab *Cancer magister* management includes all waters of Registration Area J west of the longitude of Scotch Cap Light (164° 44' W long.), south of the latitude of Cape Sarichef (54° 36' N lat.), and east of the United States-Russia Maritime Boundary Line of 1991 (Figure 1-10). Area J encompasses both waters of the Territorial Sea (0-3 nautical miles) and waters of the Exclusive Economic Zone (3-200 nautical miles).

Historic Background

Islands in the Aleutian Chain are separated by deep passes with swift currents and are closely bordered on the north by the Aleutian Basin and to the south by the Aleutian Trench. Dungeness crabs inhabit bays, estuaries, and other shallow water habitats, areas that are sparse and widely dispersed in the Aleutian Islands. Therefore, populations of Dungeness crabs are small and fishing effort has been low within the district.

The Aleutian District Dungeness crab fishery has occurred primarily as a small-vessel, summer fishery in the vicinity of Unalaska Island. Some larger-vessel effort has occurred in other locales within the district, but fishing in these areas has been sporadic throughout the history of the fishery. Interest and activity in this fishery has been erratic from year to year, with the first reliable reports of harvest made in 1970. Since 1974, harvests have ranged from no landings, to a peak of over 91,000 pounds in 1984/85 (Table 1-15). Four vessels operated that year, with over 80% of their catch coming from Unalaska and Makushin Bays. In addition to commercial harvest, Dungeness crabs have also been taken in subsistence and sport fisheries occurring in the vicinity of Unalaska Island. Subsistence harvest reports returned to ADF&G between 1988 and 1994 indicate that Dungeness harvests were larger than those documented for both red king *Paralithodes camtschaticus* and Tanner crabs *C. bairdi* crabs. On average, 15 harvest reports were returned per year and Dungeness harvest averaged 686 crabs per year with a range of five to 1,906 crabs per year (ADF&G 1999b). No estimate of current Dungeness harvest by sport or subsistence users is available, but it is believed to be small.

2003/04 Fishery

No vessels registered to harvest Dungeness crabs during the 2003/04 season.

Fishery Management and Stock Status

The Aleutian Islands Dungeness crab fishery is managed using size, sex, and season restrictions. Only male Dungeness crabs six and one-half inches (165 mm) or greater in carapace width may be retained in the Aleutian District from 12:00 NOON May 1 to 12:00 NOON January 1. No stock assessment work has been performed and limited biological and fishery data have been collected through dockside sampling. The status of this species in the Aleutian Islands is unknown, but the resource is believed to be limited due to the lack of suitable habitat.

ALEUTIAN DISTRICT SHRIMP

Description of Area

The Aleutian District of Registration Area J, as described for shrimp, includes all Bering Sea and Pacific Ocean waters west of the longitude of Cape Sarichef at 164° 55' W long. and east of the United States-Russia Maritime Boundary Line of 1991 (Figure 1-11). Area J encompasses both waters of the Territorial Sea (0-3 nautical miles) and waters of the Exclusive Economic Zone (3-200 nautical miles). The Aleutian District includes four sections: Unalaska Bay, Makushin Bay, Usof Bay, and Beaver Inlet.

Historic Background

Commercial fishing for shrimp in the Aleutian District began in the 1960s with Russian and Japanese participation. Most harvests occurred northwest of the Pribilof Islands, with some harvests as large as 30,000 metric tons per year. In 1972 a domestic trawl fishery began targeting northern pink shrimp *Pandalus borealis* in the vicinity of Unalaska Island. Catch and effort increased and harvest peaked in 1977/78 at 6.8 million pounds (Table 1-16). Sharp declines in catches after 1978 led to a reduction in season length. Between 1983 and 1991 no fishing occurred; however, in 1992 four catcher-processors targeted shrimp northwest of the Pribilof Islands. Low concentrations of shrimp were located and all four vessels departed the fishery after making a total of six landings for 72,133 pounds. Since 1992, interest in fishing for shrimp in the Aleutian District has remained at a very low level, several vessels registered to fish, but made no landings. In 1999, the first commercial harvest of shrimp in the Aleutian District occurred since 1992. Only two vessels registered for the fishery; therefore, catch information is confidential. Initial catches were composed primarily of northern pink shrimp. As the fishery progressed, sidestriped shrimp *Pandalopsis dispar* became the dominant species in the catch. The fishery was closed on July 9, 1999, because ADF&G did not possess adequate information regarding the abundance and distribution of these species and it was not possible to prosecute the trawl fishery in accordance with 5 AAC 39.210. MANAGEMENT PLAN FOR HIGH IMPACT EMERGING FISHERIES.

2003 Fishery

The 2003 trawl fishery did not open because there was insufficient information on shrimp stock abundance and distribution. There is no closed season for shrimp fishing with pots in the Aleutian Islands. One vessel registered to fish with pots in 2003, thus all catch information is confidential.

Fishery Management and Stock Status

ADF&G has obtained limited population information for the shrimp stocks of the Aleutian Islands. The last extensive commercial activity occurred in the 1970s and trawl surveys conducted by ADF&G and NMFS do not target shrimp. Consequently, ADF&G does not possess information to develop a management plan or conduct a commercial trawl fishery. Fishers have expressed interest in collaborating with ADF&G on a stock assessment survey, but funding constraints have limited such endeavors. Once BOF has adopted a plan for new and developing fisheries, a collaborative survey may be one step in the creation of a sustainable, well-managed fishery. In 2000, NMFS performed a pilot deep-sea trawl survey of the continental slope. Sided striped shrimp was the most abundant shrimp species, found primarily on the continental slope of the Bering Sea east of Zhemchug Canyon at an average depth of 214 fathoms. NMFS conducted an eastern Bering Sea continental slope survey again in 2002. Sided striped and northern pink shrimp were the most abundance species encountered although extensive data was not collected (Hoff and Britt 2003). Shrimp are also encountered during the NMFS summer Bering Sea trawl survey. The most abundant species caught on the survey are northern pink shrimp which are found along the outer shelf between the 100 and 200 meter depth contours and humpy shrimp, *P. goniurus*, which are usually found in water shallower than 100 meters.

ALEUTIAN DISTRICT MISCELLANEOUS SHELLFISH SPECIES

Description of Area

The Aleutian Islands portion of miscellaneous shellfish Registration Area J, includes all waters south of the latitude of Cape Sarichef (54° 36' N lat.), west of the longitude of Scotch Cap Light (164° 44' W long.), and east of the United States-Russia Maritime Boundary Line of 1991 (Figure 1-12). Area J encompasses both waters of the Territorial Sea (0-3 nautical miles) and waters of the Exclusive Economic Zone (3-200 nautical miles). Area J is not divided into districts.

Introduction

Shellfish species included in this section are those which have been harvested in relatively small amounts compared to the commercial king and Tanner crab fisheries which occur in the Aleutian Islands. Miscellaneous shellfish species include hair crabs, sea urchins, sea cucumbers, snails,

Paralomis multispina (cherry) crab, and octopi. Prior to 1999, it was ADF&Gs policy to register vessels for exploratory fishing in these new and emerging fisheries under authority of a commissioner's permit described in 5 AAC 38.062. PERMITS FOR OCTOPI, SQUID, KOREAN HAIR CRAB, SEA URCHINS, SEA CUCUMBERS, SEA SNAILS, CORAL, AND OTHER MARINE INVERTEBRATES. Typically, permit conditions were general and not fully developed on an individual species basis. Fisheries for these species were conducted without prior knowledge of stock abundance or distribution and no harvest limits were established. To allow for the orderly development and regulation of expanding fisheries, BOF adopted 5 AAC 39.210. MANAGEMENT PLAN FOR HIGH IMPACT EMERGING FISHERIES, which delineated criteria that must be met in order for a high impact emerging fishery to occur. In addition, BOF will be considering a plan for the development of new fisheries that will provide a framework to be employed by resource harvesters in the development of new fisheries.

2003 Fisheries

Octopus

In 2003, there was no directed fishing for octopi, although it is permitted in the Aleutian Islands under the authority of a commissioner's permit. Incidental harvest may be retained on a commercial entry fisheries commission (CFEC) card at up to 20% of the weight of the target species. In 2003, out of the 113 vessels registered for incidental harvest, 70 made 313 landings of octopi totaling 242,946 pounds from the Aleutian Islands (Table 1-17). At-sea discards totaled 26,248 pounds. The majority of retained octopi were sold to processors (66%), while the rest was either retained for bait (21%), discarded (12%) or sold for use as fishmeal (1%). Octopus landings were made by vessels targeting Pacific cod or other groundfish species using pot gear (98%), longline gear (1%) and trawl gear (1%).

Sea Cucumber and Sea Urchin

In September, ADF&G issued a news release announcing the GHL for sea cucumbers and sea urchins in the Westward Region. The 2003 season opened under a commissioner's permit with a GHL of 5,000 pounds each of eviscerated product for sea cucumbers and whole animal weight for sea urchins in the Aleutian Islands. The small GHLs were established to permit conservative commercial exploration of areas that lacked historic harvest data and to allow ADF&G to collect critical information for future management purposes. However, no vessels or divers registered or fished for either of these fisheries in the Aleutian Islands in 2003.

Other Miscellaneous Shellfish Species

No vessels were registered for any other miscellaneous shellfish species in the Aleutian Islands in 2003.

Fishery Management and Stock Status

No surveys of abundance for octopi have been performed in the Aleutian Islands; thus, no population data is available. ADF&G has not developed a management plan for this species. In addition to incidental harvest which is limited to 20% of the weight of the target species, directed fishing may also occur under the authority of a commissioner's permit. A fishing logbook is required for the directed fishery and only pots or dive gear may be used. Stock assessment work has not been performed for other miscellaneous shellfish species in the Aleutian Islands and until such work has been performed and a BOF approved management plan has been adopted, only limited fisheries for these species will be allowed.

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Table 1-1. Aleutian Islands, Area O, red king crab commercial fishery data, 1960/61 - 2003/04.

Season	Locale	Number of			Harvest ^{b,c}	Pots		Average		Deadloss ^c
		Vessels ^a	Landings	Crabs ^b		Lifted	CPUE ^d	Weight ^c	Length ^e	
1960/61	East of 172°	NA	NA	NA	NA	NA	NA	NA	NA	NA
	West of 172°	4	41	NA	2,074,000	NA	NA	NA	NA	NA
	TOTAL									
1961/62	East of 172°	4	69	NA	533,000	NA	NA	NA	NA	NA
	West of 172°	8	218	NA	6,114,000	NA	NA	NA	NA	NA
	TOTAL		287		6,647,000					
1962/63	East of 172°	6	102	NA	1,536,000	NA	NA	NA	NA	NA
	West of 172°	9	248	NA	8,006,000	NA	NA	NA	NA	NA
	TOTAL		350		9,542,000					
1963/64	East of 172°	4	242	NA	3,893,000	NA	NA	NA	NA	NA
	West of 172°	11	527	NA	17,904,000	NA	NA	NA	NA	NA
	TOTAL		769		21,797,000					
1964/65	East of 172°	12	336	NA	13,761,000	NA	NA	NA	NA	NA
	West of 172°	18	442	NA	21,193,000	NA	NA	NA	NA	NA
	TOTAL		778		34,954,000					
1965/66	East of 172°	21	555	NA	19,196,000	NA	NA	NA	NA	NA
	West of 172°	10	431	NA	12,915,000	NA	NA	NA	NA	NA
	TOTAL		986		32,111,000					
1966/67	East of 172°	27	893	NA	32,852,000	NA	NA	NA	NA	NA
	West of 172°	10	90	NA	5,883,000	NA	NA	NA	NA	NA
	TOTAL		983		38,735,000					

-Continued-

Table 1-1. (Page 2 of 6)

Season	Locale	Number of			Harvest ^{b,c}	Pots		Average		Deadloss ^c
		Vessels ^a	Landings	Crabs ^b		Lifted	CPUE ^d	Weight ^c	Length ^e	
1967/68	East of 172°	34	747	NA	22,709,000	NA	NA	NA	NA	NA
	West of 172°	22	505	NA	14,131,000	NA	NA	NA	NA	NA
	TOTAL		1,252		36,840,000					
1968/69	East of 172°	NA	NA	NA	11,300,000	NA	NA	NA	NA	NA
	West of 172°	30	NA	NA	16,100,000	NA	NA	NA	NA	NA
	TOTAL				27,400,000					
1969/70	East of 172°	41	375	NA	8,950,000	72,683	NA	NA	NA	NA
	West of 172°	33	435	NA	18,016,000	115,929	NA	6.5	NA	NA
	TOTAL		810		26,966,000	188,612				
1970/71	East of 172°	32	268	NA	9,652,000	56,198	NA	NA	NA	NA
	West of 172°	35	378	NA	16,057,000	124,235	NA	NA	NA	NA
	TOTAL		646		25,709,000	180,433				
1971/72	East of 172°	32	210	1,447,692	9,391,615	31,531	46	7	NA	NA
	West of 172°	40	166	NA	15,475,940	46,011	NA	NA	NA	NA
	TOTAL		376		24,867,555	77,542				
1972/73	East of 172°	51	291	1,500,904	10,450,380	34,037	44	7		
	West of 172°	43	313	3,461,025	18,724,140	81,133	43	5.4	NA	NA
	TOTAL		604	4,961,929	29,174,520	115,170	43	5.9		
1973/74	East of 172°	56	290	1,780,673	12,722,660	41,840	43	7.1	NA	NA
	West of 172°	41	239	1,844,974	9,741,464	70,059	26	5.3	148.6	NA
	TOTAL		529	3,625,647	22,464,124	111,899	32	6.2		

-Continued-

Table 1-1. (Page 3 of 6)

Season	Locale	Number of			Harvest ^{b,c}	Pots		Average		Deadloss ^c
		Vessels ^a	Landings	Crabs ^b		Lifted	CPUE ^d	Weight ^c	Length ^e	
1974/75	East of 172°	87	372	1,812,647	13,991,190	71,821	25	7.7		
	West of 172°	36	97	532,298	2,774,963	32,620	16	5.2	148.6	NA
	TOTAL		469	2,344,945	16,766,153	104,441	22	7.1		
1975/76	East of 172°	79	369	2,147,350	15,906,660	86,874	25	7.4		
	West of 172°	20	25	79,977	411,583	8,331	10	5.2	147.2	NA
	TOTAL		394	2,227,327	16,318,243	95,205	23	7.3		
1976/77	East of 172°	72	226	1,273,298	9367965 ^f	65,796	19	7.4		
	East of 172°	38	61	86,619	830458 ^g	17,298	5	9.6	NA	NA
	West of 172°				F I S H E R Y C L O S E D					
	TOTAL		287	1,359,917	10,198,423	83,094	16	7.5		
1977/78	East of 172°	33	227	539,656	3658860 ^f	46,617	12	6.8		
	East of 172°	6	7	3,096	2555 ^h	812	4	8.3	NA	NA
	West of 172°	12	18	160,343	905,527	7,269	22	5.7	152.2	NA
	TOTAL		252	703,095	4,589,944	54,698	13	6.5		
1978/79	East of 172°	60	300	1,233,758	6,824,793	51,783	24	5.5	NA	NA
	West of 172°	13	27	149,491	807,195	13,948	11	5.4	NA	1,170
	TOTAL		327	1,383,249	7,631,988	65,731	21	5.5		
1979/80	East of 172°	104	542	2,551,116	15,010,840	120,554	21	5.9	NA	NA
	West of 172°	18	23	82,250	467,229	9,757	8	5.7	152	24,850
	TOTAL		565	2,633,366	15,478,069	130,311	20	5.9		
1980/81	East of 172°	114	830	2,772,287	17,660,620 ^f	231,607	12	6.4	NA	NA
	East of 172°	54	120	182,349	1,392,923 ^h	30,000	6	7.6		
	West of 172°	17	52	254,390	1,419,513	20,914	12	5.6	149	54,360
	TOTAL		1,002	3,209,026	20,473,056	282,521	11	6.4		

-Continued-

Table 1-1. (Page 4 of 6)

Season	Locale	Number of			Harvest ^{b,c}	Pots		Average		Deadloss ^c
		Vessels ^a	Landings	Crabs ^b		Lifted	CPUE ^d	Weight ^c	Length ^e	
1981/82	East of 172°	92	683	741,966	5,155,345	220,087	3	6.9	NA	NA
	West of 172°	46	106	291,311	1,648,926	40,697	7	5.7	148.3	8,759
	TOTAL		789	1,033,277	6,804,271	260,784	4	6.6		
1982/83	East of 172°	81	278	64,380	431,179	72,924	1	6.7		
	West of 172°	72	191	284,787	1,701,818	66,893	4	6.0	150.8	7,855
	TOTAL		469	349,167	2,132,997	139,817	3	6.1		
1983/84	East of 172°				FISHERY CLOSED					
	West of 172°	106	248	298,948	1,981,579	60,840	5	6.6	157.3	3,833
	TOTAL	106	248	298,948	1,981,579	60,840	5	6.6	157.3	3,833
1984/85	East of 171°				FISHERY CLOSED					
	West of 171°	64	113	206,751	1,367,672	50,685	4	6.6	155.1	0
	TOTAL	64	113	206,751	1,367,672	50,685	4	6.6	155.1	0
1985/86	East of 171°				FISHERY CLOSED					
	West of 171°	35	89	162,271	906,293	32,478	5	5.6	152.2	6,120
	TOTAL	35	89	162,271	906,293	32,478	5	5.6	152.2	6,120
1986/87	East of 171°				FISHERY CLOSED					
	West of 171°	33	69	126,146	712,243	29,189	4	5.6	NA	500
	TOTAL	33	69	126,146	712,243	29,189	4	5.6	NA	501
1987/88	East of 171°				FISHERY CLOSED					
	West of 171°	71	109	211,712	1,213,933	43,433	5	5.7	148.5	6,900
	TOTAL	71	109	211,712	1,213,933	43,433	5	5.7	148.5	6,900
1988/89	East of 171°				FISHERY CLOSED					
	West of 171°	73	156	266,053	1,567,314	64,374	4	5.9	153.1	557
	TOTAL	73	156	266,053	1,567,314	64,374	4	5.9	153.1	557

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Table 1-1. (Page 5 of 6)

Season	Locale	Number of			Harvest ^{b,c}	Pots		Average		Deadloss ^c
		Vessels ^a	Landings	Crabs ^b		Lifted	CPUE ^d	Weight ^c	Length ^e	
1989/90	East of 171°				FISHERY CLOSED					
	West of 171°	56	123	196,070	1,118,566	54,513	4	5.7	151.5	759
	TOTAL	56	123	196,070	1,118,566	54,513	4	5.7	151.5	759
1990/91	East of 171°				FISHERY CLOSED					
	West of 171°	7	34	146,903	828,105	10,674	14	5.6	148.1	0
	TOTAL	7	34	146,903	828,105	10,674	14	5.6	148.1	0
1991/92	East of 171°				FISHERY CLOSED					
	West of 171°	10	35	165,356	951,278	16,636	10	5.7	149.8	0
	TOTAL	10	35	165,356	951,278	16,636	10	5.7	149.8	0
1992/93	East of 171°				FISHERY CLOSED					
	West of 171°	12	30	218,049	1,286,424	16,129	13	6.0	151.5	5,000
	TOTAL	12	30	218,049	1,286,424	16,129	13	6.0	151.5	5,000
1993/94	East of 171°				FISHERY CLOSED					
	West of 171°	12	21	119,330	698,077	13,575	9	5.8	154.6	7,402
	TOTAL	12	21	119,330	698,077	13,575	9	5.8	154.6	7,402
1994/95	East of 171°				FISHERY CLOSED					
	West of 171°	20	31	30,337	196,967	18,146	2	6.5	157.5	1,430
	TOTAL	20	31	30,337	196,967	18,146	2	6.5	157.5	1,430
1995/96	East of 171°				FISHERY CLOSED					
	West of 171°	4	12	6,880	38,941	2,205	3	5.7	153.6	235
	TOTAL	4	12	6,880	38,941	2,205	3	5.7	153.6	235
1996/97					FISHERY CLOSED					
1997/98					FISHERY CLOSED					

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Table 1-1. (Page 6 of 6)

Season	Locale	Number of			Harvest ^{b,c}	Pots Lifted	CPUE ^d	Average		Deadloss ^e
		Vessels ^a	Landings	Crabs ^b				Weight ^c	Length ^e	
1998/99	West of 174°	3	6	749	5,900	102	7	7.9	NA	0
1999/2000					F I S H E R Y C L O S E D					
2000/01 ⁱ	Petrel Bank ^j	1	3	11,257	76,792	498	23	6.8	161.0	0
2001/02 ^k	Petrel Bank ^j	4	5	22,080	153,961	700	32	7.0	159.5	82
2002/03	Petrel Bank ^j	33	35	68,300	505,642	3,782	18	7.4	162.4	1,311
2003/04	Petrel Bank ^j	30	31	59,828	479,113	5,774	10	8.0	167.9	2,617

^a Many vessels fished both east and west of 171° W long., thus total number of vessels reflects registrations for entire Aleutian Islands.

^b Deadloss included.

^c In pounds.

^d Number of legal crabs per pot lift.

^e In millimeters.

^f Split season based on 6.5 inch minimum legal size.

^g Split season based on 8 inch minimum legal size.

^h Split season based on 7.5 inch minimum legal size.

ⁱ January/February Petrel Bank survey (fish ticket harvest code 15).

^j Those waters of king crab Registration Area O between 179° E long., 179° W long., and north of 51° 45' N lat.

^k November Petrel Bank survey (fish ticket harvest code 15).

Table 1-2. Aleutian Islands, Area O, red king crab fishery economic performance data, 1973/74 - 2003/04. No economic data available prior to 1973.

Year		Value		Season Length	
		Exvessel ^a	Total ^b	Days	Dates
1973/74	East of 172°	\$0.65	\$8,269,729	24	11/01 - 11/24
	West of 172°	NA	NA	NA	NA
1974/75	East of 172°	\$0.37	\$5,176,740	75	11/01 - 01/14
	West of 172°	\$0.35	\$971,237	NA	NA
1975/76	East of 172°	\$0.42	\$6,680,797	71	11/01 - 01/10
	West of 172°	\$0.38	\$156,402	NA	NA
1976/77	East of 172° ^c	\$0.64	\$5,995,497	37	11/01 - 12/07
	East of 172° ^d	\$0.79	\$656,061	31	12/13 - 01/13
	West of 172°		FISHERY CLOSED		
1977/78	East of 172° ^c	\$0.99	\$3,622,271	84	09/15 - 12/08
	East of 172° ^e	\$1.35	\$34,502	28	12/08 - 01/05
	West of 172°	\$1.36	\$1,231,517	NA	NA
1978/79	East of 172°	\$1.35	\$9,213,471	71	09/10 - 11/20
	West of 172°	\$1.23	\$992,850	NA	NA
1979/80	East of 172°	\$0.90	\$13,509,756	122	09/10 - 01/10
	West of 172°	\$0.68	\$317,716	NA	NA
1980/81	East of 172° ^c	\$1.02	\$18,013,832	73	11/01 - 01/12
	East of 172° ^e	\$1.03	\$1,434,711	31	01/15 - 02/15
	West of 172°	\$0.92	\$1,305,952	72	01/15 - 03/28
1981/82	East of 172°	\$2.30	\$11,617,293	107	11/01 - 02/15
	West of 172°	\$2.01	\$3,314,341	107	11/01 - 02/15
1982/83	East of 172°	\$3.43	\$1,478,944	66	11/01 - 01/05
	West of 172°	\$3.44	\$5,854,254	76	11/01 - 01/15
1983/84	East of 172°		FISHERY CLOSED		
	West of 172°	\$3.43	\$6,796,816	340	01/01 - 12/16
1984/85	East of 172°		FISHERY CLOSED		
	West of 172°	\$2.10	\$2,872,111	97	11/10 - 02/15
1985/86	East of 172°		FISHERY CLOSED		
	West of 172°	\$2.15	\$1,948,530	107	11/01 - 02/15

-Continued-

Table 1-2. (page 2 of 2)

Year		Value		Season Length	
		Exvessel ^a	Total ^b	Days	Dates
1986/87	East of 172° West of 172°	\$3.87	FISHERY CLOSED \$2,756,380	107	11/01 - 02/15
1987/88	East of 172° West of 172°	\$4.00	FISHERY CLOSED \$4,855,732	107	11/01 - 02/15
1988/89	East of 172° West of 172°	\$5.00	FISHERY CLOSED \$7,836,570	34	11/01 - 12/04
1989/90	East of 172° West of 172°	\$4.20	FISHERY CLOSED \$4,697,977	107	11/01 - 02/15
1990/91	East of 172° West of 172°	\$4.00	FISHERY CLOSED \$3,312,420	107	11/01 - 02/15
1991/92	East of 172° West of 172°	\$3.00	FISHERY CLOSED \$2,853,834	107	11/01 - 02/15
1992/93	East of 172° West of 172°	\$5.05	FISHERY CLOSED \$6,496,441	76	11/01 - 01/15
1993/94	East of 172° West of 172°	\$3.87	FISHERY CLOSED \$2,701,558	107	11/01 - 02/15
1994/95	East of 172° West of 172°	\$5.50	FISHERY CLOSED \$1,083,319	27	11/01 - 11/28
1995/96	East of 172° West of 172°	\$2.81	FISHERY CLOSED \$109,424	107	11/01 - 02/15
1996/97 - 1997/98			FISHERY CLOSED		
1998/99	West of 174°		CONFIDENTIAL		
1999/2000 - 2001/02			FISHERY CLOSED		
2002/03	Petrel Bank ^f	\$6.51	\$3,291,729	2	10/25 - 10/27
2003/04	Petrel Bank ^f	\$5.14	\$2,449,189	4	10/25 - 10/29

^a Average price per pound.

^b In millions of dollars.

^c Split season based on 6.5 inch minimum legal size.

^d Split season based on 8.0 inch minimum legal size.

^e Split season based on 7.5 inch minimum legal size.

^f Those waters of king crab Registration Area O between 179° E long., 179° W long., and north of 51° 45' N lat.

Table 1-3. Eastern Aleutian Islands, west of Scotch Cap Light and east of 168° W long., subsistence king and Tanner crab harvest, 1999-2003.

Year	Number of Permits Issued	Number of Permits Returned	Percentage Returned	Harvest ^a			
				King crab reported	King crab estimated	Tanner crab reported	Tanner crab estimated
1999	180	80	44.4	788	1,773	1,430	3,218
2000	194	143	73.7	511	693	905	1,228
2001	201	200	99.5	1,128	1,134	1,701	1,710
2002	237	231	97.5	1,080	1,108	2,451	2,515
2003 ^b	231	105	45.5	331	728	3,953	8,697

^a Harvest estimate from Unalaska Island (no reported harvest on permits from any other area).

^b Data incomplete, permits are returned throughout the year.

Table 1-4. Aleutian Islands golden king crab commercial fishery data, 1981/82-2003/04 seasons.

Season	Locale	Number of			Harvest ^{b,c}	Number of Pots		CPUE ^d	Average Carapace		Deadloss ^c
		Vessels ^a	Landings	Crabs ^b		Registered	Lifted		Weight ^c	Length ^e	
1981/82	East of 172° W.	6	16	22,666	115,715	0	2,906	8	5.1	158	8,752
	West of 172° W.	14	76	217,700	1,194,046	2,647	24,627	9	5.5	160	22,064
	TOTAL		92	240,458	1,319,761	2,647	27,533	9	5.4		30,816
1982/83	East of 172° W.	49	136	227,471	1,184,971	NA	29,369	8	5.2	158	47,479
	West of 172° W.	99	501	1,509,001	8,006,274	13,111	150,103	10	5.3	158	220,743
	TOTAL		637	1,737,109	9,191,245	13,111	179,472	10	5.3		268,222
1983/84	East of 172° W.	47	132	238,353	1,810,973	4,514	29,595	8	7.6	NA	45,268
	West of 172° W.	157	1,002	1,534,909	8,128,029	17,406	226,798	7	5.3	NA	171,021
	TOTAL		1,134	1,773,262	9,939,002	21,920	256,393	7	5.6		186,289
1984/85	East of 171° W.	13	67	327,440	1,521,142	1,394	24,044	14	4.6	161	70,362
	West of 171° W.	38	85	643,597	3,180,095	5,270	64,777	10	4.9	157	125,073
	TOTAL		152	971,274	4,701,237	6,664	88,821	11	4.8		195,435
1985/86	East of 171° W.	13	67	410,977	1,968,213	1,479	34,287	12	4.7	156	38,663
	West of 171° W.	49	386	2,052,048	11,124,759	7,057	202,401	10	5.4	151	5,304
	TOTAL		453	2,463,025	13,092,972	8,536	236,688	10	5.3		43,967
1986/87	East of 171° W.	17	71	400,389	1,869,180	1,575	37,585	11	4.7	NA	9,510
	West of 171° W.	62	525	2,923,947	12,798,004	12,958	392,185	7	4.4	150	276,736
	TOTAL		596	3,324,336	14,667,184	14,533	429,770	8	4.4		286,246
1987/88	East of 171° W.	22	77	299,734	1,383,198	3,591	43,017	7	4.6	150	24,210
	West of 171° W.	46	386	1,908,989	8,001,177	10,687	267,705	7	4.2	147	165,415
	TOTAL		463	2,208,723	9,324,375	14,278	310,722	7	4.2		189,625
1988/89	East of 171° W.	21	57	323,695	1,545,113	4,215	40,869	8	4.8	154	22,960
	West of 171° W.	74	455	2,165,508	9,080,196	23,627	280,732	8	4.2	149	122,251
	TOTAL		512	2,489,203	10,625,309	27,842	321,604	8	4.3		145,211

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Table 1-4. (Page 2 of 3)

Season	Locale	Number of			Harvest ^{b,c}	Number of Pots		CPUE ^d	Average Carapace		Deadloss ^c
		Vessels ^a	Landings	Crabs ^b		Registered	Lifted		Weight ^c	length ^e	
1989/90	East of 171° W.	13	70	424,067	1,852,249	5,635	43,345	10	4.4	151	17,421
	West of 171° W.	64	505	2,520,786	10,162,400	14,724	324,153	8	4.0	149	100,724
	TOTAL		575	2,944,853	12,014,649	20,359	367,498	8	4.1		118,145
1990/91	East of 171° W.	16	58	384,885	1,718,848	5,225	54,618	7	4.3	148	42,800
	West of 171° W.	13	167	1,312,116	5,250,687	7,380	160,960	8	4.0	145	176,583
	TOTAL	24	235	1,697,001	6,969,535	12,605	214,578	8	4.1		219,383
1991/92	East of 171° W.	11	50	335,647	1,447,732	3,760	40,604	8	4.3	148	45,100
	West of 171° W.	16	206	1,511,751	6,254,409	7,635	192,949	8	4.1	145	96,848
	TOTAL	20	256	1,847,398	7,702,141	11,395	233,553	8	4.2		141,948
1992/93	East of 171° W.	10	44	330,159	1,375,048	4,222	37,718	9	4.1	148	37,200
	West of 171° W.	18	130	1,198,169	4,916,149	8,236	165,503	7	4.1	147	104,215
	TOTAL	22	174	1,528,328	6,291,197	12,458	203,221	8	4.1		141,415
1993/94	East of 171° W.	4	14	217,788	915,460	2,334	22,490	10	4.2	149	7,324
	West of 171° W.	21	147	1,102,541	4,635,683	11,970	212,164	5	4.2	148	165,358
	TOTAL	21	161	1,320,329	5,551,143	14,304	234,654	6	4.2		172,682
1994/95	East of 171° W.	14	45	384,353	1,750,267	7,378	67,537	6	4.6	148	29,908
	West of 171° W.	34	247	1,539,866	6,378,030	15,604	319,006	5	4.1	150	242,065
	TOTAL	35	292	1,924,219	8,128,297	22,982	386,543	5	4.2		271,973
1995/96	East of 171° W.	17	42	431,867	1,993,980	10,325	65,030	7	4.6	150	14,676
	West of 171° W.	25	139	1,134,274	4,896,926	14,213	226,463	5	4.2	147	338,223
	TOTAL	28	181	1,566,141	6,890,906	24,538	291,493	5	4.4		352,899
1996/97	East of 174° W.	14	70	725,452	3,262,516	9,040	113,460	6	4.5		156,857
	West of 174° W.	13	100	618,498	2,591,720	8,805	100,340	6	4.2		78,973
	TOTAL	18	170	1,343,950	5,854,236	17,845	213,800	6	4.4	147	235,830

-Continued-

Table 1-4. (Page 3 of 3)

Season	Locale	Number of			Harvest ^{b,c}	Number of Pots		CPUE ^d	Average Carapace		Deadloss ^c
		Vessels ^a	Landings	Crabs ^b		Registered	Lifted		Weight ^c	length ^e	
1997/98	East of 174° W.	15	74	780,609	3,501,054	9,720	106,403	7	4.5	147	131,480
	West of 174° W.	8	160	569,550	2,444,628	5,240	86,811	7	4.3	148	79,525
	TOTAL	15	234	1,350,159	5,945,682	14,960	193,214	7	4.4	147	211,005
1998/99	East of 174° W.	14	55	740,011	3,247,863	8,295	83,378	9	4.4	148	82,113
	West of 174° W.	3	44	409,531	1,691,385	1,930	35,920	12	4.1	146	21,218
	TOTAL	16	99	1,149,542	4,939,248	10,225	119,298	10	4.3	147	103,331
1999/00	East of 174° W.	15	60	709,332	3,069,886	9,514	79,129	9	4.3	147	67,574
	West of 174° W.	17	113	676,558	2,768,902	10,564	101,040	7	4.1	147	104,675
	TOTAL	17	173	1,385,890	5,838,788	20,078	180,169	8	4.2	147	172,249
2000/01	East of 174° W.	15	50	704,702	3,134,079	10,598	71,551	10	4.5	147	55,999
	West of 174° W.	12	100	705,613	2,884,682	8,910	101,239	7	4.1	145	53,158
	TOTAL	17	150	1,410,315	6,018,761	19,508	172,790	8	4.3	146	109,157
2001/02	East of 174° W.	19	45	725,297	3,158,179	12,927	62,325	12	4.4	147	49,523
	West of 174° W.	9	90	684,631	2,730,249	8,491	105,219	7	4.0	145	43,505
	TOTAL	21	134	1,409,928	5,888,428	21,418	167,544	8	4.2	146	93,028
2002/03	East of 174° W.	19	43	644,236	2,821,851	11,834	52,037	12	4.4	148	55,425
	West of 174° W.	6	72	664,915	2,640,951	6,225	95,581	7	4.0	146	32,467
	TOTAL	22	115	1,309,151	5,462,802	18,059	147,618	9	4.2	147	87,892
2003/04	East of 174° W.	18	37	643,074	2,977,055	12,518	58,973	11	4.6	149	76,006
	West of 174° W.	6	60	676,633	2,690,207	7,140	66,255	10	4.0	146	49,321
	TOTAL	21	96	1,319,707	5,667,262	19,658	125,228	11	4.3	147	125,327

^a Many vessels fished both east and west of 174° W, thus total number of vessels reflects registrations for entire Aleutian Islands.

^b Deadloss included.

^c In pounds.

^d Number of legal crabs per pot lift.

^e In millimeters, from observer bycatch database.

Table 1-5. Aleutian Islands golden king crab fishery economic performance data, 1981/82 - 2003/04 seasons.

Year		Value		Season Length	
		Exvessel ^a	Total ^b	Days	Dates
1981/82	East of 172° W.	\$2.05	\$0.22	75	11/01-01/15
	West of 172° W.	\$2.06	\$2.41	227	11/01-06/15
	Total	\$2.06	\$2.63		
1982/83	East of 172° W.	\$3.00	\$3.41	105	11/01-02/15
	West of 172° W.	\$3.01	\$23.43	166	11/01-04/15
	Total	\$3.01	\$26.85		
1983/84	East of 172° W.	\$3.05	\$5.38	105	11/01-02/15
	West of 172° W.	\$2.92	\$23.23	157	11/10-04/15
	Total	\$2.94	\$28.62		
1984/85	East of 171° W.	\$1.35	\$1.96	229	07/01-02/15
	West of 171° W.	\$2.00	\$6.11	240	11/10-07/08
	Total	\$1.79	\$8.07		
1985/86	East of 171° W.	\$2.00	\$3.86	121	07/01-10/31
	West of 171° W.	\$2.50	\$27.80	288	11/01-08/15
	Total	\$2.43	\$31.66		
1986/87	East of 171° W.	\$2.85	\$5.30	182	07/01-12/31
	West of 171° W.	\$3.00	\$37.56	288	11/01-08/15
	Total	\$2.98	\$42.86		
1987/88	East of 171° W.	\$2.85	\$3.87	62	07/01-09/02
	West of 171° W.	\$3.00	\$23.51	289	11/01-08/15
	Total	\$2.98	\$27.38		
1988/89	East of 171° W.	\$3.00	\$4.57	93	09/01-12/04
	West of 171° W.	\$3.20	\$28.66	288	11/01-08/15
	Total	\$3.17	\$33.23		
1989/90	East of 171° W.	\$3.50	\$6.42	104	09/01-12/15
	West of 171° W.	\$3.00	\$30.18	288	11/01-08/15
	Total	\$3.08	\$36.61		
1990/91	East of 171° W.	\$3.00	\$5.03	68	09/01-11/09
	West of 171° W.	\$3.00	\$15.22	288	11/01-08/15
	Total	\$3.00	\$20.25		
1991/92	East of 171° W.	\$2.00	\$2.81	74	09/01-11/15
	West of 171° W.	\$2.50	\$15.39	289	11/01-08/15
	Total	\$2.41	\$18.20		
1992/93	East of 171° W.	\$2.50	\$3.30	76	09/01-11/17
	West of 171° W.	\$2.05	\$9.86	288	11/01-08/15
	Total	\$2.15	\$13.16		

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Table 1-5. (Page 2 of 2)

Year		Value		Season Length	
		Exvessel ^a	Total ^b	Days	Dates
1993/94	East of 171° W.	\$2.15	\$1.95	212	09/01-03/31
	West of 171° W.	\$2.50	\$11.18	288	11/01-08/15
	Total	\$2.44	\$13.13		
1994/95	East of 171° W.	\$4.00	\$6.88	57	09/01-10/28
	West of 171° W.	\$3.33	\$20.43	288	11/01-08/15
	Total	\$3.48	\$27.31		
1995/96	East of 171° W.	\$2.60	\$5.15	38	09/01-10/09
	West of 171° W.	\$2.10	\$9.57	289	11/01-08/15
	Total	\$2.25	\$14.72		
1996/97	East of 174° W.	\$2.23	\$6.93	115	09/01-12/25
	West of 174° W.	\$2.23	\$5.60	365	09/01-08/31
	Total	\$2.23	\$12.53		
1997/98	East of 174° W.	\$2.25	\$7.58	84	09/01-11/24
	West of 174° W.	\$2.10	\$4.96	365	09/01-08/31
	Total	\$2.19	\$12.54		
1998/99	East of 174° W.	\$1.87	\$5.92	68	09/01-11/07
	West of 174° W.	\$2.04	\$3.41	365	09/01-08/31
	Total	\$1.92	\$9.33		
1999/00	East of 174° W.	\$3.26	\$9.78	55	09/01-10/25
	West of 174° W.	\$3.09	\$8.23	348	09/01-8/14
	Total	\$3.15	\$18.01		
2000/01	East of 174° W.	\$3.50	\$10.77	40	08/15-09/24
	West of 174° W.	\$3.09	\$8.75	286	08/15-05/28
	Total	\$3.33	\$19.52		
2001/02	East of 174° W.	\$3.30	\$10.26	26	08/15-09/10
	West of 174° W.	\$2.93	\$7.87	227	08/15-03/30
	Total	\$3.16	\$18.13		
2002/03	East of 174° W.	\$3.30	\$9.13	23	08/15-09/07
	West of 174° W.	\$3.50	\$9.13	205	08/15-03/08
	Total	\$3.38	\$18.26		
2003/04	East of 174° W.	\$3.46	\$10.05	24	08/15-09/08
	West of 174° W.	\$3.83	\$10.11	175	08/15-02/06
	Total	\$3.61	\$20.16		

^a Average price per pound.

^b In millions of dollars.

Table 1-6. Aleutian Islands golden king crab catch by statistical area, 2003/04 season.

Locale	Statistical Area	Number of			Pots lifted	CPUE ^c	Ave. Weight ^b	Deadloss ^b
		Landings	Crab ^a	Harvest ^{a,b}				
Islands of Four Mts.	695239	4	1,678	7,878	275	6.10	4.69	481
	695301	4	38,741	199,951	3,001	12.91	5.16	3,613
	695302	4	5,548	28,585	454	12.22	5.15	513
Yunaska Island	705200	12	81,527	353,475	8,093	10.07	4.34	11,201
	705232	16	149,072	689,391	12,984	11.48	4.62	13,357
	705300	5	49,602	226,185	3,416	14.52	4.56	5,032
Amukta Pass	715202	7	46,324	218,954	3,555	13.03	4.73	7,829
	715231	9	46,341	204,969	4,676	9.91	4.42	5,057
Seguam Pass	725201	12	75,764	350,637	7,903	9.59	4.63	8,147
Adak Island	765144	13	7,152	28,469	786	9.10	3.98	648
Kanaga/Tanaga Islands	775131	17	16,200	63,285	2,030	7.98	3.91	1,594
	775133	10	6,667	26,275	708	9.42	3.94	388
	775134	6	3,328	14,699	746	4.46	4.42	258
Delarof Islands	785102	19	19,665	76,545	2,642	7.44	3.89	2,089
	785131	20	50,203	170,172	4,105	12.23	3.39	6,677
	785134	10	2,539	10,040	443	5.73	3.95	114
	795131	12	13,104	51,296	1,191	11.00	3.91	2,390
Amchitka Pass	795102	10	5,777	22,399	578	9.99	3.88	580
	795132	16	16,303	62,804	1,204	13.54	3.85	3,961
Other ^d		476	684,172	2,861,253	66,438	10.30	4.18	51,398

^a Deadloss included.

^b In pounds.

^c Number of legal crabs per pot lift.

^d Combination of statistical areas in which landings were made by fewer than three vessels.

Table 1-7. Aleutian Islands scarlet king crab fishery data, 1992-2003.

Year	Area	Number of			Harvest ^{a,b}	Pots lifted	Value		Average		
		Vessels	Landings	Crabs ^a			Exvessel ^c	Total ^d	Weight ^b	CPUE ^e	Deadloss ^b
1992	Dutch Harbor										
	Adak										
1993	Dutch Harbor										
	Adak										
1994	Dutch Harbor										
	Adak	6	10	6,624	21,308	7,520	\$1.76	\$37.5	3.2	<1	10,829
	Total	7	10	6,624	21,308	7,520	\$1.88	\$37.5	3.1	<1	10,829
1995	Dutch Harbor	3	3	6,270	13,871	5,706	\$2.18	\$30.2	2.2	1	1,755
	Adak	6	18	19,544	49,126	15,046	\$1.82	\$89.4	2.5	1	2,066
	Total	8	21	25,814	62,997	20,752	\$1.89	\$119.1	2.4	1	3,821
1996	Dutch Harbor	3	10	10,190	20,924	10,247	\$1.78	\$37.2	2.0	1	3,990
	Adak	4	13	10,133	24,076	19,170	\$1.80	\$43.3	2.4	<1	1,861
	Total	7	23	20,323	45,000	29,417	\$1.79	\$80.6	2.2	<1	5,851
1997	Aleutian Islands	3	12	2,698	6,720	21,217	\$1.40	\$9.4	2.5	<1	408
1998	Aleutian Islands	7									
1999	Aleutian Islands	2									
2000	Aleutian Islands	2									
2001	Aleutian Islands	2									
2002	Aleutian Islands	2									
2003	Aleutian Islands	2									

^a Deadloss included.

^b In pounds.

^c Price per pound.

^d Thousands of dollars.

^e Number of legal crabs per pot lift.

Table 1-8. Eastern Aleutian District Tanner crab fishery data, 1973/74 - 2003.

Season	Number of			Harvest ^{a,b}	Pots lifted	Average		Deadloss ^b
	Vessels	Landings	Crabs			Weight ^b	CPUE ^c	
1973/74	6	14	210,539	498,836	NA	2.4	60	0
1974/75					CONFIDENTIAL			
1975/76	8	13	219,166	534,295	4,646	2.4	47	0
1976/77	12	35	544,755	1,239,569	9,640	2.3	57	0
1977/78	15	198	1,104,631	2,494,631	29,855	2.3	37	0
1978/79	20	174	542,081	1,280,115	18,618	2.4	29	0
1979/80	18	107	352,819	886,487	18,040	2.5	20	NA
1981	29	119	264,238	654,514	21,771	2.5	12	NA
1982	31	138	332,260	739,694	30,109	2.2	11	NA
1983	23	107	250,774	547,830	22,168	2.2	11	NA
1984	16	91	104,761	239,585	11,069	2.3	9	NA
1985	7	56	78,930	181,407	6,295	2.3	13	60
1986	8	37	73,187	167,339	10,244	2.3	7	400
1987	8	65	72,098	162,097	5,915	2.2	12	115
1988	20	130	129,478	309,918	11,011	2.4	12	2,000
1989	12	108	144,593	326,196	14,615	2.3	10	2,300
1990	10	75	68,859	155,648	6,858	2.3	10	0
1991	5	27	21,511	50,038	1,849	2.3	12	0
1992	4	29	42,096	98,703	2,963	2.3	14	0
1993	7	34	51,441	118,609	3,530	2.3	15	0
1994	8	119	71,760	166,080	6,303	2.3	11	40
1995-2002					FISHERY CLOSED			
2003 ^d	3	10	6,695	15,138	191	2.3	35	9

^a Deadloss included beginning 1980.

^b In pounds.

^c Number of legal crabs per pot lift.

^d January/February survey (fish ticket harvest code 15).

Table 1-9. Eastern Aleutian District Tanner crab fishery economic performance data, 1973/74 - 2003.

Season	Date		Value	
	Opened	Closed	Exvessel ^a	Total ^b
1973/74	1-Oct	31-Jul	NA	
1974/75	18-Jan	15-Oct	NA	
1975/76	20-Jan	15-Oct	\$0.20	\$0.11
1976/77	7-Nov	15-Jun	\$0.30	\$0.38
1977/78	1-Nov	15-Jun	\$0.38	\$0.95
1978/79	1-Nov	15-Jun	\$0.52	\$0.67
1979/80	1-Nov	15-Jun	\$0.52	\$0.46
1981	15-Jan	15-Jun	\$0.58	\$0.38
1982	15-Feb	15-Jun	\$1.25	\$0.92
1983	15-Feb	15-Jun	\$1.20	\$0.66
1984	15-Feb	15-Jun	\$0.98	\$0.23
1985	15-Jan	15-Jun	\$0.96	\$0.17
1986	15-Jan	15-Jun	\$1.66	\$0.28
1987	15-Jan	15-Jun	\$2.03	\$0.33
1988	15-Jan	10-Apr	\$2.18	\$0.67
1989	15-Jan	7-May	\$2.72	\$0.88
1990	15-Jan	9-Apr	\$1.97	\$0.31
1991	15-Jan	31-Mar	\$1.25	\$0.06
1992	15-Jan	31-Mar	\$2.07	\$0.20
1993	15-Jan	31-Mar	\$1.70	\$0.20
1994	15-Jan	31-Mar	\$2.11	\$0.35
1995-2003	FISHERY CLOSED			

^a Price per pound.

^b Millions of dollars.

Table 1-10. Eastern Aleutian District grooved Tanner crab fishery data, 1993 - 2003.

Year	Number of			Harvest ^{a,b}	Pots lifted	Average		Deadloss ^b	Value	
	Vessels	Landings	Crabs ^a			Weight ^b	CPUE ^c		Exvessel ^d	Total ^e
1993						CONFIDENTIAL				
1994	3	27	426,230	759,239	38,106	1.8	11	19,474	\$1.73	\$1.3
1995	7	51	494,522	850,427	75,259	1.7	6	28,338	\$1.57	\$1.3
1996	3	24	55,593	106,071	24,199	1.9	2	7,659	\$1.00	\$0.1
1997-2000						NO LANDINGS				
2001						CONFIDENTIAL				
2002						NO LANDINGS				
2003						NO LANDINGS				

^a Deadloss included.

^b In pounds.

^c Number of legal crabs per pot lift.

^d Price per pound.

^e Millions of dollars.

Table 1-11. Eastern Aleutian District triangle Tanner crab fishery data, 1993 - 2003.

Year	Number of			Harvest ^{a,b}	Pots lifted	Average		Deadloss ^b	Value	
	Vessels	Landings	Crabs ^a			Weight ^b	CPUE ^c		Exvessel ^d	Total ^e
1993										
1994										
1995	2									
1996	2									
1997-2000										
2001	1									
2002										
2003										

^a Deadloss included.

^b In pounds.

^c Number of legal crabs per pot lift.

^d Price per pound.

^e Millions of dollars.

Table 1-12. Western Aleutian District Tanner crab fishery data, 1973/74 - 2003/04.

Year	Number of			Harvest ^{a,b}	Pots lifted	Average		
	Vessels	Landings	Crabs ^a			Weight ^b	CPUE ^c	Deadloss ^b
1973/74	7	12	31,079	71,887	2,390	2.3	13	NA
1974/75					CONFIDENTIAL			
1975/76					CONFIDENTIAL			
1976/77					NO LANDINGS			
1977/78	6	7	103,190	237,512	2,700	2.3	38	NA
1978/79	6	9	84,129	197,244	4,730	2.3	18	0
1979/80	10	12	147,843	337,297	5,952	2.3	25	NA
1980/81	9	23	95,102	220,716	7,327	2.3	13	0
1981/82	17	43	364,164	838,697	21,910	2.3	17	6,470
1982/83	61	125	225,491	488,399	40,450	2.2	6	7,662
1983/84	31	86	171,576	384,146	20,739	2.2	8	200
1984/85	31	41	75,009	163,460	13,416	2.2	6	1,000
1985/86	15	30	98,089	206,814	7,999	2.1	12	0
1986/87	8	24	19,874	42,761	10,878	2.1	2	200
1987/88	15	37	63,545	141,390	7,453	2.2	9	200
1988/89	36	77	69,280	148,997	18,906	2.1	4	233
1989/90	12	30	22,937	48,746	6,204	2.1	4	3,810
1990/91	5	21	6,901	14,779	1,309	2.1	5	125
1991/92	8	8	3,483	7,825	986	2.2	4	NA
1992/93					CONFIDENTIAL			
1993/94					NO LANDINGS			
1994/95					NO LANDINGS			
1995/96					CONFIDENTIAL			
1996/97 - 2003/04					FISHERY CLOSED			

^a Deadloss included.

^b In pounds.

^c Number of legal crabs per pot pull.

Table 1-13. Western Aleutian District commercial Tanner crab fishery economic data 1973/74 - 2003/04.

Year	Value	
	Exvessel ^a	Total
1973/74	NOT AVAILABLE	
1974/75	CONFIDENTIAL	
1975/76	CONFIDENTIAL	
1976/77	NO LANDINGS	
1977/78	\$ 0.38	\$90,255
1978/79	\$ 0.53	\$104,539
1979/80	\$ 0.52	\$175,394
1980/81	\$ 0.54	\$119,187
1981/82	\$ 1.30	\$1,081,895
1982/83	\$ 1.27	\$610,536
1983/84	\$ 0.95	\$364,749
1984/85	\$ 1.30	\$211,198
1985/86	\$ 1.40	\$289,540
1986/87	\$ 1.50	\$63,842
1987/88	\$ 2.10	\$296,499
1988/89	\$ 1.00	\$148,764
1989/90	\$ 1.00	\$44,936
1990/91	\$ 1.25	\$18,318
1991/92	\$ 1.00	\$7,825
1992/93	CONFIDENTIAL	
1993/94	NO LANDINGS	
1994/95	NO LANDINGS	
1995/96	CONFIDENTIAL	
1996/97 - 2003/04	FISHERY CLOSED	

^a Price per pound.

Table 1-14. Western Aleutian District grooved Tanner crab fishery data, 1992 - 2003.

Year	Harvest ^{a,b}	Vessels	Pots lifted	Value		Average		Deadloss ^b
				Exvessel ^c	Total ^d	Weight ^b	CPUE ^e	
1992				CONFIDENTIAL				
1993				NO LANDINGS				
1994				CONFIDENTIAL				
1995	145,795	6	17,749	\$1.52	\$0.195	1.9	4	17,190
1996				CONFIDENTIAL				
1997-1998				NO LANDINGS				
1999-2003				FISHERY CLOSED				

^a Deadloss included.

^b In pounds.

^c Price per pound.

^d Millions of dollars.

^e Number of legal crabs per pot lift.

Table 1-15. Aleutian District Dungeness crab fishery data, 1974 - 2003.

Year	Season Dates	Number of			Harvest ^{a,b}	Pots Lifted	Average		Price per Pound
		Vessels	Landings	Crabs ^a			Weight ^b	CPUE ^c	
1974	01/01-12/31	3	13	24,459	60,517	3,399	2.4	8	NA
1975	01/01-12/31				CONFIDENTIAL				
1976/77	05/01-01/01				NO LANDINGS				
1977/78	05/01-01/01				NO LANDINGS				
1978/79	05/01-01/01				CONFIDENTIAL				
1979/80	05/01-01/01				CONFIDENTIAL				
1980/81	05/01-01/01				NO LANDINGS				
1981/82	05/01-01/01				NO LANDINGS				
1982/83	05/01-01/01				CONFIDENTIAL				
1983/84	05/01-01/01				CONFIDENTIAL				
1984/85	05/01-01/01	4	50	40,128	91,739	13,555	2.3	3	\$1.35
1985/86	05/01-01/01	4	19	8,590	17,830	1,706	2.1	5	NA
1986/87	05/01-01/01				CONFIDENTIAL				
1987/88	05/01-01/01	5	43	13,247	26,627	2,987	2.0	4	\$0.95
1988/89	05/01-01/01	6	45	10,814	22,634	2,581	2.1	4	\$0.90
1989/90	05/01-01/01	4	31	5,165	11,124	2,078	2.1	2	\$0.90
1990/91	05/01-01/01	3	11	8,379	17,365	1,345	2.1	6	\$0.90
1991/92	05/01-01/01	4	14	3,654	7,412	732	2.0	5	\$1.25
1992/93	05/01-01/01	4	13	2,854	5,649	555	2.0	5	\$0.83
1993/4	05/01-01/01	5	12	3,448	7,531	797	2.2	4	\$0.78
1994/95-2000/01	05/01-01/01				NO LANDINGS				
2001/02	05/01-01/01				CONFIDENTIAL				
2002/03	05/01-01/01				CONFIDENTIAL				
2003/04	05/01-01/01				NO LANDINGS				

^a Deadloss included.

^b In pounds.

^c Number of legal crabs per pot lift.

Table 1-16. Aleutian Islands District trawl shrimp fishery data, 1972 - 2003.

Season	Date		Number of		Tows	Harvest ^a	Value	
	Opened	Closed	Vessels	Landings			Exvessel ^b	Fishery ^c
1972	1/1	12/1				CONFIDENTIAL		
1973	1/1	12/1				CONFIDENTIAL		
1974	1/1	12/1	7	88	721	5,749,407	NA	NA
1975	1/1	12/1	4	14	54	467,196	NA	NA
1976	1/1	12/1	8	66	689	3,670,609	\$0.07	\$0.26
1977/78	2/1	3/1	7	93	1,372	6,800,393	\$0.12	\$0.82
1978/79	4/1	3/1	7	74	1,007	4,946,350	\$0.15	\$0.74
1979/80	4/1	2/1	7	68	799	3,292,049	\$0.20	\$0.66
1980	3/1	12/1	4	60	711	2,454,829	\$0.23	\$0.56
1981	3/1	12/1	6	45	551	2,185,326	\$0.22	\$0.48
1982	5/1	6/1				CONFIDENTIAL		
1983-1991						NO LANDINGS		
1992	1/1	12/1	4	6	94	72,133	NA	NA
1993-1998						NO LANDINGS		
1999	1/1	7/9	2			CONFIDENTIAL		
2000-2003						FISHERY CLOSED		

^a In pounds.

^b Price per pound.

^c In millions of dollars.

Table 1-17. Aleutian Islands miscellaneous shellfish fishery data 1996 - 2003.

Year	Fishery	Number of		Number of Pots Pulled	Harvest ^a
		Vessels	Landings		
1996	Octopus	35	119	17,800	62,214
	Sea Urchins	6	15 ^b		
	Sea Cucumbers		NO LANDINGS		
	Hair Crab		NO LANDINGS		
	Snails		NO LANDINGS		
	<i>Paralomis multispina</i>		NO LANDINGS		
1997	Octopus ^c	38	107		73,472
	Sea Urchins		NO LANDINGS		
	Sea Cucumbers		NO LANDINGS		
	Hair Crab		NO LANDINGS		
	Snails		NO LANDINGS		
	<i>Paralomis multispina</i>				
1998	Octopus		CONFIDENTIAL		29,360
	Octopus ^c	24	75		
	Sea Urchins		NO LANDINGS		
	Sea Cucumbers		NO LANDINGS		
	Hair Crab		NO LANDINGS		
	Snails		NO LANDINGS		
	<i>Paralomis multispina</i>		NO LANDINGS		
1999	Octopus ^c	34	95		115,322
	Sea Urchins		NO LANDINGS		
	Sea Cucumbers		NO LANDINGS		
	Hair Crab		NO LANDINGS		
	Snails		NO LANDINGS		
	<i>Paralomis multispina</i>		NO LANDINGS		
2000	Octopus ^c	31	91		21,265
	Sea Urchins		NO LANDINGS		
	Sea Cucumbers		NO LANDINGS		
	Hair Crab		NO LANDINGS		
	Snails		NO LANDINGS		
	<i>Paralomis multispina</i>		NO LANDINGS		
2001	Octopus ^c	25	51		13,097
	Sea Urchins		NO LANDINGS		
	Sea Cucumbers		NO LANDINGS		
	Hair Crab		NO LANDINGS		
	Snails		NO LANDINGS		
	<i>Paralomis multispina</i>		NO LANDINGS		

-Continued-

Table 1-17. (Page 2 of 2)

Year	Fishery	Number of		Number of Pots Pulled	Harvest ^a
		Vessels	Landings		
2002	Octopus ^c	56	186		96,585
	Sea Urchins		NO LANDINGS		
	Sea Cucumbers		NO LANDINGS		
	Hair Crab		NO LANDINGS		
	Snails		NO LANDINGS		
	<i>Paralomis multispina</i>		NO LANDINGS		
2003	Octopus ^c	70	313		242,946
	Sea Urchins		NO LANDINGS		
	Sea Cucumbers		NO LANDINGS		
	Hair Crab		NO LANDINGS		
	Snails		NO LANDINGS		
	<i>Paralomis multispina</i>		NO LANDINGS		

^a In pounds. Deadloss included.

^b Dives.

^c Octopus bycatch.

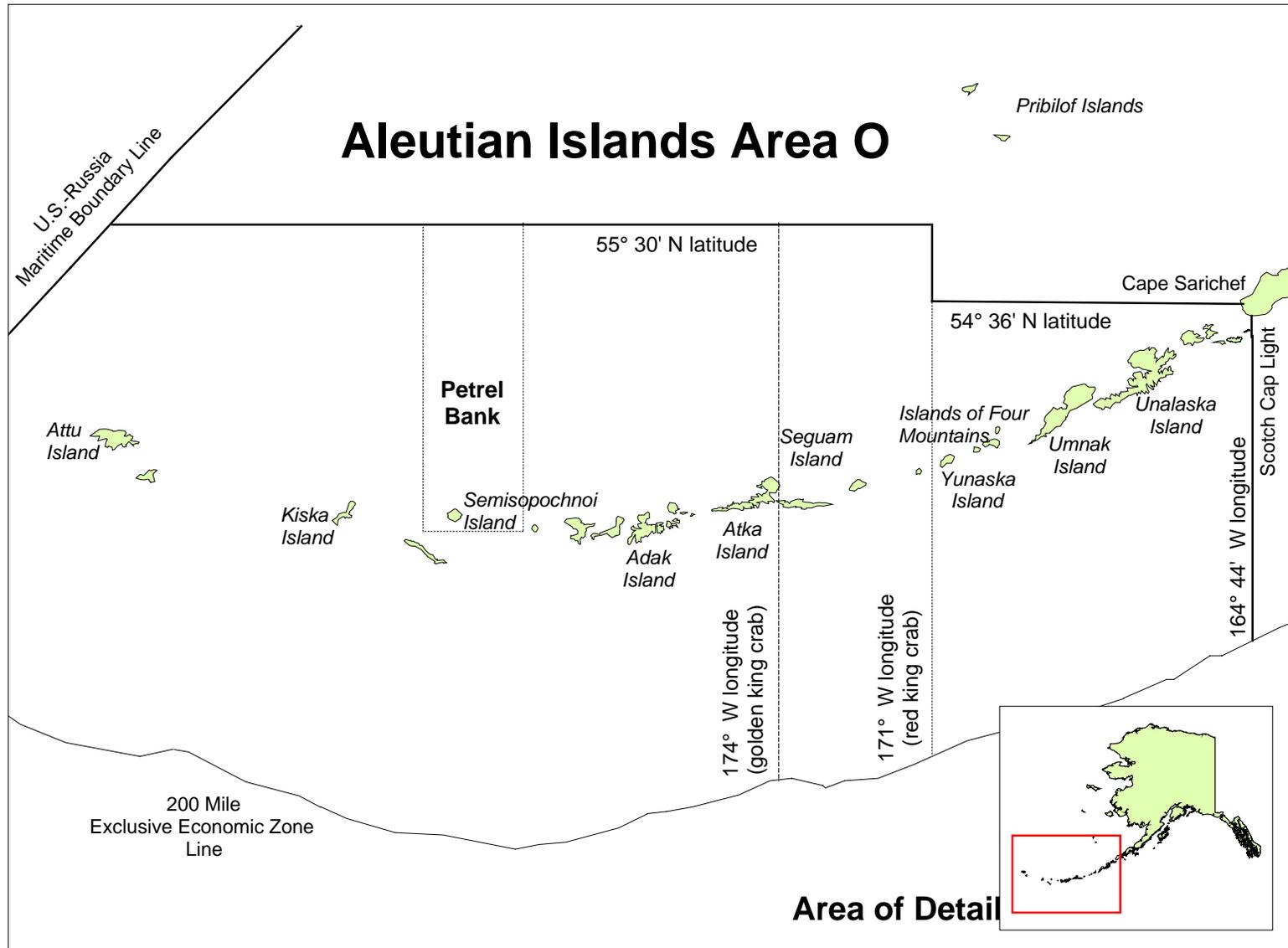


Figure 1-1. Aleutian Islands, Area O, king crab management area.

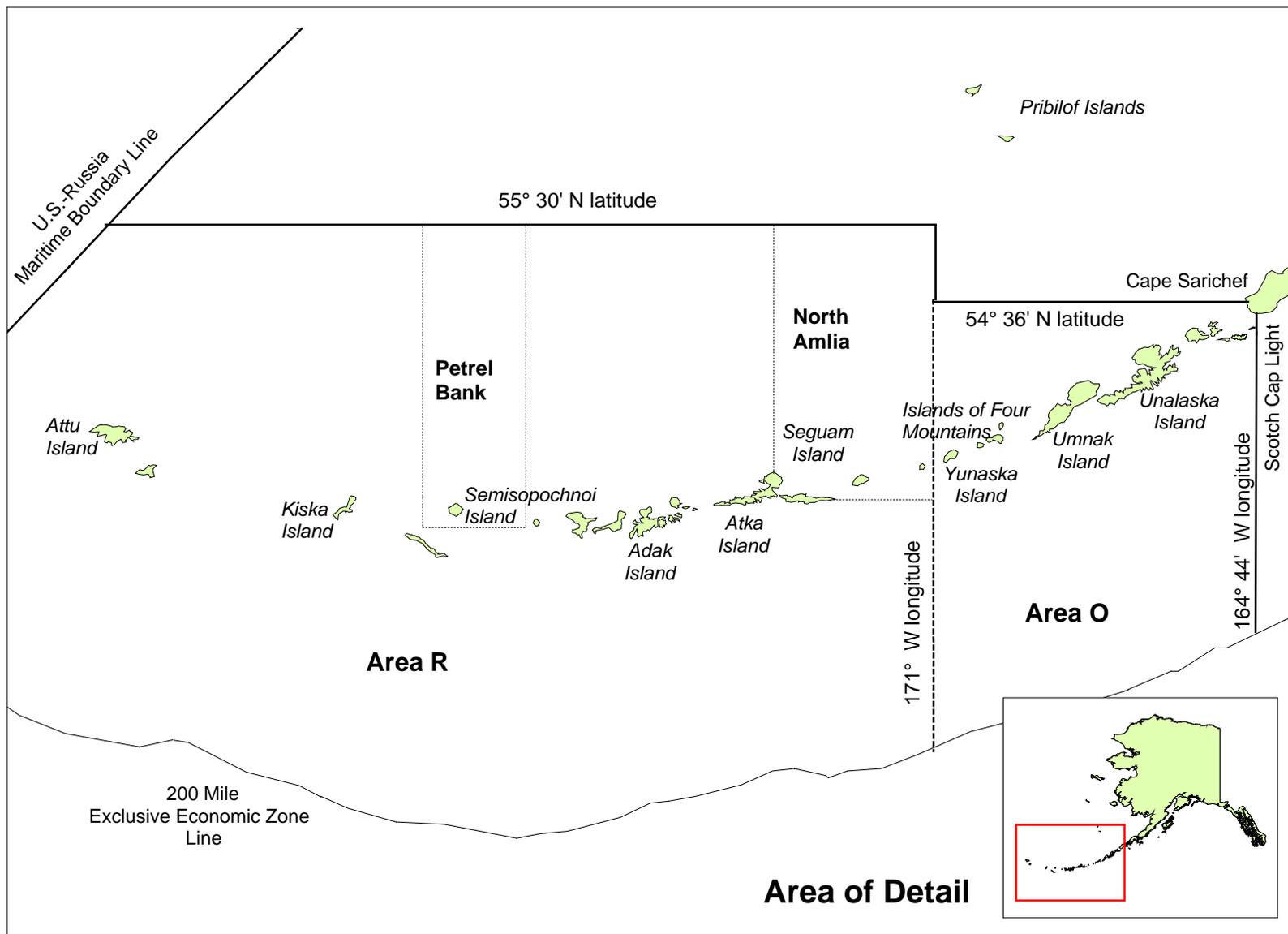


Figure 1-2. Adak (Area R) and Dutch Harbor (Area O) king crab Registration Areas and Districts 1981/82 – 1996/97.

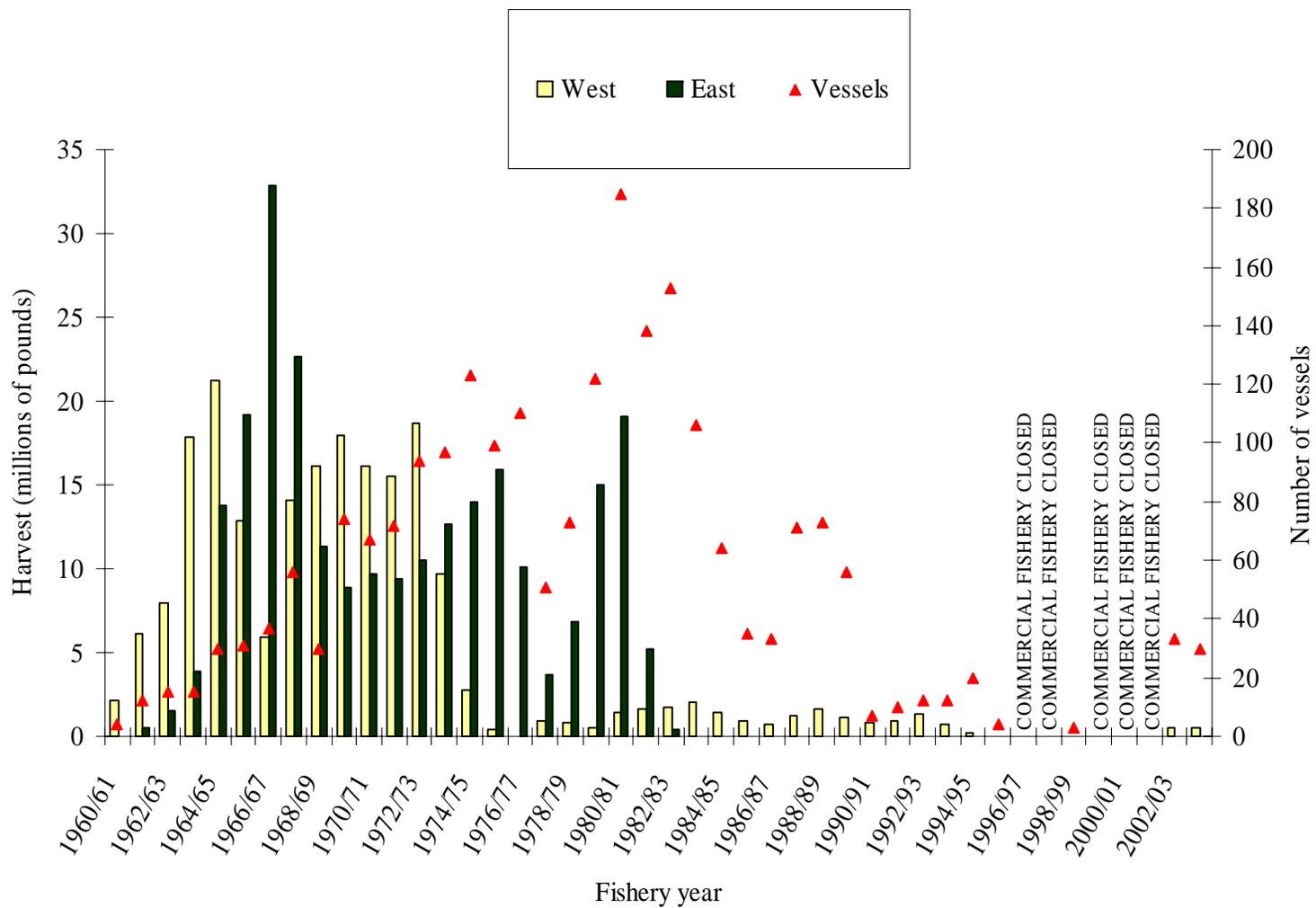


Figure 1-3. Aleutian Islands red king crab fishery harvest and vessel effort, 1960/61 - 2003/04.

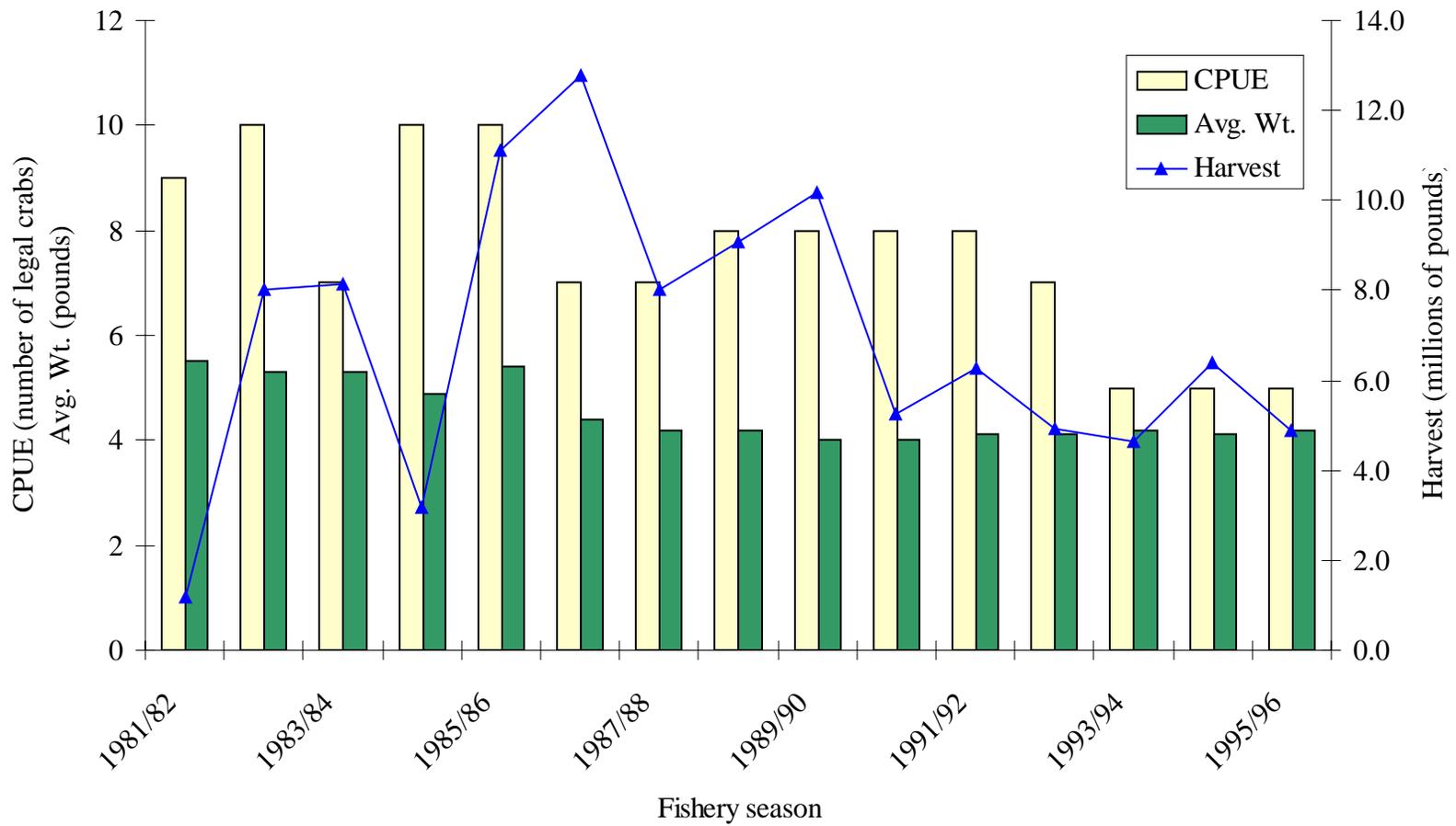


Figure 1-4. Adak Area golden king crab fishery harvest, fishery performance and average weight data, 1981/82 - 1995/96 seasons.

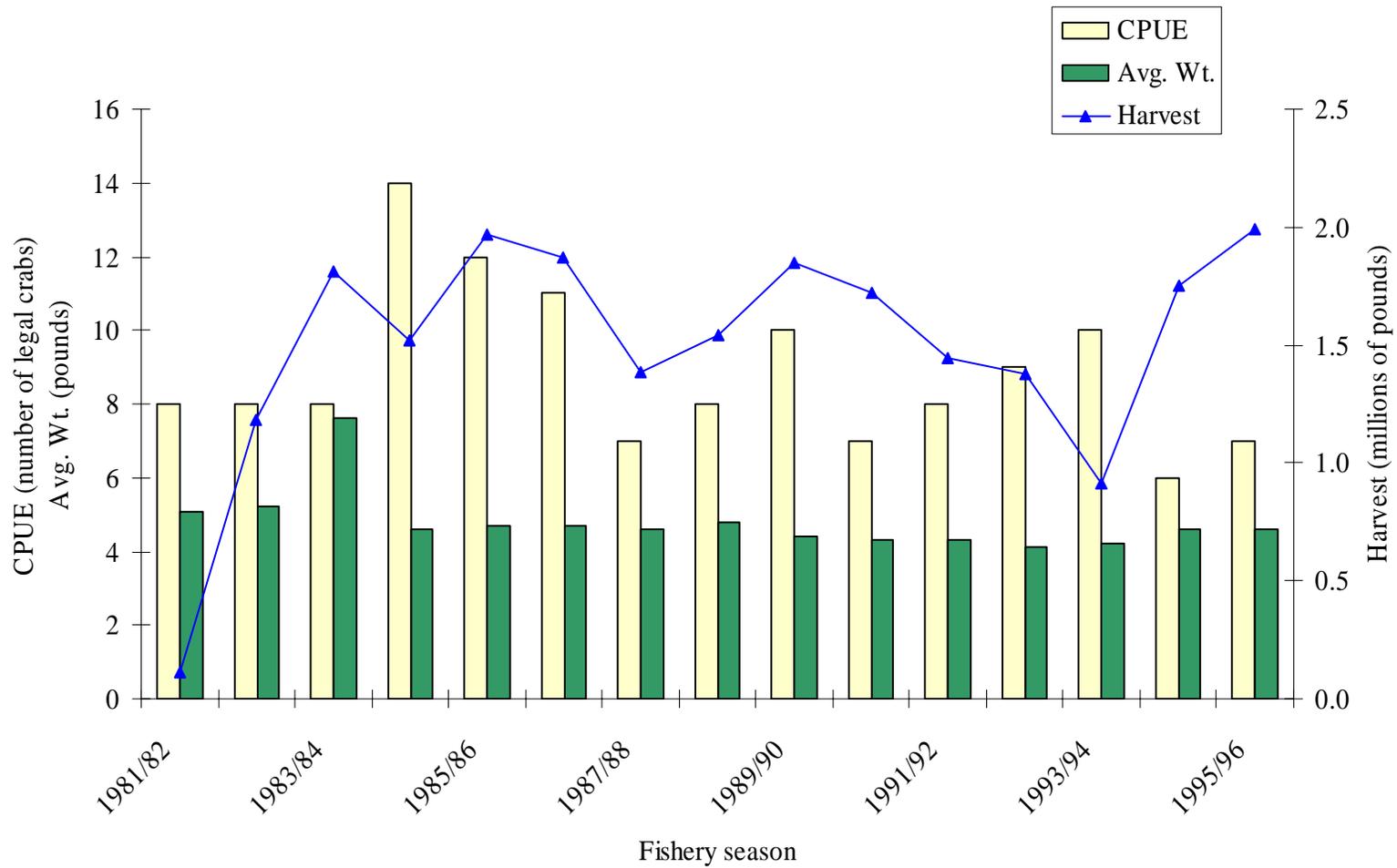


Figure 1-5. Dutch Harbor Area golden king crab fishery harvest, fishery performance and average weight data, 1981/82 - 1995/96 seasons.

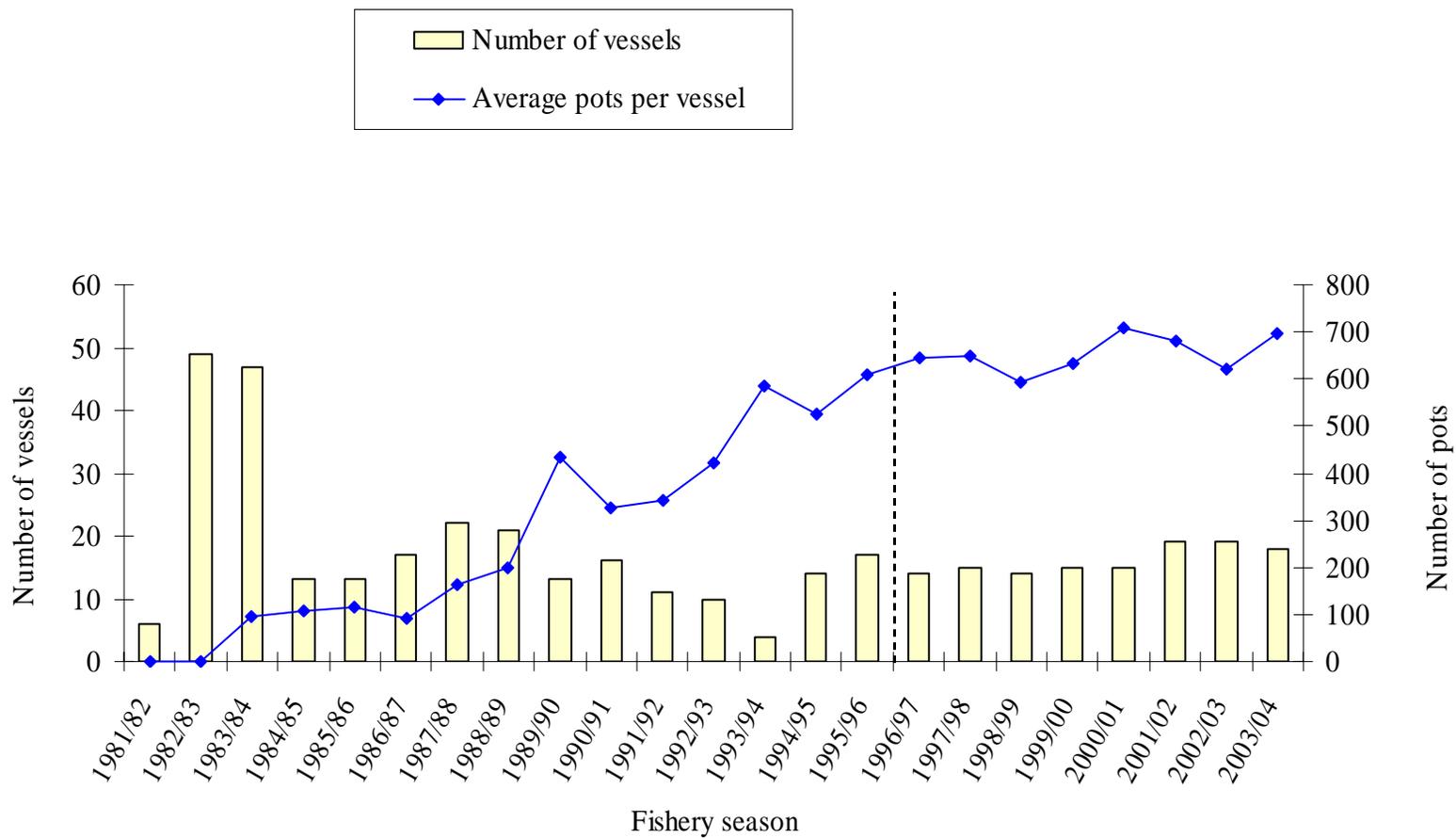


Figure 1-6. Eastern Aleutian Island golden king crab fishery vessel registrations and average number of pots per vessel 1981/82 - 2003/04.

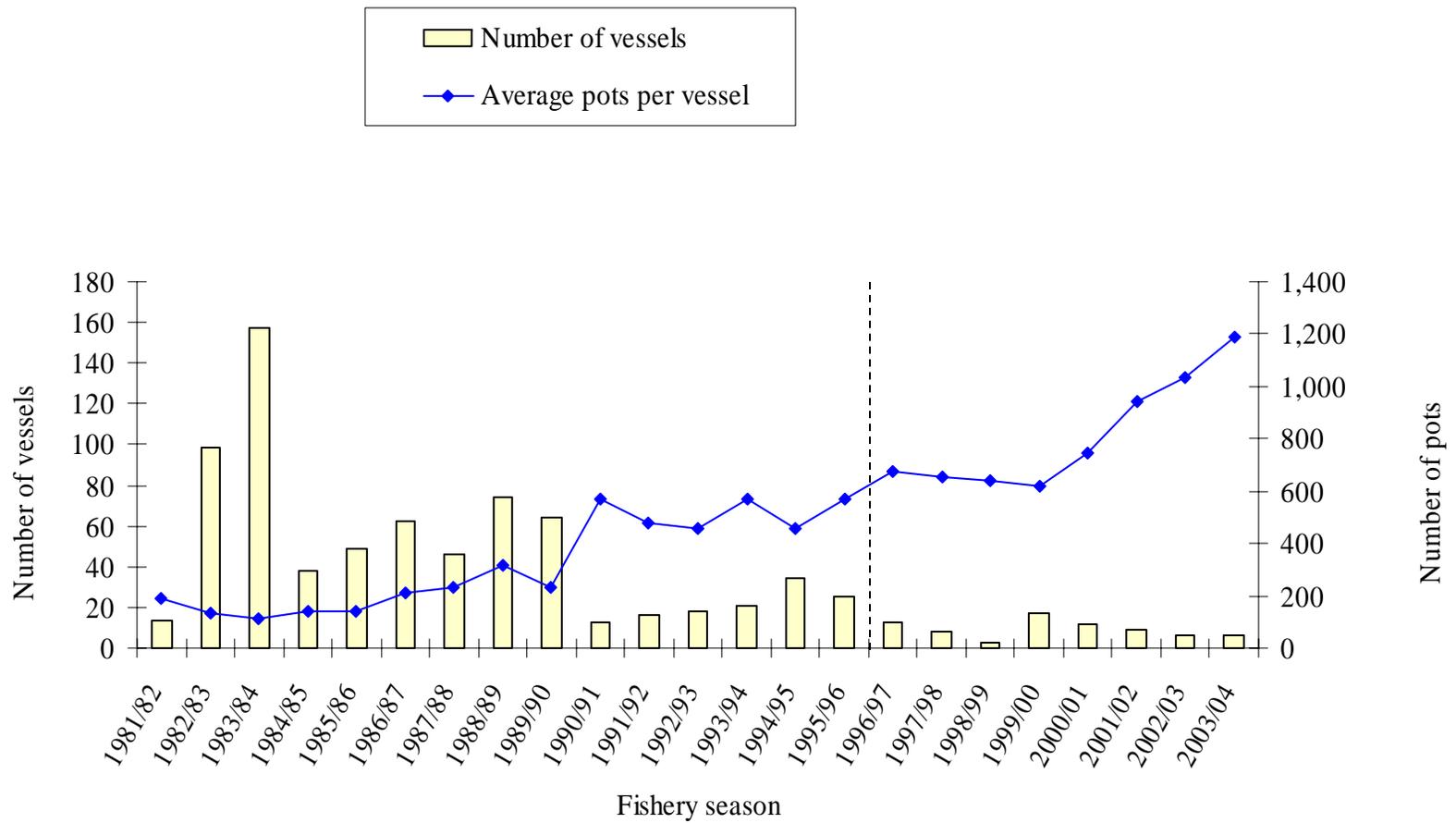


Figure 1-7. Western Aleutian Island golden king crab fishery vessel registrations and average number of pots per vessel 1981/82 - 2003/04.

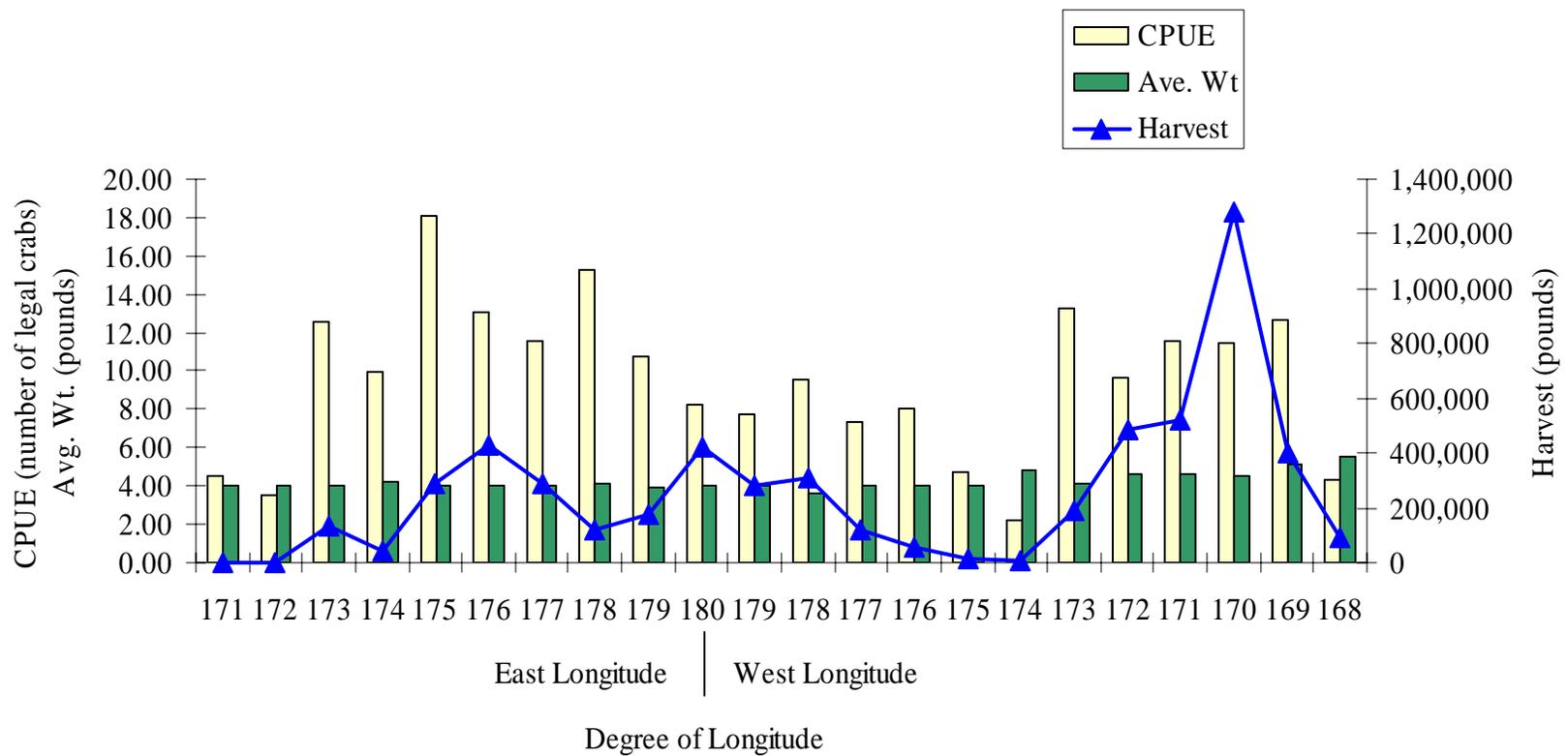


Figure 1-8. Aleutian Islands golden king crab fishery harvest, catch per unit of effort and average weight data by degree of longitude, 2003/2004.

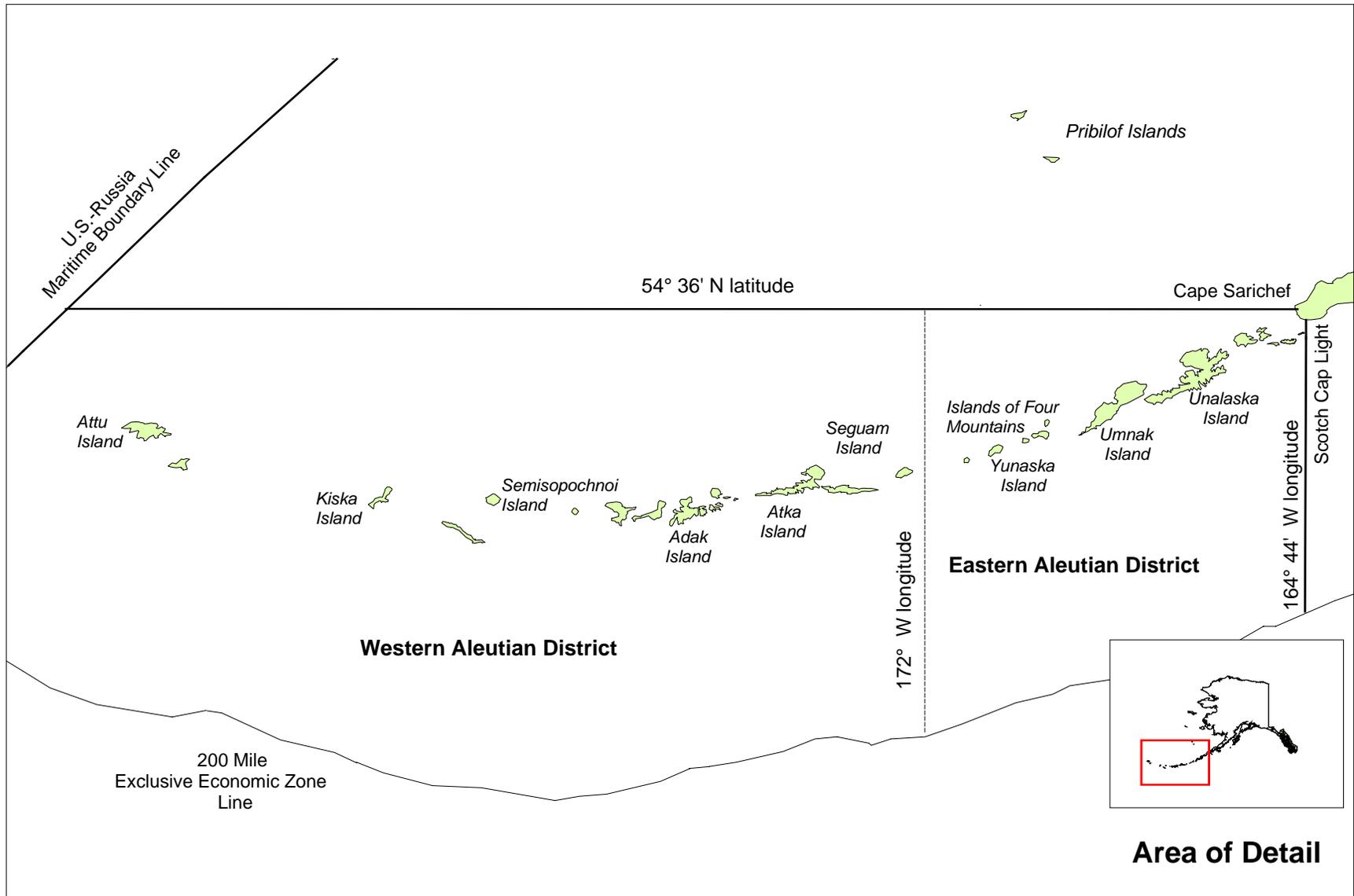


Figure 1-9. Eastern and Western Aleutian Districts of Tanner crab Registration Area J.

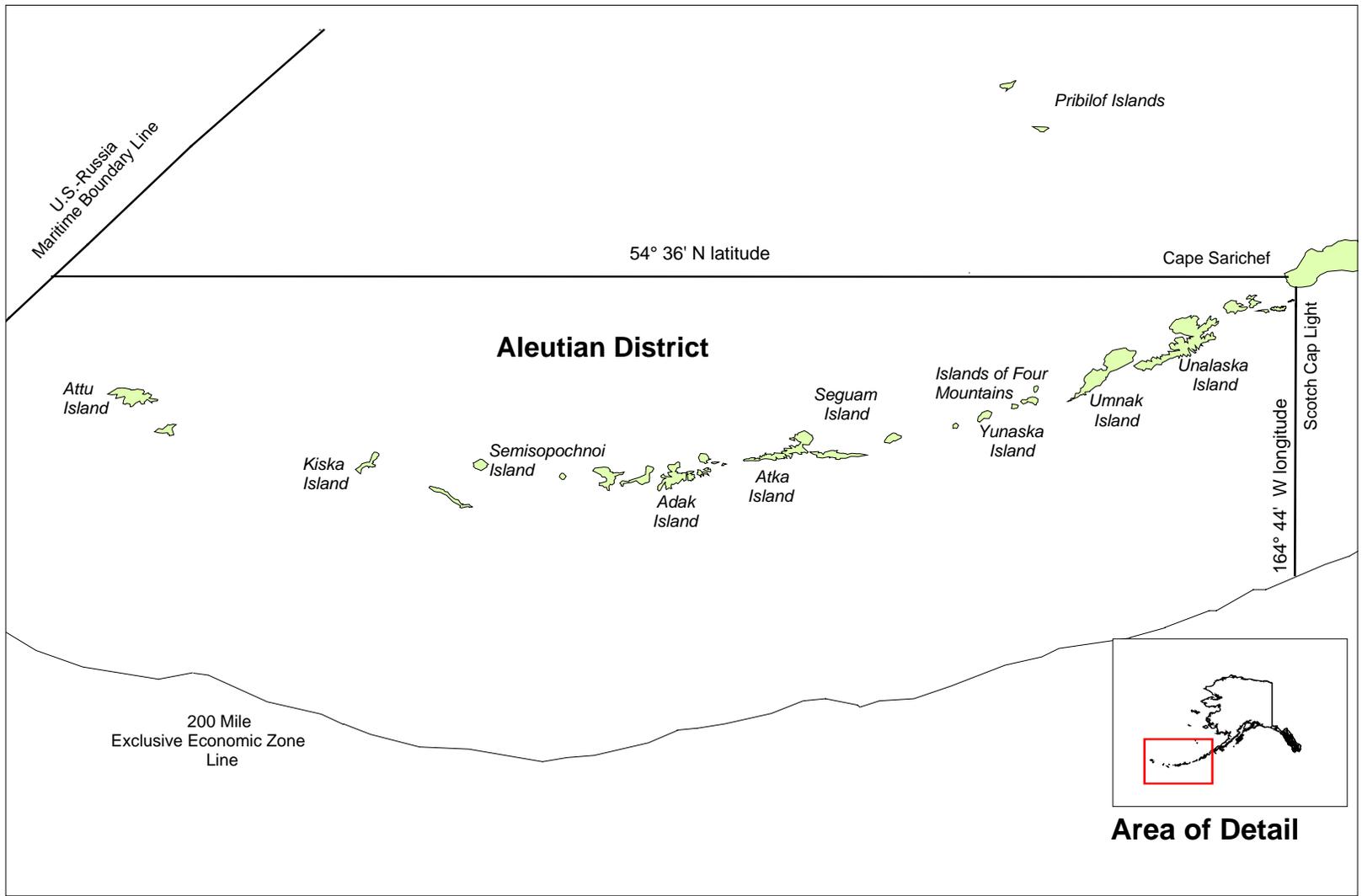


Figure 1-10. Aleutian District for Dungeness crab management.

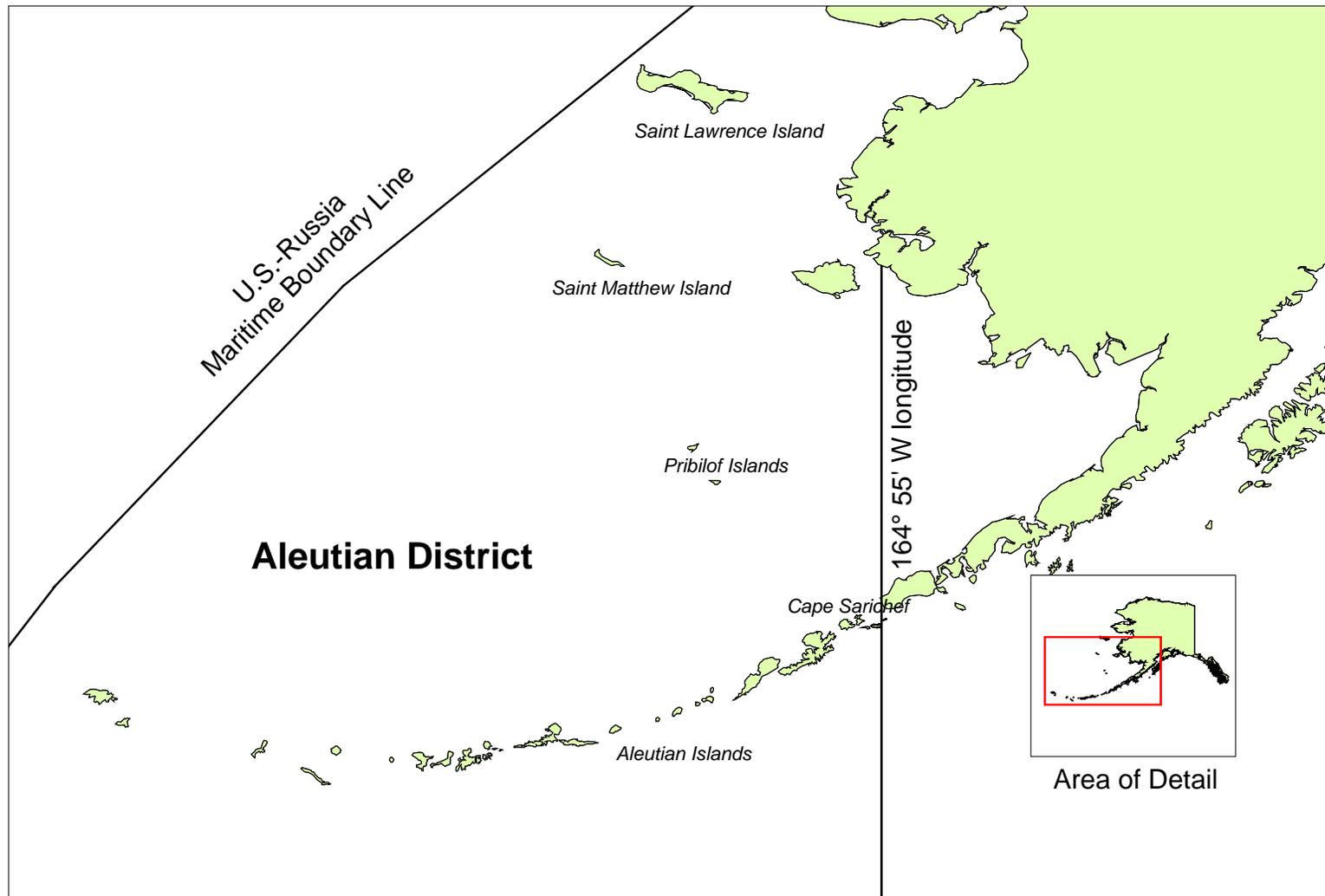


Figure 1-11. Aleutian District for shrimp management.

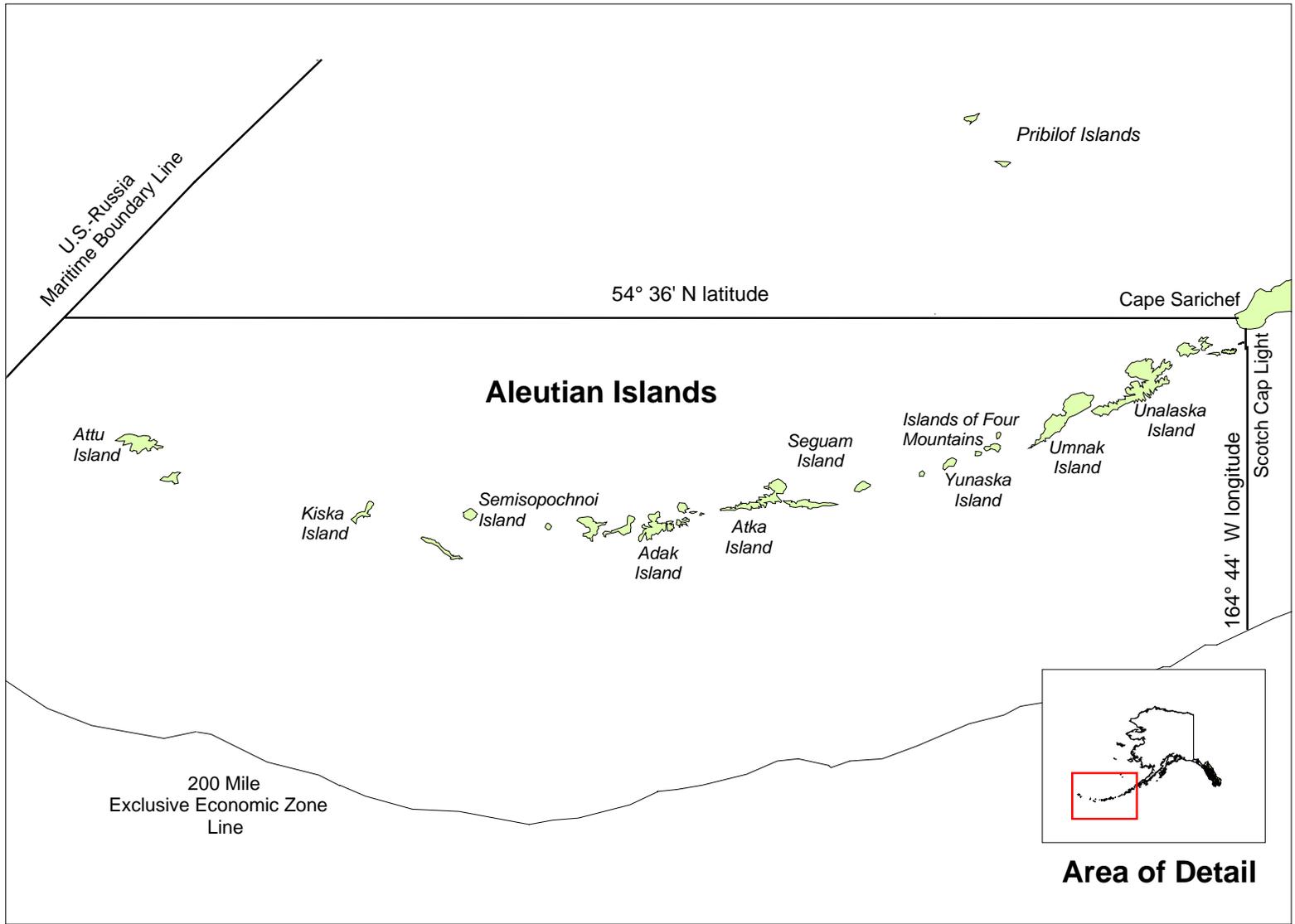


Figure 1-12. Aleutian Islands portion of miscellaneous shellfish Registration Area J.

ANNUAL MANAGEMENT REPORT FOR THE COMMERCIAL SHELLFISH
FISHERIES OF THE BERING SEA, 2003

by

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KING CRAB REGISTRATION AREA T BRISTOL BAY

Description of Area

King crab Registration Area T (Bristol Bay) includes all waters of the Territorial Sea (0-3 nautical miles from shore) and all waters of the Exclusive Economic Zone (3-200 nautical miles from shore) north of the latitude of Cape Sarichef (54° 36' N lat.), east of 168° W long., and south of the latitude of Cape Newenham (58° 39' N lat.) (Figure 2-1).

Historic Background

Commercial fishing for red king crabs *Paralithodes camtschaticus* in the Bering Sea began with Japanese harvests in 1930. The Japanese fishery ended in 1940 and resumed again from 1953 until 1974. The Russian king crab fleet operated in the eastern Bering Sea from 1959 through 1971. U.S. fishers entered the eastern Bering Sea fishery with trawl gear in 1947. Effort and catches declined in the 1950s, with no catch reported in 1959. A period of low catches followed through 1966 before the domestic fishery expanded to full-scale in the late 1970s.

The red king crab fishery in the eastern Bering Sea traditionally harvested crabs from waters north of Unimak Island and the Alaska Peninsula from Cape Sarichef to Port Heiden. With the decline of king crab stocks in other areas of the state, U.S. effort in the eastern Bering Sea increased beginning in 1966 with a peak harvest of 129.9 million pounds in 1980 (Table 2-1, Figure 2-2). Since 1980, king crab stocks throughout Alaska, including Bristol Bay, declined sharply and have not recovered to pre-1980 levels, leading to closures of the Bristol Bay red king crab (BBRKC) fishery in 1983, 1994, and 1995. From 1980 to 2001, economic value of the BBRKC fishery ranged from \$8.9 million in 1982 to a high of \$115.3 million in 1980 (Table 2-2, Figure 2-3). Exvessel price ranged from \$0.90 per pound in 1980 to a high of \$6.26 per pound in 1999.

In 1980, the Alaska Board of Fisheries (BOF) defined that portion of the Bering Sea south of Cape Newenham and east of 168° W. long. as the Bristol Bay King Crab Registration Area T, and the area was designated an exclusive registration area. During any king crab registration year (June 28 through June 27), vessels registering for and fishing in this area are prohibited from fishing in any other exclusive or super-exclusive king crab registration area. Only non-exclusive areas may be fished once a vessel is registered in Area T.

The National Marine Fisheries Service (NMFS) has conducted annual trawl abundance index surveys of the eastern Bering Sea since 1968. This multi-species (crab and groundfish) survey is conducted during the summer months and the resulting area-swept estimates of abundance are published annually. In 1983, the NMFS trawl survey of the Bering Sea indicated a record low number of legal male crabs and the lowest total king crab population ever recorded. Small female crabs carrying fewer eggs and high predator abundance were also noted. Consequently, the fishery was closed for the 1983 season. The fishery reopened in 1984 and catches slowly increased to over 20.3 million pounds in 1990. Due to the large number of catcher-processors and floating-processors

in the fishery and the inability of the Alaska Department of Fish and Game (ADF&G) to monitor these catches, an onboard observer program was initiated in 1988. Fishing effort increased dramatically from 89 vessels in 1984 to over 300 vessels in 1991 (Table 2-1, Figure 2-3). The number of pots used by the fleet also increased, with almost 90,000 pots registered for the 1991 fishery compared to just under 22,000 pots registered in 1984.

Due to the increased number of pots, the BOF established a 250-pot limit enforced through a buoy sticker program, which was implemented for the 1992 BBRKC fishery. This measure was intended to improve manageability of the fishery by extending the length of the season as well as reducing the potential for pot loss and gear conflict.

Immediately following the 1992 BBRKC fishery, the 250-pot limit was repealed by NMFS. This action was taken because of inconsistencies between the state regulations and provisions of the Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs (FMP), mandating application of pot limits in a nondiscriminatory manner (NPFMC 1998). In the spring of 1993, the BOF adopted new regulations, setting pot limits based on overall vessel length. For the BBRKC fishery, vessels in excess of 125 feet in overall length were limited to 250 pots and vessels 125 feet and under in overall length were allowed a maximum of 200 pots. These pot limits were administered through a buoy tag program from the Dutch Harbor and Kodiak ADF&G offices.

Voluntary daily vessel reports received via single side band (SSB) radio and marine telex have been used to manage the BBRKC fishery since 1993. The 1993 season ran for nine days and the total harvest was 14.6 million pounds, approximately 2.2 million pounds less than the 16.8 million pounds harvest guideline.

Results of the NMFS 1994 summer trawl survey of the Eastern Bering Sea indicated declines in all size-classes of both male and female red king crabs in the Bristol Bay area. Compared to observations made during the 1993 survey, the abundance index of large male crabs decreased 25%. Based on the 1994 survey results, large female abundance was estimated at 7.5 million crabs, which was below the minimum threshold of 8.4 million crabs necessary to allow a fishery. Consequently, the BBRKC fishery was not open for the 1994 season.

To address potential measurement errors in the area-swept trawl abundance estimates, ADF&G developed a length-based analysis (LBA) model for estimating population abundance. This method, used for the first time prior to the 1995 season, incorporates a variety of data sources including dockside sampling and observer collected data, as well as data collected on the annual NMFS survey. The LBA is less susceptible to year-to-year variations in factors unrelated to population abundance (i.e. oceanographic conditions, changes in species distribution, and subsequent availability to the survey gear) and is therefore more likely to produce an accurate estimate of abundance. Analysis of the 1995 NMFS survey using the LBA model indicated no significant difference in the abundance of mature male and female red king crabs from estimates made from the 1994 survey (Zheng et al. 1995). Based on these combined results, the BBRKC fishery remained closed for the 1995 season.

Due to the depressed status of the BBRKC population, the BOF, at their March 1996 meeting adopted a revised harvest strategy to promote stock rebuilding. One of the most significant changes

to the harvest strategy was a reduction in the exploitation rate of mature male crabs from 20% to 10% at levels below where the stock is considered rebuilt (55 million pounds of effective spawning biomass (ESB)), or 15% when the stock is considered rebuilt.

Results from the LBA incorporating the 1996 NMFS survey data indicated increased abundance in all size classes of males and females compared to the 1995 estimate (Zheng et al. 1996). Of major importance was an increase in the number of large females in 1996 to 10.2 million crabs, which was well above the threshold of 8.4 million large female crabs necessary to allow a fishery. This was a significant increase relative to the prior two years where fishery closures occurred due to insufficient numbers of large female crabs. Based on a 10% mature male exploitation rate, the 1996 guideline harvest level (GHL) was set at 5.0 million pounds. The 1996 fishery lasted four days and a total of 8.4 million pounds were harvested, exceeding the GHL by 68%.

To address the difficulty in managing this fishery at low GHLs, the BOF held a special meeting in August of 1997 implementing new pot limits and vessel preseason registration requirements. Also adopted were regulations that extended the tank inspection window for the BBRKC fishery from 24 to 30 hours and allowed fishers to leave baited pots on the fishing grounds when a fishery closure announcement is made with less than 24 hours of advance notice. New pot limits were based on vessel overall length, the preseason GHL, and the number of vessels preseason registered for the fishery. These new pot limit regulations were adopted with a sunset provision of December 31, 1998, to provide for reevaluation at the 1999 BOF meeting.

The LBA, using the 1997 NMFS survey data, indicated that all components of the BBRKC crab stock increased from levels observed in 1996 (Zheng et al. 1997), ESB was below the 55 million pound threshold necessary to allow a 15% harvest rate. Therefore, a 10% mature male exploitation rate was used, generating a general fishery GHL of 7.0 million pounds for the 1997 season. Based on the GHL and number of vessels that filed a preseason registration, pot limits were set at 100 and 125 pots for small and for large vessels, respectively. The 1997 fishery lasted four days and a total of 8.8 million pounds were harvested. The 1997 harvest exceeded the GHL by 26%, largely due to extremely high catch rates in the final hours of the fishery.

Analysis of the 1998 NMFS survey data indicated the abundance of pre-recruit male red king crabs increased by 85%, resulting in an increase in the fishable stock of mature male crabs for the 1998 season. The abundance of large females (>89 mm carapace length) increased by 42% (Stevens et al. 1998a). Effective spawning biomass was estimated to be over 55 million pounds, resulting in a 15% harvest rate on mature male crabs. The GHL for the 1998 general fishery (non Community Development Quota) was 15.8 million pounds. Because the GHL was in excess of 12 million pounds, the preseason registration requirement was waived and pot limits were set at 200 for vessels less than or equal to 125 feet in length and 250 for vessels greater than 125 feet in length. Total harvest in the 1998 fishery, which lasted five days, was 14.2 million pounds.

At the March 1999 meeting, the BOF made permanent the interim management measures that were adopted in the fall of 1997. The BOF also passed anti-prospecting regulations that were amended in 2000. The regulations prohibit vessels from participating in the Bristol Bay king crab fishery if they have operated pot, longline, or trawl gear in that portion of Registration Area T north of 55° 30' N lat. and east of 164° W long. during the 30 days immediately prior to the opening of the king crab

season. However, an exception was made for vessels participating in a directed pollock fishery with trawl gear in Area T north of 55° 30' N lat. and east of 164° W long. during the 14 days prior to the red king crab season. These vessels may participate in the BBRKC fishery if they delivered to an offshore processor or had 100 percent federal groundfish onboard observer coverage for the entire 14 days prior to the opening. The BOF also adopted a regulation that moved the opening date of the commercial red king crab fishery in Bristol Bay from November 1 to October 15. The change to an earlier opening was intended to improve fleet and industry efficiency by reducing the hiatus between the BBRKC fishery and the Bering Sea king crab fisheries, opening on September 15.

The LBA, including the 1999 NMFS survey data, indicated that while the abundance of legal and mature male red king crabs in Bristol Bay increased, all other classes decreased from the 1998 level: small males by 57%, pre-recruit males by 27%, and large females by 7% (Zheng and Kruse 1999). The LBA estimates resulted in an ESB of 47.0 million pounds. By applying an exploitation rate of 10% to the mature male population, a general fishery GHF of 10.1 million pounds was set. The 1999 season lasted five days, with a total harvest of 11.1 million pounds.

The LBA, including the 2000 NMFS survey data, indicated that the abundance of almost all size-classes of the Bristol Bay red king crab stock decreased from levels observed in 1999. Small males increased by 192%, but all others decreased: pre-recruit males by 23%, mature males by 14%, and legal males by 3%. Large females also decreased by 10% (Zheng and Kruse 2000). The 2000 ESB was estimated to be 39.9 million pounds, a decrease of 11% compared to 1999. At 39.9 million pounds, ESB was above the threshold for a fishery opening with a 10% exploitation rate on mature males. The 10% exploitation rate on mature males resulted in a general fishery GHF of 7.7 million pounds. The 2000 fishery opened at 4:00 PM on October 16 after a 24-hour delay to allow strong winds in the Bristol Bay area to diminish. A total of 239 catcher-only vessels and seven catcher-processors participated. However, only 244 vessels made landings. A total of 7.6 million pounds of red king crabs was harvested in the 4.2-day fishery, which was closed by emergency order at 9:00 PM on October 20.

Results of the NMFS stock assessment survey and LBA in 2001 gave an estimated ESB of 40.6 million pounds and a mature male abundance estimate of nearly 11 million crabs. When the harvest strategy was applied to these estimates, a general fishery GHF of 7.2 million pounds was the result of using a 10% exploitation rate applied to the mature male abundance estimate. The 2001 fishery opened at 4:00 PM on October 15 with 232 vessels registered (two registered vessels did not make landings). The fishery closed at 11:59 PM on October 18 after approximately 7.8 million pounds were harvested.

In 2002, survey results provided an estimated ESB of 37.7 million pounds and a mature male abundance estimate of 14.3 million crabs. A 10% exploitation rate was applied to the mature male abundance resulting in a general fishery GHF of 8.56 million pounds. The 2002 fishery opened at 4:00 PM on October 15 with 242 vessels registered. The fishery closed at NOON on October 18 after approximately 8.9 million pounds were harvested.

In 2003, the BOF modified the BBRKC harvest strategy. The BOF maintained the existing 10% and 15% harvest rates on mature males and implemented a 12.5% harvest rate on mature males when the ESB is greater than or equal to 34.75 million pounds but less than 55 million pounds.

American Fisheries Act

The American Fisheries Act (AFA), passed in 1998 by Congress, gave pollock fishers exclusive fishing privileges in the Bering Sea/Aleutian Islands (BSAI) pollock fishery. To protect the interests of fishers not directly benefited by the AFA, sideboards were established for AFA fishers qualified to participate in BSAI crab fisheries. To implement the sideboards, the BOF developed a management plan requiring ADF&G to manage AFA vessels with a harvest cap equally apportioned between all AFA qualified vessels or through a cooperative fishery when 100% of AFA qualified participants agree to the cooperative. The harvest cap specified by the AFA was implemented for the first time in the 2000 BBRKC fishery.

Of the 239 catcher-only vessels that participated in the 2000 BBRKC fishery, 25 participated under AFA sideboards. The AFA vessels fished in a cooperative manner with a fixed harvest cap of 10.96% of the general fishery GHL, or 0.9 million pounds. Post-season production reports show that AFA vessels harvested approximately 0.7 million pounds or 84.7% of their cap.

During the 2001 BBRKC fishery, 31 vessels participated under the AFA sideboards and fished in a cooperative manner. The fleet harvested 0.70 million pounds of a 0.72 million pound cap. Most of the vessels fishing under the AFA sideboards in 2001 were not constrained by the cap.

In 2002, 31 vessels participated under the AFA sideboards and fished in a cooperative manner. Twenty seven of the AFA vessels were constrained by the cap and stopped fishing prior to the closure. Several of the participating vessels exceeded the individual limits, however the AFA fleet remained under the cap and harvested 917,676 pounds, or 97.6% of the 939,842 pound cap.

2003 Fishery

NMFS survey and LBA results for 2003 indicated that the stock was above the fishery threshold with an estimated abundance of 29.7 million mature females and an estimated ESB of 60.7 million pounds. Both of these estimates represented substantial increases from those generated in 2002. Since ESB was estimated to be greater than 55.0 million pounds, the harvest strategy specifies an exploitation rate of 15% on mature males. Given an estimated mature male abundance of 16.4 million crabs and an average weight of 6.4 pounds per legal crab, the 2003 GHL was set at 15.7 million pounds, 1.2 million pounds of which were allocated to the Community Development Quota fishery.

Preseason vessel registration was required prior to 5:00 PM, September 24, 2003. Based on the 254 preseason vessel registrations received prior to that deadline and the 14.5 million pound general fishery GHL, pot limits were set at 200 pots for vessels less than or equal to 125 feet in overall length and 250 pots for vessels greater than 125 feet in overall length. In addition, preseason vessel registrations were used to select catcher vessels to carry onboard observers during the fishery; 24 catcher vessels were selected and 23 observers were deployed. Eight catcher processors and one floating processor registered for the fishery. Based on preseason effort levels and catch rate data from recent BBRKC fisheries, the department chose to manage the 2003 fishery through inseason catch reports from fishers rather than with a closure

announced prior to the opening. As part of the inseason management process, the department advised the fleet that catch updates would be made daily at noon and 9:00 PM and that the department would attempt to provide the fleet with 24-hours advance notice of the fishery closure, but given the pace of recent BBRKC fisheries, less than 24-hours advance notice was possible.

During the week preceding vessel registration, department staff consulted with United States Coast Guard (USCG) search and rescue personnel and National Weather Service (NWS) forecasters regarding a potential weather-related delay in the season opening. NWS staff did not forecast storm force winds in the operational area of vessels that would be travelling to the Bristol Bay red king crab fishing grounds from Dutch Harbor, Akutan, King Cove, or False Pass, nor were storm force winds forecast for the time period October 15-18. USCG personnel did not foresee that current or forecast weather conditions would hamper a search and rescue mission immediately before or during the first 18 hours of the fishery, thus the season was not delayed.

Vessel hold and gear inspections as part of the “quick registration” process began October 7 in Dutch Harbor and Akutan, October 8 in King Cove, and October 10 in False Pass. Vessel registration began at 10:00 AM, October 14. A total of 252 vessels registered for the fishery, which began at 4:00 PM, October 15. Intent to participate in the volunteer catch reporting program was received from 139 vessel operators. Observers on 32 additional vessels contributed daily catch reports as well. Catch reports were first received at 6:00 PM October 15, however these reports represented only the first two hours of the season and no catch was reported.

By 6:00 PM October 17, the catch rate was approximately 19 legal crabs per pot lift, the fleet pulled approximately 12,000 pots in the preceding twelve hours, and the cumulative harvest had reached 3.4 million pounds (Table 2-3). By 6:00 AM October 19, catch rates had increased to 23 legal crabs per pot lift and the fleet pulled approximately 13,000 pots in the previous 12 hours. The cumulative catch at 6:00 AM October 19 was 8.5 million pounds and the fleet was harvesting approximately 1.7 million pounds every 12 hours. Based on catch reports received through 6:00 AM October 19 and the most recent 12-hour harvest, the department issued a news release at NOON on October 19 stating that the GHF would be met and that the fishery would close at 6:00 PM October 20. One hundred and seventeen vessel operators participated in the inseason management process by providing at least one catch report during the fishery.

Catch reports received from the fleet on October 20 indicated that catch per unit of effort decreased after the closure announcement was made, while the number of pot lifts per 12 hour period increased. The fleet pulled nearly 43,000 pots in the final 24 hours of the fishery. The general fleet harvest projection including the AFA fleet portion based on inseason reports received after the closure announcement was approximately 16.6 million pounds. Actual harvest was 14,530,248 pounds, or 99.9% of the GHF.

The fleet was provided with more than 24 hours of advance notice of the fishery closure, thus all gear was required to be unbaited and stored with the doors open, or removed from the water by the time of the closure. The majority of the fleet was able to comply with this requirement, however 13 vessels experienced mechanical problems or delays that caused them to have gear stored illegally.

Fishers restricted under the AFA cap in the general fishery made a substantial change to their fishing practices in 2003. All but two of the participating vessels chose to be assigned a preseason trip limit rather than fish competitively until 80% of the cap was reached before receiving a limit. The AFA fleet made the change in an attempt to address perceived inequities in the prior management approach. Catch rates of the 32 vessels participating under the AFA cap in the general fishery were lower than those recorded by the non-capped portion of the fleet. As a fleet, the AFA vessels rarely exceeded a catch rate of 20 legal crabs per pot lift (Table 2-4). Vessels operating under the AFA cap had an average catch per unit of effort (CPUE) of 15 legal crabs per pot lift compared to an overall fleet average CPUE of 18 legal crabs per pot lift. Ten of the AFA vessels reached their trip limit and stopped fishing prior to the closure. Both vessels participating in the competitive fishery reached 80% of their portion of the cap. The AFA fleet remained well under the cap and harvested 1,189,013 pounds or 75% of the cap.

The 2003 Bristol Bay red king crab fishery was 122 hours long, a substantial increase from the 2002 season length of 68 hours. The 2003 legal male CPUE was 18, a slight decrease from the 2002 catch rate of 20 legal crabs per pot lift. Catch rates were highest between 56° and 57° N lat. and between 163° and 164° W long. High catch rates were also reported as far west as 165° W long. In general, the highest catch rates during the 2003 fishery occurred to the west of the most productive areas in the 2002 fishery, which were west of 163° W long. Nearly 85% of the 2003 harvest occurred in four adjacent ADF&G statistical areas (Table 2-5).

The fleet pulled approximately 129,000 pots to harvest 14,530,248 pounds (Table 2-1). Landed king crabs averaged 6.2 pounds per crab, representing a decrease of nearly 0.2 pounds per crab from the 2002 fishery average weight (Table 2-6) and the average weight used for GHF setting process. The decrease in average weight is consistent with survey results indicating improved recruitment to the legal size class.

Fishers were paid an average price of \$5.08 per pound by shore plants in Dutch Harbor, Akutan, Saint Paul, King Cove, Sand Point, and Kodiak. In addition, one floating processor and two catcher processors purchased crabs after the season. The 2003 Bristol Bay red king crab fishery had an exvessel value of \$72.7 million, a substantial increase from the 2002 exvessel value of \$54.2 million (Table 2-2, Figure 2-3).

Weather conditions during the 2003 Bristol Bay red king crab fishery were generally poor and fishers reported that operations were slowed due to weather. No vessels were lost, however one fatality occurred. A single vessel reported mechanical problems before the season opened and was not able to participate in the fishery.

ADF&G personnel or observers contacted approximately 76% of Bristol Bay red king crab vessel operators for postseason interviews. Biological data were collected from the majority of these deliveries. The Alaska Bureau of Wildlife Enforcement (ABWE) stationed personnel in all ports where Bristol Bay red king crabs were landed and cited four vessel operators for possession of undersized crab. ABWE seized 14,955 pounds of illegal king crab valued at approximately \$75,000.

Size data indicated that the majority (72%) of the harvest was composed of recruit sized crabs. An increase from 61% recruits in 2002. Landed red king crabs averaged 149 mm in carapace length (CL), a slight decrease from the 2000, 2001, and 2002 average CL of 151 mm (Table 2-6).

Prior to the 2003 general red king crab fishery in Bristol Bay, ADF&G conducted cost-recovery fishing using a chartered vessel. The department intended to conduct all 2003 cost-recovery activities in the Pribilof District, but low catches of legal males in the Pribilof District forced the department to divert the chartered vessel to Bristol Bay. The cost-recovery project harvested and sold approximately 32,000 pounds of Bristol Bay red king crabs (Table 2-7), worth approximately \$180,000 (Table 2-8). The 2003 cost-recovery fishery is part of an ongoing program used to collect funds to conduct research on Bering Sea shellfish and to fund pre-season practical examinations for new observers. No additional cost-recovery fishing occurred post season.

Stock Status

The status of the Bristol Bay red king crab stock and fishery are evaluated through the use of abundance based thresholds. When the total mature biomass (TMB) of red king crabs in Bristol Bay falls below the 44.8 million pound minimum stock size threshold (MSST), the stock is considered overfished. In 2003, the TMB of red king crabs in Bristol Bay was estimated to be 178.1 million pounds, which is well above the maximum sustained yield (MSY) value of 89.6 million pounds TMB and is the highest TMB estimate since 1981.

The state harvest strategy for Bristol Bay red king crabs establishes three thresholds that must be met prior to a fishery opening. The first is a threshold abundance level of 8.4 million mature females, the second is an ESB threshold of 14.5 million pounds of ESB, and the third is a minimum GHL threshold of 4.0 million pounds. LBA estimates for 2003 show the stock to be above both the mature female abundance threshold at 29.7 million females and the ESB threshold at 60.7 million pounds of ESB. Mature female abundance and ESB increased substantially from the 2002 levels.

Legal male abundance increased substantially over the 2002 level. At 12.3 million crabs, the legal male abundance estimate in 2003 is the largest in the last 20 years. (Rugolo et al. 2003). Strong recruitment experienced in 2003 resulted in a slightly lower average weight and average crab size during the 2003 fishery. Given recent survey trends, there should be a modest increase in mature female crab abundance, ESB, and legal male crab abundance in 2004 and it is likely that fishery thresholds will be met and the stock will be above MSST.

KING CRAB REGISTRATION AREA Q BERING SEA

Description of Area

The Bering Sea king crab Registration Area Q has as its southern boundary a line from 54° 36' N lat., 168° W long., to 54° 36' N lat., 171° W long., to 55° 30' N lat., 171° W. long., to 55° 30' N lat., 173° 30' E long., as its northern boundary the latitude of Point Hope (68° 21' N lat.), as its eastern boundary a line from 54° 36' N lat., 168° W long., to 58° 39' N lat., 168° W long., to Cape Newenham (58° 39' N lat.), and as its western boundary the United States-Russia Maritime Boundary Line of 1991 (Figure 2-4). Area Q is divided into the Pribilof District, which includes waters south of Cape Newenham, and the Northern District, which incorporates all waters north of Cape Newenham. The Northern District is subdivided into three sections: the Saint Matthew Island Section, which includes waters north of Cape Newenham and south of Cape Romanzof; the Norton Sound Section, which includes all waters north of Cape Romanzof, south of Cape Prince of Wales, and east of 168° W long; and the Saint Lawrence Island Section, which encompasses all remaining waters of the district. Registration Area Q includes waters of both the Territorial Sea (0-3 nautical miles from shore) and the Exclusive Economic Zone (3-200 miles from shore).

PRIBILOF DISTRICT RED AND BLUE KING CRAB

Historic Background

The king crab fishery in the Pribilof District began in 1973, when vessels targeted blue king crabs *Paralithodes platypus* in the vicinity of Saint George and Saint Paul Islands. The first reported catch in this area was 1.3 million pounds taken by eight vessels between July 1973 and October 1974. The average weight of crabs harvested was 7.3 pounds and CPUE was 26 legal crabs per pot lift. By the 1980/1981 season, fishing effort had increased to 110 vessels, that harvested 11.0 million pounds, the highest catch on record. However, by that time the fishery CPUE had dropped to nine legal crabs per pot lift and continued declining to a low of two crabs per pot by the end of the 1986/1987 season. Consequently, the harvest dropped to 260,000 pounds, taken by 16 vessels (Table 2-9). Due to this six-year decline in harvest and concurrently low annual population estimates, the blue king crab fishery was closed beginning with the 1988/1989 season and remained closed until 1995 (Figure 2-5).

In 1993, the BOF adopted regulations that set pot limits based on overall vessel length for all king crab fisheries in the Bering Sea. In the Pribilof District, pot limits were established at 50 for vessels over 125 feet overall length and at 40 for vessels 125 feet overall length or less.

The 1993 NMFS summer trawl survey of the Bering Sea indicated a marked increase in the abundance of red king crabs around the Pribilof Islands. Although no threshold abundance level for opening the fishery was established for Pribilof District red king crabs, survey results indicated a harvestable surplus of legal-sized male crabs. Consequently, a red king crab fishery in the Pribilof

District opened for the first time in September 1993. A harvest of 2.6 million pounds was taken from a GHL of 3.4 million pounds. In 1994, the Pribilof District was again opened to the commercial harvest of red king crabs, and 104 vessels harvested 1.3 million pounds.

In 1995, an increase in blue king crab abundance and a continued harvestable surplus of red king crabs resulted in a combined red and blue king crab GHL of 2.5 million pounds. Subsequent declines in red and blue king crab abundance over the next three years resulted in a combined GHL for 1998 of 1.3 million pounds (Table 2-10). Poor fishery performance during those seasons resulted in annual harvests below the fishery GHL. From 1999 to 2002, blue king crab abundance continued to decline and the Pribilof fishery was not opened.

Since 1993, fishery openings have ranged from six to 14 days (Table 2-10). This compares to the eight-year period from 1980-1988 when fishery openings ranged from 10 to 86 days. Due to shorter seasons, the Pribilof District fishery has been managed in season using voluntary catch reports from fishing vessels. Reports are received up to twice per day and are used to calculate CPUE, effort, and daily harvest. Inseason management of the fishery allows the department to base management decisions on real-time fishery performance and to respond to changes in catch rates caused by weather, crab abundance, and effort.

The economic value of the Pribilof District red king crab fishery peaked at \$13.0 million in 1993 with an exvessel price of \$4.98 per pound, the second highest on record. The value of the Pribilof District blue king crab fishery peaked at \$13.6 million in 1981/1982, with an exvessel price of \$1.50 per pound. Since 1995, the exvessel price of red or blue king crabs has not exceeded \$3.37 per pound. Total value of the fishery declined from \$6.8 million in 1995 to \$2.4 million in 1998 (Table 2-10, Figure 2-6).

2003 Fishery

The blue king crab fishery in the Pribilof District was not opened in 2003 due to the continued decline in blue king crab abundance. The stock remains below the threshold level of abundance required for a fishery opening. Due to significant uncertainty surrounding estimated red king crab abundance and concerns for blue king crab bycatch in a directed red king crab fishery, the red king crab fishery also remained closed for the 2003 season.

Stock Status

The population of blue king crabs in the Pribilof District remains at its lowest level since 1985. Legal (≥ 135 mm CL) male abundance was estimated to be 0.2 million crabs in 2003, the same estimate generated in 2002. The pre-recruit (110-134 mm CL) male abundance estimate remained at less than 0.1 million crabs and large (≥ 90 mm CL) female abundance decreased from 1.2 to 1.1 million crabs (Rugolo et al. 2003). Overall, the population abundance remains low and there appears to be little or no recruitment.

The abundance index for large female red king crabs in the Pribilof District increased from 0.4 to 1.1 million crabs. This apparent increase should be viewed with caution since female red king crab abundance in the Pribilof District is difficult to accurately estimate with confidence. The abundance of pre-recruit males increased slightly from 0.02 million in 2002 to 0.1 million crabs in 2003. Legal male red king crab abundance decreased from 1.8 million crabs in 2002 to 1.3 million crabs in 2003. In general, estimates of red king crab abundance in the Pribilof District are considered inaccurate. The inaccuracy of red king crab abundance estimates in the Pribilof District coupled with the potential for blue king crab bycatch in a red king crab fishery, the lack of a formal harvest strategy for red king crabs and poor performance of prior fisheries has contributed to the continued closure of the fishery despite a modest increase in legal male abundance (NPFMC 2003).

The Pribilof blue king crab stock was declared overfished in September of 2002 and the department developed a rebuilding harvest strategy as part of a comprehensive rebuilding plan for the blue king crab stock (Zheng and Pengilly 2003). The BOF selected a harvest strategy that includes a 10% harvest rate on mature males and a 500,000 pound minimum GHL.

In addition to the annual NMFS eastern Bering Sea crab survey, ADF&G conducted a pot survey targeting red and blue king crab in the Pribilof District in 2003. The objectives of the survey were to determine the distribution and relative abundance of red and blue king crab in the District and to conduct cost-recovery fishing to cover the costs of the survey and related expenses. A total of 696 pots were pulled during the survey with an overall legal male red and blue king crab CPUE of less than one crab per pot lift. An additional 202 pots were pulled as part of the cost-recovery effort. Only 146 legal male red king crab were caught and sold for cost-recovery from the Pribilof District, thus the chartered vessel was directed to Registration Area T for the remainder of the cost-recovery efforts.

SAINT MATTHEW ISLAND SECTION BLUE KING CRAB

Historic Background

The commercial blue king crab fishery in the Saint Matthew Island Section of the Northern District was first prosecuted in 1977, resulting in a commercial harvest of 1.2 million pounds. In 1978, the catch increased to almost 2.0 million pounds (Table 2-11). Catches decreased in 1979 and 1980 due to lack of effort. In 1981, several vessels returned to the Saint Matthew Island Section during the Norton Sound Section fishery. Catches were strong, and after the Norton Sound Section closed, additional vessels moved into the Saint Matthew Section, taking 4.6 million pounds of blue king crabs. Catch and effort increased to a peak harvest of 9.5 million pounds in 1983 when 164 vessels participated. In subsequent seasons, catches remained at or below 4.7 million pounds (Figure 2-7).

NMFS trawl surveys from 1983 to 1998 in the Saint Matthew Island indicated a harvestable surplus of blue king crabs ranging from 1.7 to 8.0 million pounds. In 1998, the legal male abundance decreased by 21%, resulting in a GHL of 4.0 million pounds. The 1998 season closed before the GHL was attained due to poor fishery performance and observer information indicating a relatively high incidental capture rate of sublegal males and female crabs. The 1998 CPUE was seven crabs

per pot lift, the second lowest CPUE on record. The 1998 season, which was managed based on inseason catch reports, lasted 11 days, the longest since a 17-day opening that occurred in 1983, when 9.5 million pounds were harvested (Table 2-12). The actual harvest of 2.9 million pounds equaled the harvest projected from inseason catch reports (Table 2-13). From 1999 to 2002, abundance estimates for the Saint Matthew blue king crab stock were low and the fishery remained closed because harvest strategy abundance thresholds were not met.

In 1993, BOF adopted regulation changes and moved the opening date of the Saint Matthew king crab fishery from September 1 to September 15 (Table 2-14), concurrent with the king crab fishery in the Pribilof District. This action was taken to improve effort distribution between the Pribilof and Saint Matthew areas, thereby reducing the number of vessels participating in each fishery. Differential pot limits, established in 1993 for the Saint Matthew Island Section, limited vessels over 125 in feet overall length to 75 pots and vessels 125 feet in overall length or less to a maximum of 60 pots.

The exvessel price for Saint Matthew blue king crab during the last open season, 1998, averaged \$1.87 per pound, the lowest on record since 1984 and 1985, when fishers received \$1.75 and \$1.60 per pound, respectively. Total value for this fishery peaked in 1983 at \$25.8 million, and since 1994, has not been higher than \$15.0 million (Table 2-12). In contrast, the number of vessels participating has generally increased, from 87 in 1994 to 131 in 1998 (Figure 2-8). Average weight per crab has ranged from 4.0 to 5.0 pounds, depending on the percentage of new recruits entering the fishery each year. The average weight per crab during the last fishery (1998), was 4.7 pounds (Table 2-11).

2003 Fishery

The 2003 Saint Matthew Island Section blue king crab fishery remained closed because the GHL calculated from the harvest strategy was below the minimum GHL threshold specified in regulation.

Stock Status

Based on the 2003 NMFS survey, the abundance index for legal male blue king crabs decreased from 0.7 million crabs in 2002 to 0.6 million in 2003. Abundance of pre-recruit male blue king crabs increased from 0.2 million crabs in 2002 to 0.3 million in 2003. Large female blue king crab abundance increased from 0.1 million crabs in 2002 to 0.8 million in 2003 (Rugolo et al. 2003). Total mature biomass for the Saint Matthew Island blue king crab stock increased significantly over the 2002 level from 4.7 million pounds to 12.8 million pounds. The 2003 TMB estimate is above the MSST value of 11.0 million pounds established for this stock. The stock is above MSST for the first time in the last five years. The apparent increase in TMB should be viewed with caution because the estimates are based on low numbers of blue king crabs caught. Female blue king crab can be particularly difficult to catch during the trawl survey resulting in highly variable estimates from one year to the next.

A rebuilding plan was adopted for this stock in 2000 (NPFMC 2000). Stocks listed as overfished are not deemed rebuilt until TMB increases to or above the maximum sustainable yield biomass, which is twice the MSST, or 22.0 million-pounds TMB for the Saint Matthew Island blue king crab stock. Based on the 2003 survey results, the TMB would have to nearly double for the stock to be considered rebuilt. Survey data indicates that the stock may slowly be recovering (NPFMC 2003).

PRIBILOF DISTRICT GOLDEN KING CRAB

Historic Background

Golden king crabs *Lithodes aequispina* are found in commercial concentrations in only a few deep canyons in the Bering Sea District and have never sustained large harvests when compared to other Bering Sea king crab fisheries. As with many other crab fisheries in the Bering Sea, the fishery for golden king crabs was pioneered by foreign fishing fleets. A domestic fishery developed during the 1982/83 season after BOF directed ADF&G to regulate fishing for golden king crabs in the Pribilof District by emergency order (ADF&G 1984). By the 1984 season, BOF directed ADF&G to manage the Area Q golden king crab fishery under authority of a commissioner's permit that allowed the fishery to develop and expand into new areas (ADF&G 1985).

The first domestic harvest of golden king crabs in the Bering Sea occurred in June of 1982 when two vessels fished in the Pribilof District. Effort increased to 10 vessels during the following season with a harvest of nearly 70,000 pounds. The size limit for golden king crabs in the Pribilof District was reduced from six and one-half inches to five and one-half inches in 1983. Subsequently, effort in the Pribilof District peaked during the 1983/84 season when 50 vessels harvested 860,000 pounds of golden king crabs. From 1984 to 1992, no more than two vessels participated each year in the fishery. Since the 1983/84 season, harvest has not exceeded 350,000 pounds annually (Table 2-15). The Pribilof District golden king crab fishery reached a maximum exvessel value of just over \$1 million in 1995, and the highest price fishers received per pound was \$3.81 in 1994 (Table 2-16). During the last nine years in the Pribilof District fishery an average of five vessels have annually harvested an average of 166,000 pounds. CPUE has averaged seven legal crabs per pot lift with an average weight of 4.0 pounds. Most harvest in the Pribilof District has occurred in the area immediately to the south of the Pribilof Islands.

At its March 1993 meeting, BOF developed pot limits for all king crab fisheries in the Bering Sea. Current pot limits in the Pribilof District are set at 40 pots for vessels 125 feet or less in length and 50 pots for vessels greater than 125 feet in length.

In 2000, the Pribilof district golden king crab fishery opened with a GHL of 150,000 pounds, which was 50,000 pounds less than the 1999 harvest level. This adjustment better complies with guidelines outlined in the FMP for the king and Tanner crab fisheries of the Bering Sea and Aleutian Islands and is based on the average harvest from 1983 to 1997. Seven vessels harvested 127,000 pounds in 2000. The GHL was not reached; thus the fishery remained open until the end of the year. In 2001, six vessels harvested 146,000 pounds and the fishery was closed by emergency order (Table 2-16).

The golden king crab fishery in the Bering Sea is managed using inseason catch reports provided by processors and observers. Fishing is restricted to depths of 100 fathoms or greater. Starting in 2001, 100% observer coverage was required for each vessel registered for the fishery to provide fishery and biological data that has not previously been available. In addition, vessel logbooks issued with the commissioner's permit provide location of fishing operations, effort, and estimates of bycatch. Primary bycatch species include non-retained golden king crabs, Pacific halibut *Hippoglossus stenolepis*, Pacific cod *Gadus macrocephalus* and, snow crabs *Chionoecetes opilio*.

The 2002 fishery opened January 1 with a GHL of 150,000 pounds, and closed by emergency order on May 14. The total harvest was 150,434 pounds. CPUE averaged six legal crabs per pot lift, a decrease from the CPUE of eight legal crabs per pot during the 2001 fishery. Landed crabs averaged 4.3 pounds per crab, the same as the 2001 season. The 2002 Pribilof District golden king crab fishery had a total fishery value of \$438,000, which was just \$9,000 more than the 2001 fishery value.

2003 Fishery

The 2003 Pribilof District golden king crab fishery opened on January 1 with a GHL of 150,000 pounds. Three vessels registered for the fishery and began fishing in late March. A fourth vessel registered in April but did not fish. Because only two processors participated in the fishery, most harvest information is confidential. The majority of the harvest in 2004 again occurred south of Saint George Island (Table 2-17).

Stock Status

The golden king crab population in the Pribilof District is not surveyed and no estimate of abundance has been made. There are no plans to survey this population, nor has a formal harvest strategy been developed. Population size is believed to be limited by the amount of available habitat in the Pribilof District. The fishery is currently managed using a GHL set from the long-term average harvest. Data collected by onboard observers in conjunction with data from the landed catch are used to annually evaluate the status of the stock.

NORTHERN DISTRICT GOLDEN KING CRAB

Historic Background

A domestic fishery for golden king crabs in the Saint Matthew Island Section of the Northern District also began in the 1982/83 season. Effort and harvest in the Northern District has been sporadic. Since the initial fishery, harvest has only been documented during ten seasons. Harvest peaked during the 1987 season when 11 vessels harvested over 424,000 pounds. Since 1988, no more than four vessels have participated during any season (Table 2-18). The majority of the golden king crab harvest in the Northern District has occurred west of Saint Matthew Island. There has

been no documented harvest of golden king crabs from either the Saint Lawrence Island or Norton Sound Sections.

At its March 1993 meeting, BOF developed pot limits for all king crab fisheries in the Bering Sea. Current pot limits in the Northern District are set at 60 pots for vessels 125 feet or less in length and 75 pots for vessels greater than 125 feet in length. These pot limits are significantly lower than the average number of pots fished per vessel in the Aleutian Islands golden king crab fishery, which has no pot limits in place. The Northern District fishery has never been closed by emergency order (Table 2-19).

The golden king crab fishery in the Bering Sea is managed using inseason catch reports provided by processors and observers. Starting in 2001, 100% observer coverage was required for each vessel registered for the fishery in order to provide fishery and biological data that has not previously been available. In addition, vessel logbooks issued with the commissioner's permit provide location of fishing operations, effort, and estimates of bycatch. Primary bycatch species include non-retained golden king crabs, Pacific halibut, Pacific cod, and snow crabs. Fishing is also restricted to depths of 100 fathoms or greater.

2003 Fishery

The fishery opened January 1 with a GHJ of 10,000 to 20,000 pounds and closed December 31, 2003. A single vessel registered to fish for golden king crabs in the Northern District of Area Q in 2003, thus harvest information is confidential.

Stock Status

The golden king crab population in the Northern District is not surveyed and no estimate of abundance has been made. There are no plans to survey this population, nor has a formal harvest strategy been developed. Population size is believed to be limited by the amount of available habitat in the Northern District. The current GHJ of 10,000 to 20,000 pounds is designed to allow for some exploratory fishing and data gathering.

BERING SEA SCARLET KING CRAB

Historic Background

Scarlet king crabs *Lithodes couesi* are harvested under authority of a permit issued by the commissioner of ADF&G authorized in 5 AAC 34.082 PERMITS FOR *LITHODES COUESI* KING CRAB. Harvest of scarlet king crabs in the Bering Sea has primarily occurred as incidental harvest in the grooved Tanner crab *Chionoecetes tanneri* and golden king crab fisheries. Although vessels first registered to fish for Bering Sea scarlet king crabs in 1992, no commercial landings occurred prior to 1995. In 1995, four vessels harvested 26,684 pounds (Table 2-20) and were paid

an exvessel price of \$2.12 per pound. Only two vessels participated in 1996, consequently all catch information is confidential. No vessels registered to fish for scarlet king crabs from 1997 to 1999. A single vessel was permitted to retain scarlet king crabs as incidental harvest during the grooved Tanner crab fishery in 2000 and 2001. Since less than three vessels participated, the harvest information is confidential. Scarlet king crab incidental harvest was permitted at a rate of 50% of the weight of the target species. No vessels registered to retain incidental catch of scarlet king crab in 2002.

2003 Fishery

Three vessels registered to retain scarlet king crabs as incidental harvest during the 2003 Bering Sea golden king and deep-water Tanner crab fisheries. Due to the limited amount of participation in the fishery all harvest information is confidential.

Fishery Management and Stock Status

No annual abundance estimates are available for scarlet king crab stocks, nor have any stock assessment surveys been conducted. Onboard observers have been required on most vessels targeting deepwater crab species since 1994 and have collected information detailing the size and sex composition of the retained and non-retained scarlet king crab and bycatch species. This information will be used to help develop management measures for these deepwater crab stocks in the future. Currently, ADF&G does not intend to register any vessels to fish directly for scarlet king crabs in the Bering Sea pending BOF adoption of a plan for the development of new fisheries. Any additional directed fishing for scarlet king crabs will be conducted in accordance with that plan. Retention of scarlet king crabs captured in other deepwater crab fisheries will be permitted at low levels.

BERING SEA TANNER CRAB MANAGEMENT DISTRICT

Description of Area

The Bering Sea District of Tanner crab Registration Area J includes all waters of the Bering Sea north of Cape Sarichef at 54° 36' N lat. and east of the U.S.-Russia Maritime Boundary Line of 1991. This district is divided into the Eastern and Western Subdistricts at 173° W long. The Eastern Subdistrict is further divided at the latitude of Cape Romanzof and 168° W long. into the Norton Sound Section to the east and the General Section to the south and west (Figure 2-9).

BERING SEA TANNER CRAB

Historic Background

The first reported U.S. harvest of Tanner crabs *Chionoecetes bairdi* occurred in 1968, incidental to the harvest of red king crabs in Bristol Bay. In 1974, a directed Tanner crab fishery began. Harvest peaked at 66.6 million pounds during the 1977/78 season (Table 2-21). In the fall of 1978, NMFS predicted sharp declines in Tanner crab abundance beginning with the 1978/79 fishing season. As anticipated, Tanner crab stocks declined, and by 1984 the commercial harvest fell to 1.2 million pounds (Figure 2-10). Further stock declines led to a fishery closure during the 1986 and 1987 seasons.

In 1992, in an effort to slow the harvest rate in order to provide sufficient time for inseason management of the Tanner crab fishery, the BOF adopted regulations which restricted all participating vessels to fishing a maximum of 250 pots. In 1993, in order to comply with federal law regarding application of pot limits in a nondiscriminatory manner, differential pot limits based on vessel length were implemented. Vessels 125 feet or under in overall length were limited to a maximum of 200 pots, while vessels longer than 125 feet in overall length were limited to a maximum of 250 pots.

Also in 1993, BOF adopted regulations that opened and closed that portion of the Eastern Subdistrict east of 168° W long., to Tanner crab fishing concurrent with the regulatory opening and emergency order closure of the Bristol Bay red king crab fishery. If sufficient GHL remained to be taken, the BOF mandated a reopening of the Eastern Subdistrict between 163° and 173° W long. for the directed Tanner crab fishery 10 days after the closure of the Bristol Bay red king crab fishery. In the event the Bristol Bay red king crab fishery failed to open, the portion of the Eastern Subdistrict west of 163° W long. would open to a directed Tanner crab fishery on November 1. These BOF actions were based on observer bycatch data and historic harvest patterns indicating that the majority of female king crab bycatch in the Bristol Bay red king crab and Bering Sea Tanner crab fisheries came from waters east of 163° W long.

During the 1994 and 1995 seasons, the Bristol Bay red king crab fishery did not open due to low stock abundance. As a result, the Tanner crab fishery opened on November 1 in the Eastern Subdistrict west of 163° W long. The commercial Tanner crab harvest in 1994 was 7.8 million pounds; in 1995 the harvest declined to 4.2 million pounds (Table 2-22).

The GHL for the 1996 Tanner crab fishery was 8.4 million pounds (Table 2-23). Due to poor fishery performance, the fishery was closed before the GHL was reached; a total of 1.8 million pounds was harvested. The average size of crabs harvested in 1996 was 152 mm carapace width (CW). This compares to an average of 149 mm CW observed in 1995. The percentage of new-shell crabs harvested in 1996 decreased to 47% from 59% observed in the 1995 harvest (Table 2-24).

Based on poor fishery performance in 1996 and results from the 1997 NMFS survey indicating significant declines in most segments of the Tanner crab population (Stevens et al. 1998a), the

Bering Sea Tanner crab fishery remained closed for the 1997 season. The 1998 NMFS survey indicated further declines in Tanner crab abundance and the fishery did not open in 1998. Abundance of large male and female Tanner crabs continued to decline to the lowest level in the history of the survey (Stevens et al. 1998b). Because the stock fell below the MSST established in the FMP for this fishery, the stock was declared overfished by NMFS in 1998, necessitating the establishment of a rebuilding plan.

At the March 1999 BOF meeting, a revised harvest strategy was adopted as part of a comprehensive Bering Sea Tanner crab rebuilding plan. The harvest strategy for the Eastern Subdistrict specifies a threshold of 21.0 million pounds of mature female biomass that, for management purposes, are females ≥ 80 mm CW. No directed crab fishery is prosecuted when female biomass is below that threshold. When the mature female biomass is between 21.0 million and 45.0 million pounds, a maximum harvest rate of 10% is applied to “molting mature males”, or those mature male crabs likely to continue to grow, defined as 100% of new-shell and 15% of old-shell males greater than 112 mm CW. When the mature female biomass is above 45.0 million pounds the harvest rate is set at a maximum of 20% of molting mature males.

When establishing a GHL, no more than 50% of the exploitable legal-size male abundance may be harvested. Exploitable legal-size male abundance is 100% of new shell and 32% of old-shell male crabs greater than 140 mm CW. Separate GHLs are calculated for the areas east and west of 168° W long. The minimum fishery threshold is 4.0 million pounds. If the fishery is not opened because it did not meet threshold requirements, the fishery may reopen the following season if a GHL of at least 8.0 million pounds is calculated through the harvest strategy, but only half of the GHL may be taken that year. If the fishery remains closed because the GHL is calculated to be greater than 4.0 million pounds, but less than 8.0 million pounds, the fishery may reopen the following year if the calculated GHL is at least 4.0 million pounds. This safeguard was established to protect against survey bias in the year following a closure due to low stock abundance.

Pre-recruit crab abundance began increasing in 1998 and 1999, but this trend reversed in 2000 and 2001. In addition, the stock remained below fishery threshold level established in the harvest strategy and the fishery was closed from 1999 to 2002.

2003 Fishery

Harvest strategy thresholds were not met in 2003. Consequently, the Bering Sea Tanner crab fishery remained closed for the 2003 season.

Stock Status

The abundance of Tanner crabs in the Bering Sea District remains below levels to allow for a fishery, but the stock demonstrates increasing male and female abundance trends. The estimated abundance of molting mature males increased 71% over the 2002 level to 10.3 million crabs. The 2003 estimate for mature female abundance was 52% greater than in 2002. The 2003 legal male abundance estimate was 3.1 million crabs, only a slight increase from the 2002 level. The 2003

Bering Sea Tanner crab mature female biomass was 20.8 million pounds and the fishery was not opened because the harvest strategy threshold of 21 million pounds of mature female biomass was not met.

The 2003 estimate of spawning biomass increased from 69.4 million pounds to 100.8 million pounds. In 2003, the stock increased above MSST (94.8 million pounds of spawning biomass) for the first time in six years. Despite increases in abundance observed in 2003, the stock remains well below the rebuilt level of 189.6 million pounds of spawning biomass and is not likely to reach that level in 2004 (NPFMC 2003).

BERING SEA SNOW CRAB

Historic Background

The first commercial landings of snow crabs *Chionoecetes opilio* from the Bering Sea were recorded in 1977, incidental to the harvest of Tanner crabs. In 1981, a reduction in the Tanner crab harvest resulted in increased snow crab harvest. The harvest of snow crabs fell from 52.8 million pounds in 1981 to 26.1 million by 1983 (Table 2-25, Figure 2-11). In 1984, harvest increased slightly, and in 1985, 66 million pounds were landed. In 1986, the harvest increased to 98.0 million pounds. The commercial catch continued to increase annually to a high of 328.6 million pounds in 1991. Although stocks began to decline, the harvest of snow crabs remained over 100 million pounds through the 1994 season. In 1996, the harvest declined to 65.7 million pounds, the lowest in the preceding eleven seasons. The GHL more than doubled in 1997 to 117.0 million pounds and the fleet harvested 119.5 million pounds. In the 1998 general fishery, 229 vessels harvested 243.3 million pounds.

The NMFS stock assessment survey in 1998 indicated that the estimate of large male snow crabs declined by 17% from the prior year's survey, resulting in a general fishery GHL of 186.2 million pounds. Two hundred and forty one vessels landed 184.5 million pounds during the 1999 general fishery, ending on March 22.

In 1999, the surveyed stock was 60% of the minimum stock size threshold, defined as half the long term average mature biomass established in the FMP for Bering Sea and Aleutian Islands king and Tanner Crab (NPFMC 1998). In response to significant stock declines, ADF&G initially reduced the 58% exploitation rate on 102 mm CW and larger male snow crabs by 50%. The revised 29% exploitation rate would still have resulted in a removal rate from the estimated mature biomass close to the long-term average. Thus, in accordance with NMFS guidelines for stock rebuilding, the harvest rate was reduced by an additional 25% to 22%, which also took into consideration handling mortality during the fishery and high natural mortality during the six month hiatus between the survey and the fishery opening. This reduction in exploitation rate resulted in a GHL of 28.5 million pounds for the 2000 season.

The 2000 snow crab fishery was scheduled to open by regulation at noon on January 15. However, by early January, a significant portion of the fishing grounds were ice covered. The ADF&G and

industry had concerns about potential gear conflicts and gear loss due to sea ice and vessel interactions because of the limited fishing area. ADF&G was also concerned with the handling effects and the potential for increased handling mortality and limb loss of captured crabs in a derby-style fishery under extreme weather conditions. ADF&G received input from representatives of the crab industry and the majority indicated a desire to delay the season. The USCG was also in favor of delaying the season due to vessel safety concerns during severe vessel icing conditions. On January 7, ADF&G announced by news release that the fishery would be delayed and would not open prior to April 1, and that two weeks advance notice would be provided to industry prior to an opening. On March 7, ADF&G issued a news release defining criteria that would be used to open the fishery. These criteria, developed with input from industry, specified that at least 50% of the fishing grounds had to be ice free at the time of the opening, and that the ice edge at 167° W long. could be no further south than 58° N lat. On March 15, ADF&G issued a news release indicating opening criteria had been met and that the fishery would open at noon on April 1.

The 2000 general fishery opened at noon on April 1 and closed at noon on April 8 (Table 2-26). A total of 229 vessels, including nine catcher-processors, registered and received tank inspections in Akutan, Dutch Harbor, King Cove, and Saint Paul Island. In addition, five floating processors registered to purchase and process crabs on the grounds during the fishery. In 1999, 241 vessels, including 10 catcher-processors, participated along with 11 floating processors.

Due to the relatively small GHL, management of the 2000 fishery was based on daily inseason reports from fishers. A total of 75 vessel operators or 33% of the fleet reported numbers of pots fished and number of crabs retained daily. Reports were received via marine telex and over single side band radio every 24 hours and were used to generate inseason estimates of harvest.

Catch projections indicated that the daily harvest ranged from less than 0.2 million pounds on the first day of the fishery to over 8.0 million pounds on the final day of the season. The projected harvest based on inseason reports, was estimated to be 31.3 million pounds. The actual harvest of 30.8 million pounds exceeded the 26.4 million pound general fishery GHL by 17%.

Daily CPUE ranged from 31 retained crabs per pot lift on the first reporting day to 149 retained crabs on the day prior to the closure. Projected CPUE based on inseason reports was 129. The actual CPUE for the 2000 fishery, based on postseason fish ticket data, was 137. Overall fishery CPUE for the 1999 fishery was 158 retained crabs per pot.

Based on inseason reports, fishers made a total of 170,064 pot pulls throughout the course of the seven-day 2000 fishery. The average number of pot pulls per day was 24,700 and ranged from 2,241 on the first day of the fishery to 43,905 on the day of the closure. In comparison, the 1999 fishery lasted 66 days and the average number of pots pulled per day was 13,621.

Harvest from the Eastern Subdistrict was 20.9 million pounds from 217 landings, or 68% of the total harvest. In recent years the majority of the harvest had occurred in the Eastern Subdistrict. Total harvest from the Western Subdistrict was 9.8 million pounds from 91 landings. The majority of the Eastern Subdistrict harvest came from six statistical areas surrounding the Pribilof Islands. The majority of the harvest in the Western Subdistrict came from four statistical areas along the 100 fathom depth contour, between 173° and 174° W long. In both subdistricts the majority of the harvest came from areas which have, in recent years, contributed the majority of the harvest.

Analysis of observer and dockside sampling data indicated an average weight of 1.3 pounds for crabs landed during the 2000 fishery. New-shell crabs made up 95.2% of the harvest. In 1999, new-shell crabs made up 97.7% of the harvest and the overall average weight was 1.3 pounds. Crabs less than 102 mm CW made up 8.3 percent of the 2000 harvest. This compares to 23.3, 21.1, 9.7, and 13.7% of crabs less than 102 mm CW harvested during the 1996, 1997, 1998, and 1999 seasons, respectively.

The exvessel price for snow crabs harvested in the 2000 fishery was two-tiered due to concerns for higher than normal old-shell crabs expected in the catch. Fishers were offered \$1.85 per pound for new-shell crabs and \$1.00 per pound for old-shell crabs. Fishers reported encountering high percentages of old-shell crabs in the first two days of the fishery, but thereafter located areas, which contained predominantly new-shell animals. As a result, less than 10% of crabs landed were old-shell animals. Based on an average exvessel price of \$1.81 per pound, the 2000 snow crab fishery was worth \$55.1 million. This compares to an exvessel price of \$0.88 per pound and an overall fishery value in excess of \$161 million in 1999.

Analysis of the 2000 National Marine Fisheries Service summer trawl survey of the Eastern Bering Sea indicated a 19% decrease in the abundance of large (≥ 102 mm CW) male crabs from the 1999 survey. However, small (< 102 mm CW) male and large (≥ 50 mm CW) female abundance increased 100% and 212%, respectively. Due to the large increase in both small male and large female abundance, the spawning biomass, estimated at 472.7 million pounds, was slightly above the minimum stock size threshold of 460.8 million pounds.

In the spring of 2000, the BOF adopted a harvest strategy specifying a stepped harvest rate on mature male crabs that is dependant on estimated spawning biomass and that would rebuild the stock. The rebuilding plan specifies an exploitation rate of 16.875% of the mature male biomass when the spawning biomass is between 460.8 and 921.6 million pounds, resulting in a GHL for the 2001 season of 27.3 million pounds with 25.3 available to the general fishery and 2.0 million pounds allocated to the CDQ fishery.

The 2001 Bering Sea snow crab general fishery opened by regulation at noon on January 15 and closed by emergency order at 11:59 PM on February 14. The fleet harvested 23,382,046 pounds, or 92% of the GHL. A total of 207 vessels, including 7 catcher-processors participated in the 2001 fishery. Because of lengthy price negotiations, most catcher vessels did not begin fishing until 4:00 PM on February 3. As a result, harvest for the first 18 days of the season, 2.2 million pounds, was taken almost entirely by catcher-processor vessels. Catch projections based on inseason reports indicate that daily harvest ranged from less than 60,000 pounds reported on January 17 to over 2.7 million pounds reported on February 12 and February 14. The closure announcement, made over single side band radio and distributed by email and fax, was released to the public at 6:30 PM on February 12, providing the fleet with 54 hours advance notice of the closure. Based on the inseason reports through February 12, it appeared that the 25.3 million pound GHL would be reached by the closure, however, fleet efficiency was reduced by poor weather that developed after the closure announcement was made. Catch projections based on reports received after the fishery closure indicated that the total harvest would fall short of the GHL at approximately 23.0 million pounds.

The average exvessel price per pound in 2001 was \$1.53, resulting in a total fishery value of \$32.1 million, a significant decrease from the 2000 fishery value of \$55.1 million.

Weather conditions in the Bering Sea throughout the 2001 fishery were very unfavorable. Several storms, some generating hurricane force winds, combined with large tides to produce extremely dangerous sea conditions. Several vessels lost wheelhouse windows and experienced other structural damaged caused by large waves. No vessels or lives were lost during the 2001 fishery. Sea ice was not a major concern in 2001, and the main ice pack remained north of Saint Matthew Island throughout the fishery.

The 2001 NMFS trawl survey of the Eastern Bering Sea indicated a 2% increase in the abundance of large male crabs when compared to the 2000 survey. Pre-recruit male and large female abundance increased 114% and 3%, respectively. The total mature biomass of snow crab in the Bering Sea was estimated to be 571.0 million pounds which is above the minimum stock size threshold of 460.8 million pounds.

Given the estimated total mature biomass of 571.0 million pounds and current harvest strategy requirements, the GHL was set using a 16.875% exploitation rate. The calculated GHL of 51.0 million pounds constituted a harvest greater than 50% of the estimated exploitable legal male abundance and thus, according to harvest strategy requirements was adjusted down to not exceed 50% of the exploitable legal male abundance. The resultant 2002 Bering Sea snow crab GHL was 30.8 million pounds with 28.5 million pounds available to the general fishery. The remaining 2.31 million pounds were allocated to the CDQ fishery. Approximately 61% of the four inch and greater carapace width males encountered during the 2001 survey had old shells.

The 2002 Bering Sea snow crab general fishery opened by regulation at NOON on January 15 and closed by emergency order at NOON on February 8. Total harvest was 30,252,501 pounds, exceeding the general fishery GHL of 28.5 million pounds by 1.8 million pounds (6.4%).

A total of 191 vessels, including eight catcher-processors, participated in the 2002 fishery. Three floating processors also registered and purchased crabs on the grounds during and after the fishery. A total of five shore-based processors in Dutch Harbor, two in Saint Paul, one in King Cove and two in Kodiak also purchased and processed snow crabs. In addition, two catcher-processor vessels purchased snow crabs from catcher vessels after the fishery. The fleet registered 33,028 pots for the 2002 fishery and purchased 37,807 buoy tags.

The fleet spent January 15 and 16 deploying gear and less than 1.0 million pounds total were taken on those days. By January 18, the fleet had harvested 2.1 million pounds and was pulling approximately 15,000 pots per day for a CPUE of 71 crabs per pot lift and a daily harvest rate of 1.3 million pounds. Daily harvest and CPUE peaked on January 19 when the fleet harvested 2.0 million pounds with a CPUE of 101 crabs per pot lift. CPUE and harvest declined steadily for the remainder of the fishery. By early February fleet size had diminished to less than 180 vessels and less than 30,000 pots were being fished. Vessels left the snow crab fishery prior to the closure to participate in other fisheries. Reports received through 6:00 AM February 7 indicated that in the prior 24 hours, the fleet harvested 1.1 million pounds and pulled approximately 15,600 pots for a CPUE of 57 crabs per pot lift and a cumulative harvest of nearly 26.0 million pounds. Given this catch rate, the

department issued a news release at noon on February 6 announcing that the 2002 Bering Sea snow crab fishery would close at noon on February 8. Based on inseason catch reports received from approximately 34% of the fleet, the total harvest for the 2002 snow crab fishery was 28.1 million pounds and the fleet pulled approximately 320,000 pots for a CPUE of 68 crabs per pot lift. Actual CPUE for the 2002 fishery based on fish ticket data was 76 crabs per pot lift.

Unlike the 2001 fishery, in 2002 the Bering Sea snow crab fleet voted to accept a price offer prior to the beginning of vessel registration on January 13. The fleet voted to accept \$1.40 per pound for new-shell crabs that were four inch and greater carapace width. As the fishery progressed, some fishers experienced difficulty in finding grounds containing a high percentage of new-shell crabs. Approximately 31% of landed crabs had old shells. As a result, processors offered a second price of \$0.90 to \$1.00 per pound for old-shell crabs that were four inch and greater carapace width. Given this price structure, the 2002 Bering Sea snow crab fishery had an estimated exvessel value of \$44 million.

In addition to old-shell crabs that were delivered, onboard observers and fishers reported that up to 30% of legal crabs caught were being discarded at sea due to shell condition. During the 2001 fishery, approximately 20% of the legal snow crabs that were caught were not retained and 4.8% of snow crabs landed had old shells.

Due to the protracted length of the 2002 fishery, most vessels made one or two landings prior to the closure of the fishery. By the fishery closure, approximately 66% of the harvest had already been processed, thus post season processing delays experienced in 2001 were reduced. Processing was completed by February 17. Two processors operating under sideboards of the AFA were constrained by their processing caps; none were constrained in 2001.

Weather conditions in the Bering Sea during the 2002 fishery did not significantly hamper the fleet, however heavy freezing spray slowed production in late January and early February. Like the 2001 fishery, no vessels or lives were lost in 2002. Unlike the 2001 fishery, sea ice was a significant factor throughout the season. Sea ice forced most of the fleet to remain below 59° N lat. and thus a significant portion of the stock could not be fished. In addition, sea ice forced fishers to move gear more frequently. Post season, sea ice covered some gear stored north of 56° 30' N lat.

2003 Fishery

The 2003 Bering Sea snow crab general fishery opened by regulation at noon on January 15 and closed by emergency order at 6:00 AM on January 25. Fish ticket data indicate a harvest of 26.34 million pounds, exceeding the general fishery GHL of 23.69 million pounds by 2.65 million pounds (11.2%).

Analysis of the 2002 NMFS trawl survey data indicated a 2% decrease in the abundance of male crabs when compared to the 2001 survey. Small male and large female abundance decreased 12% and 67%, respectively. The total mature biomass of snow crab in the Bering Sea is estimated to be 313.0 million pounds which is below the minimum stock size threshold of 460.8 million pounds and is a decrease from the 2001 TMB estimate of 571.0 million pounds.

Given the estimated total mature biomass of 313.0 million pounds and the recently adapted harvest strategy requirements, the GHL was set using an 11.5% exploitation rate. The resultant 2003 Bering Sea snow crab GHL was 25.6 million pounds with 23.7 million pounds available to the general fishery. The remaining 1.9 million pounds were allocated to the CDQ fishery. Approximately 35% of males 102 mm and greater CW encountered during the 2002 survey had old or very old shells.

Preseason vessel registration was required by 5:00 PM on December 24, 2002. A total of 193 vessels filed preseason registrations. Four additional vessels filed for late registration and were permitted to enter the fishery, however only two of the four late registrants actually participated. Observer coverage was assigned based on the number of catcher vessels that filed preseason registrations. Eighteen catcher vessels carried observers during the 2003 Bering Sea snow crab fishery.

Based on the snow crab GHL, pot limits were set at 100 pots for vessels less than or equal to 125 feet in overall length and 120 pots for vessels greater than 125 feet in overall length. A total of 20,452 buoy tags were purchased by 192 vessel operators for the 2003 Bering Sea snow crab fishery. The fleet purchased 37,807 buoy tags for the 2002 fishery. The 2003 snow crab fishery is the first in which pot limits were lower than 200 pots for vessels less than or equal to 125 feet in overall length and 250 pots for vessels greater than 125 feet in overall length.

The quick registration process began January 9 with preseason tank inspections in Dutch Harbor, Akutan, King Cove, and False Pass. Preseason tank inspections are not provided in Saint Paul, however, tank inspections are conducted in Saint Paul 24 hours prior to the fishery opening. In the four other tank inspection locations, the fleet was registered on January 13. The tank inspection process was also used to enlist vessel operators in the inseason catch reporting program. Over 50% of the fleet volunteered to report effort and catch data daily during the fishery.

During the week preceding vessel registration, department staff consulted with USCG search and rescue personnel and NWS forecasters regarding a potential weather-related delay in season opening. NWS staff did not forecast storm force winds in the operational area of vessels that would be travelling to the snow crab fishing grounds from Dutch Harbor, Akutan, King Cove, Saint Paul or False Pass, nor were storm force winds forecast for the time period January 15-17. USCG personnel did not foresee that current or forecast weather conditions would hamper a search and rescue mission immediately before or during the first 48 hours of the fishery, thus the season was not delayed.

A total of 192 vessels, including five catcher-processors participated in the 2003 fishery. Three floating processors also registered and purchased crabs on the grounds during and after the fishery. A total of six shore-based processors in Dutch Harbor, two in Saint Paul, one in King Cove, and one in Kodiak also purchased and processed snow crabs. In addition, two catcher processor vessels purchased snow crabs from catcher vessels after the fishery.

The fleet spent January 15 and the early portion of the 16th deploying gear and less than 0.2 million pounds total were taken on those days. By 6:00 AM January 17, the fleet had harvested 2.3 million pounds and was pulling approximately 15,000 pots per day for a CPUE of 114 crabs per pot lift and a daily harvest rate of 2.1 million pounds. Daily harvest peaked on January 23 when the fleet

harvested 3.1 million pounds with a CPUE of 153 crabs per pot lift. CPUE peaked on January 20 at 158 crabs per pot (Table 2-27).

Reports received through 6:00 AM January 23 indicated that in the prior 24 hours, the fleet harvested 2.8 million pounds and pulled approximately 15,100 pots for a CPUE of 151 crabs per pot lift and a cumulative harvest of nearly 18.8 million pounds. Given this catch rate, the department issued a news release at 2:00 PM on January 23 announcing that the 2003 Bering Sea snow crab fishery would close at 6:00 AM January 25. Based on inseason catch reports received from approximately 40% of the fleet, the estimated total harvest for the 2003 snow crab fishery was 24.9 million pounds with an estimated effort of 143,718 pot lifts for a CPUE of 142 crabs per pot lift. In 2002, the fleet harvested 30.3 million pounds and pulled approximately 308,000 pots for a CPUE of 76 crabs per pot lift. Actual CPUE for the 2003 fishery based on fish ticket data is 155 crabs per pot lift from a total of 139,903 pot lifts.

Higher than expected CPUE and on the grounds reports of increased recruitment to the snow crab stock prompted the Pacific Northwest Crab Industry Advisory Committee (PNCIAC) to file a formal request for an inseason adjustment to the GHL. Such inseason adjustments are permitted if FMP criteria are met. Since GHLS are set using the regulatory harvest strategy and annual biomass estimates, an increase in GHL would have required a revision to one or both. The Bering Sea snow crab stock was declared overfished in 1999 and is currently being managed under a rebuilding plan. ADF&G determined that the PNCIAC request for a GHL increase would not be consistent with the goal of rebuilding the stock and the request was denied.

Weather conditions in the Bering Sea during the 2003 fishery did not significantly hamper the fleet and sea ice location allowed the fleet to operate farther north and west of areas that have been recently fished. Like the prior two snow crab fisheries, no vessels or lives were lost in 2003. Despite the lack of sea ice on the grounds, the 2003 Bering Sea snow crab harvest did not occur over a broad geographic area. Nearly one half of the 2003 harvest occurred in four ADF&G statistical areas, three of which are contiguous (Table 2-28).

The preliminary estimated average weight of crabs landed during the 2003 fishery was 1.2 pounds, a slight decrease from the 2002 average weight of 1.3 pounds. Preliminary data does not indicate a significant difference in average weight between crabs harvested in the Eastern and Western Subdistricts (Table 2-29). In 2003, relatively little of the snow crab harvest occurred in the Eastern Subdistrict, a sharp contrast to the fisheries of the 1990s when the majority of the harvest occurred east of 173° W long. During 2003, approximately 4.0 million pounds (15%) of snow crabs were harvested east of 173° W long.

As in 2002, representatives of the snow crab fleet voted to accept a price offer from processors prior to the start of tank inspections. The fleet voted to accept \$1.85 per pound for new-shell crabs that were four inch and greater CW, a substantial increase from the 2002 price of \$1.40 per pound. In contrast to 2002, the fleet did not encounter large numbers of old or very old shell crabs on the grounds (Table 2-30) resulting in an average exvessel price of \$1.83 per pound and a total exvessel value of nearly \$47 million, an increase from the 2002 exvessel value of \$44 million (Table 2-31).

ADF&G personnel or observers contacted approximately 85% of snow crab vessel operators for data collection interviews. Biological data were collected from the majority of these deliveries. The ABWE stationed personnel in all ports where snow crabs were landed. Neither ABWE nor ADF&G personnel encountered any illegally harvested Tanner crabs in the snow crab catch. The fishery was not free from enforcement activities, however. The USCG located six vessels that had crossed the US-Russia Maritime Boundary into Russian waters and were ordered to port. NMFS agents seized 181,457 pounds of snow crab from five vessels that were fishing in Russian waters. The sixth vessel that was ordered to port did not have any illegally taken crab onboard.

Stock Status

The Bering Sea snow crab stock fell below the minimum stock size threshold and was declared overfished in 1999. Since 1999, snow crab abundance in the Bering Sea has fluctuated. Both the 2000 and 2001 NMFS surveys estimated the total snow crab population to be in excess of 3.0 billion crabs. The 2002 estimate was substantially lower at approximately 1.5 billion crabs. The 2003 total crab abundance increased from the 2002 level to 2.6 billion crabs. In 2003, large male snow crab abundance was estimated to be 65.2 million crabs, a 16% decrease from the 2002 level. In addition, prerecruit males decreased 34% in abundance to 166.5 million crabs, however large female abundance increased 20% to 614.0 million crabs (Rugolo et al. 2003).

Approximately 46% of the large male abundance was found in the Eastern Subdistrict compared to 60% in 2002, 46% in 2000 and 2001, and 70% in 1999. Thirty percent of large males were classified as having old shells, compared to 35% in 2002 and 63% in 2001.

Small male and female abundance increased significantly from the 2002 level and large female abundance increased by 20%. While the presence of these 40-50 mm CW crabs is encouraging, similar signs of recruitment to the stock in 2000 and 2001 disappeared from the survey before reaching maturity.

Federal FMP and state harvest strategy requirements use the total mature snow crab biomass (TMB) to evaluate the stock. TMB is defined as the biomass of all the mature male and female snow crabs. In 2001, the TMB of snow crabs in the Bering Sea was estimated to be 571 million pounds, a 21% increase over the 2000 level of 473 million pounds, but well below the Federal FMP defined rebuilt level of 921.6 million pounds. In 2003, TMB decreased to 306.2 million pounds compared to 313 million pounds in 2002. TMB must remain above 230.4 million pounds in order for a fishery to occur.

Relative to FMP criteria, the Bering Sea snow crab stock remains below the rebuilt level. The recruitment observed in 2000 and 2001 does not appear to have contributed significantly to stock rebuilding, however it helped sustain small commercial harvests that otherwise may not have been possible. It is difficult to predict if TMB will be adequate to meet the harvest strategy threshold for opening the 2005 fishery, or if the minimum GHL threshold will be met.

BERING SEA GROOVED TANNER CRAB

Historic Background

In 1988, BOF established a special permit season for deepwater Tanner crabs. However, no commercial harvest of grooved Tanner crabs from the Bering Sea occurred until 1992. In 1993, ADF&G restricted the harvest to male crabs with a CW of 127 mm (5 inches) or greater. Six vessels harvested just less than 660,000 pounds. The following year, differential pot limits, based on vessel size, were applied to vessels fishing for deepwater Tanner crabs in the Bering Sea. Effort and landings consequently decreased as four vessels harvested slightly over 300,000 pounds (Table 2-32).

At the March 1995 meeting, BOF determined that pot limits should not apply to the deepwater permit fisheries of the Westward Region. Effort increased significantly that year when eight vessels harvested over one million pounds with a fishery value exceeding \$1.3 million. Since 1995, the number of vessels registered for Bering Sea District grooved Tanner crabs has not exceeded three vessels for any year. Catch per unit effort was highest in 1994 at 11 legal crabs per pot lift and declined to three in 1996. Harvests decreased from over 1,000,000 pounds in 1995 to 107,000 pounds in 1996. No vessels registered to fish grooved Tanner crabs in the Bering Sea District from 1997 to 1999, while only one vessel registered each year in 2000 and 2001. Historically, fishing effort has been concentrated in a few statistical areas immediately south of Saint George Island.

In 1997, ADF&G set GHLS for grooved Tanner crabs that were based on prior harvest information. In the past, the Bering Sea, Alaska Peninsula, and Eastern Aleutian Districts supported the largest catches of grooved Tanner crabs. A GHLS of 200,000 pounds was established for each of these districts. A GHLS of 100,000 pounds was established in the Kodiak and Western Aleutian Districts to allow for exploratory fishing. Additionally, due to concerns about handling mortality on undersized and female deepwater crabs caught and released, ADF&G began to require a minimum of two escape rings per pot with a minimum inside ring diameter of 4.5 inches.

Given fishery performance and declining harvests of the mid-1990s, the department reevaluated deepwater Tanner crab harvest levels in 1999. A GHLS range of 50,000 to 200,000 pounds was established for the Bering Sea District. The GHLS was set as a range to provide greater flexibility for inseason management and to better inform the public of the department's management goals for the fishery. The fishery is managed so that the upper end of the GHLS range is reached only when catch rates similar to or greater than those documented prior to the harvest declines of the mid 1990s are observed. In addition to new GHLS requirements, the department specified that four 4.5" escape rings be placed on the lower third of each pot and required that pots be fished over multiple depth strata. Since 1994, observers have been required on each vessel registered for the fishery and will collect biological and fishery data.

2003 Fishery

A single vessel registered for the directed Bering Sea grooved Tanner crab fishery in 2003. Two additional vessels registered to retain grooved Tanner crab incidentally taken during the Pribilof District golden king crab fishery, but did not harvest any grooved Tanner crab. A fourth vessel illegally retained a small amount of grooved Tanner crab taken incidentally in the Pribilof District golden king crab fishery. The Bering Sea District grooved Tanner crab harvest in 2003 was confidential due to limited participation.

Stock Status

The grooved Tanner crab population in the Bering Sea District is not surveyed; subsequently, no estimates of population abundance are available for this stock. Fishery data is the primary source of information regarding abundance and stock status. Based on this information, the population appears to have been heavily exploited, at least in the area historically fished.

BERING SEA TRIANGLE TANNER CRAB

Historic Background

Historically, triangle Tanner crabs *Chionoecetes angulatus* were taken as incidental harvest in the grooved Tanner crab fishery. Vessel operators have verbally reported retention of triangle Tanner crabs before 1994. To obtain biological information on grooved Tanner crabs, ADF&G implemented 100% onboard observer coverage in 1994. That year, onboard observers documented a single incidence of triangle Tanner crab bycatch, but prior to 1995, this species had not been commercially harvested. In 1995, four vessels registered to retain triangle Tanner crabs, and harvested over 49,000 pounds for a total fishery value of \$50,000. In 1996, 2000, and 2001, only one vessel delivered triangle Tanner crabs as incidental harvest each year. No vessels registered to fish triangle Tanner crabs in the Bering Sea District in 1997, 1998, 1999, or 2002 (Table 2-33).

Due to the lack of stock abundance data for this species additional fishing for triangle Tanner crabs in the Bering Sea District will be limited to incidental harvest during the grooved Tanner crab fishery. Vessels registered to fish for grooved Tanner crabs will be permitted to harvest triangle Tanner crabs at up to 50% of the weight of the target species as incidental harvest. This harvest level is consistent with the historic catches and allows for limited retention of this deepwater species that is believed to experience significant handling mortality when caught and released.

2003 Fishery

There was no directed fishing for triangle Tanner crabs in the Bering Sea District in 2003 and incidental harvest during the Bering Sea District grooved Tanner crab fishery is confidential.

Stock Status

Surveys of population abundance are not conducted for triangle Tanner crabs in the Bering Sea; thus the status of this stock is unknown. There are currently no plans to survey this population.

MISCELLANEOUS SHELLFISH SPECIES BERING SEA

Description of Area

The Bering Sea portion of Registration Area J, as described herein for miscellaneous shellfish, includes all Bering Sea waters of both the Territorial Sea (0-3 nautical miles from shore) and the Exclusive Economic Zone (3-200 miles from shore) north of the latitude of Cape Sarichef at 54° 36' N lat. and east of the United States-Russia Maritime Boundary Line of 1991 (Figure 2-12).

Introduction

Miscellaneous shellfish species include hair crabs *Erimacrus isenbeckii*, green sea urchins *Strongylocentrotus droebachiensis*, red sea cucumbers *Parastichopus californicus*, snails *Neptunea* and *Buccinum*, octopus *Octopus dofleini*, and cherry crabs *Paralomis multispina*, a deepwater crab closely related to king crabs. These species have been harvested in relatively small amounts when compared to the commercial king and Tanner crab fisheries in the Bering Sea. Prior to 1999, it was ADF&G policy to allow commercial fishing for miscellaneous shellfish species under authority of a commissioner's permit described in 5 AAC 38.062. PERMITS FOR OCTOPI, SQUID, HAIR CRAB, SEA URCHINS, SEA CUCUMBERS, SEA SNAILS, CORAL, AND OTHER MARINE INVERTEBRATES. Typically, permit conditions were general and not fully developed on an individual species basis. Fisheries for miscellaneous shellfish species occurred without prior knowledge of stock abundance or distribution and no harvest limits were established. To better regulate these types of fisheries, ADF&G and BOF have developed a draft policy on the implementation of new and developing fisheries. Prior to the formal adoption of this policy, ADF&G will only register vessels for those fisheries with an established GHL, or when sufficient data is available to develop a conservative GHL.

Those species of current or historic interest in the Bering Sea include cherry, hair and Dungeness crabs *Cancer magister*, octopus, and snails. North Peninsula District shrimp do not fall under the miscellaneous species category, but are included in this report due to low or infrequent annual

harvests. The fishery for shrimp in the Bering Sea District is described in the Aleutian Islands section of this report.

Bering Sea Hair Crabs

Description of Area

The Bering Sea hair crab fishery is prosecuted in an area that includes all waters north of 54° 36' N lat., south of 60° N lat., east of the United States-Russia Maritime Boundary Line of 1991, and west of 168° W long. (Figure 2-13). There is no formal hair crab registration area established in regulation; rather, the fishing area is set using the terms of a commissioner's permit.

Historic Background

The fishery for hair crabs in the Bering Sea was pioneered by the Japanese fleet during the 1960s and first commercially exploited by the U. S. fleet in 1979. In its early years, the domestic hair crab season was opened by emergency order concurrent with the Bering Sea Tanner crab fishery. In 1980, the BOF established a yearlong season within a three-mile area of the Pribilof Islands. In 1984, under conditions of a commissioner's permit issued by ADF&G, the year-round hair crab fishery was expanded in the Bering Sea District. Between 1979 and 1992, however, the majority of hair crabs landed was reported as incidental catch in the Bering Sea Tanner crab fisheries.

Beginning in the fall of 1993, under the terms of the Commissioner's Permit, all vessels fishing for hair crabs were required to carry an observer during all fishing activities (ADF&G 1996). In 1994, hair crab pots were defined by BOF as pots with a rigid tunnel opening in the top of the pot, with a tunnel perimeter not to exceed 26 inches and a base that does not exceed 48 inches in any one direction. Legal retention of hair crabs is permitted only from hair crab pots.

In 1996, due to a steady increase in the number of vessels participating in this fishery, the Alaska Legislature authorized the Commercial Fisheries Entry Commission (CFEC) to regulate vessel licenses in the Bering Sea hair crab fishery. Vessel qualification was based on participation in at least one of the qualifying years from 1992 to 1995. Licenses were issued to 23 vessels for those waters beyond five nautical miles of Saint George and Saint Paul Islands. Also included in this legislation were provisions which allow any vessel 58 feet and under to fish within five nautical miles of Saint George and Saint Paul Islands. In addition, it was the intent of the Legislature, expressed in the moratorium, that BOF maintain 100% observer coverage on all vessels participating in the Bering Sea hair crab fishery. However, ADF&G exempted vessels under 44 feet in length from mandatory observer coverage because of observer safety considerations (ADF&G 1998).

Observers provide catch and effort reports that are expanded into harvest estimates. Their data, along with information collected from vessel operators and processors, allow ADF&G to manage the Bering Sea hair crab fishery in season. Catch reports from processors are used to verify estimates generated from observer data. Reports from fishers provide information regarding distribution of crabs, gear conflicts, weather, and other fishing conditions.

Participation and harvest in the Bering Sea hair crab fishery has varied greatly over the history of the U. S. fishery. Effort and harvest reached a peak of 67 vessels and 2.4 million pounds in 1980 when the fishery was prosecuted as an incidental harvest fishery during the Tanner crab season (Table 2-34 and Figure 2-14). Between 1985 and 1990, effort was minimal due to low stock abundance. Since the 1996 moratorium, effort has remained at 19 or fewer vessels and in 2000 only three vessels made landings. In the 1990s, harvest reached a peak of 2.3 million pounds in the 1993/94 season. Total fishery value peaked in 1995 at \$5.7 million (Table 2-35). Since 1995, both effort and GHL have been declining. During the 2000 season, only 1,500 pounds of hair crabs were harvested, for a total fishery value of \$5,000.

Since the establishment of the year-round permit fishery in the Bering Sea in 1984, average weight and CPUE have also fluctuated significantly. The highest CPUE of 10 crabs per pot was recorded in 1991, while CPUE dropped to less than one crab per pot during the spring 1993 and 2000 seasons. Average weight of retained hair crabs was highest during the early years of the U.S. fishery at 2.1 pounds, but decreased to 0.9 pound in 1991. In the late 1990s, the average weight of retained hair crabs has remained around 1.6 pounds (Table 2-34).

Beginning in 1993, the hair crab fishing season opening date was set at November 1, which conflicted with the Bristol Bay red king crab fishery. In 1998, ADF&G solicited comments from industry regarding a new opening date. A consensus was reached that the fishery would open 10 days after the closure of the Pribilof District or Saint Matthew Island Section king crab fisheries, whichever closed later. The fishery opened on October 8 in 1998. In 1999, BOF changed the Bristol Bay red king crab season opening to October 15; thus the hair crab fishery was again in conflict. Consensus was reached with industry to conduct the fishery 10 days after the closure of the Bristol Bay red king crab fishery. Subsequently, in 1999 and 2000, the hair crab season opened on October 30.

The GHL for Bering Sea hair crabs is established using results of the NMFS Bering Sea trawl survey. Since there are no registration areas, districts, or sections established in regulation for hair crabs, survey results are described in terms of Bering Sea king crab registration areas, districts and sections (Figure 2-4). Because confidence in the results of this survey is relatively low, a 20% fishery exploitation rate has been used to determine the GHL. Male hair crabs ≥ 83 mm in CW are defined as legal crabs in the commissioner's permit for this fishery.

Typically, the majority of legal-sized male hair crabs encountered during the trawl survey have been found in the vicinity of the Pribilof Islands and the fishery harvest has occurred primarily in the area east of Saint Paul Island. During the 1999 survey, however, 65% of the large male hair crab population in the Bering Sea was found in the Northern District instead of the traditional Pribilof District. Subsequently, in 2000, the Pribilof District was closed to commercial hair crab fishing due to low stock abundance, and for the first time, a directed hair crab fishery was opened in the Northern District of king crab Registration Area Q. Given the experimental nature of the fishery, the low abundance of small male crabs found during the 2000 survey, the relative size of the stock, and lack of fishery data from the Northern District, the harvest rate was set conservatively at 10% of the estimated large male hair crab abundance. As a result of low stock abundance, the Bering Sea was closed to hair crab fishing in 2001 and 2002.

In 2003, CFEC instituted a vessel-based limited entry program for the Bering Sea hair crab fishery and issued hair crab permits to qualified vessel owners. Impact of the limited entry program on fishery management is currently unknown, but the program should lead to a more easily managed fishery if stock conditions allow a reopening. It is estimated that approximately 20 permanent licenses will be issued for the fishery.

2003 Fishery

The 2003 Bering Sea hair crab fishery was closed in both the Northern and Pribilof Districts due to low stock abundance.

Stock Status

The abundance index for large male hair crabs declined from 1981 to 1992, increased from 1992 to 1995, and decreased again from 1995 to 1999. The 2003 NMFS trawl survey of the eastern Bering Sea indicated that the abundance of large male hair crabs decreased 52% from the 2002 level to 1.0 million crabs and that the abundance estimate for large females decreased 65% from the 2002 level to 0.2 million crabs (Rugolo et al. 2003). Population trends observed during the last seven years and weak performance of recent commercial fisheries indicate that the Bering Sea hair crab population is severely depressed. Precise estimates of total female and small male hair crab abundance have never been available from current trawl survey data. In general, the biology and habitat usage of hair crabs makes them difficult to survey with trawl gear. Large male abundance is thought to be better estimated because recruitment trends can be followed in the survey results and fishery harvests.

Bering Sea Octopus

The last directed fishery for octopus in the Bering Sea occurred in 1995, with areas fished covering both Aleutian Islands and Bering Sea waters. Less than three vessels made landings; therefore, the harvest information is confidential. Since 1995, all reported harvests in the Bering Sea have been incidental to other fisheries. Any vessel registered for groundfish in the Westward Region using a miscellaneous finfish permit may retain incidentally caught octopus at up to 20% of the weight of the target species.

In 2003, 112 vessels registered for octopus incidental harvest in the Bering Sea/Aleutian Islands area. Seventy eight of these vessels made 237 landings with 94,642 pounds of octopus landed. Another 27,961 pounds were discarded at sea (Table 2-36). The majority of the octopi caught in the Bering Sea are retained for use as bait in other fisheries. In 2003, 93% of the octopus harvest was taken with pot gear, 5% with non-pelagic trawl gear, and the remainder with longline gear and mid-water trawl gear.

The incidental harvest of octopi in Bering Sea groundfish fisheries more than doubled from 2002 to 2003. Verbal reports from fishers and processors indicate that market interest in octopuses has increased and that some fishers are operating to increase their incidental harvest of octopuses while remaining below the maximum retainable amount. The department intends to closely

monitor effort in the octopus fishery as well as the spatial and temporal distribution of the incidental harvest.

Cherry Crabs

Fishing for cherry crabs is managed under the terms of a commissioner's permit. Although one vessel was registered to fish for cherry crabs in 1995, no commercial harvest was reported. One vessel, for which landings are confidential, participated in the 1996 fishery. No vessels requested commissioner's permits to fish for cherry crabs in the Bering Sea District from 1997 through 2003. Given the lack of available data on this stock, the department will not issue permits allowing harvest of cherry crabs.

Sea Cucumbers and Sea Urchins

ADF&G annually issues a news release announcing the GHL for red sea cucumbers and green sea urchins in the Westward Region. The season in the Bering Sea Area opens October 1 under terms of a commissioner's permit with a GHL of 5,000 pounds of eviscerated red sea cucumbers and 5,000 pounds round weight for green sea urchins. The small GHLs were established to permit conservative commercial exploration of areas that lacked historic harvest data and to allow ADF&G to collect critical information for future management purposes (Ruccio and Jackson 2000). No commercial harvest of either species occurred in the Bering Sea District in 2001. In 2002, a separate guideline harvest range of 30,000 to 60,000 pounds was established for the waters around Saint George Island. This harvest level was based on abundance estimates obtained from dive survey data and marketing factors. One diver harvested green sea urchins in the Saint George Island area in 2002, therefore all harvest information is confidential.

In 2003, the GHL for the Bering Sea Area (excluding Saint George Island) was again set at 5,000 pounds each, for red sea cucumbers and green sea urchins. No divers registered to harvest green sea urchins or red sea cucumbers in 2003.

Snails

Historic Background

Commercial fishing for snails in the Bering Sea was initiated by the Japanese fleet in 1971 and continued until 1987, however little information is available from this early fishery. The Fishery Conservation and Management Act of 1976 required that foreign nations provide the United States with records concerning fisheries occurring inside the U.S. Exclusive Economic Zone (EEZ) and the Japanese began to provide fishing records following the passage of the act (MacIntosh 1979). NMFS recorded 14 vessels participating in 1971, five vessels in 1972, no vessels in 1973, and six vessels in 1974. No fishing occurred in 1975 and 1976. In 1977, records indicate that participation in the fishery increased to three vessels (MacIntosh 1980). In the 1980s all fishing was conducted by catcher-processor vessels. The majority of the retained catch

during this early fishery was composed of the Pribilof Neptune *Neptunea pribiloffensis*. Smaller components of the retained catch were composed of *Buccinum angulosum* and *B. scalariforme* (MacIntosh 1980). Exvessel value was \$242 thousand in 1977, increasing to \$1.3 million by 1979. Russian vessels began fishing for snails in the same area in 1989.

The Foreign Fisheries Observer Program assigned observers to Japanese catcher-processors in the years 1984-1987 and later to Russian vessels in 1989. The Russian venture only lasted one year with minimal return. Converted Tanner crab pots were used in the early foreign fishery. Pots were long-lined in depths from 100 to 150 fathoms. Data from the Foreign Fisheries Observer Program showed the Japanese vessels pulled an average of 2,779 pots per day with an average soak time of 50 hours while the Russian vessels averaged just 1,219 pot lifts per day with an average soak time of 80 hours.

The U.S. fishery began in 1992 when two vessels registered to fish for snails. One vessel harvested snails as incidental harvest in the Tanner crab fishery and the second participated in a directed fishery for snails after the June closure of the hair crab fishery. Fishing for snails was limited to waters of the Bering Sea District west of 168° W long. from 1994 to 1996. In 1997, snail fishing was limited to waters west of 164° W long.

Observer coverage was required as a condition of the commissioner's permit issued in 1993 under 5 AAC 39.210 (h) MANAGEMENT PLAN FOR HIGH IMPACT EMERGING FISHERIES. Minimal crab bycatch was observed in the area west of 168° W long. Bycatch of legal sized king crabs was less than one animal per pot. Female snow crabs had the highest incidence of bycatch at one animal per pot (Tracy 1995).

Observer coverage was not required again until 1997 when two vessel operators expressed interest in fishing east of 168° W longitude. Vessels were restricted to grounds west of 164° W long. and north of 54° 36' N latitude. These restrictions were conditions of the permit issued under 5 AAC 38.062 PERMITS FOR OCTOPI, SQUID, HAIR CRAB, SEA URCHINS, SEA CUCUMBERS, SEA SNAILS, CORAL, AND OTHER MARINE INVERTEBRATES. There was no bycatch of red or blue king crabs; however, bycatch of Tanner crabs was observed. An estimated 17,300 female and 2,100 sublegal male Tanner crabs, in addition to 57,600 sublegal snow crabs, were captured in the 192,000 pots pulled.

In the 1997 fishery, average CPUE was 16 snails per pot, equal to the CPUE from vessels fishing northwest of the Pribilof Islands in the 1996 fishery. The majority of the catch for the 1997 season was composed of the genera *Neptunea* and *Buccinum*. Catches increased from 313,000 pounds in 1993 to 3,570,000 pounds in 1996 and then declined to 932,000 pounds in 1997 (Table 2-37 and Figure 2-15). The value of the fishery increased from \$125 thousand in 1993 to over \$1.05 million in 1996 and then dropped to \$308 thousand in 1997 (Table 2-38). From 1998 to 2002, no snails were harvested from the Bering Sea.

2003 Fishery

No vessels registered to harvest snails from the Bering Sea in 2003.

Stock Status

The NMFS eastern Bering Sea trawl survey provides distribution and relative abundance information on Bering Sea snail populations. However, differential catchability of various species of snails makes accurate population estimates difficult.

NORTH PENINSULA DISTRICT

Description of Area

The North Peninsula District for shrimp management includes all Bering Sea waters of both the Territorial Sea (0-3 nautical miles from shore) and the Exclusive Economic Zone (3-200 miles from shore) east of the longitude of Cape Sarichef at 164° 55'30" W long. (Figure 2-16). The North Peninsula District for management of Dungeness crabs includes all waters of both the Territorial Sea (0-3 nautical miles from shore) and the Exclusive Economic Zone (3-200 miles from shore) north of the latitude of Cape Sarichef at 54° 36' N lat. (Figure 2-17).

Shrimp

No vessels have registered for the North Peninsula District pot or trawl shrimp fishery since 1994. Currently, shrimp fishing is not permitted in this district due to a lack of data concerning the shrimp stocks.

Dungeness Crabs

Fishing effort for the North Peninsula Dungeness crab fishery has been sporadic, with few vessels participating. Typically the fishery has occurred north of Unimak Island. In 1995, six vessels made 19 deliveries for a harvest of 134,407 pounds. Catch information from 1996 to 1998 is confidential, as less than three vessels participated in each of those years. The average annual harvest in the three-year period from 1996-1998 was approximately 48,000 pounds. No vessels registered to fish for Dungeness crabs in the North Peninsula District in 1999. One vessel, for which landings are confidential, participated in the 2000 fishery. No vessels registered to fish for Dungeness crabs in 2001. In 2002, three vessels registered to fish for Dungeness crabs and harvested less than 22,000 pounds (Table 2-39). No vessels registered to fish for Dungeness crabs in the North Peninsula District in 2003.

Stock Status

There is no population data available to determine the status of the North Peninsula Dungeness crab stock. This fishery is managed using size, sex, and season restrictions. Currently in this District only male Dungeness crabs with a shoulder width of 165 mm or larger may be taken between 12:00 noon May 1 through 12:00 noon October 18.

BERING SEA/ALEUTIAN ISLANDS COMMUNITY DEVELOPMENT QUOTA CRAB FISHERIES

Description of Area

The Bering Sea, for Community Development Quota (CDQ) fisheries, encompasses all waters of the Territorial Sea (0-3 nautical miles) and Exclusive Economic Zone (3-200 nautical miles from shore) north of Cape Sarichef (54° 36' N lat.), south of Cape Prince of Wales (65° 49' N lat.), and east of the U.S.-Russia Maritime Boundary Line, including the waters of Bristol Bay. For those CDQ fisheries managed by the ADF&G Westward Region, Cape Romanzof (61° 49' N lat.) is the northern boundary (Figure 2-18).

CDQ Program Background

The North Pacific Fishery Management Council (NPFMC) established the CDQ Program in 1992 for walleye pollock and was later expanded to sablefish and Pacific halibut. In 1995 the NPFMC included certain Bering Sea king and Tanner crab stocks in the CDQ Program. The BOF adopted regulations for the Bering Sea/Aleutian Islands king and Tanner crab CDQ fisheries in 1997, and fisheries started in 1998. The State of Alaska manages the CDQ Program and ADF&G manages the crab CDQ fisheries.

Sixty-five coastal Bering Sea communities are eligible for the CDQ Program. These communities are aligned into six CDQ organizations and are collectively referred to as CDQ groups. The groups are Aleutian Pribilof Island Community Development Association (APICDA), Bristol Bay Economic Development Corporation (BBEDC), Central Bering Sea Fishermen's Association (CBSFA), Coastal Villages Regional Fund (CVRF), Norton Sound Economic Development Corporation (NSEDC), and Yukon Delta Fisheries Development Association (YDFDA).

The CDQ groups are non-profit entities, which may have for-profit subsidiaries. Each group submits comprehensive plans on the intended use of the CDQ funds, which vary widely between groups. Most include fishing-related investments, scholarships, training, employment services, and other projects which are intended to benefit the communities and regions the CDQ groups represent. Some groups are buying equity in fishing vessels which will harvest crab in both CDQ and general fisheries.

The CDQ groups receive allocations for the following Bering Sea crab fisheries: Norton Sound red king crab *Paralithodes camtschaticus*, Bristol Bay red king crab, Pribilof red and blue king crab *Paralithodes platypus*, St. Matthew blue king crab, Bering Sea snow crab *Chionoecetes opilio*, and Bering Sea Tanner crab *Chionoecetes bairdi*. To be eligible as a CDQ crab fishery, the crab stock must have an established guideline harvest level (GHL), be managed under the Fishery Management Plan (FMP) for Bering Sea/Aleutian Islands king and Tanner crabs and have a reliable survey to estimate abundance. The CDQ allocation percentage is based on the total actual harvest each year. The annual CDQ allocations for crab were phased in over a three-

year period (3.5% of the total allowable fishery harvest for 1998, 5.0% for 1999, and reaching a maximum of 7.5% for 2000 and subsequent years). The individual CDQ group allocation varies in each fishery (Table 2-40). The value of the crab fisheries to the CDQ groups is estimated to be 20-30% of the exvessel fishery value. This report addresses all CDQ crab fisheries except the Norton Sound CDQ red king crab fishery.

Fishery History

The CDQ groups are required to submit fishery plans to the department prior to each CDQ crab fishery. Plans include names of participating vessels and operators, vessel information regarding safety and communications, intended processor and location, method of attaining but not exceeding the allocation, and if a cooperative effort, the method for apportioning the allocation.

All CDQ crab fishing seasons have been subsequent to the general fisheries season, and all CDQ vessels have also participated in the prior general fishery. Before vessels are allowed to register for the CDQ fishery, ADF&G must generate an accurate estimate of the general fishery harvest. Fishers are required to obtain buoy tags for all gear fished, and if required, an onboard observer. At the time of registration all gear on board the vessel must be tagged with CDQ buoy tags and all gear in the water must be tagged before being deployed in the fishery. Additionally, all gear must be in compliance with the closure requirements of the general fishery.

The allocation for 1998 was 3.5% of the total harvest of red king crab, blue king crab and snow crab. This was increased in 1999 to 5.0% of the total harvest, and again in 2000 to 7.5% of the total harvest of king and Tanner crab.

All six CDQ groups participated in the CDQ fisheries; however, not all groups participated in each fishery. All CDQ groups have participated in the snow crab fishery yearly. Five groups participated in the St. Matthew Island Section CDQ blue king crab fishery in 1998 and one group participated in the Pribilof red and blue king crab CDQ fishery, the only year a commercial fishery has occurred since the inception of the CDQ program for crab. Five groups participated in the Bristol Bay red king crab CDQ fishery from 1998 to 2000, and all six groups have participated since. No Tanner crab fishery has occurred due to low stock abundance.

Regulations pertaining to the CDQ fisheries authorize a harvest prior to the general fishery; however, the department did not allow a CDQ harvest before the general fishery during the first year. A full understanding of the impact of these new fisheries and adequate staff to handle the increased management burden was needed before allowing CDQ fisheries to occur prior to the general fisheries. The department's intent was to allow CDQ groups to harvest part of their allocation before the general fishery during the second and subsequent years of the program. This would have allowed CDQ groups to harvest part of their 1999 allocation of snow crab in the fall of 1998. The National Marine Fisheries Service (NMFS) determined that the CDQ regulatory language did not allow for a harvest of the allocation outside of the calendar year to which it was assigned. The intent of NMFS was not to impede ADF&G management of the CDQ crab fisheries. The federal CDQ regulations were revised, but not in time for any harvest of the 1999 allocation of snow crab to occur in the fall of 1998. The Alaska Board of Fisheries (BOF) agreed to address an

agenda change request at the March 1999 meeting to consider a proposal to prohibit any CDQ harvest prior to the general fishery. Representatives of processors and non-CDQ fishers contended that CDQ crabs on the market prior to the general fishery would be detrimental to the value of the general fishery. The BOF directed the CDQ, non-CDQ and processor representatives to reach a compromise, and adopted the compromise into regulation. The new regulations allow a CDQ king or Tanner crab fishery prior to the general fishery only when the GHL is 50 million pounds or more, and a maximum of 30% of the CDQ allocation may be harvested preseason.

In 1999, the department changed permitting procedures after the allocation was exceeded in the snow crab fishery for two consecutive years. Permits for CDQ fisheries were previously issued only to vessels fishing for the groups. These permits were issued before the actual allocation was established, and therefore did not reference the CDQ group's harvest allocation. Permits were henceforth to be issued to each CDQ group, initially stating the group allocation percentage and followed by an addendum with the actual allocation in pounds. The vessels were to be issued a permit that referred to the group permit and the associated allocation.

Observer coverage requirements have fluctuated over the history of the CDQ crab fisheries. During the first year of CDQ crab fishing operations, onboard observers were required during all fishing operations. In 1999, observer coverage was reduced in the CDQ snow crab fishery from one observer per vessel to one per CDQ group while during the Bristol Bay CDQ red king crab fishery, coverage remained at one observer per vessel. Observer coverage in the 2000 CDQ snow crab fishery was increased from one observer per group to two per group. During the 2001 CDQ Bristol Bay red king crab fishery, only one observer was required per group. In previous years, all CDQ vessels for this fishery were required to carry on board observers. Observers collect biological data and document the fishing practices of the CDQ fleet.

2003 CDQ Fisheries

Bering Sea CDQ Snow Crab Fishery

The 2003 Bering Sea CDQ snow crab fishery occurred subsequent to the general snow crab fishery. The 2003 CDQ allocation was 7.5 percent of the total snow crab commercial harvest. Based on inseason processor reports and hailed weights for the general fishery, the CDQ allocation was 2,120,637 pounds. All six CDQ groups participated in the fishery. The percent allocated to each group ranged from 8-20%. Percentages allocated to each group are determined by a percentage set forth for these CDQ groups by the Alaska Department of Community and Economic Development (ADCED).

Ten vessels participated in the fishery. Data from fish tickets show that those vessels made 29 deliveries for a harvest of 2,119,027 pounds including deadloss, approximately 99.9% of the allocation (Table 2-41). None of the CDQ groups exceeded their allocation.

Permits were issued to each CDQ group prior to the closure of the general fishery on January 25. The permit stated the group's allocation, listed the vessel(s) requested by the group and authorized by ADF&G to participate in the fishery, and stated that those vessels must comply

with requirements such as dates of operation, pot limits, buoy tags, and observer coverage. Vessel registration could begin noon January 29, ninety-six hours after the closure of the general fishery. Typically vessel registration for the CDQ fishery begins 72 hours after the closure of the general fishery, but was delayed 24 hours in 2003 to obtain a more accurate estimate of the general fishery harvest. CDQ groups were notified of their preliminary allocation January 29. Final allocations were announced February 10 after processing of all general fishery harvest was completed. During the fishery, two of the groups received amended allocations resulting from poundage transfers. One group transferred poundage to another after completing fishing and finding their final landing was less than expected. Transfers were approved through the ADCED and ADF&G.

The first vessel began fishing on January 30 and fishing operations concluded on March 24. The first delivery of CDQ snow crab occurred on February 7 with the final delivery March 26. Average exvessel price per pound in the 2003 CDQ snow crab fishery was \$1.80 (Table 2-42), slightly less than the general fishery where the average price per pound was \$1.83. The fishery value to the fleet was approximately \$3.78 million, and the estimated value to the CDQ groups was 20-30% of the CDQ fleet fishery value.

The average number of legal male crab per pot pull (catch per unit effort or CPUE) was 120 retained crabs per pot, a substantial increase from the 2002 CDQ CPUE of 99 retained crabs per pot, but less than the general fishery CPUE of 155 retained crabs per pot. Average weight of crabs in the CDQ fishery was 1.2 pounds, the same as the general fishery. Catches were landed at three shorebased processors, located in Dutch Harbor, and St. Paul. No floater-processors operated during the CDQ fishery. In 2003, for the first time a catcher processor vessel participated in the CDQ fishery.

Observer coverage in the 2003 fishery was two for each group, the same coverage employed since 2000. Since each group except one utilized two or fewer vessels, all but one vessel in the fleet fished with an onboard observer for the entire season. Observers collected biological data, provided inseason harvest rates to the department, and documented fishing practices of the CDQ fleet.

Saint Matthew Island Section CDQ Blue King Crab Fishery

No CDQ harvest of Saint Matthew Island Section blue king crab occurred in 2003 due to closure of the commercial fishery.

Pribilof District CDQ Red and Blue King Crab Fishery

No CDQ harvest of Pribilof District red or blue king crab occurred in 2003 due to closure of the commercial fishery.

Bristol Bay CDQ Red King Crab Fishery

The 2003 Bristol Bay CDQ red king crab fishery allocation based on inseason processor reports and hauled weights from the general fishery, was 1,167,040 pounds. All six CDQ groups participated in this fishery.

Permits were issued to each CDQ group prior to the closure of the general fishery on October 21. The permit stated the group's preliminary allocation, which is determined by a percentage set forth for each CDQ group by the ADCED. The permit listed the vessel(s) requested by the group and authorized by ADF&G to participate in the fishery, and stated that those vessels must comply with requirements such as dates of operation, pot limits, buoy tags, and observer coverage. Vessel registration could begin at 8:00 am October 24, 72 hours after closure of the general fishery. Eight vessels registered on October 24, three of which were registered in St. Paul; one registered October 26, two registered October 27, one registered October 29, and the last vessel registered November 5. The final fishery allocations were announced October 27. Deliveries began October 29, and the final delivery was made November 16. Thirteen vessels made 20 landings for an overall harvest of 1,166,662 pounds and a fishery value of approximately 5.4 million dollars. One CDQ group exceeded its allocation, however all other CDQ groups were under their allocation.

The average CPUE was 30, higher than the CPUE of 18 for the general fishery, but the same as the 2002 CDQ fishery. The average soak time during the CDQ fishery was 45 hours compared to a soak time of 31 hours during the general fishery. Average weight of crabs in the CDQ fishery was 6.7 pounds, compared to an average weight of 6.2 for the general fishery. Two of the groups used three vessels to harvest their allocation, one group used one vessel, and the remaining three groups used two vessels each.

Prior to 2001, all CDQ vessels for this fishery were required to carry onboard observers. During the 2001 to 2003 seasons, only one observer was required per CDQ group. Based on this coverage, six vessels were without observer coverage. During the fishery observers collected biological data, provided inseason harvest rates to the department, and documented fishing practices of the CDQ fleet.

Bering Sea CDQ Tanner Crab Fishery

No CDQ harvest of Tanner crab occurred during 2003 due to closure of the commercial fishery.

BERING SEA KING AND TANNER CRAB BUOY IDENTIFICATION PROGRAM

Introduction and Background

Early 1990s BSAI crab fisheries were characterized by increased fishing effort, decreased GHs, and shorter fishing seasons than prior years. In response to these changes, the BSAI crab industry

submitted a petition regarding pot limits to the BOF. The petition was supported by ADF&G data indicating that management was more difficult and conservation concerns were increased during low GHL fisheries due in part to the amount of gear on the fishing grounds. On March 20, 1991 the BOF proposed an agenda change request regarding this issue and subsequently adopted BSAI pot limit regulations. Effective August 1, 1992 these regulations limited the number of pots a vessel may operate while harvesting BSAI king and Tanner crabs. The buoy identification program was created to help implement these regulations, and as per Alaska State statute, designed to be completely self-supportive by generating funds.

Buoy identification stickers were first implemented during 1992 Bristol Bay red king crab season, but were temporarily suspended due to product failure. Pot limit requirements for Bering Sea Tanner crab fisheries remained in effect until repealed by National Marine Fisheries Services on November 30, 1992. According to the Fishery Management Plan for Bering Sea /Aleutian Island King and Tanner Crab, pot limit regulation is a category II measure (NPFMC 1998). Category II measures may be adopted at the state level but are subject to the federal appeal process and must adhere to national standards requiring regulation application to be nondiscriminatory. Consequently, in February 1993, BOF passed differential pot limit regulations. Each fishery has specific pot limits based on vessel overall length (OL) (Table 2-43). Vessels in excess of 125 feet OL are entitled to operate the maximum number of pots allowed for a fishery, and vessels 125 feet or less in OL may fish 80% of the maximum pot limit. Further differential pot limit regulations for the Bristol Bay red king crab fishery were adopted on an interim basis August 27, 1997. The regulations created an 11-tier pot limit system dependent on fishery GHL and anticipated fleet size. The tiered system was made permanent March 1999.

Implementation

Beginning with 1992-1993 Bristol Bay king and Bering Sea Tanner crab seasons, ADF&G leased additional office space and employed a Fish and Wildlife Technician III to administer the buoy identification program. Regulations providing implementation of the buoy identification program are stated in Alaska Statute 16.05.050. POWERS AND DUTIES OF THE COMMISSIONER and Alaska Statute 16.05.632. IDENTIFICATION OF SHELLFISH POTS OR BUOYS, OR BOTH, USED IN THE TAKING OF KING CRAB AND REQUIREMENTS FOR BUOYS.

By May 1993 heavy-duty, self-locking, nylon tags had taken the place of buoy stickers. After use in several fisheries, numerous quality control problems and industry complaints prompted ADF&G to initiate trial tests of other manufactured tags. Eventually, a new style buoy tag was procured which required an independent means of attachment. The Alaska Department of Fish and Game initially supplied zip ties for tag attachment at no additional charge, but dispersal was discontinued due to high failure rates. Consequently, industry is now responsible for tag attachment. The new style tags were first issued in September 1998 and continue to be used.

Replacement Tags

Buoy tag replacement issues were resolved during the initial BOF meeting regarding pot limits. Regulations were written based on concerns from the Division of Fish and Wildlife Protection

regarding prosecution of cases involving replacement tags. Specifics regarding replacement tag sales are included in 5 AAC 34.826. (b) KING CRAB POT MARKING REQUIREMENTS FOR REGISTRATION AREA T, 5 AAC 34.926. (b) KING CRAB POT MARKING REQUIREMENTS FOR REGISTRATION AREA Q, and 5 AAC 35.526. (b) TANNER CRAB POT MARKING REQUIREMENTS FOR REGISTRATION AREA J.

Between the 1994 Bristol Bay red king crab and Bering Sea Tanner crab fisheries, and prior to 1995 snow crab season, the Dutch Harbor ADF&G office received input from fishers concerned with tag replacement regulations. At the time, vessels delivering to remote areas such as King Cove or Saint Paul were unable to obtain replacement tags without travelling to Dutch Harbor. Some vessel operators felt the cost of travelling to Dutch Harbor with three crewmembers was prohibitive to obtaining replacement tags and would promote illegal fishing.

During 1998-1999 seasons, stakeholders reiterated buoy tag replacement issues. In response to these concerns ADF&G began allowing permit holders to file an official affidavit in Saint Paul or King Cove, however ADF&G personnel must be available for verification. This change was implemented prior to 2000 Bering Sea snow crab fishery.

Buoy Identification Tag Refunds

Since the inception of the tag program, refunds for buoy tags have not been offered because the \$2.00 fee per tag covers administrative and program implementation costs. However, during the 2001 Bering Sea snow crab fishery, two buoy tag refunds were issued as per 15 AAC 116.120. REFUND OF LICENSE FEES.

Requests for buoy identification tag refunds may be procured only through ADF&G Headquarters in Juneau. To request a refund, the following information must be sent by the tag administrator to administrative staff in Kodiak: name, address, social security number of the permit holder, vessel name and ADF&G number, a copy of the check used for original payment, number of tags purchased/returned, the imprinted sequential tag numbers, return date of unused, complete set of tags and person who received the tags, budget code for refunding, and a statement from the permit holder explaining the refund request. All refund requests are out of the tag program administrator's jurisdiction and will be evaluated by ADF&G Headquarters in Juneau.

Vessel Length Verification

The tiered pot limit regulations are based in part on vessel OL. These measurements are outlined in 5 AAC 34.825 (j) LAWFUL GEAR FOR REGISTRATION AREA T and 5 AAC 35.525 (f) LAWFUL GEAR FOR REGISTRATION AREA J. In order to obtain the maximum number of buoy tags allotted per fishery all vessels with OL in excess of 125 feet must present valid, original or notarized, U.S. Coast Guard or certified marine surveyor documentation, showing the vessel's OL. The permit holder is required to show OL documentation the first time buoy tags are purchased, and when any change in vessel OL occurs. The ADF&G office in Dutch Harbor has an established list of 98 vessels with documented OL in excess of 125 feet.

Administration of the Buoy Identification Program

Bering Sea buoy tags are issued from the ADF&G offices in Kodiak and Dutch Harbor for an administrative fee of \$2.00 per tag. Tags are issued to the holder of a valid, fishery specific, Commercial Fisheries Entry Commission interim use permit card. An authorized agent may be issued tags if an affidavit is signed by the permit holder and filed with ADF&G in Dutch Harbor. Also upon request, ADF&G Dutch Harbor office will send buoy tags through the U.S. Mail, via priority mail with insurance and return receipt. Due to potential weather delayed mail service, the deadline for mail request is generally two to three weeks prior to the opening of each fishery. The deadline is announced in fishery specific news releases regarding pot limits.

2003 Buoy Tag Sales

Several of the Bering Sea crab fisheries were not open to commercial harvest because stocks did not meet minimum threshold levels. The Pribilof Island red king and blue king crab, Saint Matthew Island blue king crab, and Bering Sea Tanner crab fisheries were closed in 2003. Tags for these fisheries are stored in Dutch Harbor ready for issue when needed (Table 2-44).

No tags were procured for the 2003 Bering Sea snow crab fishery, rather tags for this fishery were issued from partial sets in storage. Tag sales for this fishery are as follows: from Dutch Harbor 146 vessels purchased 15,825 tags (26 were mail requests) and in Kodiak 46 vessels purchased 4,752 tags. One hundred ninety two vessels purchased 20,452 tags and 5 replacement tags were issued for 20,457 total tags. Ten vessels purchased 1,868 tags for the 2003 Bering Sea snow crab CDQ fishery. No replacement tags were issued.

Four vessels purchased tags for 2003 Pribilof District golden king crab fishery, 160 tags were sold and 6 replacements issued, a total of 166 tags. One vessel purchased 60 tags for the 2003 Northern District, Saint Matthew Island Section golden king crab fishery. No replacement tags were issued. There was no fishing effort in 2003 for South Peninsula grooved Tanner crab.

There were 65,000 tags procured for the 2003 Bristol Bay red king crab fishery. Tag sales for this fishery are as follows: from Dutch Harbor 207 vessels purchased 41,966 tags (32 were mail requests), in Kodiak 46 vessels purchased 7,732 tags. Two hundred fifty two vessels purchased 49,198 tags and no replacement tags were issued. Thirteen vessels purchased 2,470 tags for the 2003 Bristol Bay red king crab CDQ fishery. No replacement tags were issued. The Petrel Bank red king crab fishery had 33 vessels purchase 1,221 tags and no replacement tag was issued. One set of 34 tags was purchased from Kodiak, the other 32 vessels purchased tags in Dutch Harbor.

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Table 2-1. Bristol Bay commercial red king crab fishery harvest data, 1966-2003.

Year	Number of			Harvest ^{a,b}	Number of Pots		CPUE ^c	Deadloss ^b
	Vessels	Landings	Crabs ^a		Registered	Pulled		
1966	9	15	140,554	997,321	NA	2,720	52	NA
1967	20	61	397,307	3,102,443	NA	10,621	37	NA
1968	59	261	1,278,592	8,686,546	NA	47,496	27	NA
1969	65	377	1,749,022	10,403,283	NA	98,426	18	NA
1970	51	309	1,682,591	8,559,178	NA	96,658	17	NA
1971	52	394	2,404,681	12,955,776	NA	118,522	20	NA
1972	64	611	3,994,356	21,744,924	NA	205,045	19	NA
1973	67	441	4,825,963	26,913,636	NA	194,095	25	NA
1974	104	605	7,710,317	42,266,274	NA	212,915	36	NA
1975	102	592	8,745,294	51,326,259	NA	205,096	43	1,639,483
1976	141	984	10,603,367	63,919,728	NA	321,010	33	875,327
1977	130	1,020	11,733,101	69,967,868	NA	451,273	26	730,279
1978	162	926	14,745,709	87,618,320	NA	406,165	36	1,273,037
1979	236	889	16,808,605	107,828,057	NA	315,226	53	3,555,891
1980	236	1,251	20,845,350	129,948,463	78,352	567,292	37	1,858,668
1981	177	1,026	5,307,947	33,591,368	75,756	542,250	10	711,289
1982	90	255	541,006	3,001,210	36,166	141,656	4	95,834
1983				FISHERY CLOSED				
1984	89	137	794,040	4,182,406	21,762	112,556	7	35,601
1985	128	130	796,181	4,174,953	30,117	85,003	9	6,436
1986	159	230	2,099,576	11,393,934	32,468	178,370	12	284,127
1987	236	311	2,122,402	12,289,067	63,000	220,871	10	120,388
1988	200	201	1,236,131	7,387,795	50,099	153,004	8	23,537
1989	211	287	1,684,706	10,264,791	55,000	208,684	8	81,334

-Continued-

Table 2-1. (Page 2 of 2)

Year	Number of			Harvest ^{a,b}	Number of Pots		CPUE ^c	Deadloss ^b
	Vessels	Landings	Crab ^a		Registered	Pulled		
1990	240	331	3,120,326	20,362,342	69,906	262,131	12	116,527
1991	302	324	2,630,446	17,177,894	89,068	227,555	12	119,670
1992	281	289	1,196,958	8,043,018	68,189	205,940	6	9,000
1993	292	361	2,261,287	14,628,639	58,881	253,794	9	133,442
1994				FISHERY CLOSED				
1995				FISHERY CLOSED				
1996	196	198	1,249,005	8,405,614	39,461	76,433	16	24,166
1997	256	265	1,315,969	8,756,490	27,499	90,510	15	13,771
1998	274	284	2,140,607	14,233,063	56,420	141,707	15	53,716
1999	257	268	1,812,403	11,090,930	42,403	146,997	12	44,132
2000	246	256	1,166,796	7,546,145	26,352	98,694	12	76,283
2001	230	238	1,196,040	7,786,420	24,571	63,242	19	57,294
2002	242	254	1,377,922	8,856,828	25,833	68,328	20	32,177
2003	252	275	2,335,614	14,530,248	46,964	129,019	18	228,272

^a General fishery only. Deadloss included.

^b In pounds.

^c Number of legal crab retained per pot pull.

NA: Not available.

Table 2-2. Bristol Bay commercial red king crab fishery economic data, 1980-2003.

Year	GHL ^a	Value		Season Length	
		Exvessel	Total ^b	Days	Dates
1980	70-120	\$0.90	\$115.3	40	09/10-10/20
1981	70-100	\$1.50	\$49.3	91	09/10-12/15
1982	10-20 ^d	\$3.05	\$8.9	30	09/10-10/10
1983		FISHERY CLOSED			
1984	2.5- 6.0	\$2.60	\$10.8	15	10/01-10/16
1985	3.0-5.0	\$2.90	\$12.1	8	09/25-10/02
1986	6.0-13.0	\$4.05	\$45.0	13	09/25-10/07
1987	8.5-17.7	\$4.00	\$48.7	12	09/25-10/06
1988	7.5	\$5.10	\$37.6	8	09/25-10/02
1989	16.5	\$5.00	\$50.9	12	09/25-10/06
1990	17.1	\$5.00	\$101.2	12	11/01-11/13
1991	18.0	\$3.00	\$51.2	7	11/01-11-08
1992	10.3	\$5.00	\$40.2	7	11/01-11/08
1993	16.8	\$3.80	\$55.1	9	11/01-11/10
1994		FISHERY CLOSED			
1995		FISHERY CLOSED			
1996	5.0	\$4.01	\$33.6	4	11/01-11/05
1997	7.0	\$3.26	\$28.5	4	11/01-11/05
1998	15.8	\$2.64	\$37.4	5	11/01-11/06
1999	10.1	\$6.26	\$69.1	5	10/15-10/20
2000	7.7	\$4.81	\$36.0	4	10/16-10/20 ^c
2001	6.6	\$4.81	\$37.5	3.3	10/15-10/18
2002	8.6	\$6.14	\$54.2	2.8	10/15-10/18
2003	14.5	\$5.08	\$72.7	5.1	10/15-10/20

^a General fishery only. In millions of pounds.

^b Millions of dollars.

^c Delayed start due to weather.

^d Inseason revision to 4.7 million pounds.

Table 2-3. 2003 Bristol Bay commercial red king crab fishery inseason catch and effort projections for the non-AFA fleet based on 12-hour reports to ADF&G.

October Date	Report Hour	Potlifts	Catch ^{a, b}	Cummulative Catch ^{a, b}	Number of Crabs	CPUE ^c	Number of Vessels Reporting
16	12	875	18,385	18,385	2,965	3	62
16	24	7,538	634,241	652,626	105,262	13	72
17	36	13,326	1,291,590	1,944,216	313,583	16	72
17	48	11,919	1,428,993	3,373,209	544,066	19	70
18	60	11,987	1,410,507	4,783,716	771,567	19	70
18	72	14,228	1,983,196	6,766,912	1,091,437	23	67
19	84	13,245	1,733,606	8,500,518	1,371,051	21	67
19	96	13,757	2,114,717	10,615,235	1,712,135	24	31
20	108	20,158	2,507,157	13,122,392	2,116,515	21	30
20	120	23,129	2,799,791	15,922,183	2,568,094	19	17
Total		130,162	15,922,183	15,922,183	2,568,094	20	

^a In pounds.

^b Based on 6.4 pound average weight.

^c Number of legal crab retained per pot pull.

Table 2-4. 2003 Bristol Bay commercial red king crab fishery catch and effort projections for the AFA fleet, based on inseason vessel reports to the AFA fleet manager.

October Date	Report Hour	Potlifts	Catch ^{a, b}	Cummulative Catch ^{a, b}	Number of Crabs	CPUE ^c	Percentage of Cap Harvested
16	12	30	4,007	4,007	636	21	0
16	24	978	62,515	66,522	9,923	10	4
17	36	1,285	98,601	165,123	15,651	12	10
17	48	1,626	180,508	345,631	28,652	18	22
18	60	1,025	125,402	471,032	19,905	19	30
18	72	1,763	222,699	693,731	35,349	20	44
19	84	1,214	96,674	790,404	15,345	13	50
19	96	1,635	158,855	949,259	25,215	15	60
20	108	1,950	141,643	1,090,902	22,483	12	68
20	120	1,507	108,776	1,199,678	17,266	11	75
Total		13,013	1,199,678	1,199,678	190,425	15	75

^a In pounds.

^b Based on 6.3 pound average weight.

^c Number of legal crab retained per pot pull.

Table 2-5. Bristol Bay commercial red king crab fishery catch by statistical area, 2003.

Statistical Area	Number of		Harvest ^{a,b}	Pots Lifted	Average		Deadloss ^b
	Landings	Crab ^a			CPUE ^c	Weight ^b	
615601	9	27,147	169,988	2,220	12	6.3	5,793
615630	30	86,673	543,395	7,939	11	6.3	12,024
615700	4	365	2,361	125	3	6.5	5
625531	4	1,695	12,433	244	7	7.3	113
625600	85	356,899	2,224,697	22,749	16	6.2	43,366
625630	98	324,285	1,999,160	24,403	13	6.2	30,285
625700	7	6,401	37,423	576	11	5.8	457
625800	4	17,036	106,999	1,115	15	6.3	2,183
635530	8	49,464	314,360	2,501	20	6.4	976
635600	125	722,345	4,567,930	31,765	23	6.3	73,242
635630	102	575,591	3,604,332	27,857	21	6.3	44,861
635700	8	36,745	209,728	1,781	21	5.7	2,890
635800	5	26,672	171,239	1,963	14	6.4	2,847
645600	11	73,133	362,997	2,016	36	5.0	7,532
645630	12	23,778	157,897	1,139	21	6.6	1,566
Other ^d	3	7,385	45,309	626	12	6.1	132
Total	515	2,335,614	14,530,248	129,019	18	6.2	228,272

^a Deadloss included.

^b In pounds.

^c Number of legal crab retained per pot pull.

^d Combination of three statistical areas from which less than three vessels made landings.

Table 2-6. Bristol Bay commercial red king crab fishery harvest composition by fishing season, 1973-2003.

Season	Percent		Size Limit ^b	Average		% Old Shell
	Recruit	Postrecruit ^a		Weight (pounds)	Length (mm)	
1973	63	37	6¼	5.6	NA	NA
1974	60	40	6¼	5.5	NA	NA
1975	21	79	6¼ ^c	5.7	NA	NA
1976	56	44	6½	6.0	148	27.4
1977	67	33	6½	5.9	148	13.0
1978	75	25	6½	5.9	147	6.9
1979	47	53	6½	6.4	152	10.4
1980	44	56	6½	6.2	151	11.0
1981	14	86	6½ ^d	6.3	151	47.4
1982	68	32	6½	5.5	145	24.6
1983			FISHERY CLOSED			
1984	59	41	6½	5.2	142	26.5
1985	66	34	6½	5.2	142	25.8
1986	65	35	6½	5.4	142	25.5
1987	77	23	6½	5.8	145	19.0
1988	59	41	6½	6.0	147	15.1
1989	58	42	6½	6.1	148	17.7
1990	49	51	6½	6.5	152	14.7
1991	44	56	6½	6.5	152	12.1
1992	33	67	6½	6.7	153	22.3
1993	33	67	6½	6.5	152	15.2
1994			FISHERY CLOSED			
1995			FISHERY CLOSED			
1996	31	69	6½	6.7	153	24.3
1997	28	72	6½	6.7	152	11.0
1998	40	60	6½	6.7	152	19.1
1999	72	28	6½	6.1	148	6.3
2000	65	35	6½	6.5	151	16.3
2001	54	46	6½	6.5	151	22.3
2002	61	39	6½	6.4	151	22.2
2003	72	28	6½	6.2	149	21.9

^a Legal sized old and new shell greater than 153mm carapace length defined as postrecruits.

^b Minimum carapace width in inches.

^c 6½ inches after 11/01.

^d 7 inches after 10/20

NA: Not Available.

Table 2-7. Bristol Bay red king crab cost-recovery harvest data, 1990-2003.

Year ^a	Number of		Harvest ^{b,c}	Number of Pots Pulled	Average		Deadloss ^c
	Landings	Crabs ^b			CPUE ^d	Weight ^c	
1990	3	9,567	80,701	870	16	5.9	24,540
1991	2	30,351	205,851	518	62	6.4	12,817
1992	1	11,213	74,089	670	17	6.3	3,000
1993	1	8,384	53,200	464	18	6.3	800
1994	1	14,806	93,336	732	21	6.0	4,500
1995	2	14,123	80,158	564	26	5.5	2,339
1996	3	15,390	107,955	355	44	6.9	1,918
1997	4	21,698	154,739	658	37	6.3	18,040
1998	2	22,230	188,176	738	36	7.0	32,564
1999	2	12,438	79,765	698	18	6.4	165
1999 ^e	2	16,930	106,179	541	31	6.3	245
2000 ^f	2	14,196	86,218	702	20	6.1	347
2001 ^e	3	17,605	120,435	597	29	6.8	138
2002 ^e	2	14,528	96,221	277	52	6.6	181
2003 ^{f,g}	1	5,327	33,817	584	9	6.4	143

^a All cost recovery from 1990-1998 was conducted to fund the Bering Sea and Aleutian Islands shellfish research program.

^b Deadloss included.

^c In pounds.

^d Number of legal crab retained per pot pull.

^e Bering Sea and Aleutian Islands shellfish research and observer program cost recovery.

^f Bering Sea and Aleutian Islands shellfish research program cost recovery.

^g Includes 1,222 pounds harvested in the Pribilof District.

Table 2-8. Bristol Bay red king crab cost-recovery economic performance data, 1990-2003.

Year ^a	Harvest ^b	Value		Charter dates	Charter length ^c
		Exvessel	Total		
1990	56,161	\$5.10	286.4	8/7-9/7	30
1991	193,034	\$3.75	723.9	9/2-10/7	35
1992	71,089	\$5.24	372.5	10/8-10/23	15
1993	52,400	\$6.57	344.3	8/20-9/20	31
1994	88,836	\$5.21	462.8	9/25-10/25	30
1995	77,819	\$6.65	517.5	8/1-8/31	31
1996	106,037	\$4.53	480.4	8/1-8/31	31
1997	136,699	\$3.55	485.2	7/25-8/21	28
1998	155,612	\$3.25	505.7	8/1-8/28	28
1999	79,600	\$6.02	478.8	9/25-10/11	17
1999 ^d	105,934	\$6.32	669.5	9/25-10/11, 10/25-11/10	34
2000 ^e	85,871	\$5.82	499.8	9/20-10/04	15
2001 ^d	120,297	\$5.18	623.1	9/22-10/10, 10/23-11/8	36
2002 ^d	96,087	\$6.45	619.6	9/23-10/9, 10/17-10/27	27
2003 ^{e,f}	33,674	\$5.56	187.2	9/1-10/4	34

^a All cost recovery from 1990-1998 was conducted to fund the Bering Sea and Aleutian Islands shellfish research program.

^b Deadloss not included. In pounds.

^c In days.

^d Bering Sea and Aleutian Islands shellfish research and observer program cost recovery.

^e Bering Sea and Aleutian Islands shellfish research program cost recovery.

^f Includes 1,204 pounds harvested in the Pribilof District.

Table 2-9. Pribilof District commercial red and blue king crab fishery data, 1973/74-2003.

Year ^a	Number of		Crabs ^b	Harvest ^b (pounds)	Number of Pots		Average		Length ^d (mm)	Deadloss (pounds)
	Vessels	Landings			Registered	Pulled	CPUE ^c	Weight (pounds)		
1973/74	8	13	174,420	1,276,533	NA	6,814	26	7.3	NA	NA
1974/75	70	101	908,072	7,107,294	NA	45,518	20	7.8	157.8	NA
1975/76	20	54	314,931	2,433,714	NA	16,297	19	7.7	159.1	NA
1976/77	47	113	855,505	6,611,084	NA	71,738	12	7.7	158.1	NA
1977/78	34	104	807,092	6,456,738	NA	106,983	8	7.9	158.9	159,269
1978/79	58	154	797,364	6,395,512	NA	101,117	8	8.1	159.3	63,140
1979/80	46	115	815,557	5,995,231	NA	83,527	10	7.7	155.9	284,555
1980/81	110	258	1,497,101	10,970,346	31,636	167,684	9	7.3	155.7	287,285
1981/82	99	312	1,202,499	9,080,729	25,408	176,168	7	7.6	158.2	250,699
1982/83	122	281	587,908	4,405,353	34,429	127,728	5	7.5	159.8	51,703
1983/84	126	221	276,364	2,193,395	36,439	86,428	3	7.9	159.9	4,562
1984/85	16	25	40,427	306,699	3,122	15,147	3	7.6	155.5	NA
1985/86	26	49	77,607	532,735	6,038	23,483	3	6.9	146.5	7,500
1986/87	16	25	36,988	258,939	4,376	15,800	2	7.0	NA	5,450
1987/88	38	68	95,131	701,337	9,594	40,507	2	7.4	152.7	9,910
1988/89-92/93	F I S H E R Y C L O S E D									
1993 ^e	112	135	380,217	2,607,634	4,860	35,942	11	6.9	154.4	NA
1994 ^e	104	121	167,520	1,338,953	4,675	28,976	6	8.0	162.1	2,929
1995 ^e	117	151	107,521	871,173		33,531	3	8.1	162.5	15,316
1995 ^f	119	152	172,987	1,267,454		34,721	5	7.3	N/A	46,263
1995 ^g	127	162	280,508	2,138,627	5,400	37,643	8	NA		61,579
1996 ^e	66	90	25,383	200,304		29,425	<1	7.9	161.0	319
1996 ^f	66	92	127,676	937,032		30,607	4	7.3	153.1	14,997
1996 ^g	66	92	153,059	1,137,336	2,730	30,607	3	7.4		15,316

-Continued-

Table 2-9. (Page 2 of 2)

Year ^a	Number of			Harvest ^b (pounds)	Number of Pots		Average			Deadloss (pounds)
	Vessels	Landings	Crabs ^b		Registered	Pulled	CPUE ^c	Weight (pounds)	Length ^d (mm)	
1997 ^e	53	110	90,641	756,818		28,458	3	8.4	164.3	18,807
1997 ^f	51	105	68,603	512,374		27,652	3	7.5	163.6	16,747
1997 ^g	53	110	159,244	1,269,192	2,230	30,400	5	8.0		35,554
1998 ^e	57	84	68,129	510,365		23,381	3	7.5	158.8	8,703
1998 ^f	57	83	68,513	516,996		22,965	3	7.5	156.1	22,289
1998 ^g	57	84	136,642	1,027,361	2,398	23,381	3	7.5		30,992
1999-2003	F I S H E R Y C L O S E D									

^a Blue king crab, 1973 - 1988.

^b Deadloss included.

^c Number of legal crabs retained per pot pull.

^d Carapace length.

^e Red king crab.

^f Blue king crab.

^g Blue and red king crab fisheries combined.

NA: Not Available.

Table 2-10. Guideline harvest level (GHL), economic performance and season length summary for the Pribilof District commercial red and blue king crab fishery, 1980/81-2003.

Year ^a	GHL ^b	Value		Season Length	
		Exvessel	Total ^c	Days	Dates
1980/81	5.0-8.0	\$0.90	\$9.6	60	09/15-11/15
1981/82	5.0-8.0	\$1.50	\$13.6	47	09/10-10/28
1982/83	5.0-8.0	\$3.05	\$13.4	15	09/10-09/25
1983/84	4.0 ^d	\$3.00	\$6.6	10	09/01-09/11
1984/85	0.5-1.0	\$2.50	\$0.1	15	09/01-09/16
1985/86	0.3-0.8	\$2.90	\$1.4	26	09/25-10/21
1986/87	0.3-0.8	\$4.05	\$1.2	55	09/25-11/20
1987/88	0.3-1.7	\$4.00	\$2.8	86	09/25-12/20
1988/89-92/93		F I S H E R Y C L O S E D			
1993 ^e	3.4	\$4.98	\$13.0	6	09/15-09/21
1994 ^e	2.0 ^d	\$6.45	\$8.6	6	09/15-09/21
1995 ^e	2.5 ^g	\$3.37	\$2.9	7	09/15-09/22
1995 ^f	2.5 ^g	\$2.92	\$3.9	7	09/15-09/22
1996 ^e	1.8 ^g	\$2.76	\$0.6	11	09/15-09/26
1996 ^f	1.8 ^g	\$2.65	\$2.4	11	09/15-09/26
1997 ^e	1.5 ^g	\$3.09	\$2.3	14	09/15-09/29
1997 ^f	1.5 ^g	\$2.82	\$1.4	14	09/15-09/29
1998 ^e	1.25 ^{g,h}	\$2.39	\$1.2	13	09/15-09/28
1998 ^f	1.25 ^{g,h}	\$2.34	\$1.2	13	09/15-09/28
1999-2003		F I S H E R Y C L O S E D			

^a Blue king crab, 1980-1988.

^b Guideline harvest level, millions of pounds.

^c Millions of dollars.

^d Set not to exceed.

^e Red king crab.

^f Blue king crab.

^g Combined red and blue king crab.

^h General fishery only.

Table 2-11. Saint Matthew Island Section commercial blue king crab fishery data, 1977-2003.

Year	Number of			Harvest ^a (pounds)	Number of Pots		CPUE ^b	Percent Recruits	Average		Deadloss (pounds)
	Vessels	Landings	Crabs ^a		Registered	Pulled			Weight (pounds)	Length ^c (mm)	
1977	10	24	281,665	1,202,066		17,370	16	7	4.3	130.4	129,148
1978	22	70	436,126	1,984,251		43,754	10	NA	4.5	132.2	116,037
1979	18	25	52,966	210,819		9,877	5	81	4.0	128.8	128.8
1980	CONFIDENTIAL										
1981	31	119	1,045,619	4,627,761		58,550	18	NA	4.4	NA	53,355
1982	96	269	1,935,886	8,844,789		165,618	12	20	4.6	135.1	142,973
1983	164	235	1,931,990	9,454,323	38,000	133,944	14	27	4.8	137.2	828,994
1984	90	169	841,017	3,764,592	14,800	73,320	11	34	4.5	135.5	31,983
1985	79	103	484,836	2,427,110	13,000	51,606	9	9	5.0	139	2,613
1986	38	43	219,548	1,003,162	5,600	22,093	10	10	4.6	134.3	32,560
1987	61	62	234,521	1,075,179	9,370	28,440	8	5	4.6	134.1	400
1988	46	46	302,053	1,325,185	7,780	10,160	30	65	4.4	133.3	22,358
1989	69	69	247,641	1,166,258	11,983	30,853	8	9	4.7	134.6	3,754
1990	31	38	391,405	1,725,349	6,000	26,264	15	4	4.4	134.3	17,416
1991	68	69	726,519	3,372,066	13,100	37,104	20	12	4.6	134.1	216,459
1992	174	179	544,956	2,474,080	17,400	56,630	10	9	4.6	134.1	0
1993	92	136	629,874	2,999,921	5,895	58,647	11	6	4.8	135.4	0
1994	87	133	827,015	3,764,262	5,685	60,860	14	60	4.6	133.3	46,699
1995	90	111	666,905	3,166,093	5,970	48,560	14	45	4.8	135	90,191
1996	122	189	661,115	3,080,916	8,010	91,205	7	47	4.7	134.6	36,892
1997	117	166	939,822	4,649,660	7,650	81,117	12	31	4.9	139.5	209,490
1998	131	255	612,346	2,868,965	8,561	89,500	7	46	4.7	135.8	14,417
1999-2003	FISHERY CLOSED										

^aDeadloss included.

^bNumber of legal crabs retained per pot pull.

^cCarapace length.

NA: Not Available.

Table 2-12. Guideline harvest level (GHL), economic performance and season length summary for the Saint Matthew Island Section commercial blue king crab fishery, 1983-2003.

Year	GHL ^a	Value		Season Length	
		Exvessel	Total ^b	Days	Dates
1983	8	\$3.00	\$25.80	17	08/20-09/06
1984	2.0-4.0	\$1.75	\$6.50	7	09/01-09/08
1985	0.9-1.9	\$1.60	\$3.80	5	09/01-09/06
1986	0.2-0.5	\$3.20	\$3.20	5	09/01-09/06
1987	0.6-1.3	\$2.85	\$3.10	4	09/01-09/05
1988	0.7-1.5	\$3.10	\$4.00	4	09/01-09/05
1989	1.7	\$2.90	\$3.50	3 ^c	09/01-09/04
1990	1.9	\$3.35	\$5.70	6	09/01-09/07
1991	3.2	\$2.80	\$9.00	4	09/16-09/20
1992	3.1	\$3.00	\$7.40	3 ^c	09/04-09/07
1993	4.4	\$3.23	\$9.70	6	09/15-09/21
1994	3.0	\$4.00	\$15.00	7	09/15-09/22
1995	2.4	\$2.32	\$7.10	5	09/15-09/20
1996	4.3	\$2.20	\$6.70	8	09/15-09/23
1997	5.0	\$2.21	\$9.80	7	09/15-09/22
1998	4.0 ^d	\$1.87	\$5.34	11	09/15-09/26
1999-2003			FISHERY CLOSED		

^a Guideline harvest level, millions of pounds.

^b Millions of dollars.

^c Actual length - 60 hours.

^d General fishery GHL.

Table 2-13. Guideline harvest level (GHL), inseason harvest projections and actual commercial harvests for the St. Matthew Island Section blue king crab fishery, 1983-2003.

Year	Guideline Harvest Levels ^a	Projected Harvest ^{a,b}	Actual Harvest ^{a,c}
1983	8.0	8.0	9.5
1984	2.0 - 4.0	4.0	3.8
1985	0.9 - 1.9	2.0	2.4
1986	0.2 - 0.5	1.0	1.0
1987	0.6 - 1.3	1.3	1.1
1988	0.7 - 1.5	1.5	1.3
1989	1.7	1.7	1.2
1990	1.9	1.9	1.7
1991	3.2	3.2	3.4
1992	3.1	3.1	2.5
1993	4.4	4.4	3.0
1994	3.0	3.0	3.8
1995	2.4	2.4	3.2
1996	4.3	4.3	3.1
1997	5.0	5.0	4.6
1998	4.0 ^d	2.9	2.9
1999-2003		FISHERY CLOSED	

^a Millions of pounds.

^b Based on inseason catch reports.

^c Deadloss included.

^d General fishery only.

Table 2-14. Commercial harvest of blue king crabs by season for the St. Matthew Island Section, 1977-2003.

Season	Date		Harvest ^a	Minimum Size ^b	Price per Pound
	Opened	Closed			
1977	Jun-07	Aug. 16	1,202,066	5 1/2	\$1.00
1978	Jul-15	Sept. 3	1,984,251	5 1/2	\$0.95
1979	Jul-15	Aug. 24	210,819	5 1/2	\$0.70
1980	Jul-15	Sept. 3	CONFIDENTIAL	5 1/2	CONFIDENTIAL
1981	Jul-15	Aug. 21	4,627,761	5 1/2	\$0.90
1982	Aug-01	Aug. 16	8,844,789	5 1/2	\$2.00
1983 ^{c,d}	Aug-20	Sept. 6 ^c	9,506,880 ^d	5 1/2	\$3.00
1984	Aug-01	Sept. 8	3,764,592	5 1/2	\$1.75
1985	Sep-01	Sept. 6	2,427,110	5 1/2	\$1.60
1986	Sep-01	Sept. 6	1,003,162	5 1/2	\$3.20
1987	Sep-01	Sept-05	1,075,179	5 1/2	\$2.85
1988	Sep-01	Sept-05	1,325,185	5 1/2	\$3.10
1989	Jan-01	Sept-04	1,166,258	5 1/2	\$2.90
1990	Sep-01	Sept-07	1,725,349	5 1/2	\$3.35
1991	Sep-16	Sept-20	3,372,066	5 1/2	\$2.80
1992	Sep-04	Sept-07	2,474,080	5 1/2	\$3.00
1993	Sep-15	Sept-21	2,999,921	5 1/2	\$3.23
1994	Sep-15	Sept-22	3,764,262	5 1/2	\$4.00
1995	Sep-15	Sept-22	3,166,093	5 1/2	\$2.32
1996	Sep-15	Sept-16	3,080,916	5 1/2	\$2.20
1997	Sep-15	Sept-22	4,649,660	5 1/2	\$2.21
1998	Sep-15	Sept-26	2,868,965	5 1/2	\$1.87
1999-2003	FISHERY CLOSED				

^a In pounds, deadloss included.

^b Carapace width in inches.

^c Part of Northern District open until September 20.

^d St. Lawrence Island harvest of 52,557 lbs. included.

Table 2-15. Pribilof District golden king crab fishery harvest data, 1981/82-2003 seasons.

Season	Number of			Harvest ^{a,b}	Pots lifted	CPUE ^c	Average		Deadloss ^b
	Vessels	Landings	Crabs ^a				Weight ^b	Length ^d	
1981/82	2					CONFIDENTIAL			
1982/83	10	19	15,330	69,970	5,252	3	4.6	151	570
1983/84	50	115	253,162	856,475	26,035	10	3.4	127	20,041
1984						NO LANDINGS			
1985	1					CONFIDENTIAL			
1986	1					CONFIDENTIAL			
1987	1					CONFIDENTIAL			
1988	2					CONFIDENTIAL			
1989	2					CONFIDENTIAL			
1990						NO LANDINGS			
1991	1					CONFIDENTIAL			
1992	1					CONFIDENTIAL			
1993	5	15	17,643	67,458	15,395	1	3.8	NA	0
1994	3	5	21,477	88,985	1,845	12	4.1	NA	730
1995	7	22	82,456	341,700	9,481	9	4.1	NA	716
1996	6	32	91,947	329,009	9,952	9	3.6	NA	3,570
1997	7	23	43,305	179,249	4,673	9	4.1	NA	5,554
1998	3	9	9,205	35,722	1,530	6	3.9	NA	474
1999	3	9	44,098	177,108	2,995	15	4.0	NA	319
2000	7	19	29,145	127,217	5,450	5	4.4	NA	5,288
2001	6	14	33,723	145,876	4,262	8	4.3	143	8,227
2002	8	20	34,639	150,434	5,464	6	4.3	144	8,984
2003	3		CONFIDENTIAL		2,854	13	4.1	139	CONFIDENTIAL

^a Deadloss included.

^b In pounds.

^c Number of legal crabs retained per pot pull.

^d Carapace length in millimeters.

NA: Not available.

Table 2-16. Pribilof District golden king crab fishery economic data, 1991-2003 seasons.

Season	Value		Season Length	
	Exvessel ^a	Fishery	Days	Dates
1991	CONFIDENTIAL		365	1/1-12/31
1992	CONFIDENTIAL		365	1/1-12/31
1993	\$2.42	\$163,248	365	1/1-12/31
1994	\$3.81	\$336,252	365	1/1-12/31
1995	\$3.12	\$1,056,900	365	1/1-12/31
1996	\$2.02	\$639,532	365	1/1-12/31
1997	\$2.23	\$387,340	365	1/1-12/31
1998	\$2.06	\$72,611	365	1/1-12/31
1999	\$2.34	\$413,686	162	1/1-6/10
2000	\$3.22	\$392,436	365	1/1-12/31
2001	\$3.12	\$429,464	105	1/1-4/15
2002	\$3.10	\$438,495	134	1/1-5/14
2003	CONFIDENTIAL		121	1/1-5/1

^a Price per pound.

Table 2-17. Pribilof District commercial golden king crab fishery catch by statistical area, 2003.

Statistical area	Number of		Harvest ^{a,b}	Pots lifted	Average		Deadloss ^b
	Landings	Crab ^a			CPUE ^c	Weight ^b	
	CONFIDENTIAL			2,854	13	4.1	CONFIDENTIAL

^a Deadloss included.

^b In pounds.

^c Number of legal crabs per pot lift.

Table 2-18. Saint Matthew Island Section commercial golden king crab fishery harvest data, 1982/83-2003 seasons.

Season	Number of			Harvest ^{a,b}	Pots lifted	CPUE ^c	Average		Deadloss ^b
	Vessels	Landings	Crabs ^a				Weight ^b	Length ^d	
1982/83	22	30	51,714	193,507	7,825	7	3.7	138	957
1983/84						NO LANDINGS			
1985						NO LANDINGS			
1986						NO LANDINGS			
1987	11	29	101,618	424,394	14,525	7	4.2	142	11,750
1988	11	23	36,270	160,441	11,672	3	4.4	150	14,000
1989	2					CONFIDENTIAL			
1990						NO LANDINGS			
1991						NO LANDINGS			
1992	1					CONFIDENTIAL			
1993						NO LANDINGS			
1994	1					CONFIDENTIAL			
1995	4	4	245	1,200	383	1	4.9	NA	0
1996	1					CONFIDENTIAL			
1997-2000						NO LANDINGS			
2001	1					CONFIDENTIAL			
2002						NO LANDINGS			
2003	1					CONFIDENTIAL			

^a Deadloss included.

^b In pounds.

^c Number of legal crabs retained per pot pull.

^d In millimeters.

NA: Not available.

Table 2-19. Saint Matthew Island Section commercial golden king crab fishery economic data, 1991-2003 seasons.

Season	Value		Season Length	
	Exvessel ^a	Total	Days	Dates
1991	NO LANDINGS		365	1/1-12/31
1992	CONFIDENTIAL		365	1/1-12/31
1993	NO LANDINGS		365	1/1-12/31
1994	CONFIDENTIAL		365	1/1-12/31
1995	\$3.12	\$3,744	365	1/1-12/31
1996	CONFIDENTIAL		365	1/1-12/31
1997-2000	NO LANDINGS		365	1/1-12/31
2001	CONFIDENTIAL		365	1/1-12/31
2002	NO LANDINGS		365	1/1-12/31
2003	CONFIDENTIAL		365	1/1-12/31

^a Price per pound.

Table 2-20. King crab Registration Area Q commercial scarlet king crab fishery data, 1992-2003.

Year	Number of Vessels	Harvest ^{a,b}	Pots Lifted	Value		Average		Deadloss ^a
				Exvessel ^c	Fishery ^d	Weight ^a	CPUE ^e	
1992-94					NO LANDINGS			
1995	4	26,684	24,551	\$2.12	\$0.06	2.4	1	465
1996	2				CONFIDENTIAL			
1997- 99					NO LANDINGS			
2000 ^f	1				CONFIDENTIAL			
2001 ^f	1				CONFIDENTIAL			
2002 ^f					NO LANDINGS			
2003 ^f	1				CONFIDENTIAL			

^a In pounds.

^b Deadloss included.

^c Price per pound.

^d In millions of dollars.

^e Number of legal crabs retained per pot pull.

^f Restricted to incidental harvest during Bering Sea golden king and grooved Tanner crab fisheries.

Table 2-21. Bering Sea District commercial Tanner crab fishery harvest data, 1969-2003.

Year	Number of			Harvest ^a (pounds)	Number of Pots		CPUE ^b	Deadloss (pounds)
	Vessels	Landings	Crab ^a		Registered	Pulled		
1969	NA	131	353,300	1,008,900	NA	29,800	12	NA
1970	NA	66	482,300	1,014,700	NA	16,400	29	NA
1971	NA	22	61,300	166,100	NA	7,300	8	NA
1972	NA	14	42,061	107,761	NA	4,260	10	NA
1973	NA	44	93,595	231,668	NA	15,730	6	NA
1974	NA	69	2,531,825	5,044,197	NA	22,014	115	NA
1974/75	28	80	2,773,770	7,028,378	NA	38,462	72	NA
1975/76	66	304	8,956,036	22,358,107	NA	141,206	63	NA
1976/77	83	541	20,251,508	51,455,221	NA	297,471	68	NA
1977/78	120	861	26,350,688	66,648,954	NA	516,350	51	218,099
1978/79	144	817	16,726,518	42,547,174	NA	402,697	42	76,000
1979/80	152	804	14,685,611	36,614,315	40,273	488,434	30	56,446
1981	165	761	11,845,958	29,630,492	42,910	559,626	21	101,594
1982	125	791	4,830,980	11,008,779	36,396	490,099	10	138,159
1983	108	448	2,286,756	5,273,881	15,255	282,006	8	60,029
1984	41	134	516,877	1,208,223	9,851	61,357	8	5,025
1985	44	166	1,283,474	3,151,498	15,325	104,707	12	14,096
1986				FISHERY CLOSED				
1987				FISHERY CLOSED				
1988	98	248	897,059	2,210,394	38,765	112,334	8	10,724
1989	109	359	2,907,021	7,012,965	43,607	184,892	16	34,664
1990	179	1,032	10,717,924	24,549,299	46,440	711,137	15	87,475
1990/91	255	1,756	16,608,625	40,081,555	75,356	883,391	19	210,769
1991/92	285	2,339	12,924,034	31,796,381	85,401	1,244,633	10	279,741

-Continued-

Table 2-21. (Page 2 of 2)

Year	Number of			Harvest ^a (pounds)	Number of Pots		CPUE ^b	Deadloss (pounds)
	Vessels	Landings	Crab ^a		Registered	Pulled		
1992/93	294	2,084	15,265,880	35,130,866	71481	1,200,885	13	343,955
1993/94	296	862	7,235,498	16,891,320	116,039	576,464	13	258,389
1994	183	349	3,351,639	7,766,886	38,670	249,536	13	132,780
1995	196	256	1,877,303	4,233,061	40,827	247,853	8	44,508
1996 ^c	196	347	734,296	1,806,077	68,602	149,289	5	14,608
1997 to 2003	FISHERY CLOSED							

^a Deadloss included.

^b Number of legal crabs retained per pot pull.

^c Includes incidental catch with Bristol Bay red king crab and Tanner crab directed fishery totals.

NA: Not Available.

Table 2-22. Bering Sea District commercial Tanner crab fishery catch by subdistrict, 1974/75-2003.

Season	Subdistrict ^a	Vessels	Number of		Harvest ^b (pounds)	Pots Pulled	Average		Deadloss (pounds)
			Landings	Crab ^b			Weight (pounds)	CPUE ^c	
1974/75	Southeastern		72	2,526,687	6,504,984	32,275	2.6	78	0
	Pribilofs		8	247,083	523,394	3,923	2.1	63	0
	TOTAL	28	80	2,773,770	7,028,378	38,462	2.5	72	0
1975/76	Southeastern		230	6,682,232	16,643,194	106,445	2.5	63	0
	Pribilofs		74	2,273,804	5,714,913	34,761	2.5	65	0
	TOTAL	66	304	8,956,036	22,358,107	141,206	2.5	63	0
1976/77	Southeastern		437	16,089,057	41,007,736	233,667	2.6	69	0
	Pribilofs		104	4,162,451	10,447,485	63,804	2.5	65	0
	TOTAL	83	541	20,251,508	51,455,221	297,471	2.5	68	0
1977/78	Southeastern		706	21,055,527	53,278,012	408,437	2.5	52	0
	Pribilofs		155	5,210,170	13,152,843	107,913	2.5	48	0
	TOTAL	120	861	26,350,688	66,648,954	516,350	2.5	51	218,099
1978/79	Southeastern		758	15,601,891	39,694,205	356,594	2.5	44	75,400
	Pribilofs		59	1,124,627	2,852,969	46,103	2.5	24	600
	TOTAL	144	817	16,726,518	42,547,174	402,697	2.5	42	76,000
1979/80	Southeastern		789	14,329,889	35,724,003	476,410	2.5	30	56,446
	Pribilofs		15	355,722	890,312	12,024	2.5	30	0
	TOTAL	152	804	14,685,611	36,614,315	488,434	2.5	30	56,446

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Table 2-22. (page 2 of 4)

Season	Subdistrict ^a	Number of			Harvest ^b (pounds)	Pots Pulled	Average		Deadloss (pounds)
		Vessels	Landings	Crab ^b			Weight (pounds)	CPUE ^c	
1981	Southeastern		674	10,532,007	26,684,956	496,751	2.5	21	97,398
	Pribilofs		87	1,313,951	2,945,536	62,875	2.5	21	4,196
	TOTAL	165	761	11,845,958	29,630,492	559,626	2.5	21	101,594
1982	Southeastern		539	3,825,433	8,812,302	322,634	2.3	12	69,829
	Pribilofs		252	1,005,547	2,196,477	167,465	2.2	6	68,330
	TOTAL	125	791	4,830,980	11,008,779	490,099	2.3	10	138,159
1983	Northern		10	29,478	48,454	5,950	1.7	5	167
	Southeastern		287	1,984,673	4,633,354	192,538	2.3	10	52,879
	Pribilofs		151	272,505	592,073	83,528	2.2	3	6,983
	TOTAL	108	448	2,286,756	5,273,881	282,006	2.3	8	60,029
1984	Southeastern		91	470,181	1,099,142	44,546	2.3	11	4,688
	Pribilofs		43	46,759	109,081	16,811	2.3	3	337
	TOTAL	41	134	516,877	1,208,223	61,357	2.3	8	5,025
1985	Southeastern	38	143	1,278,109	3,139,041	96,976	2.4	13	14,096
	Pribilofs	15	23	5,365	12,457	7,731	2.3	1	0
	TOTAL	44	166	1,283,474	31,513,498	104,707	2.4	12	14,096
1986				F I S H E R Y C L O S E D					
1987				F I S H E R Y C L O S E D					

-Continued-

Table 2-22. (page 3 of 4)

Season	Subdistrict ^a	Number of			Harvest ^b (pounds)	Pots Pulled	Average		Deadloss (pounds)
		Vessels	Landings	Crab ^b			Weight (pounds)	CPUE ^c	
1988	Eastern	98	248	897,059	2,210,394	112,334	2.5	8	10,724
	Western	0	0	0	0	0	0	0	0
	TOTAL	98	248	897,059	2,210,394	112,334	2.5	8	10,724
1989	Eastern	109	359	2,907,021	7,012,965	184,892	2.4	16	34,664
	Western	0	0	0	0	0	0	0	0
	TOTAL	109	359	2,907,021	7,012,965	184,892	2.4	16	34,664
1990	Eastern		1,105	10,708,996	24,529,165	701,924	2.3	15	87,475
	Western		17	8,928	20,134	9,213	2.3	1	0
	TOTAL	179	1,032	10,717,924	24,549,299	711,137	2.3	15	87,475
1990/91	Eastern	255	1,756	16,608,625	40,081,555	883,391	2.4	19	210,769
	Western	0	0	0	0	0	0	0	0
	TOTAL	255	1,756	16,608,625	40,081,555	883,391	2.4	19	210,769
1991/92	Eastern	285	2,339	12,924,034	31,796,381	1,244,633	2.5	10	279,741
1992/93	Eastern	293	2,011	15,074,084	34,821,043	1,150,834	2.3	13	340,955
	Western	70	96	191,796	309,823	50,051	1.6	4	3,000
	TOTAL	294	2,084	15,265,880	35,130,866	1,200,885	2.3	13	343,955
1993/94	East of 168 ^{od}	283	347	1,696,430	4,114,949	250,501	2.4	7	103,715
	163° to 173 ^{oe}	261	515	5,539,068	12,776,371	325,963	2.3	17	154,674
	TOTAL	296	862	7,235,498	16,891,320	576,464	2.3	13	258,389

-Continued-

Table 2-22. (page 4 of 4)

Season	Subdistrict ^a	Number of			Harvest ^b (pounds)	Pots Pulled	Average		Deadloss (pounds)
		Vessels	Landings	Crab ^b			Weight (pounds)	CPUE ^c	
1994	163° to 173°	183	349	3,351,639	7,766,886	249,536	2.3	13	132,780
1995	163° to 173°	196	256	1,877,303	4,233,061	247,853	2.3	8	44,508
1996	East of 168° ^d	192	195	393,257	994,776	75,753	2.5	5	8,464
	163° to 173° ^e	135	152	341,039	811,301	73,522	2.4	5	6,144
	TOTAL	196	347	734,296	1,806,077	149,275	2.5	5	14,608
1997 to 2003		F I S H E R Y C L O S E D							

^a Prior to 1988, the subdistricts were: Southeastern, Pribilof, and Northern (includes the Norton Sound and General Sections).

^b Deadloss included.

^c Number of legal crabs retained per pot pull.

^d Incidental harvest in Bristol Bay red king crab fishery.

^e Directed Tanner crab fishery.

Table 2-23. Bering Sea District commercial Tanner crab fishery economic data, 1979/80-2003.

Year	GHL ^a	Value		Season Length	
		Exvessel (per lb.)	Total ^b	Days	Dates
1979/80	28-36	\$0.52	\$19.0	189	11/01-05/11
1981	28-36	\$0.58	\$17.2	88	01/15-04/15
1982	12-16	\$1.06	\$11.5	118	02/15-06/15
1983	5.6	\$1.20	\$6.2	118	02/15-06/15
1984	7.1	\$0.95	\$1.1	118	02/15-06/15
1985	3	\$1.40	\$4.3	149	01/15-06/15
1986		FISHERY CLOSED			
1987		FISHERY CLOSED			
1988	5.6	\$2.17	\$4.8	93	01/15-04/20
1989	13.5	\$2.90	\$20.3	110	01/15-05/07
1990 ^c	29.5	\$1.85	\$45.3	89	01/15-04/24
1990/91	42.8	\$1.12	\$44.5	126	11/20-03/25
1991/92	32.8	\$1.50	\$47.3	137	11/15-03/31
1992/93	39.2	\$1.69	\$58.8	137	11/15-03/31
1993 ^d	10.7	\$1.90	\$7.6	10	11/01-11/10
1993/94 ^e	9.1	\$1.90	\$24.0	42	11/20-01/01
1994 ^e	7.5	\$3.75	\$28.5	20	11/01-11/21
1995 ^e	5.5	\$2.80	\$11.7	15	11/01-11/16
1996 ^d	2.2	\$2.51	\$2.5	4	11/01-11/05
1996 ^e	6.2	\$2.48	\$2.0	12	11/15-11/27
1997 to 2003		FISHERY CLOSED			

^a Guideline harvest level, millions of pounds.

^b Millions of dollars.

^c Winter fishery.

^d East of 168° West longitude (incidental to Bristol Bay red king crab).

^e 163° -173° West longitude (directed fishery).

Table 2-24. Bering Sea District commercial Tanner crab fishery harvest composition by fishing season, 1972-2003.

Season	Average		% New Shell
	Weight (pounds)	Width (mm)	
1972 ^a	2.6	NA	NA
1973 ^a	2.5	NA	NA
1974 ^a	2	NA	NA
1974/75	2.5	NA	NA
1975/76	2.5	NA	NA
1976/77	2.5	NA	NA
1977/78	2.5	152.8	88.0
1978/79	2.5	152.7	95.0
1979/80	2.5	151.4	90.0
1981	2.5	149.4	86.6
1982	2.3	148.8	85.4
1983 ^b	2.3	148.8	70.5
1984	2.3	146.5	40.0
1985	2.4	150.0	65.0
1986	FISHERY CLOSED		
1987	FISHERY CLOSED		
1988	2.5	143.5	70.2
1989	2.4	149.4	80.8
1990	2.3	148.1	96.5
1990/91	2.4	149.7	95.3
1991/92	2.5	150.4	93.2
1992/93	2.3	148.0	90.5
1993/94	2.4	150.7	93.9
1994	2.3	150.0	92.5
1995	2.3	149.3	58.6
1996 ^c	2.5	152.1	46.6
1997 to 2003	FISHERY CLOSED		

^a Incidental to the king crab fishery.

^b Partial Bering Sea closure.

^c Includes incidental catch with Bristol Bay red king crab and Tanner crab directed fishery totals.

NA: Not Available.

Table 2-25. Bering Sea District commercial snow crab fishery harvest data, 1978/79-2003.

Year	GHL ^a	Number of		Harvest ^{b,c}	Pots Pulled	CPUE ^d	Deadloss ^c	
		Vessels	Landings Crab ^b					
1978/79		102	490	22,118,498	32,187,039	190,746	116	759,137
1979/80		134	597	25,286,777	39,572,668	255,102	99	228,345
1981	39.5-91.0	153	867	34,415,322	52,750,034	435,742	79	2,269,979
1982	16.0-22.0	122	803	24,089,562	29,355,374	469,091	51	1,092,655
1983 ^e	15.8	109	461	23,853,647	26,128,410	287,127	83	1,324,466
1984 ^e	49.0	52	367	24,009,935	26,813,074	173,591	138	798,795
1985 ^e	98.0	75	718	52,903,246	65,998,875	372,045	142	1,064,184
1986 ^e	57.0	88	992	76,499,123	97,984,539	543,744	141	1,378,533
1987 ^e	56.4	103	1,038	81,307,659	101,903,388	616,113	132	978,449
1988 ^e	110.7	171	1,285	105,716,337	135,354,637	776,907	136	3,260,020
1989 ^e	132.0	168	1,341	112,618,881	149,455,848	663,442	170	1,844,682
1990 ^e	139.8	189	1,565	128,977,638	161,821,350	911,613	141	1,796,664
1991 ^e	315.0	220	2,788	265,123,960	328,647,269	1,391,583	191	3,464,036
1992	333.0	250	2,763	227,376,582	315,302,034	1,281,796	177	2,325,852
1993	207.2	254	1,836	169,558,842	230,787,000	971,046	175	1,573,952
1994	105.8	273	1,293	114,779,014	149,775,765	716,524	160	1,799,323
1995	55.7	253	869	60,611,411	75,252,677	506,802	117	1,287,169
1996	50.7	234	766	52,912,823	65,712,797	520,651	102	1,333,014
1997	117.0	226	1,127	99,975,539	119,543,024	754,140	133	2,351,555
1998 ^f	225.9	229	1,767	186,543,734	243,341,381	891,268	207	2,893,945
1999 ^f	186.2	241	1,630	143,296,568	184,529,821	899,043	158	1,828,313
2000 ^f	26.4	229	287	23,265,802	30,774,838	170,064	137	338,057
2001 ^f	25.3	207	293	17,185,523	23,382,046	176,930	97	429,884
2002 ^f	28.5	191	403	23,303,975	30,252,501	307,666	76	582,589
2003 ^{f,g}	23.7	192	230	21,637,019	26,341,958	139,903	155	665,199

^a Guideline harvest level in millions of pounds.

^b Deadloss included.

^c In pounds.

^d Number of legal crabs retained per pot pull.

^e Partial district and subdistrict closures, see Table 2-26.

^f General fishery only.

^g Includes 181,457 pounds illegally taken in Russian waters.

Table 2-26. Bering Sea District commercial snow crab fishery season dates and area closures, 1977/78-2003.

Season	Opened	Closed	Comments
1977/78	09/15/77	09/23/78	Bering Sea District closure ^a
1978/79	11/01/78	09/03/79	Bering Sea District closure ^a
1979/80	11/01/79	08/15/80 09/03/80	Bering Sea District state closure Bering Sea District federal closure
1981	01/15/81	09/01/81	Bering Sea District closure ^b
1982	02/15/82	08/01/82	Bering Sea District closure ^b
1983	02/15/83	05/22/83 08/01/83	Bering Sea District closure south of 57°30' N. lat. ^b Bering Sea District closure north of 57°30' N. lat. ^b
1984	02/15/84	08/01/84 08/22/84	Bering Sea District closure south of 58° N. lat. ^b Bering Sea District closure north of 58° N. lat. to allow an orderly start to king crab season ^b
	09/15/84	12/31/84	Bering Sea District closure north of 58°N. lat. reopened after king season and Bering Sea District closure ^b
1985	01/15/85	05/08/85 08/01/85 08/22/85	Pribilof Subdistrict closure south of 58° N. lat. ^b Bering Sea District closure south of 58°39' N. lat. ^b Northern Subdistrict closure to allow an orderly start to king crab season ^b
	10/09/85	01/15/86	*Bering Sea District reopened, except east of 164° W. long. in Southeastern Subdistrict, *fishery was scheduled to close 12/31/85 but did not, it remained open until the start of the 1986 fishery
1986	01/15/86	04/21/86 06/01/86 08/01/86 08/24/86	Southeastern Subdistrict closure west of 164° W long. ^b Pribilof Subdistrict closure ^b Northern Subdistrict closure east of 175° W. long. ^b Northern Subdistrict closure west of 175° W. long. ^b
1987	01/15/87	04/12/87 06/01/87	Southeastern Subdistrict west of 164° W. long., and Pribilof Subdistrict closure Northern Subdistrict south of 60°30' N lat. and east of 178° W. long. closure

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Table 2-26. (page 2 of 2)

Season	Opened	Closed	Comments
1987 (cont.)	01/15/87	06/22/87	Northern Subdistrict north of 60°30' N lat. and west of 178° W. long. closure
1988	01/15/88	03/29/88	Bering Sea District closure (Western Subdistrict to assist in an orderly closure)
	05/15/88	06/30/88	Western Subdistrict reopen and closure
1989	01/15/89	03/26/89	Eastern Subdistrict closure
		05/07/89	Western Subdistrict closure
1990	01/15/90	04/09/90	Eastern Subdistrict east of 165° W. long. closure
		04/24/90	Eastern Subdistrict west of 165° W. long. closure
		06/12/90	Western Subdistrict closure
1991	01/15/91	05/05/91	Eastern Subdistrict closure
		06/23/91	Western Subdistrict closure
1992	01/15/92	04/22/92	Bering Sea District closure
1993	01/15/93	03/15/93	Bering Sea District closure
1994	01/15/94	03/01/94	Bering Sea District closure
1995	01/15/95	02/17/95	Bering Sea District closure
1996	01/15/96	02/29/96	Bering Sea District closure
1997	01/15/97	03/21/97	Bering Sea District closure
1998	01/15/98	03/20/98	Bering Sea District closure
1999	01/15/99	03/22/99	Bering Sea District closure
2000	04/01/00	04/08/00	Bering Sea District closure
2001	01/15/01	02/14/01	Bering Sea District closure
2002	01/15/02	02/08/02	Bering Sea District closure
2003	01/15/03	01/25/03	Bering Sea District closure

^a State managed domestic fishery.

^b Concurrent state and federal date.

Table 2-27. 2003 Bering Sea snow crab fishery inseason harvest and effort projections.

Date	Report Day	Projected				Cumulative harvest ^b	Season CPUE ^a
		Daily CPUE ^a	Pot lifts	Number of crabs	Daily Harvest ^b		
(Jan) 16	1	73	2,179	161,518	197,052	197,052	74
17	2	114	14,972	1,709,055	2,085,047	2,282,099	109
18	3	136	15,310	2,063,748	2,517,772	4,799,871	121
19	4	152	15,571	2,327,809	2,839,927	7,639,798	130
20	5	149	16,307	2,388,727	2,914,247	10,554,045	134
21	6	158	15,917	2,478,908	3,024,268	13,578,313	139
22	7	157	12,642	1,972,501	2,406,451	15,984,764	141
23	8	151	15,130	2,279,766	2,781,314	18,766,078	142
24	9	153	16,785	2,567,630	3,132,508	21,898,586	144
25	10	152	18,906	2,464,428	3,006,602	24,905,188	142
Totals			143,719	20,414,089	24,905,188		142

^a Number of legal crabs retained per pot pull.

^b In pounds.

Table 2-28. Bering Sea District commercial snow crab fishery catch by statistical area, 2003.

Area	Number of		Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
	Landings	Crab ^a			CPUE ^c	Weight	
EASTERN SUBDISTRICT AREAS							
715600	3	5,347	6,791	185	29	1.27	35
715630	19	501,198	637,925	6,453	78	1.27	8,421
715700	3	54,305	67,231	520	104	1.24	1,253
725630	22	1,439,039	1,777,223	8,439	171	1.24	49,650
725700	20	1,076,681	1,307,713	6,342	170	1.21	29,076
725730	14	347,632	416,791	2,144	162	1.20	3,319
725800	8	200,820	247,022	2,162	93	1.23	10,181
Other ^d	13	306,305	395,911	3,060	100	1.29	4,659
Subtotal	102	3,931,327	4,856,607	29,305	134	1.24	106,594
WESTERN SUBDISTRICT AREAS							
735700	23	1,134,071	1,369,658	5,111	222	1.21	24,356
735730	47	3,021,445	3,628,171	16,436	184	1.20	48,174
735800	79	4,713,149	5,790,400	28,979	163	1.23	81,639
735830	25	1,343,353	1,609,513	9,169	147	1.20	31,812
735900	3	153,008	184,061	766	200	1.20	756
745800	27	740,910	888,446	6,281	118	1.20	14,188
745830	16	763,068	894,956	5,661	135	1.17	33,961
745900	12	104,596	130,880	1,068	98	1.25	1,304
745930	12	171,553	207,512	1,071	160	1.21	899
755900	13	663,271	799,870	3,689	180	1.21	35,382
755930	16	625,333	718,936	3,999	156	1.15	20,739
756000	3	3,090	3,194	151	20	1.03	63
765900	3	10,182	12,304	242	42	1.21	19
766000	6	41,464	50,149	532	78	1.21	1,064
755900	6	277,803	329,861	2,278	122	1.19	7,119
775930	32	1,752,751	2,103,897	12,619	139	1.20	38,410
776000	4	72,215	91,281	707	102	1.26	2,567
776030	3	27,169	23,160	90	302	0.85	388

-Continued-

Table 2-28. (page 2 of 2)

Area	Number of		Harvest ^{a,b}	Pots Pulled	Average		Deadloss ^b
	Landings	Crab ^a			CPUE ^c	Weight	
785930	6	143,593	177,967	754	190	1.24	3,008
786000	8	520,549	629,824	2,662	196	1.21	183,490
786030	16	973,778	1,291,122	5,333	183	1.33	23,249
Other ^e	31	449,341	550,189	3,000	150	1.22	6,018
Subtotal	391	17,705,692	21,485,351	110,598	160	1.21	558,605
Total ^{f,g}	493	21,637,019	26,341,958	139,903	155	1.22	665,199

^a Deadloss included.

^b In pounds.

^c Defined as catch of legal crabs per pot pull.

^d Includes 12 statistical areas where less than three vessels made landings.

^e Includes 13 statistical areas where less than three vessels made landings.

^f General fishery only.

^g Includes 181,457 pounds illegally taken in Russian waters.

Table 2-29. Bering Sea District commercial snow crab harvest by season and subdistrict, 1977/78-2003.

Season	Subdistrict	Number of			Harvest ^{b,c}	Pots Pulled	Average Weight ^c	CPUE ^d	Deadloss ^c
		Vessels	Landings ^a	Crab ^b					
1977/78	Southeastern		33	1,063,872	1,439,959	11,560	1.4	92	NA
	Pribilof		5	203,674	276,165	1,687	1.4	121	NA
	TOTAL	15	38	1,267,546	1,716,124	13,247	1.4	96	NA
1978/79	Southeastern	101	476	21,279,794	31,102,832	184,491	1.5	115	659,137
	Pribilof	10	14	838,704	1,084,039	6,225	1.5	135	100,000
	TOTAL	102	490	22,118,498	32,187,039	190,746	1.5	116	759,137
1979/80	Southeastern	133	561	23,199,446	36,406,391	237,375	1.6	98	187,945
	Pribilof	19	36	2,087,331	3,166,777	17,727	1.5	118	40,400
	TOTAL	134	597	25,286,777	39,572,668	255,102	1.6	99	228,345
1981	Southeastern		624	24,498,642	37,866,229	309,304	1.6	79	1,475,078
	Pribilof		243	9,916,617	14,886,705	126,438	1.5	78	794,901
	TOTAL	153	867	34,415,322	52,750,034	435,742	1.5	79	2,269,979
1982	Southeastern		468	10,207,174	13,079,583	257,193	1.3	40	422,979
	Pribilof		335	13,882,388	16,276,421	211,898	1.2	66	669,676
	TOTAL	122	803	24,089,562	29,355,374	469,091	1.2	51	1,092,655
1983	Southeastern		153	3,553,281	4,197,304	94,470	1.2	38	165,298
	Pribilof		239	19,076,553	20,514,000	153,458	1.0	124	1,078,643
	Northern		69	1,223,813	1,417,106	39,199	1.1	31	80,525
	TOTAL	109	461	23,853,647	26,128,410	287,127	1.1	83	1,324,466

-Continued-

Table 2-29. (page 2 of 5)

Season	Subdistrict	Number of		Harvest ^{b,c}	Pots Pulled	Average Weight ^c	CPUE ^d	Deadloss ^c	
		Vessels	Landings ^a						Crab ^b
1984	Southeastern		76	3,534,370	3,990,621	33,091	1.1	107	54,678
	Pribilof		230	17,909,096	19,727,493	112,078	1.1	160	708,706
	Northern		61	2,566,469	3,094,960	28,422	1.2	90	35,411
	TOTAL	52	367	24,009,935	26,813,074	173,591	1.1	138	798,795
1985	Southeastern	55	301	21,963,882	27,373,232	158,819	1.4	138	461,001
	Pribilof	60	301	24,089,526	29,804,093	142,937	1.2	169	505,146
	Northern	24	116	6,849,838	8,821,550	70,289	1.3	97	98,037
	TOTAL	75	718	52,903,246	65,998,875	372,045	1.3	142	1,064,184
1986	Southeastern	47	112	8,491,694	10,957,578	63,889	1.3	133	44,755
	Pribilof	80	508	39,851,767	50,525,150	281,337	1.3	142	472,342
	Northern	67	372	28,155,662	36,501,811	198,518	1.3	142	861,436
	TOTAL	88	992	76,499,123	97,984,539	543,744	1.3	141	1,378,533
1987	Southeastern	28	64	4,116,778	5,106,473	24,619	1.2	167	24,619
	Pribilof	94	458	38,604,802	47,676,734	261,337	1.2	148	261,337
	Northern	99	516	38,586,079	49,120,181	330,157	1.2	117	330,157
	TOTAL	103	1,038	81,307,659	101,903,388	616,113	1.2	132	978,449
1988	Eastern	162	770	59,811,702	75,781,258	431,310	1.3	139	775,104
	Western	151	515	45,904,635	58,278,927	335,597	1.3	137	2,484,916
	TOTAL	171	1,285	105,716,337	134,060,185	776,907	1.3	136	3,260,020
1989	Eastern	163	871	77,698,698	104,399,693	391,451	1.3	198	1,128,971
	Western	127	470	34,920,183	45,056,155	271,991	1.3	128	715,711
	TOTAL	168	1,341	112,618,881	149,455,848	663,442	1.3	170	1,844,682

-Continued-

Table 2-29. (page 3 of 5)

Season	Subdistrict	Number of			Harvest ^{b,c}	Pots Pulled	Average Weight ^c	CPUE ^d	Deadloss ^c
		Vessels	Landings ^a	Crab ^b					
1990	Eastern	177	956	76,331,829	94,831,897	512,259	1.2	149	1,010,755
	Western	152	659	52,645,809	66,989,453	399,354	1.3	132	785,909
	TOTAL	189	1,565	128,977,638	161,821,350	911,613	1.3	141	1,796,664
1991	Eastern	218	2,013	190,139,612	240,090,666	912,751	1.3	208	1,593,021
	Western	186	867	74,984,348	88,556,603	478,832	1.2	157	1,871,015
	TOTAL	220	2,788	265,123,960	328,647,269	1,391,583	1.2	191	3,464,036
1992	Eastern	250	N/A	217,375,564	302,363,005	1,228,280	1.4	177	2,268,467
	Western	55	N/A	10,001,018	12,939,029	53,516	1.3	187	57,385
	TOTAL	250	2,763	227,376,582	315,302,034	1,281,796	1.4	177	2,325,852
1993	Eastern	251	1,384	110,760,099	151,328,721	675,996	1.4	164	1,108,520
	Western	185	633	58,798,743	79,458,279	295,050	1.4	199	465,432
	TOTAL	254	1,836	169,558,842	230,787,000	971,046	1.4	175	1,573,952
1994	Eastern	220	820	56,012,017	72,008,424	375,928	1.3	149	901,674
	Western	171	586	58,766,997	77,767,341	340,596	1.3	173	897,649
	TOTAL	273	1,293	114,779,014	149,775,765	716,524	1.3	160	1,799,323
1995	Eastern	217	627	32,630,348	39,736,986	313,910	1.2	104	657,051
	Western	153	357	27,981,063	35,515,691	192,892	1.3	145	630,118
	TOTAL	253	869	60,611,411	75,252,677	506,802	1.2	120	1,287,169
1996	Eastern	161	462	23,676,069	28,244,924	252,227	1.2	94	555,118
	Western	146	351	29,236,754	37,467,873	268,424	1.3	109	777,896
	TOTAL	234	766	52,912,823	65,712,797	520,651	1.2	102	1,333,014

-Continued-

Table 2-29. (page 4 of 5)

Season	Subdistrict	Number of			Harvest ^{b,c}	Pots Pulled	Average Weight ^c	CPUE ^d	Deadloss ^c
		Vessels	Landings ^a	Crab ^b					
1997	Eastern	225	1,040	88,486,602	105,648,771	649,319	1.2	136	2,115,217
	Western	83	164	11,488,937	13,894,253	104,821	1.2	110	236,338
	TOTAL	226	1,127	99,975,539	119,543,024	754,140	1.2	133	2,351,555
1998 ^e	Eastern	228	1,724	177,781,444	232,485,209	855,393	1.3	205	2,787,292
	Western	44	88	8,762,290	10,856,172	35,875	1.2	242	106,653
	TOTAL	229	1,767	186,543,734	243,341,381	891,268	1.3	207	2,893,945
1999 ^e	Eastern	236	1,386	102,209,222	134,135,696	656,276	1.3	156	1,237,770
	Western	121	388	39,646,982	48,565,812	242,767	1.2	163	590,543
	TOTAL	241	1,630	141,856,204	182,701,508	899,043	1.3	158	1,828,313
2000 ^e	Eastern	168	217	15,269,109	20,941,389	110,127	1.4	139	200,748
	Western	82	91	7,996,693	9,833,449	59,937	1.2	133	137,309
	TOTAL	229	287	23,265,802	30,774,838	170,064	1.3	137	338,057
2001 ^e	Eastern	163	219	8,877,103	12,575,815	114,044	1.4	78	224,266
	Western	85	115	8,308,420	10,806,231	62,866	1.3	132	205,618
	TOTAL	207	293	17,185,523	23,382,046	176,910	1.4	97	429,884

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Table 2-29. (page 5 of 5)

Season	Subdistrict	Number of			Harvest ^{b,c}	Pots Pulled	Average Weight ^c	CPUE ^d	Deadloss ^c
		Vessels	Landings ^a	Crab ^b					
2002 ^e	Eastern	144	274	10,369,137	13,513,988	161,736	1.3	64	296,854
	Western	107	191	12,909,073	16,707,594	145,330	1.3	89	283,716
	TOTAL ^f	191	403	23,303,975	30,252,501	307,666	1.3	76	580,570
2003 ^e	Eastern	66	102	3,931,327	4,856,607	29,305	1.2	134	106,594
	Western	158	155	17,705,692	21,485,351	110,598	1.2	160	558,605
	TOTAL ^g	192	257	21,637,019	26,341,958	139,903	1.2	155	665,199

^a Number of subdistrict landings is greater than the total number of landings because a single vessel may fish in several statistical areas.

^b Deadloss included.

^c In pounds.

^d Number of legal crabs retained per pot pull.

^e General fishery only.

^f Total harvest includes 30,919 pounds taken from an unidentified statistical area.

^g Includes 181,457 pounds illegally taken in Russian waters.

NA: Not Available.

Table 2-30. Bering Sea District commercial snow crab fishery harvest composition by fishing season, 1978/79-2003.

Season	Average		Percent new shell	Percent <102 mm cw landed
	Weight (pounds)	Width (mm)		
1978/79	1.5	113.1	83.0	NA
1979/80	1.6	118.1	90.0	NA
1981	1.5	117.0	79.2	NA
1982	1.2	109.4	78.0	NA
1983 ^a	1.1	NA	NA	NA
1984 ^a	1.1	105.4	78.0	NA
1985 ^a	1.3	108.0	80.0	NA
1986 ^a	1.3	109.5	73.7	NA
1987 ^a	1.2	108.9	84.0	NA
1988 ^a	1.3	109.5	71.2	NA
1989 ^a	1.3	111.2	85.2	NA
1990 ^a	1.3	109.1	97.4	NA
1991 ^a	1.2	110.2	95.1	NA
1992	1.4	111.7	97.6	NA
1993	1.4	111.6	92.5	NA
1994	1.3	110.4	93.1	11.3
1995	1.2	108.6	89.6	17.2
1996	1.2	107.5	75.8	19.7
1997	1.2	107.3	96.5	17.3
1998 ^b	1.3	111.1	97.0	7.3
1999 ^b	1.3	110.3	97.7	8.0
2000 ^b	1.3	111.3	95.2	6.5
2001 ^b	1.4	111.3	95.2	5.3
2002 ^b	1.3	110.4	69.0	12.2
2003 ^b	1.2	107.2	83.8	10.2

^a Partial district and subdistrict closures, see Table 2-26.

^b General fishery only.

NA: Not Available.

Table 2-31. Bering Sea District commercial snow crab fishery economic data 1979/80-2003.

Year	Value		Registered Pots ^b	Season Length ^c
	Exvessel	Fishery ^a		
1979/80	\$0.21	\$ 82.50	35,503	307
1981	\$0.26	\$ 13.10	39,789	229
1982	\$0.73	\$ 20.70	35,522	167
1983 ^d	\$0.35	\$ 8.70	15,396	120
1984 ^d	\$0.30	\$ 7.80	12,493	320
1985 ^d	\$0.30	\$ 19.50	15,325	333
1986 ^d	\$0.60	\$ 60.00	13,750	252
1987 ^d	\$0.75	\$ 75.70	19,386	158
1988 ^d	\$0.77	\$ 100.70	38,765	120
1989 ^d	\$0.75	\$ 110.70	43,607	112
1990 ^d	\$0.64	\$ 102.30	46,440	148
1991 ^d	\$0.50	\$ 162.60	76,056	159
1992	\$0.50	\$ 156.50	77,858	97
1993	\$0.75	\$ 171.90	65,081	59
1994	\$1.30	\$ 192.40	54,837	45
1995	\$2.43	\$ 180.00	53,707	33
1996	\$1.33	\$ 85.60	50,169	45
1997	\$0.79	\$ 92.60	47,036	65
1998 ^e	\$0.56	\$ 134.65	47,909	64
1999 ^e	\$0.88	\$ 160.78	50,173	66
2000 ^e	\$1.81	\$ 55.09	43,407	7
2001 ^e	\$1.53	\$ 32.12	40,379	30
2002 ^e	\$1.49	\$ 44.20	37,807	24
2003 ^e	\$1.83	\$ 46.98	20,452	9

^a Millions of dollars.

^b Prior to 1992 includes Tanner crab gear.

^c In days.

^d Partial district and subdistrict closures, see Table 2-26.

^e General fishery only.

Table 2-32. Bering Sea District commercial grooved Tanner crab fishery harvest data, 1992-2003.

Year	Number of		Harvest ^{a,b}	Pots Pulled	Exvessel Value	Fishery Value ^c	Average		Deadloss
	Vessels	Crabs ^a					Weight ^b	CPUE ^d	
1992						CONFIDENTIAL			
1993	6	342,095	658,796	35,650	\$0.94	\$0.60	1.9	9	71,000
1994	4	165,365	332,454	13,739	\$1.20	\$0.40	2	11	30,585
1995	8	38,313	1,005,721	60,993	\$1.40	\$1.31	2.1	7	69,177
1996	3	40,849	106,886	14,504	\$1.08	\$0.10	2.1	3	11,186
1997-1999						NO LANDINGS			
2000	1					CONFIDENTIAL			
2001	1					CONFIDENTIAL			
2002						NO LANDINGS			
2003	1					CONFIDENTIAL			

^a Deadloss included.

^b In pounds.

^c Millions of dollars.

^d Number of legal crabs per pot lift.

Table 2-33. Bering Sea District commercial triangle Tanner crab fishery harvest data, 1992-2003.

Year	Number of		Harvest ^{a,b}	Pots Pulled	Exvessel Value	Fishery Value ^c	Average		Deadloss
	Vessels	Crabs ^a					Weight ^b	CPUE ^d	
1992-1994						NO LANDINGS			
1995	4	41,914	49,007	22,180	\$1.35	\$0.05	1.2	1	14,147
1996	1					CONFIDENTIAL			
1997-1999						NO LANDINGS			
2000 ^e	1					CONFIDENTIAL			
2001 ^e	1					CONFIDENTIAL			
2002 ^e						NO LANDINGS			
2003 ^e	1					CONFIDENTIAL			

^a Deadloss included.

^b In pounds.

^c Millions of dollars.

^d Number of legal crabs per pot lift.

^e Restricted to incidental harvest during grooved Tanner crab fishery.

Table 2-34. Bering Sea commercial hair crab fishery data, 1979-2003.

Year	Number of			Harvest ^{a,b}	Pots		Average		Deadloss ^b
	Vessels	Landings	Crabs ^a		Registered	Pulled	CPUE ^c	Weight ^b	
1979	11	16	2,457	5,213		9,908	<1	2.1	0
1980	9	17	25,417	53,914		14,506	2	2.1	0
1980/81	67	192	1,127,309	2,439,483		172,695	7	2.2	265,369
1981/82	48	159	466,560	932,584		117,518	4	2.0	29,749
1982/83	52	161	575,453	1,211,420		84,346	7	2.1	122,456
1983/84	19	48	200,670	406,538		20,414	10	2.0	28,062
1984 ^d	7	26	197,209	396,630		22,392	9	2.0	19,436
1985 ^d	3	9	34,410	66,042		3,905	9	2.0	593
1986	3	7	7,289	14,835		4,720	2	2.0	500
1987 ^e	2				CONFIDENTIAL				
1988-90 ^d					NO LANDINGS				
1991 ^d	7	42	441,533	377,708		44,444	10	.9	0
1992 ^{d,e}	9	20	203,758	240,767		38,808	5	1.2	11,495
1992 ^{d,f}	10	47	1,127,948	1,198,590		125,943	9	1.1	65,674
1993 ^{d,e}	4	5	2,347	3,038		9,345	<1	1.3	0
1993/94 ^{d,f,g,h}	19	129	1,936,795	2,331,686		585,913	3	1.2	124,596
1994 ^{d,f}	10	55	897,070	1,199,246	13,350	287,954	3	1.3	49,275
1995 ^{d,f}	21	81	1,485,097	2,059,988	25,750	441,494	3	1.4	73,882

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Table 2-34. (Page 2 of 2)

Year	Number of			Harvest ^{a,b}	Pots		Average		Deadloss
	Vessels	Landings	Crabs ^a		Registered	Pulled	CPUE ^c	Weight ^b	
1996 ^d	19	99	485,735	745,804	20,680	410,548	1	1.5	32,495
1997 ^d	16	52	420,121	668,096	18,180	211,970	2	1.6	17,522
1998 ^d	12	31	188,784	307,739	14,330	128,495	2	1.6	17,392
1999 ^d	8	27	139,894	221,656	9,840	92,333	1	1.6	4,677
2000 ^d	3	3	1,058	1,546	3,900	3,300	<1	1.5	0
2001-2003 ^d	FISHERY CLOSED								

^a Deadloss included.

^b In pounds.

^c Number of legal crabs retained per pot pull.

^d Permit Fishery.

^e Spring Fishery.

^f Fall Fishery.

^g Fishery opened Nov. 1, 1993 and closed April 20, 1994.

^h Includes seven vessels that landed hair crab incidental to Tanner crab.

Table 2-35. Bering Sea commercial hair crab fishery economic performance data, 1979-2003.

Year	GHL ^a	Value		Season	
		Exvessel ^b	Total ^c	Days	Dates
1979		\$0.54	\$0.03	257	04/19-12/31
1980		\$0.75	\$0.04	244	01/01-08/30
1980/81		\$0.80	\$1.7	242	11/01-06/30
1981/82		\$0.55	\$0.5	288	11/01-08/15
1982/83		\$0.65	\$0.7	297	10/08-08/01
1983/84		\$1.20	\$0.5	335	08/01-06/30
1984		\$1.60	\$0.6	184	07/01-12/31
1985		\$1.60	\$0.1	365	01/01-12/31
1986		\$1.15	\$0.2	365	01/01-12/31
1987		CONFIDENTIAL		365	01/01-12/31
1988-90		NO LANDINGS		365	01/01-12/31
1991		\$3.08	\$1.2	365	01/01-12/31
1992		\$2.25	\$0.5	32	01/01-06/04
1992		\$2.46	\$2.8	156	10/01-11/01
1993		NA	NA	45	04/01-05/15
1993/94	3.0	\$2.42	\$5.3	171	11/01-04/20
1994	1.1	\$3.55	\$4.0	41	11/01-12/12
1995	1.8	\$2.87	\$5.7	25	11/01-11/26
1996	0.9	\$2.65	\$1.9	31	11/01-12/02
1997	0.8	\$2.97	\$1.9	25	11/01-11/25
1998	0.4	\$2.70	\$0.8	16	10/08-10/23
1999	0.3	\$3.20	\$0.7	37	10/30-12/07
2000	0.3	\$3.84	\$0.005	7	10/30-11/05
2001-2003		FISHERY CLOSED			

^a Guideline harvest level, millions of pounds.

^b Price per pound.

^c In millions of dollars.

NA: Not Available.

Table 2-36. Bering Sea commercial octopus incidental harvest in groundfish fisheries, 1995-2003.

Year	Number of		Harvest ^b	
	Vessels	Landings ^a	Total ^c	Landed
1995 ^d	30	76	17,730	11,967
1996	38	104	27,226	5,337
1997	27	47	12,232	6,997
1998	30	48	9,542	3,855
1999	7	8	6,961	376
2000	50	128	39,944	16,303
2001	62	163	50,947	8,982
2002	70	185	56,179	39,466
2003	78	237	122,423	94,462

^a All landings incidental to other fisheries.

^b Numbers from State Groundfish Tickets (Neptune database), in pounds.

^c Discards at sea included.

^d The 1995 directed fishery data is confidential, and is not included in this table.

Table 2-37. Bering Sea commercial snail catch data, 1992 - 2003.

Year	Number of		Number of Pots		Harvest ^{a,b}	CPUE ^c	Pounds Per Pot ^d	Deadloss ^b
	Vessels	Landings	Registered	Pulled				
1992					CONFIDENTIAL			
1993	4	10	13,800	44,686	312,876	25	7	NA
1994	4	42	14,850	279,349	2,027,328	21	7.3	62,571
1995	4	38	18,800	262,096	2,352,825	28	9	22,371
1996	5	67	31,300	741,326	3,572,992	16	4.8	62,494
1997	3	17	14,500	191,893	932,048	16	4.9	77,131
1998-2003					NO LANDINGS			

^a Deadloss included.

^b In pounds.

^c Number of snails per pot pull.

^d Whole weight.

NA: Not Applicable.

Table 2-38. Bering Sea commercial snail fishery economic performance data, 1992-2003.

Year	Harvest ^a	Number of		Value	
		Vessels	Landings	Exvessel ^b	Total
1992			CONFIDENTIAL		
1993	312,876	4	10	\$0.40	\$125,150
1994	1,964,757	4	42	\$0.34	\$668,017
1995	2,330,454	4	38	\$0.30	\$699,136
1996	3,510,498	5	67	\$0.30	\$1,053,149
1997	854,917	3	17	\$0.36	\$307,770
1998-2003			NO LANDINGS		

^a In pounds.

^b Price per pound.

Table 2-39. North Peninsula District commercial Dungeness crab fishery data, 1992-2003.

Year	Number of		Harvest ^{a,b}	Pots Pulled	Value		Average		Deadloss ^b
	Vessels	Crabs ^a			Exvessel ^c	Total ^d	Weight ^b	CPUE ^e	
1992									
1993	2								
1994	2								
1995	6	63,732	134,407	34,499	\$1.32	\$0.18	2.1	4	367
1996	1								
1997	2								
1998	1								
1999									
2000	1								
2001									
2002	3	11,173	21,871	2,431	\$1.78	\$0.04	2.0	5	236
2003									

^a Deadloss included.

^b In pounds.

^c Price per pound.

^d Millions of dollars.

^e Number of legal crabs per pot pull.

Table 2-40. The 2002-2005 Community Development Quota (CDQ) Program percent allocation by fishery to each participating CDQ group.

Fishery	Group ^a					
	APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA
Bristol Bay Red King Crab	18	18	10	18	18	18
Pribilof Red & Blue King Crab	0	0	100	0	0	0
St. Mathew Blue King Crab	50	12	0	12	14	12
Norton Sound Red King Crab	0	0	0	0	50	50
Bering Sea Snow Crab	10	19	19	17	18	17
Bering Sea Tanner Crab	10	19	19	17	18	17

^a APICDA (Aleutian Pribilof Island Community Development Association).
 BBEDC (Bristol Bay Economic Development Corporation).
 CBSFA (Central Bering Sea Fishermen's Association).
 CVRF (Coastal Villages Region Fund).
 NSEDC (Norton Sound Economic Development Corporation).
 YDFDA (Yukon Delta Fisheries Development Association).

Table 2-41. The 1998-2003 crab Community Development Quota (CDQ) Program fisheries statistics.

Fishery	Allocation ^a	Number of			Harvest ^{a,b}	Deadloss ^a	CPUE ^c
		Vessels	Landings	Crabs			
Bristol Bay Red King Crab							
1998	525,115			Confidential			23
1999	580,641			Confidential			29
2000	610,265			Confidential			20
2001	617,623			Confidential			29
2002	714,239			Confidential			30
2003	1,167,040	13	20	174,651	1,166,662	2,197	30
Pribilof Red King Crab							
1998	35,958 ^d			Confidential			6
1999				Fishery Closed			
2000				Fishery Closed			
2001				Fishery Closed			
2002				Fishery Closed			
2003				Fishery Closed			
Pribilof Blue King Crab							
1998	35,958 ^d			Confidential			6
1999				Fishery Closed			
2000				Fishery Closed			
2001				Fishery Closed			
2002				Fishery Closed			
2003				Fishery Closed			
St. Matthew Blue King Crab							
1998	99,512			Confidential			10
1999				Fishery Closed			
2000				Fishery Closed			
2001				Fishery Closed			
2002				Fishery Closed			
2003				Fishery Closed			
Bering Sea Snow Crab							
1998	8,886,634	20	86	6,975,242	8,846,977	134,898	176
1999	9,674,326	23	104	7,747,876	9,670,084	92,871	167
2000	2,518,760			Confidential			144
2001	1,878,070			Confidential			98
2002	2,458,565	11	33	1,873,780	2,399,716	73,168	99
2003	2,120,637	10	29	1,747,935	2,119,027	18,379	120
Bering Sea Tanner Crab							
1998				Fishery Closed			
1999				Fishery Closed			
2000				Fishery Closed			
2001				Fishery Closed			
2002				Fishery Closed			
2003				Fishery Closed			

^a In pounds

^b Includes deadloss.

^c Defined as legal crabs per pot pull.

^d Fishery was executed with an overall quota for both Pribilof red and blue king crab, harvest was tracked by species.

Table 2-42. The crab Community Development Quota (CDQ) Program economic overview.

Fishery	Harvest ^a	Exvessel Value	Fishery Value ^b	Average Weight ^a	Pots Registered	Pots Pulled
Bristol Bay Red King Crab						
1998			Confidential			
1999			Confidential			
2000			Confidential			
2001			Confidential			
2002			Confidential			
2003	1,164,465	\$ 4.67	\$ 5,438,052	6.7	2,470	5,814
Pribilof Red King Crab						
1998			Confidential			
1999			Fishery Closed			
2000			Fishery Closed			
2001			Fishery Closed			
2002			Fishery Closed			
2003			Fishery Closed			
Pribilof Blue King Crab						
1998			Confidential			
1999			Fishery Closed			
2000			Fishery Closed			
2001			Fishery Closed			
2002			Fishery Closed			
2003			Fishery Closed			
St. Matthew Blue King Crab						
1998			Confidential			
1999			Fishery Closed			
2000			Fishery Closed			
2001			Fishery Closed			
2002			Fishery Closed			
2003			Fishery Closed			
Bering Sea Snow Crab						
1998	8,712,079	\$ 0.54	\$ 4,704,523	1.3	4,016	39,575
1999	9,577,213	\$ 0.85	\$ 8,140,631	1.2	5,250	46,490
2000			Confidential			
2001			Confidential			
2002	2,326,548	\$ 1.33	\$ 3,094,309	1.3	2,100	18,835
2003	2,100,648	\$ 1.80	\$ 3,781,166	1.2	1,670	14,583
Bering Sea Tanner Crab						
1998			Fishery Closed			
1999			Fishery Closed			
2000			Fishery Closed			
2001			Fishery Closed			
2002			Fishery Closed			
2003			Fishery Closed			

^aIn pounds, live weight only.

^bCDQ group portion estimated at 20 to 30% of fishery value.

Table 2-43. Pot limits for Bering Sea king and Tanner crab fisheries, 2003.

Fishery	GHL Range (Million Pounds)	Number of Vessels	Pot Limits	
			<= 125' ^a	> 125' ^a
Bering Sea District snow crab ^b	15 >= or < 20	-	70	90
	20 >= or < 25	-	100	120
	>= 25	-	200	250
Eastern Aleutian District Tanner crab ^c	-	-	Total Allowable Pots 300	
St. Matthew Island Section king crab ^d	-	-	60	75
Pribilof District king crab ^d	-	-	40	50
Bristol Bay red king crab ^e	< 4.0	NA	NA	NA
	4.0 to 5.9	< 200	80	100
		200 to 250	60	75
		> 250	60	75
	6.0 to 8.9	< 200	120	150
		200 to 250	100	125
		> 250	100	125
	9.0 to 12	< 200	200	250
		200 to 250	160	200
		> 250	160	200
> 12	Any	200	250	
Petrel Bank red king crab ^c	-	-	Total Allowable Pots 1,250	

^a Vessel Length Overall in feet.

^b Multi-tier pot limits effective 2002.

^c Total allowable pots divided into number of preseason registered vessels.

^d Pot limits independent of number of registered vessels and GHL.

^e Multi-tiered pot limits effective 1997.

Table 2-44. Number of Bering Sea buoy tags printed and issued by fishery, 2003.

Fishery	Number of Tags Ordered ^a	Tag Sets Issued		Total Sets	Tags Issued		Replct. Tags	Total Tags
		<= 125' ^b	> 125' ^b		<= 125' ^b	> 125' ^b		
South Peninsula grooved Tanner crab	Surplus Tags				NO FISHING EFFORT			
Pribilof red and blue king crab	Tags in Storage				NO COMMERCIAL FISHERY			
Pribilof red and blue king crab CDQ ^c	-				NO COMMERCIAL FISHERY			
Pribilof golden king crab	Surplus Tags	4	0	4	160	0	6	166
St. Matthew blue king crab	Tags in Storage				NO COMMERCIAL FISHERY			
St. Matthew blue king crab CDQ ^c	-				NO COMMERCIAL FISHERY			
Bristol Bay red king crab	65,000	176	76	252	31,175	18,023	0	49,198
Bristol Bay red king crab CDQ ^c	Surplus Tags	6	7	13	953	1,517	0	2,470
Bering Sea Tanner Crab	Tags in Storage				NO COMMERCIAL FISHERY			
Bering Sea Tanner Crab CDQ ^c	-				NO COMMERCIAL FISHERY			
Bering Sea snow crab	Surplus Tags	128	64	192	12,772	7,680	5	20,457
Bering Sea snow crab CDQ ^c	Surplus Tags	22	11	33	748	473	0	1,221
Total	65,000	336	158	494	45,808	27,693	11	73,512

^a Tags ordered in sets of 250, then separated for each fishery pot limit.

^b Vessel Length Overall in feet.

^c Community Development Quota.

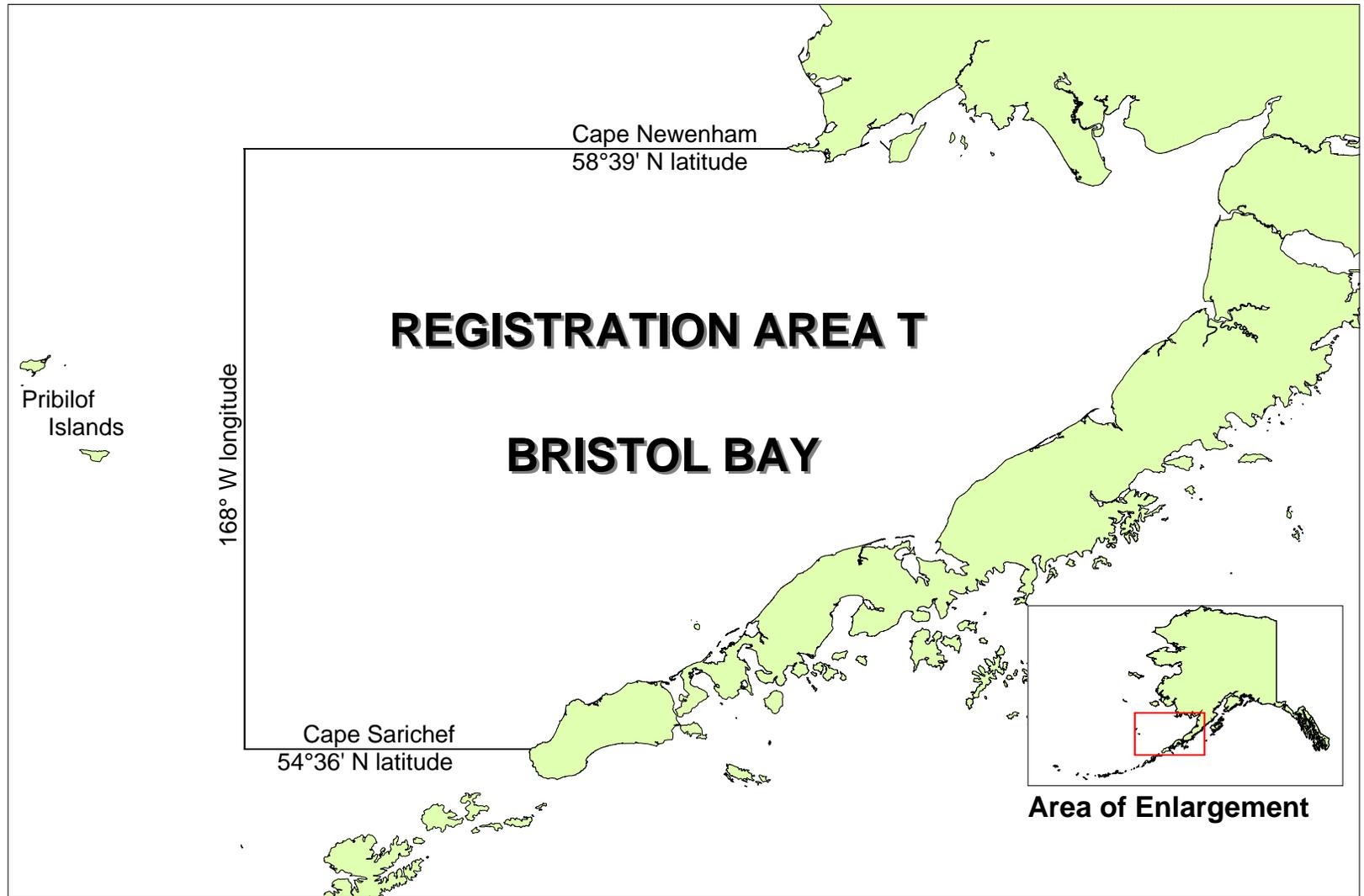


Figure 2-1. King crab Registration Area T (Bristol Bay).

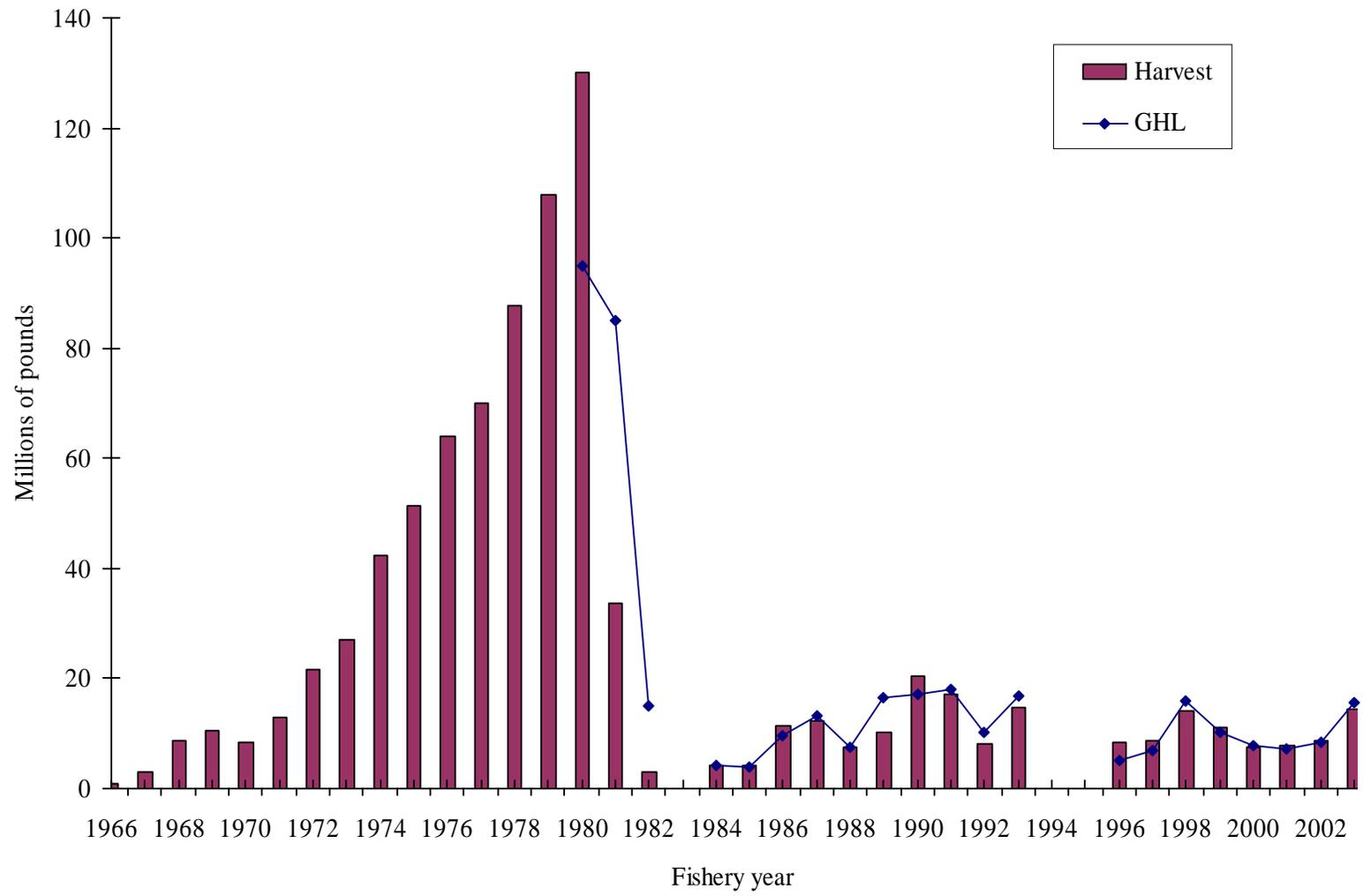


Figure 2-2. Bristol Bay commercial red king crab fishery harvest and guideline harvest levels, 1966-2003.

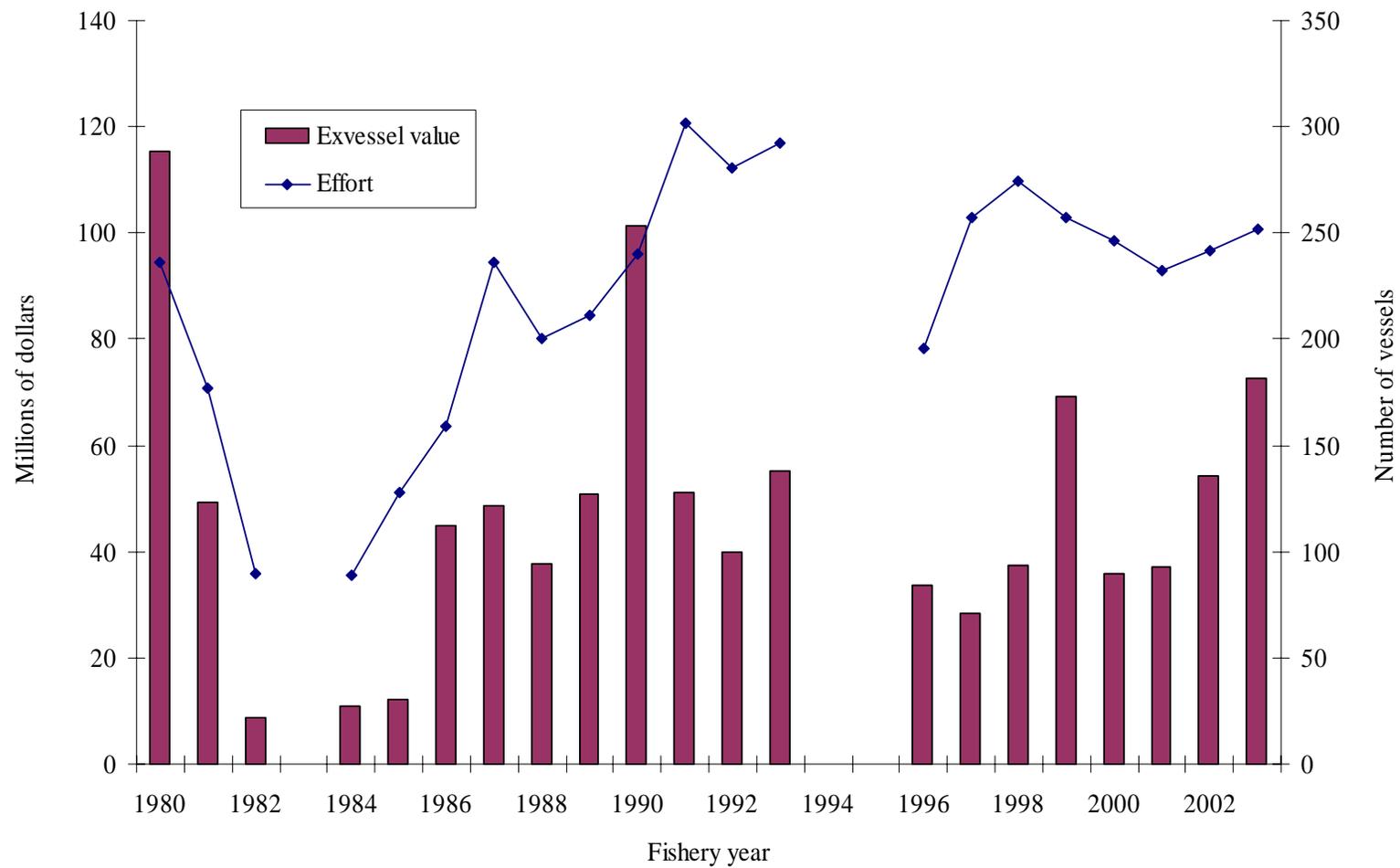


Figure 2-3. Bristol Bay commercial red king crab fishery effort and exvessel value, 1980-2003.

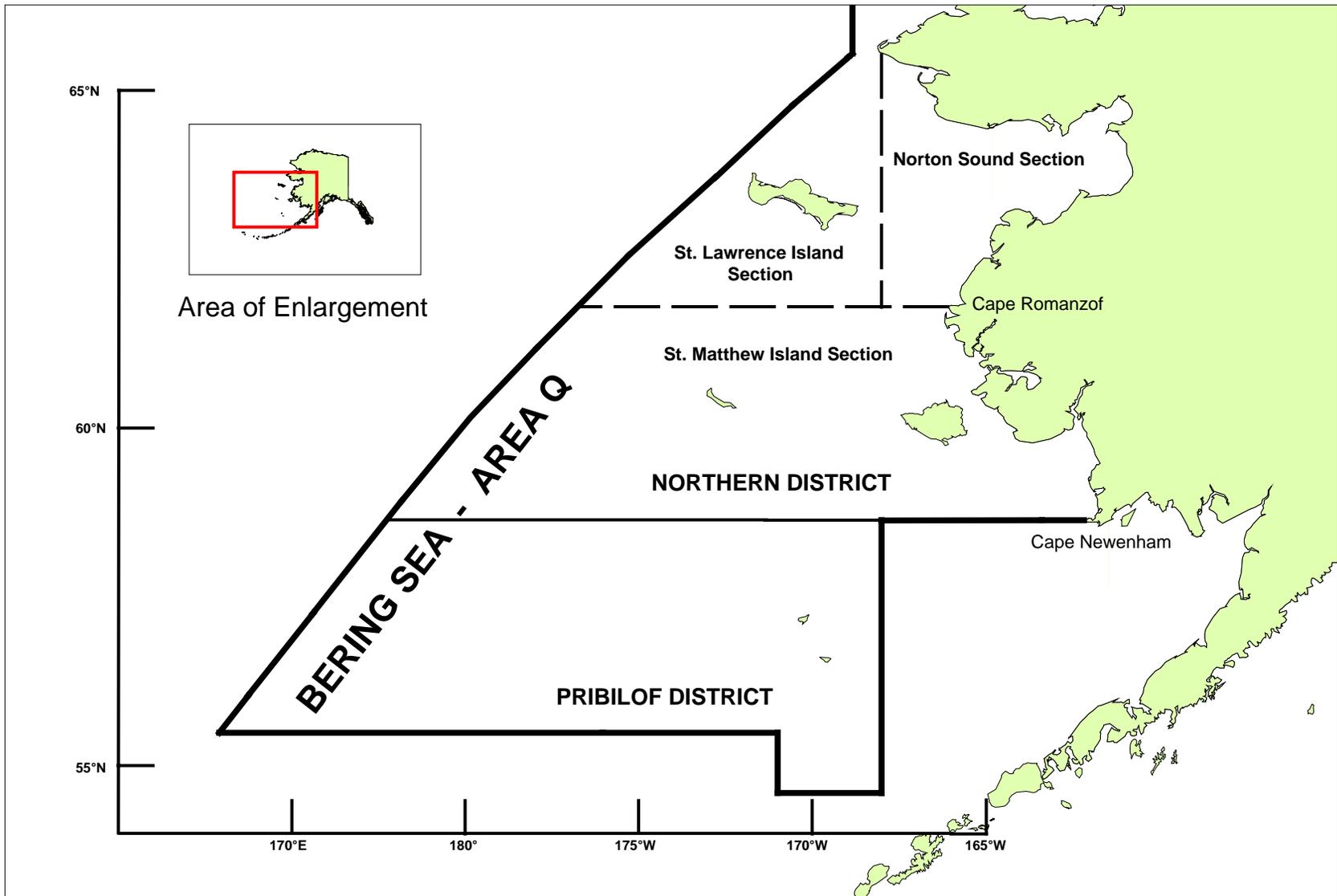


Figure 2-4. King crab Registration Area Q (Bering Sea).

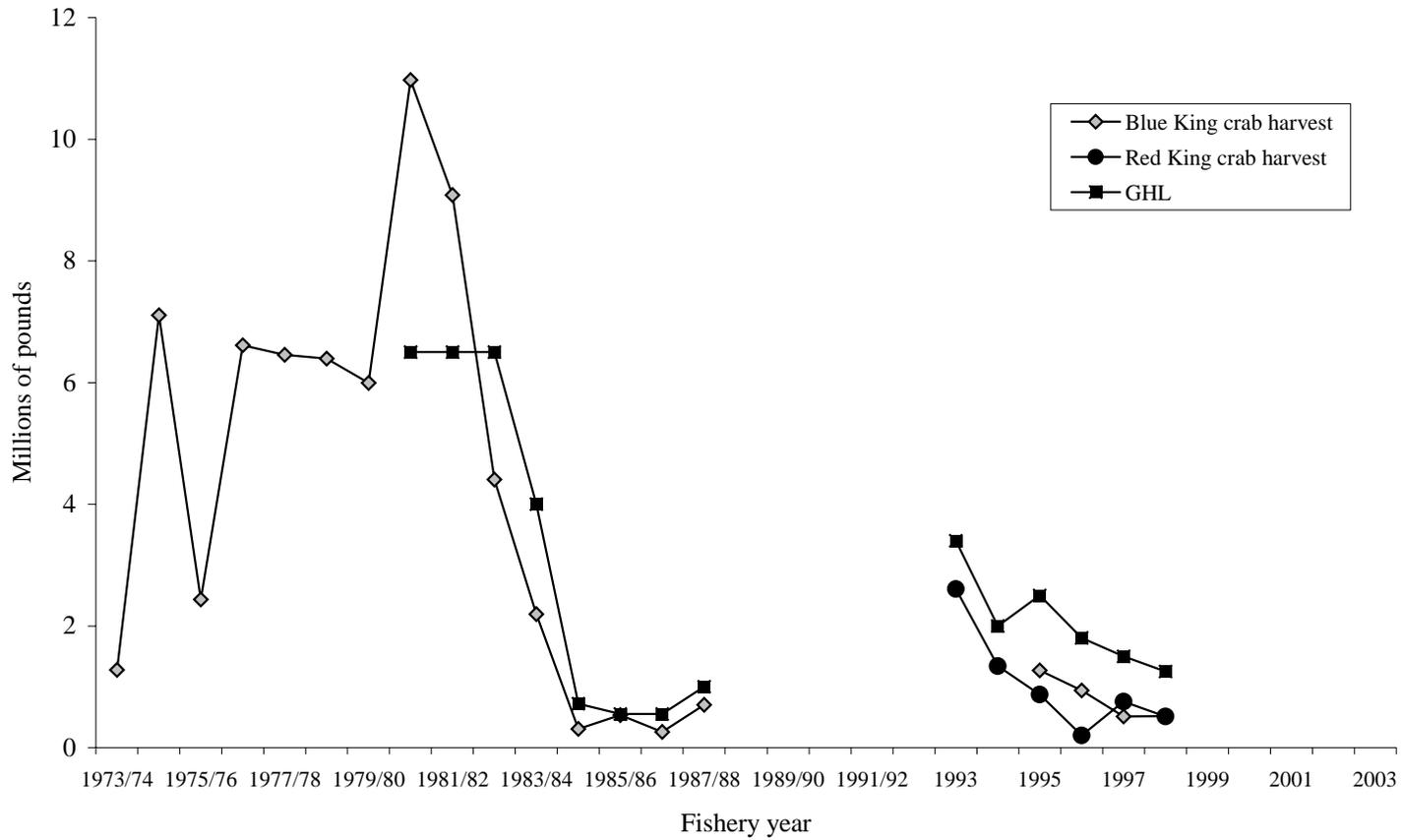


Figure 2-5. Pribilof District red and blue king crab harvest and guideline harvest level (GHL) 1973-2003. GHL for red and blue king crab is combined from 1995 onward.

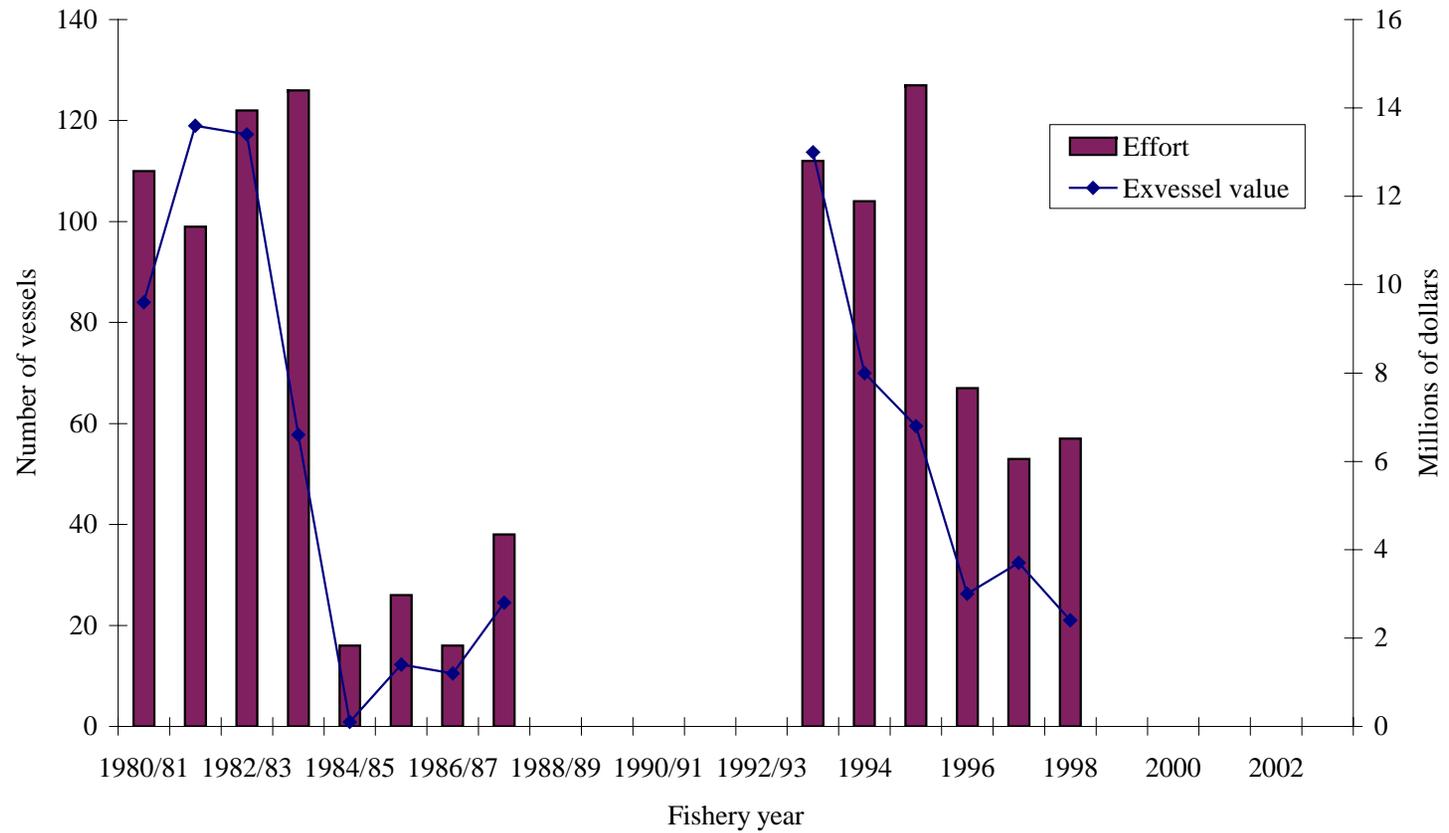


Figure 2-6. Pribilof District commercial red and blue king crab fishery effort and exvessel value, 1980-2003.

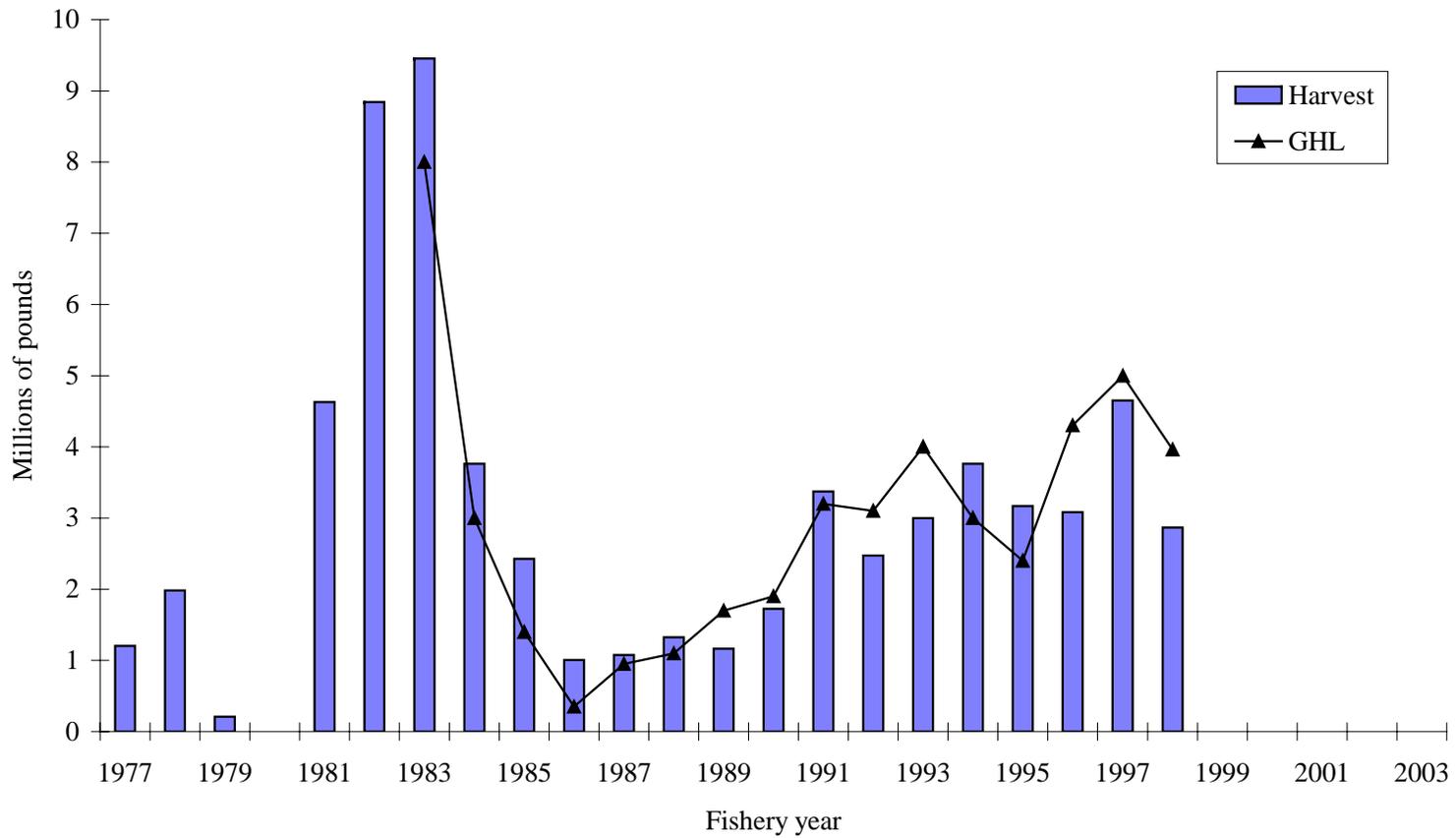


Figure 2-7. Saint Matthew Island Section commercial blue king crab fishery harvest and guideline harvest level, 1977 - 2003.

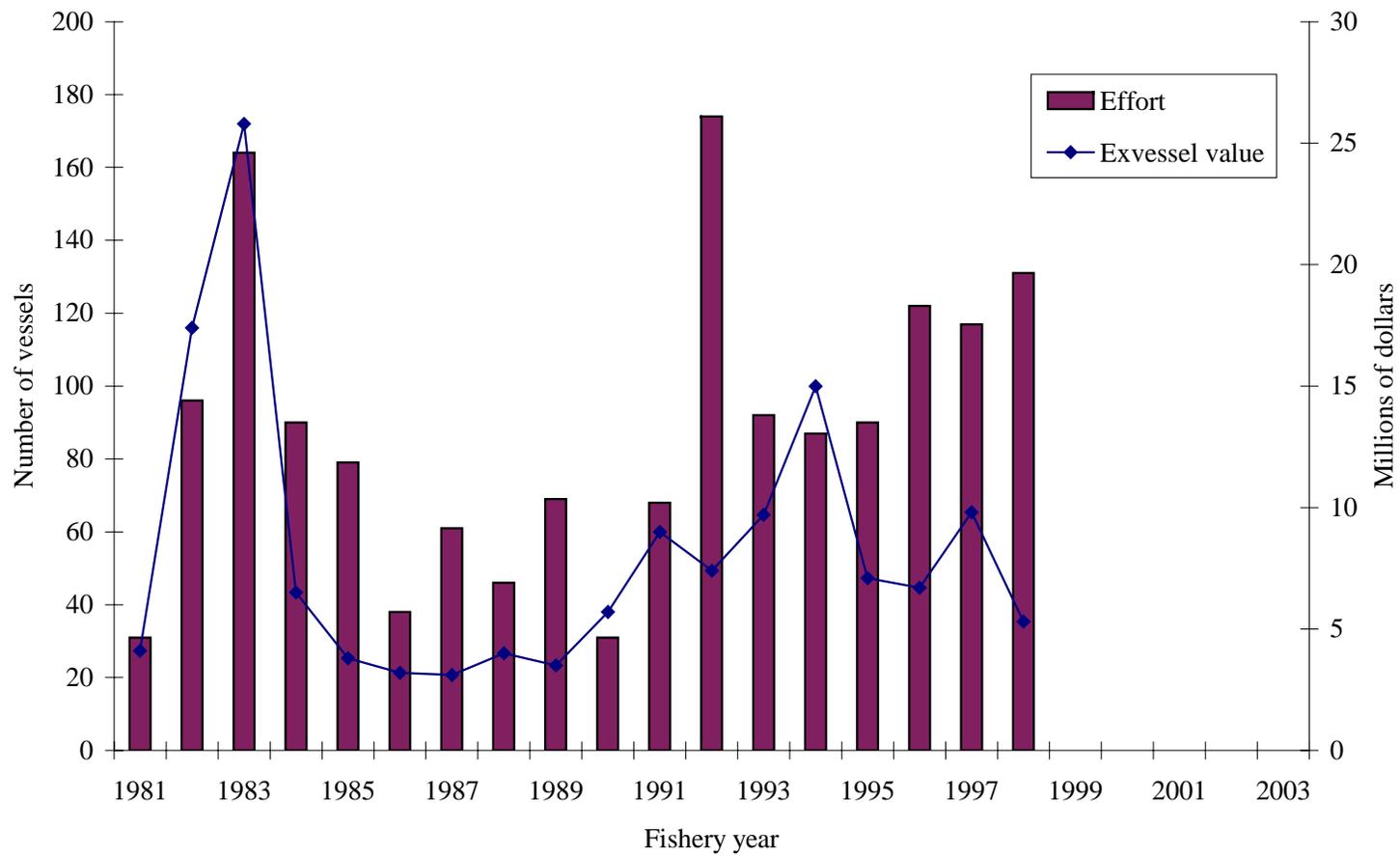


Figure 2-8. Saint Matthew Island Section commercial blue king crab fishery effort and exvessel value, 1981-2003.

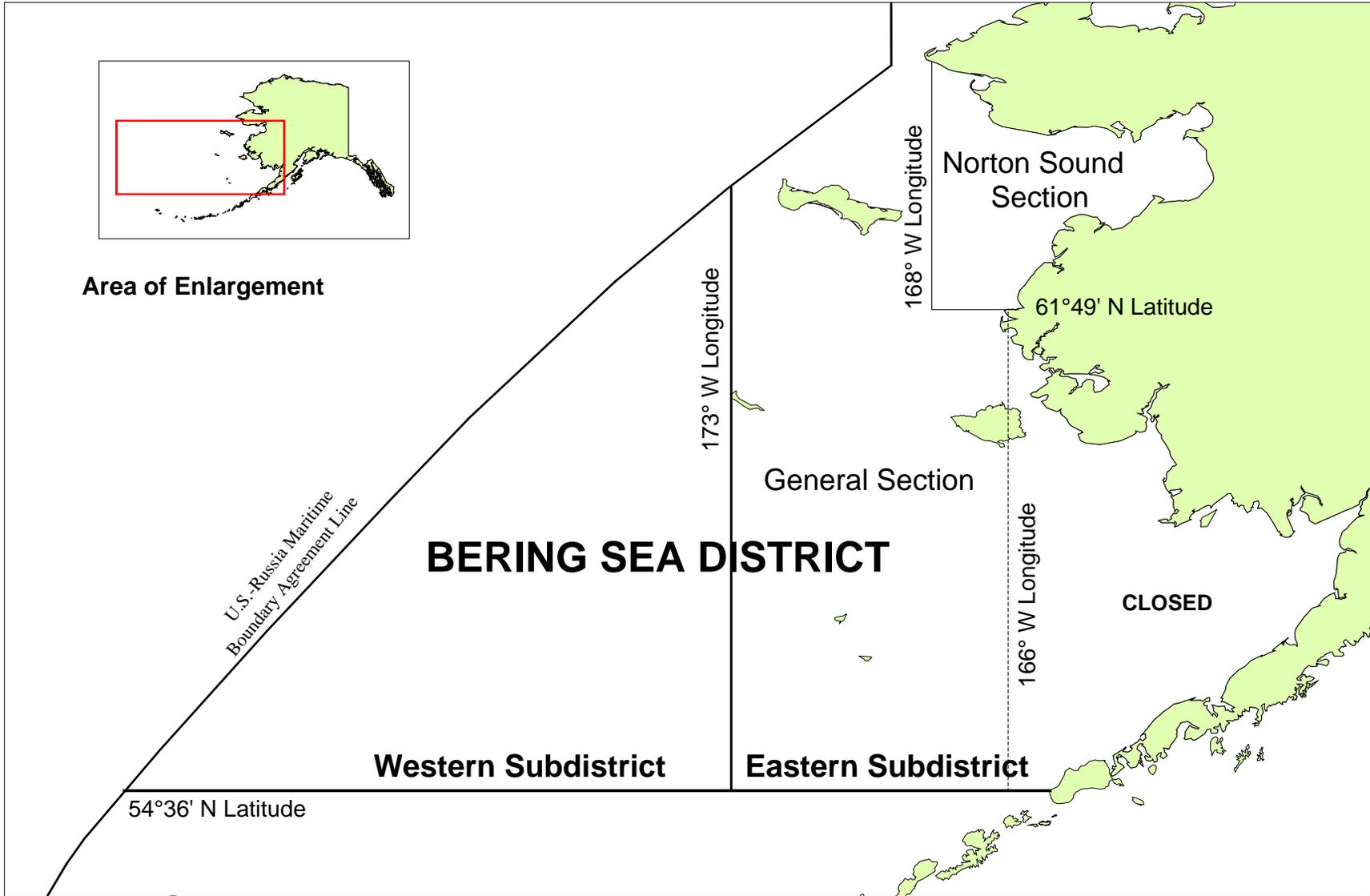


Figure 2-9. Bering Sea District of Tanner crab Registration Area J including subdistricts and sections.

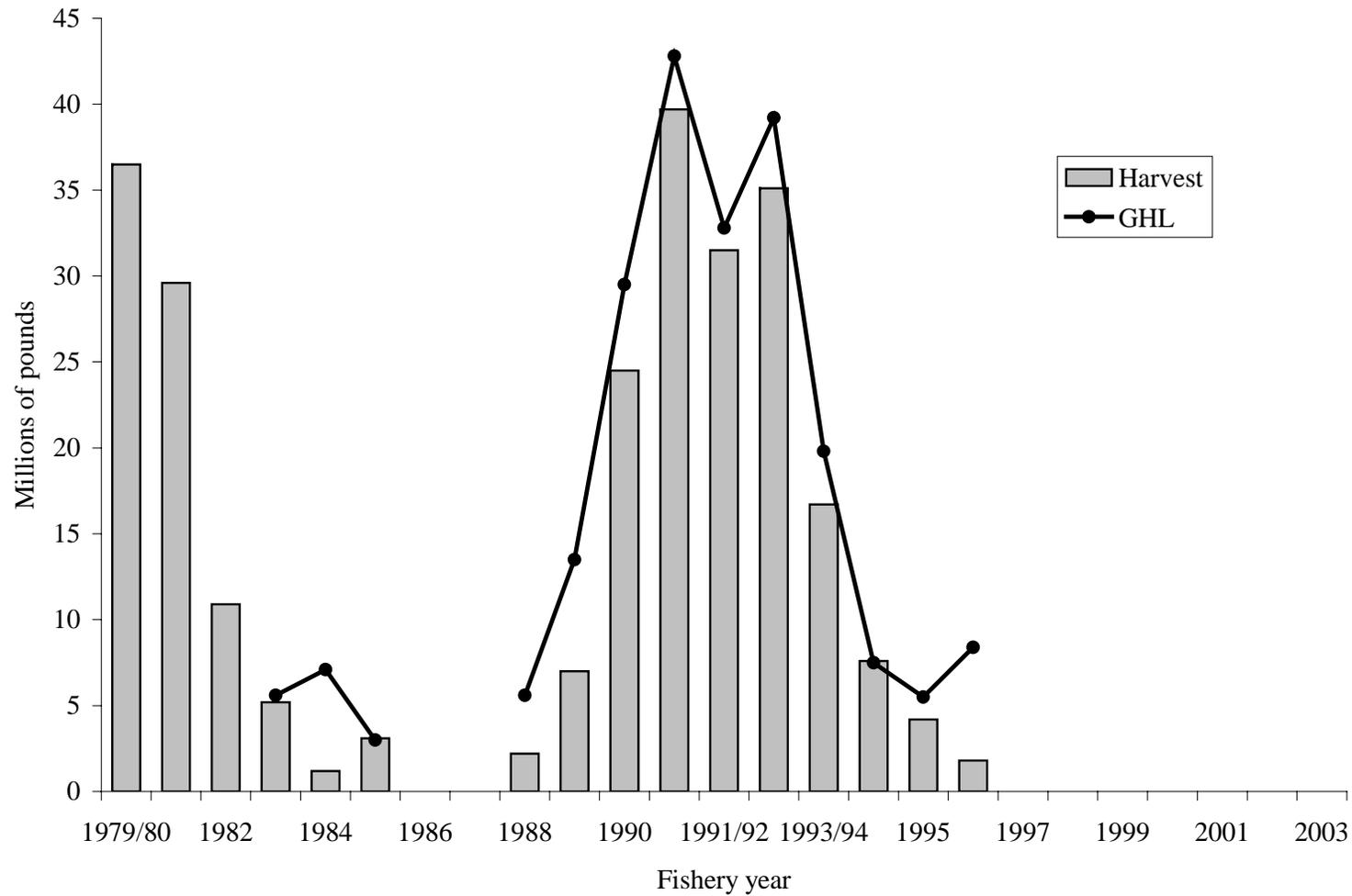


Figure 2-10. Bering Sea District commercial Tanner crab harvest and guideline harvest levels, 1979-2003.

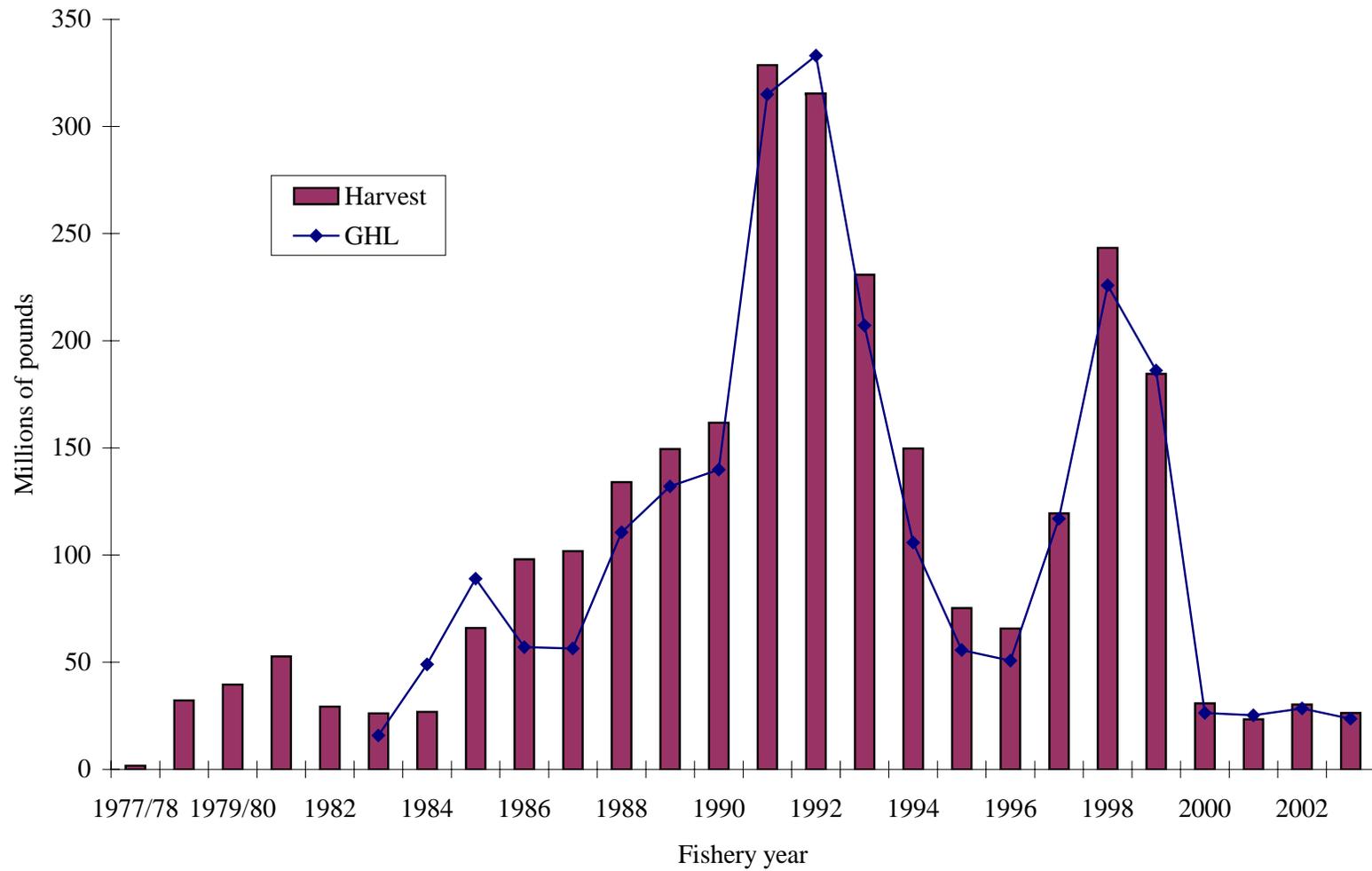


Figure 2-11. Bering Sea District commercial snow crab fishery harvest and guideline harvest level, 1977-2003.

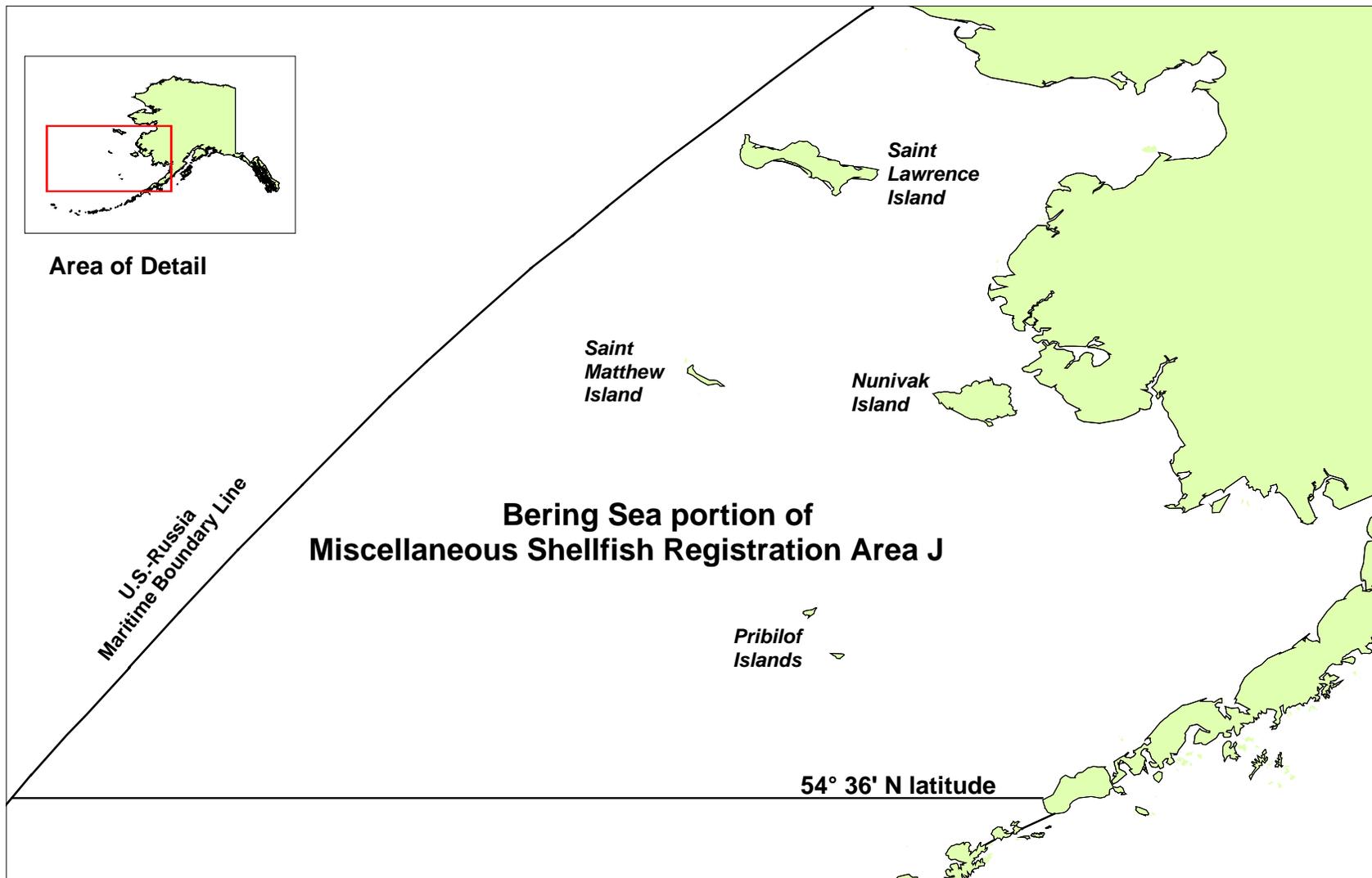


Figure 2-12. Bering Sea portion of miscellaneous shellfish Registration Area J.

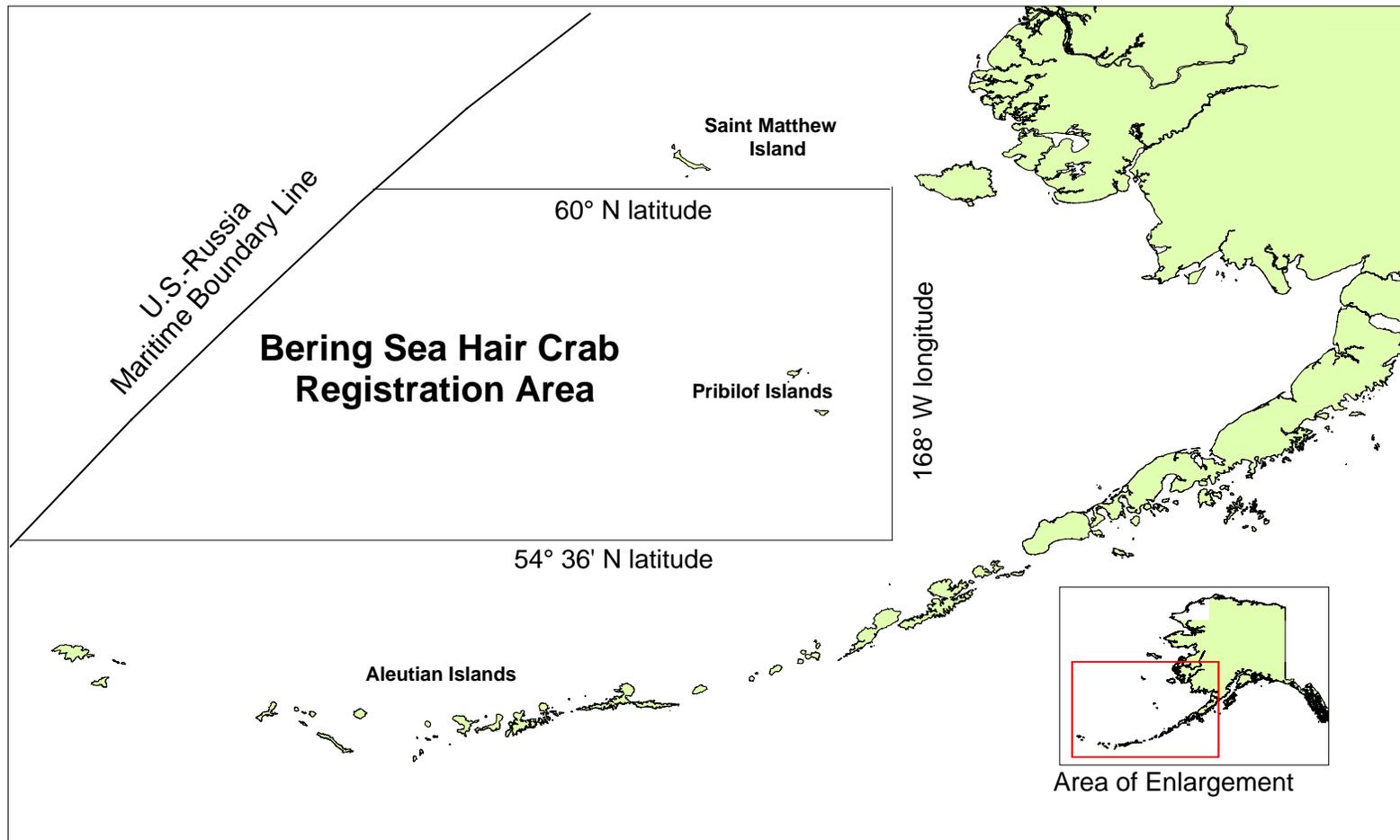


Figure 2-13. Bering Sea hair crab fishing area of miscellaneous shellfish Registration Area J.

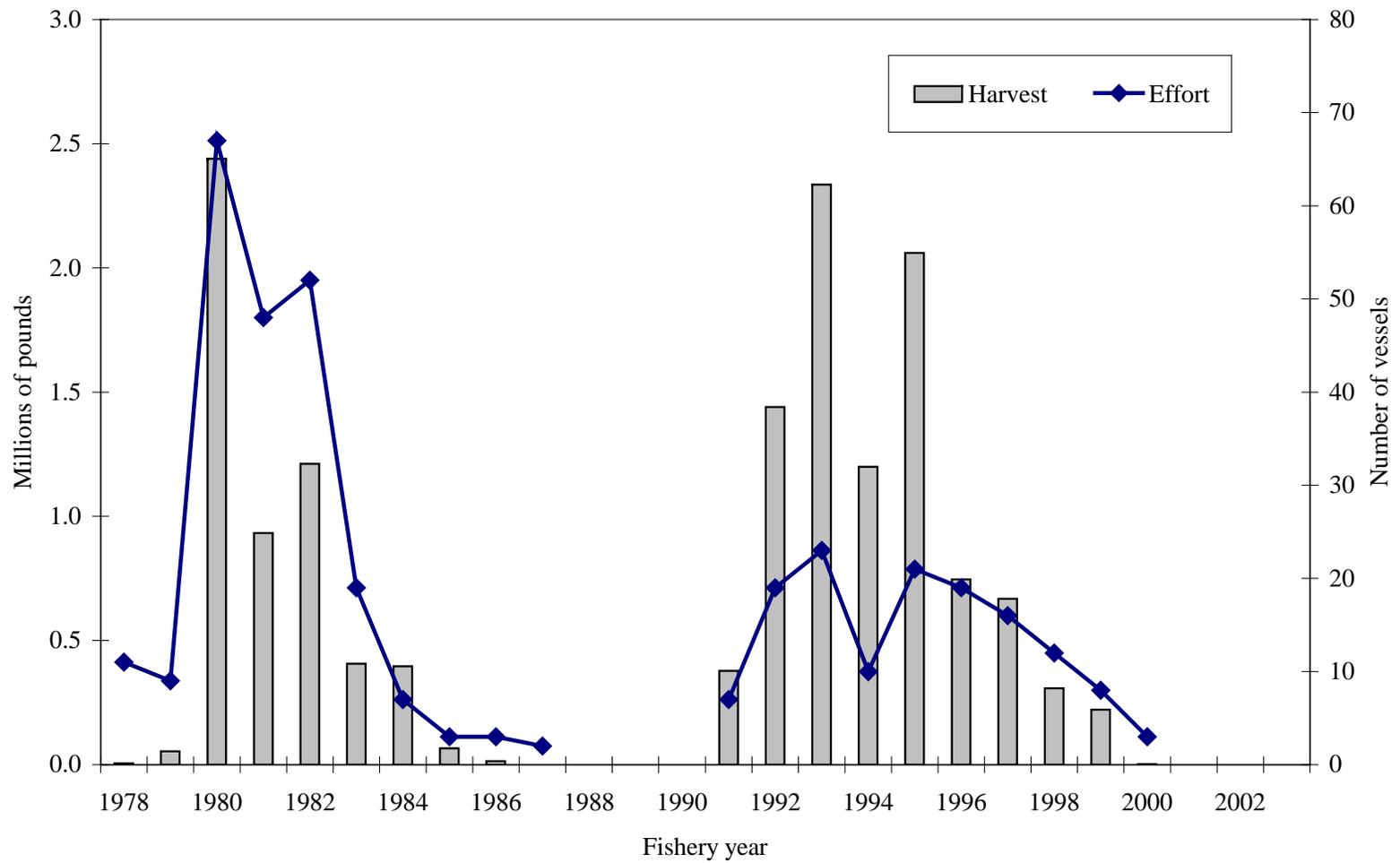


Figure 2-14. Bering Sea commercial hair crab fishery harvest and effort, 1978-2003.

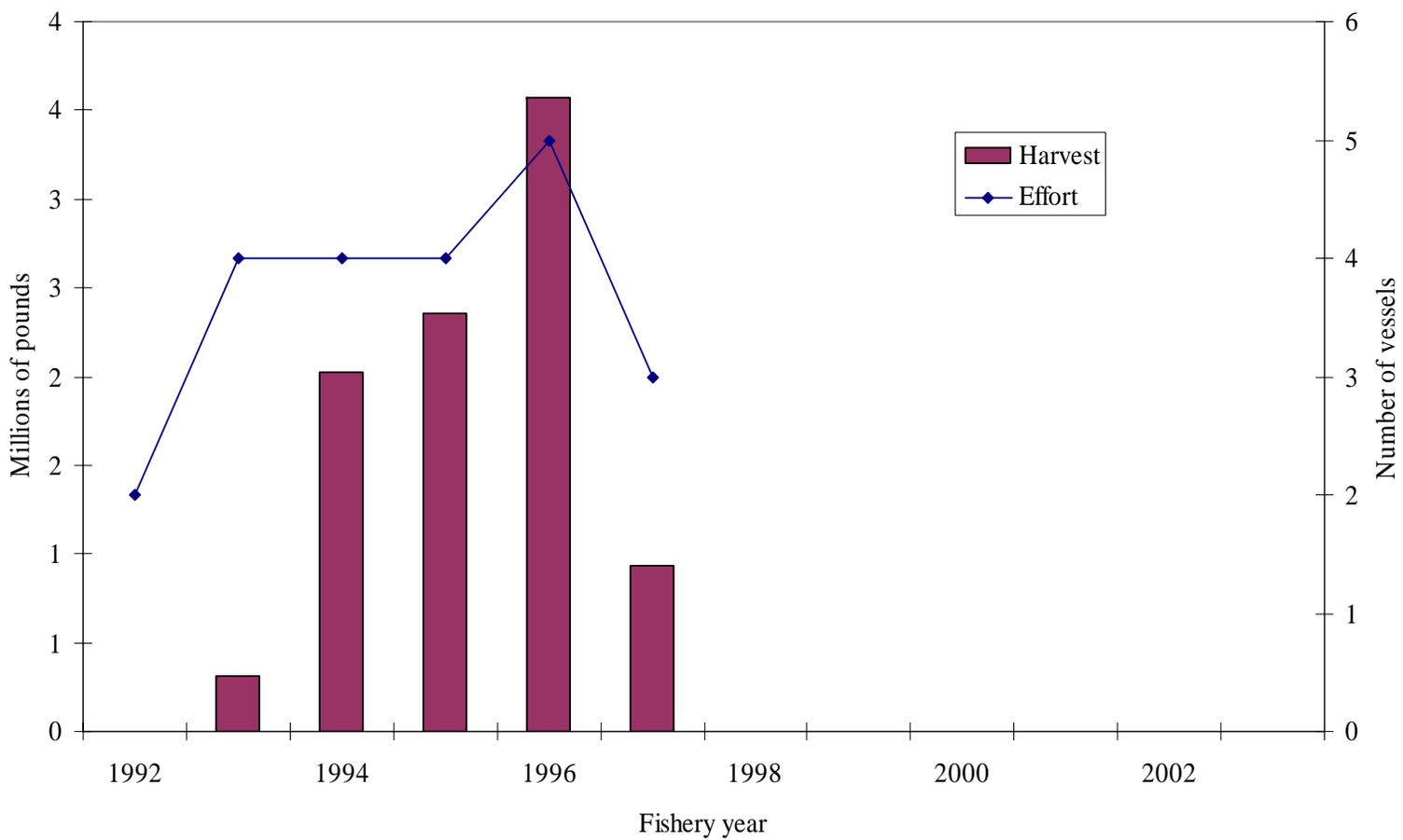


Figure 2-15. Bering Sea commercial snail fishery harvest and effort, 1992 - 2003.

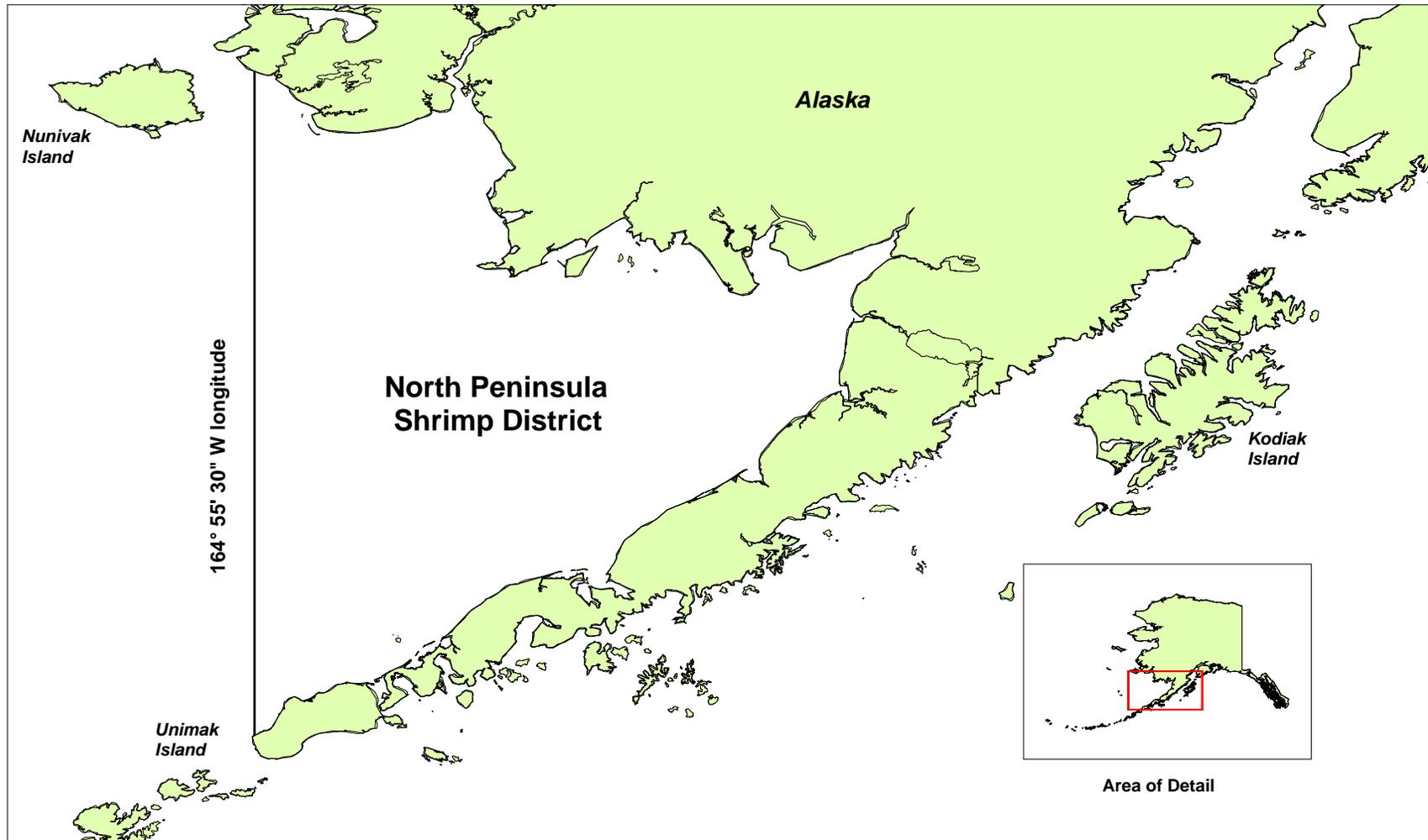


Figure 2-16. North Peninsula District of shrimp Registration Area J.

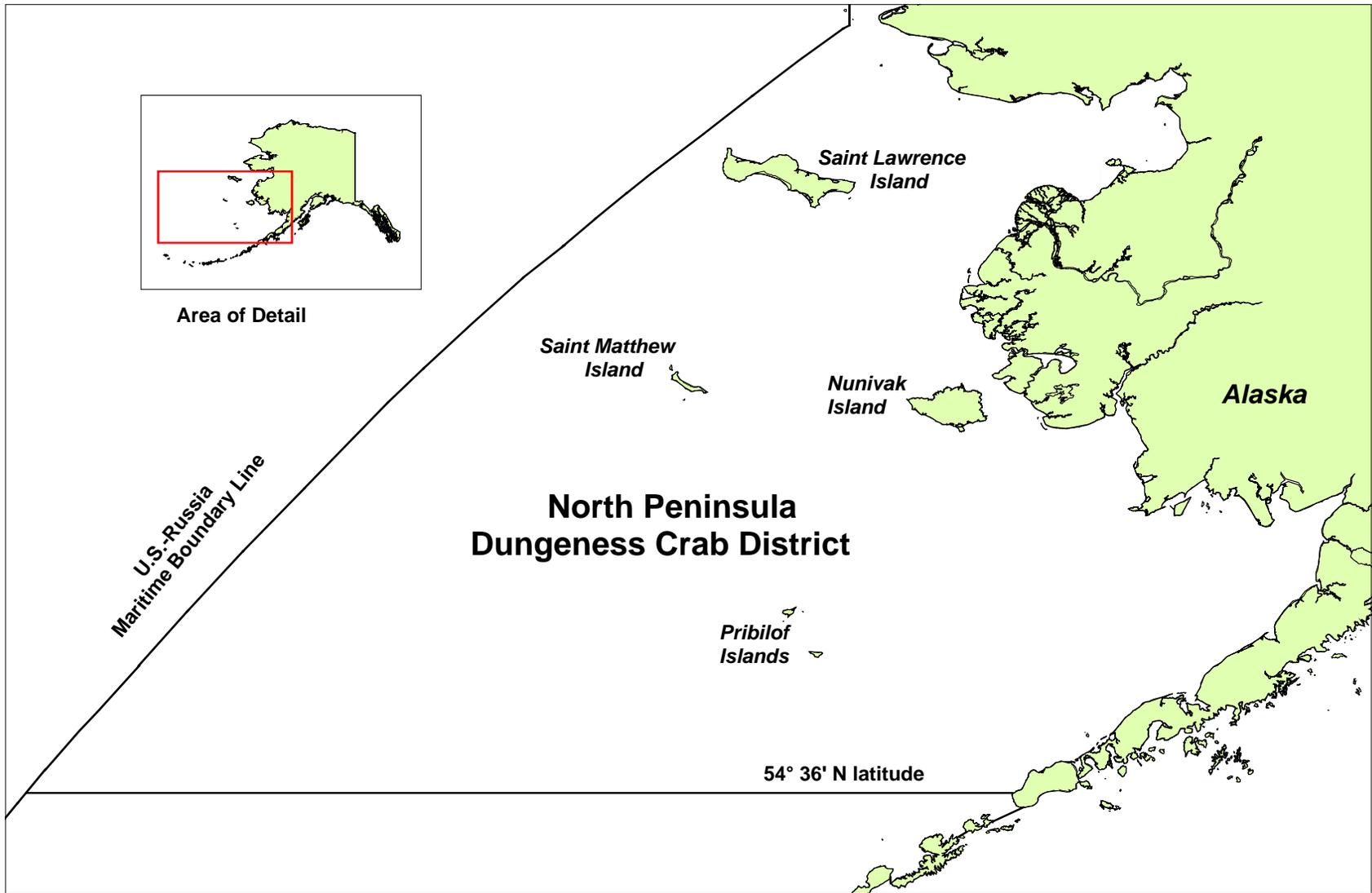


Figure 2-17. North Peninsula District of Dungeness crab Registration Area J.

Annual Report of the Onboard Observer Program
for the Westward Region Crab and Statewide Scallop Fisheries

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INTRODUCTION

Onboard observer data collection and fishery monitoring is an integral component of fisheries management. The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) of 1996 states in Findings (8) “The collection of reliable data is essential to the effective conservation, management, and scientific understanding of the fishery resources of the United States” (U.S. Department of Commerce 1996).

The State of Alaska Shellfish Onboard Observer Program has evolved to help meet the MSFCMA National Standards. The Alaska Department of Fish and Game (ADF&G) commercial shellfish fishing regulation 5 AAC 39.645. SHELLFISH ONBOARD OBSERVER PROGRAM, states that onboard observers afford the only practical mechanism of gathering essential biological and management data in particular fisheries, and provide the only effective means to enforce regulations that protect the shellfish resource.

This report summarizes the activities of the ADF&G crab and scallop observer programs for calendar year 2003. Observer deployment activities in all observer-monitored crab fisheries are outlined for the 2003 fisheries, with the exception of the 2002/2003 Aleutian Islands golden king crab fishery. Scallop observer deployment activities are summarized for the 2003/2004 regulatory seasons.

HISTORY OF SHELLFISH OBSERVER PROGRAMS

Crab Observer Program

In April 1988, the Alaska Board of Fisheries (BOF) adopted regulations requiring observers on all vessels that process king crabs *Paralithodes spp.* and *Lithodes spp.*, and Tanner crabs *Chionoecetes bairdi* within waters under the jurisdiction of the state. The observer requirement was prompted by historic catch information collected by ADF&G, which suggested illegal processing of undersized and female crabs by catcher-processors (C/Ps) in the Bering Sea and Aleutian Islands (BSAI) fisheries. Catcher-processor reports showed consistently higher catch rates compared to catcher-only vessels (C/Vs). These regulations resulted in creation of the Shellfish Onboard Observer Program. At inception, the primary program goals were to monitor compliance of sex and size regulations of retained crabs and collect data for inseason management of BSAI fisheries. The cost of providing onboard observers is borne by the at-sea processors. The first observer deployments occurred in September 1988 during the Bristol Bay red king crab *Paralithodes camtschaticus* fishery.

In the spring of 1990, the BOF broadened observer coverage to include vessels processing snow crabs *Chionoecetes opilio*. This change was considered necessary based on reports of undersized Tanner crabs being processed and labeled as snow crabs. The BOF also defined observer qualification standards and observer duties and responsibilities. In the fall of 1991, the BOF adopted observer certification and decertification standards.

In 1993, the requirement to carry shellfish observers as a condition of the permit for fishing hair crabs *Erimacrus isenbeckii* in the Bering Sea was enacted. Regulations implemented in 1994 allow the department to require, as a condition of the commissioner's permit, 100% observer coverage on vessels targeting grooved Tanner crabs *C. tanneri*, triangle Tanner crabs *C. angulatus*, scarlet king crabs *Lithodes couesi*, and cherry crabs *Paralomis multispinus*. Management and research of these fisheries rely almost completely on observer-collected data to determine the impacts of fishing activities. In 1995, shellfish observers were required on all vessels fishing for king crabs in the Aleutian Islands Registration Area.

An Amendment to the MSFCMA provided for the development and implementation of a Community Development Quota (CDQ) program for crab fisheries occurring in the Bering Sea. The CDQ amendment was incorporated into the existing state-managed shellfish fisheries in 1998. Six separate CDQ groups are designated for the Bering Sea: Bristol Bay Economic Development Corporation (BBEDC), Coastal Villages Region Fund (CVRF), Central Bering Sea Fishermen's Association (CBSFA), Yukon Delta Fisheries Development Association (YDFDA), Norton Sound Economic Development Corporation (NSEDC), and Aleutian Pribilof Island Community Development Association (APICDA). Crab fisheries included in the CDQ program are Bristol Bay red king crab, Norton Sound red king crab, St. Matthew blue king crab *Paralithodes platypus*, Pribilof red and blue king crab, and Bering Sea Tanner and snow crab. Observer coverage levels have varied since initiation of the CDQ program, but all participating groups must adhere to the observer requirements regardless of vessel type.

In 1998, Congress passed the American Fisheries Act (AFA), which gave eligible walleye pollock *Theragra chalcogramma* fishers, exclusive fishing privileges in the Bering Sea walleye pollock fishery. To protect the interests of fishers not directly benefited by the AFA, sideboards were established for AFA boats qualified to participate in specific Bering Sea crab and statewide scallop fisheries. Partial observer coverage levels are required for the AFA fleet.

Since the inception of the observer program, the number of C/Ps participating in various BSAI fisheries has decreased, therefore reducing the number of deployed observers. Consequently, observer data no longer provided a representative sample of the fleet's activities in a particular fishery, thus hampering the department's ability to adequately monitor harvests and bycatch information. Therefore in 1999, the BOF granted ADF&G full authority and responsibility for deploying observers on any vessel participating in BSAI crab fisheries. The BOF also established a 15-member Crab Observer Oversight Task Force (COOTF) comprised of crab industry representatives to provide program recommendations to ADF&G. In addition to the pay-as-you-go funding mechanism, where vessels secure and pay for observer coverage, the BOF endorsed funding for additional observer deployments through ADF&G cost-recovery fishing. The test-fish funded portion of the program was initiated July 1, 2000. A detailed history of Alaska's Mandatory Shellfish Observer Program is in Boyle and Schwenzfeier (2000).

With an rapid increase in observer participation on catcher-only vessels, observer training and logistic efforts could not meet industry demands. Therefore in 2002 in an effort to address observer shortages, the BOF relaxed conflict of interest standards by increasing an observer's time on any one vessel in 12 consecutive months from 90 days to 120 days in particular fisheries.

Additionally, as an effort to retain observers in spite of shorter fishing seasons, trainee permits may be extended to 365 days, and 270 days for crab and scallop observers, respectively, so that a trainee may gain the experience needed to obtain full certification.

Scallop Observer Program

From the inception of Alaska scallop fisheries in 1967 through mid-May 1993, management of the Westward Region scallop fisheries employed minimal management measures. Scallop dredges were restricted to rings four inches or greater inside diameter. Closed waters and seasons were established to protect crabs and crab habitat (Barnhart 2003).

During the early 1990s, an influx of vessels from the east coast of the U.S. into the Alaska weathervane scallop *Patinopecten caurinus* fishery, prompted concerns from both the scallop industry and ADF&G about scallop resource conservation and impacts on depressed stocks of red king crab and Tanner crabs (Barnhart 2003). Between 1990 and 1993 statewide scallop harvests were at levels comparable to those between 1968 and 1973, which proved to be unsustainable. Reduced scallop abundance was at least partly responsible for the fishery collapse in the 1970s (Kruse 1994). Therefore, the weathervane scallop fishery was designated as a high impact emerging fishery on May 21, 1993 and was closed until an interim management plan could be completed (Barnhart and Sagalkin 1998). The resulting interim Alaska Scallop Fishery Management Plan, effective July 1, 1993, included: (1) a requirement for 100% onboard observer coverage, (2) regulations that limited efficiency and slowed the pace of the fishery, (3) regulations that reduced the capture rate of small scallops, and (4) crab bycatch limits. Regulations specifically prohibited the use of mechanical shucking machines and chafing gear, restricted the number and size of dredges, required a minimum ring size, and allowed for no more than 12 crewmembers per vessel. A history of the weathervane scallop fisheries management is detailed in Barnhart (2000) and Barnhart (2003).

Data collection efforts in the early years of the observer program focused on detailed examination of crab bycatch and collection of baseline data relative to scallop biology. Since that time, data collection has evolved and expanded to help answer specific questions related to resource management. Data are collected on crab and halibut bycatch, discarded scallop catch, retained scallop catch, catch composition, scallop meat weight recovery, location, area, and depth fished, and catch per unit effort (Barnhart 1998). Summary and analysis reports of observer-collected data are produced from these data.

Data are used to manage the fishery inseason and to set guideline harvest ranges for the following season. Data are provided to local advisory committees, BOF, North Pacific Fisheries Management Council (NPFMC), National Marine Fisheries Service (NMFS), and the public. Observer-collected data have been used by the BOF and the NPFMC for making informed decisions regarding the scallop fishery and for preparing documents including Essential Fish Habitat and Habitat Areas of Particular Concern (Barnhart 2003).

SHELLFISH OBSERVER PROGRAM REGULATIONS AND GUIDELINES

Shellfish Observer Program guidelines were originally defined by the BOF in 1988. Current guidelines defining the responsibilities of each group (ADF&G, observer companies, observers, and vessels) involved in the observer program can be found in the Alaska Statutes Title 16, AS 16.05.050 POWERS AND DUTIES OF THE COMMISSIONER, AS 16.05.055 ON-BOARD OBSERVER PROGRAM, AS 16.05.251 REGULATIONS OF THE BOARD OF FISHERIES, Alaska Administrative Code, 5 AAC 39.141 ONBOARD OBSERVER PROGRAM, 5 AAC 39.142 CONFLICT OF INTEREST STANDARDS FOR ONBOARD OBSERVERS AND INDEPENDENT CONTRACTING AGENTS, 5 AAC 39.143 ONBOARD OBSERVER CERTIFICATION AND DECERTIFICATION, 5 AAC 39.144 ONBOARD OBSERVER INDEPENDENT CONTRACTING AGENT CERTIFICATION AND DECERTIFICATION, 5 AAC 39.146 ONBOARD OBSERVER BRIEFING AND DEBRIEFING, 5 AAC 39.645 SHELLFISH ONBOARD OBSERVER PROGRAM, and 5 AAC 39.646 SHELLFISH ONBOARD OBSERVER TRAINEE PROGRAM QUALIFICATIONS AND REQUIREMENTS.

Alaska Department of Fish and Game Responsibilities

The Alaska Department of Fish and Game is responsible for establishing policies and procedures for certification and decertification of contracting agents and observers. To promote data consistency and reliability, ADF&G developed observer training standards and sampling methodology and protocols. Department personnel continue to develop the program with a progressive outlook towards future data integrity and meeting the management needs for fisheries information.

Independent Contracting Agent Responsibilities

Independent contracting agent observer providers, also referred to as observer companies or contractors, are required by regulation to hire, train, deploy, and logistically support their observers with food, accommodations, sampling equipment, and transportation. Observer companies secure contracts for observer services directly with vessel owners, or the department depending on the funding source for observer coverage. In 2003, five independent contracting agents were authorized to provide onboard observers: Alaskan Observers, Inc. (AOI), Data Contractors, Inc. (DCI), Northwest Observers, Inc. (NWO), Saltwater, Inc. (SWI) and Techsea International (TSI).

Observer Responsibilities

Observer qualifications include a minimum of a Bachelor's degree in the sciences of biology or any branch of biology, or a valid NMFS observer certification, or other fisheries related experience or education. Observer candidates are required to undergo ADF&G approved training and must demonstrate 90% proficiency on the ADF&G shellfish observer written examination. As part of their training, crab observers must also participate in a practical training exercise administered by the observer program staff in Dutch Harbor. As representatives of ADF&G, observers are required to adhere to a detailed set of professional standards outlined in regulation. Prior to 1991, observer companies provided observer training. Currently, the University of Alaska Anchorage, North Pacific Fisheries Observer Training Center (OTC) in Anchorage conducts crab and scallop observer training. This facility is operated through funds provided by the University of Alaska Sea Grant Program. The OTC also trains groundfish fisheries observers for NMFS.

Vessel Owner and Operator Responsibilities

Regulations require the cost of observers to be borne by the shellfish industry or funded through ADF&G cost-recovery fishing. When required, vessel owners and operators are to procure and pay for observers through a qualified observer contractor and provide their observer with food and accommodations equal to that of the vessel's crew. The vessel must also dedicate a safe work area, necessary totes to hold the contents of sampled pots, and allow the observer opportunity and time to adequately sample the catch according to specific ADF&G data collection requirements. Accurate fishing effort and harvest data are to be provided daily to the observer, as well as access to communication equipment.

The MSFCMA and ADF&G commercial shellfish fishing regulations require that a vessel carrying an observer meets United States Coast Guard (USCG) commercial fishing vessel safety standards and must have a current Commercial Fishing Vessel Safety Examination (CFVSE) decal. Whenever possible before a fishery, USCG personnel will board and examine safety equipment on vessels that carry observers. Although a vessel possesses the CFVSE decal, the vessel's safety equipment may not meet the USCG requirements, usually because equipment currency dates have expired since the last CFVSE.

OBSERVER DUTIES

Observers are required to confirm that the vessel is displaying a current CFVSE decal, and that safety equipment on the vessel is current and in usable condition. This inspection is made when the observer first boards the vessel.

Observers record retained daily catch, fishing effort and location, and periodically report vessel and observer activity to ADF&G. Reports are coded and given via radio, marine satellite, or

telephone. Scallop observers report scallop harvests, number of tows, areas fished, and crab bycatch.

Observers sample the retained catch and bycatch in a specified number of pots or tows each day. Sampling is an assessment of all the animals caught at a particular depth and location and with a specific gear type. Scallop observers sample a dredge to obtain species composition. Crab observers conduct either ‘measurement’ or ‘count’ sample pots. Measurement sample pots are sorted by species, of which prescribed crabs are sexed, measured, assessed for legality and retention, counted, and examined for shell age and fecundity. All other animals are identified to species and counted, with the exception of some finfish that are also measured. Count pot sampling requires animals be identified to species, and prescribed crabs enumerated based on legality, sex and retention.

Shellfish observers regularly monitor fishing operations for regulatory compliance. The Alaska Department of Public Safety, Bureau of Wildlife Enforcement (ABWE) assists OTC and ADF&G staff with instruction of observers for evidence collection, handling procedures, and proper chain-of-custody documentation. In the event that a potential violation is encountered, the ABWE will interview the observer and usually request a written statement.

Observers may also be assigned projects, ranging from collecting shellfish, finfish and other marine specimens, gathering tissue specimens for genetic stock identification, and the morphometric data collection of non-retained crabs. Observers also facilitate the tag-recovery studies of crab, and document specific seabird and mammal observations.

Crab Catcher-Processor Vessel

Daily duties specific to C/P vessel observers are: 1) interview the skipper for confidential catch and effort information, 2) conduct pot sampling of a specified number of randomly selected pots for retained catch and bycatch, 3) biological sampling of 100 retained crabs for size and shell age, 4) obtain average weights from a specified number of crab, and 5) obtain size, sex, and species compliance monitoring through a legal tally of 600 retained crabs conducted throughout the day. Observers are also asked to conduct processed crab section counts and case weights in the factory to verify catch data supplied by the vessel operator on a weekly basis.

Crab Floating Processor Vessel

Sampling duties specific to floating processor (F/P) vessel observers are: 1) interview the delivering vessel’s skipper for confidential catch and effort information, 2) determine average weight of retained crabs, 3) conduct biological sampling of 100 retained crabs for size and shell age, and 4) obtain size, sex, and species compliance monitoring through a legal tally of 600 retained crabs during the delivery offload. Sampling duties are conducted on all vessels delivering to the processor.

Crab Catcher-Only Vessel

Daily observer duties specific to C/Vs include: 1) interviewing the skipper for confidential catch and effort information, and 2) conducting pot samples of a specified number of randomly selected pots for retained catch and bycatch. During deliveries the observer: 1) determines the average weight of retained crabs, 2) collects biological data from 100 retained crabs, and 3) monitors size, sex, and species compliance through a legal tally of 600 crabs in the live tank.

Scallop Catcher-Processor Vessel

Daily observer sampling duties on board a scallop vessel involve: 1) conducting a species composition assessment of a specified number of randomly selected tows, 2) measuring shell height and weighing 20 retained scallops per bycatch sample tow, 3) enumerating, measuring and assessing the condition of crab of commercial importance, Pacific halibut and scallops from a specified number of randomly selected tows, and 4) conducting a detailed examination of the discarded scallop catch. Observers also calculate catch per unit effort based on scallop meat weight recovery. Triweekly observer reports are used to manage the fishery inseason.

PROGRAM REVIEW

Observer Coverage and Cost-Recovery Funds

In addition to mandatory requirements for observer coverage on at-sea processing vessels, the BOF has given ADF&G the regulatory authority to deploy crab observers on an adequate number of C/Vs in each BSAI crab fishery. This regulatory authority allows ADF&G to collect much needed biological and fishery-based data necessary for resource management. It has also allowed ADF&G to meet requirements of the MSFCMA and the Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner crabs (NPFMC 1998).

The COOTF and ADF&G agreed to continue the same observer coverage goals in fiscal year 2004 as those adopted for the 2002-2003 fisheries. Observer coverage levels remain at 100% and funded under the pay-as-you-go system for at-sea processors participating in BSAI king or Tanner crab fisheries, for all vessels in the Aleutian Islands king crab fisheries, and for all vessels participating in hair crab, deep water king crab, and deep water Tanner crab fisheries under a commissioner's permit. Likewise, observer coverage for vessels in the CDQ and AFA fisheries remains under the pay-as-you-go system (Table 3-1).

The Shellfish Onboard Observer Program has utilized test fish funding for a portion of the BSAI observer coverage costs since 1999 (Tables 3-2 and 3-3). The test fish authority was originally capped at \$650,000 and structured as a revolving fund, which, if not used in one fiscal year, may be rolled into and available in the following fiscal year. A total of \$669,500 in test fish funds was collected for the cost-recovery funded portion of the observer program from the harvest and sale of red king crab after the close of the 1999 Bristol Bay red king crab fishery. In 2000, the

ADF&G and COOTF agreed that if the cost-recovery fund dropped below \$300,000, a test fishery would be conducted to replenish it. The observer test fish fund balance at the end of fiscal year 2003 was not expected to fall below \$300,000. Consequently, the department did not conduct a cost-recovery test fish charter in fiscal year 2004.

ADF&G's goal for the 2003-2004 season was to deploy observers on 10% of C/Vs in two vessel size categories, between 75 ft and 125 ft, and greater than 125 feet, with a minimum of five observers per vessel size category in selected fisheries. ADF&G deploys seasonal biologist staff observers and additional observers are obtained through a State of Alaska contract with observer providers. Observer coverage levels are depicted in Figure 3-1.

2003 OBSERVER PROGRAM ACTIVITY

Shellfish observer activities in this section of the report are documented by calendar year. The length of an observer deployment in observer days is defined as the total number of days from the observer's briefing to debriefing. One observer month is equivalent to 30 observer days.

Observer Training, Certification, and Decertification

Since the inception of the observer program in 1988, 37 crab observer classes have been held, resulting in the dispersion of 525 trainees into the field. During 2003, two crab observer training classes were conducted at the OTC in Anchorage. At the end of 2003, 71 crab observers either held a trainee permit or were certified in the crab observer program. The observer turnover in 2003 was 24%, up from 21% in 2002. During 2003, 11 observer certifications lapsed due to 12 months of inactivity or due to trainee permit expiration, and one observer was decertified. Crab observer training and participation levels from 1988 to 2003 are summarized in Table 3-4.

Two scallop observer training classes were held at the OTC during 2003. Six trainees were issued permits, of which five received full certification by the end of 2003. Conversely during 2003, five scallop observer certifications lapsed due to 12 months of inactivity or due to trainee permit expiration, resulting in a 33% turnover rate. No scallop observers were decertified for failure to comply with observer program standards. Ten certified scallop observers remained in the program as of December 31, 2003. Scallop observer training and participation levels from 1993 to present are summarized in Table 3-5.

Shellfish Observer Deployment Activity

The Shellfish Observer Program continues to develop its procedures and policies, with data integrity as the primary goal. Over the years ADF&G has found a need to increase the length of observer sessions (briefing, midtrip debriefing, debriefing) from the minimum 15 minutes to two or more hours in order to keep pace with data needs and data quality issues. Data requests have

become more complex, and additionally, deployment dynamics and vessel differences more varied.

Observer deployment activity in 2003 decreased slightly from the previous year in terms of observer trips, but continued to remain at one of the highest levels in the past five years (Table 3-6). One hundred and one vessels carried observers during the course of the year and is the second largest coverage level in the history of the program. This can be attributed to the expansion of fleet coverage for the Bristol Bay red king and Bering Sea snow crab fisheries since 1999, despite a decrease in season lengths, which is evident by a diminution in observer months. A total of 167 briefings, 27 midtrip debriefings, and 169 debriefings were conducted in 2003 (Table 3-7).

Spikes of observer activity occurred during the months of January and October, coinciding with the Bering Sea snow crab and BSAI red king crab fisheries (Table 3-8 and Figure 3-2). Observers participating in the combined red king crab fisheries, including Bristol Bay general and CDQ fisheries and the Petrel Bank fishery, accounted for 156 (43%) of the 363 total number of observer sessions in 2003 (Table 3-7). All three fisheries opened and closed within a five-week period in October and November, putting a strain on observer resources and program staff. In order to alleviate the pressures of high-volume observer traffic, which puts at risk effective and productive observer management, several deployment strategies were employed. First, observers participating in the Bristol Bay and Petrel Bank red king crab general fisheries were briefed for both fisheries prior to the Bristol Bay season, and subsequently debriefed for all fisheries at the termination of the final trip. Although the tactic of double-briefing/debriefing observers increases the time spent in each session, it relieves logistical problems associated with deploying observers in successive fisheries. Second, observer staff was dispatched to Adak and Anchorage to conduct additional observer sessions for observers deployed from ports other than Dutch Harbor. Finally, department staff was sent from the regional headquarters in Kodiak to assist with the anticipated surge of observer activity in the Dutch Harbor office.

OBSERVER DEPLOYMENTS BY FISHERY

Observer coverage goals and requirements were met in most fisheries, with a total of 168 deployments, spanning 135 observer months (Table 3-9). Thirty-eight percent of the observer months were in deployments during the Aleutian Islands golden king crab *L. aequispina* fishery. Crab and scallop observers conducted a combined 12,318 samples for species composition, establishing an overall sampling rate of 5.7% (Table 3-10).

Shellfish observer deployments and vessel assignments in this section of the report are documented by fishing season.

2002-2003 Aleutian Islands Golden King Crab Fishery Observer Activity

The 2002-2003 Aleutian Islands golden king crab fishery opened at noon on August 15, 2002 with 22 vessels, including 21 C/Vs and one C/P. One hundred percent observer coverage was mandatory on all vessels and observers were secured and paid for by the vessel operator. Saltwater, Inc., AOI, DCI and TSI provided observers throughout the season for 33 total deployments.

Twenty-three briefings for both the eastern and western management areas took place August 10-13 in the Dutch Harbor office. Eleven more briefings were performed during the season in Dutch Harbor, Adak or Anchorage with the last occurring February 10, 2003. Sampling duties varied by vessel type and fishing location. For vessels fishing east of 174° W longitude, C/V observers were assigned 4 measurement and 10 count sample pots per fishing day, and C/P observers were required to sample four measurement and five count pots per fishing day. Harvest information and sampling effort was reported tri-weekly. For vessels fishing west of 174° W longitude, C/V and C/P observers were assigned six and five measurement sample pots per fishing day, respectively. Reports were transmitted on a weekly basis until a few weeks prior to the closure announcement, at which time report periods increased to tri-weekly. Observers were also required to measure and document all red king crab bycatch and tagged golden king crab caught in all pots.

The eastern management area closed on September 7, 2002, and 17 debriefings were conducted in Dutch Harbor September 9-13. The western management area closed six months later on March 8, 2003. Another 16 debriefings were held during and after the season in either Dutch Harbor or Adak, with the last debriefing occurring March 20, 2003. Throughout the course of the fishery, 18 midtrip debriefings took place in Dutch Harbor and Adak. In summary, 33 briefings, 18 midtrip debriefings, and 33 final debriefings were conducted throughout the fishery.

The entire fleet fished for a combined 864 days, landed 5,462,802 pounds of crab and made 115 deliveries to six different processors (Table 3-10). During 1,539 deployment days, observers sampled 6,494 (4.4%) of the 147,618 pots pulled by the entire fishing fleet. Observers on C/Vs sampled 5,834 pots and completed 81 biological measurements and 81 legal tallies, and observers on the C/P sampled 660 pots and completed 144 biological measurements and 146 legal tallies (Table 3-11). Observers and crewmembers collectively recovered 140 golden king crab tags and no evidence was collected for regulatory non-compliance. Observers reported 210 red king crabs caught in all pots pulled.

2003 Bering Sea Snow Crab General Fishery Observer Activity

The 2003 Bering Sea snow crab general fishery opened at noon on January 15, 2003 with 195 vessels; including 187 C/Vs, 5 C/Ps and 3 F/Ps, with 2 C/Ps participating as floating-processors at the closure of the fishery. The department set a goal of 10% observer coverage for the C/V fleet, and employed six staff biologists and contracted 12 observers from SWI and DCI. The C/Vs that carried observers were chosen at random from the preseason vessel registration list and observer costs paid through the state's observer test-fish funds. One hundred percent observer

coverage was mandatory for C/Ps and F/Ps and observers were secured and paid for by the vessel operator. Alaskan Observers Inc., SWI, TSI, and NWO provided nine observers for the C/Ps and F/Ps.

Briefings for 19 of the 27 observers took place in Dutch Harbor January 6-11. Six observers who boarded their vessels in ports other than Dutch Harbor were briefed in Anchorage by department staff January 9-10. One observer was briefed for deployment on a floating processor on January 20 and another observer was briefed on February 8 to relieve a C/P observer. Seventeen observers boarded their vessels in Dutch Harbor, three boarded in Akutan, five boarded in King Cove and two in St. Paul. One observer resigned after briefing and was immediately debriefed and relieved of all observer duties, which dropped the coverage of the catcher-only fleet from 10 to 9.6%.

Observers on C/Vs were assigned a sampling goal of one measurement and five count sample pots per fishing day and observers on C/Ps were assigned one measurement and three count sample pots. Biological measurements, legal tallies and average weights were conducted daily on C/Ps and at each delivery on C/Vs. Observers assigned to F/Ps conducted skipper interviews and performed biological measurements and legal tallies for each delivering vessel. Observers were to collect hemolymph samples from crab found with bitter crab syndrome. All observers reported harvest and effort information every 24 hours to the department.

The fishery closed at 6:00 AM on January 25, 2003. Sixteen observers disembarked in Dutch Harbor, six disembarked in Akutan, four in King Cove and one in St. Paul. Debriefings were performed for 20 observers from January 28 through February 12 in Dutch Harbor.

The fleet pulled a total of 139,903 pots for the entire fishery, made 257 deliveries and landed 26,341,958 pounds of crab during the Bering Sea snow crab season. Observed C/Vs pulled 12,813 pots, made 21 deliveries, and landed 2,348,475 pounds of crab. The C/Ps pulled 3,623 pots, made 11 deliveries, landed 806,472 pounds of crab and took a total of 8 deliveries from C/Vs (Table 3-10). Floating processors took 55 deliveries.

During 618 deployment days, observers sampled 870 pots, which represented 5.3% of pots pulled on observed vessels. Catcher vessel observers sampled 741 of 12,813 pots pulled on observed C/Vs (5.8%) and conducted 20 biological measurements and 20 legal tallies. Observers on C/Ps sampled 129 of 3,623 pots pulled (3.6%) and conducted 47 biological measurements and 47 legal tallies. Catcher vessel observers sampled 0.5% and C/P observers sampled 0.1% of pots pulled by the entire fleet. Observers on all vessels sampled a total of 0.6% of all pots pulled. Observers on F/Ps performed 61 biological measurements and 61 legal tallies on retained catch (Table 3-12). Five hemolymph samples from bitter crab were collected and evidence of violations was collected on three vessels.

2003 Bering Sea CDQ Snow Crab Fishery Observer Activity

The 2003 Bering Sea CDQ snow crab fishery registration began on January 29. The six CDQ groups eligible to fish participated with a total of nine catcher vessels and one catcher-processor. The mandatory observer coverage was two observers per CDQ group for a total of nine observed vessels. Each group was responsible for securing an observer through a state-certified observer contractor and for all observer costs. Groups fishing with more than two vessels determined which vessels would carry the observers, with the exception of the C/P, where observer coverage is mandatory.

Data Contractors, AOI, and SWI supplied observers for the CDQ groups. Between the dates of January 28 and February 12, 10 CDQ observer briefings took place in Dutch Harbor. During the season, one CDQ vessel changed observers. Seven observers boarded in Dutch Harbor and three in St. Paul.

For each C/V deployment, the observers were assigned one measurement and five count sample pots for each day of fishing. On the C/P, the observers were required to complete one measurement and three count sample pots each day. Every Monday, harvest and effort information was reported to the department. Observers were to collect hemolymph samples from any bitter crab brought onboard their vessels.

The last delivery for the 2003 Bering Sea CDQ snow crab fishery occurred on March 26, 2003. Two observers had mid-trip debriefings in Dutch Harbor during the fishery. Two observers disembarked in Akutan, two in St. Paul and six in Dutch Harbor. All 10 debriefings took place in Dutch Harbor February 12 through March 26.

The entire CDQ fleet put in approximately 190 fishing days and delivered 2,124,584 pounds of crab. During 313 deployment days observers conducted 61 biological measurements, 61 legal tallies and sampled 746 (5.1%) of the 14,583 pots pulled by the entire fleet (Table 3-13). No evidence was collected during this fishery. No hemolymph samples were returned to the department.

2003 Bering Sea Golden King Crab Fishery Observer Activity

The 2003 Bering Sea golden king crab fishery opened at noon on January 1, 2003. Three catcher-only vessels registered to fish the Pribilof District, of which one vessel also registered for the Northern District. One hundred percent coverage was mandatory on all vessels and observers were secured and paid for by the vessels.

Scarlet king crab, grooved and triangle Tanner crab could be retained as bycatch while targeting golden king crab in Area Q under the conditions of a deep water Tanner crab and *L. couesi* crab permit. One catcher vessel obtained a permit. The observer was to follow the sampling and tallying guidelines established for the golden king crab fishery, but to maintain separate reporting forms for all other retained species.

During the course of three days, from March 25 through 27, three briefings for the Pribilof and Northern Districts were conducted in the Dutch Harbor office, and all observers boarded their vessels in Dutch Harbor. Saltwater, Inc., AOI, and DCI provided observer coverage for the vessels. All observers were assigned a sampling goal of ten measurement sample pots per fishing day. Tri-weekly harvest information and sampling effort was reported to the department.

The Pribilof District closed to commercial fishing on May 1, 2003, and the Northern District remained open until December 31, 2003, as stipulated by the conditions of the permit issued by the commissioner. Only one vessel opted to fish the Northern District after the Pribilof District closure. The last delivery for the 2003 Bering Sea golden king crab fishery occurred on May 20. All observers disembarked and debriefed in Dutch Harbor between May 5 and May 20, 2003. During 138 deployment days, observers conducted six biological measurements, six legal tallies and sampled 593 pots (Table 3-14). No evidence was collected during this fishery.

2003 Bristol Bay Red King Crab General Fishery Observer Activity

The 2003 Bristol Bay red king crab fishery opened at 4:00 PM October 15 with 253 vessels, including 244 C/Vs, 8 C/Ps, and 1 F/P. Three C/Ps participated as floating-processors at the closure of the fishery. Of the 244 C/Vs, 32 vessels participated under the American Fisheries Act. The department set a goal of 10% observer coverage on all catcher vessels. Observer costs for the non-AFA vessels were paid through the state's observer test-fish funds and AFA vessel observers were secured and paid for directly by the vessel operators. One hundred percent observer coverage was mandatory for the C/Ps and the F/P, and observers were secured and paid for directly by the vessel operators.

The department employed seven staff observers and contracted 13 observers from SWI and AOI for the non-AFA C/V fleet. Three observers were contracted from SWI for the AFA vessels. Saltwater Inc, TSI, NWO, and AOI provided nine observers for the catcher-processors and floating processor.

Briefings for 22 of the 37 observer trips occurred in Dutch Harbor October 8-11. Thirteen observers who boarded their vessels in ports other than Dutch Harbor were briefed in Anchorage by department staff October 8-11. Certified observers assigned to C/Vs were double-briefed for both the Bristol Bay and the Petrel Bank red king crab fisheries. Two observers were briefed in Dutch Harbor on October 21 for freight hauls to Seattle. Nineteen observers boarded in Dutch Harbor, three boarded in Akutan, five in False Pass, and five in King Cove. One observer who had been briefed and assigned to a C/V was unable to board due to cancelled flights, so C/V observer coverage fell short, covering 9.2% of the fleet instead of the intended 10%.

Observers on C/Ps and C/Vs were assigned a sampling goal of 10 measurement sample pots per fishing day. Biological measurements, legal tallies and average weights were to be conducted daily for C/Ps and at each delivery for C/Vs. Observers assigned to F/Ps conducted skipper interviews and performed biological measurements and legal tallies for each delivering vessel. All observers were to collect information on all tagged crab found on their assigned vessels, and report harvest information twice daily to the department.

The fishery closed at 6:00 PM on October 20, 2003. Thirteen observers disembarked in Dutch Harbor, two disembarked in Akutan, one in False Pass, seven in King Cove, two in Kodiak and one in Sand Point. Thirteen observers were given waivers by the department to disembark their vessels prior to offloading in order to expedite their transition to the Petrel Bank fishery. Debriefings were performed for 26 observer trips in Dutch Harbor and 10 observer trips in Anchorage between October 21 and November 7. One observer was debriefed in Adak on November 4, 2003.

The fleet pulled 129,019 pots for the entire fishery, made 275 deliveries, and landed 14,530,248 pounds of crab during the Bristol Bay red king crab season. Observers sampled 731 pots, representing 4.4% and 0.6% of pots pulled on observed vessels and the entire fleet, respectively (Table 3-15).

The 210 non-AFA C/Vs pulled 111,120 pots, made 229 deliveries, and landed 12,660,773 pounds of crab. Of the 10,531 pots pulled by the observed vessels, observers sampled 485 (4.6%) and conducted 11 biological measurements and 11 legal tallies during the course of 300 deployment days. Likewise, the 32 AFA C/Vs pulled 12,913 pots, made 33 deliveries, and landed 1,188,781 pounds of crab. After 36 deployment days, observers sampled 71 (7.8%) of 911 pots pulled on observed AFA vessels, and conducted one biological measurement and one legal tally.

The C/Ps pulled 4,986 pots, made 13 deliveries, landed 680,694 pounds of crab and took 11 deliveries from C/Vs. Observers on C/Ps had a combined 108 deployment days, sampled 175 (3.5%) of 4,986 pots pulled and conducted 35 biological measurements and 32 legal tallies. Observers on F/Ps performed 16 biological measurements and 18 legal tallies.

Observers reported 49 (27.8%) of the 176 red king crab tags retrieved and evidence of violation was collected on three vessels.

2003 Bristol Bay Red King Crab CDQ Fishery Observer Activity

Registrations for the 2003 Bristol Bay CDQ red king crab fishery were available on October 24, 2003. The six CDQ groups eligible to fish participated with 11 C/Vs and 2 C/Ps. The 2003 season was the first year catcher-processors participated in the fishery since the inception of the CDQ program in 1998. The mandatory observer coverage was one observer per CDQ group for catcher vessels. All C/Ps were required to carry an observer, and groups using more than one C/V were responsible for determining which vessel would carry the observer. Each group was responsible for securing an observer through a state-certified observer contractor and for all observer costs.

Eight vessels, two of which were C/Ps, carried observers for the fishery. Alaskan Observers, Inc., TSI, NWO, and SWI provided eight observers for the CDQ groups. Observer briefings were conducted in Dutch Harbor between October 18 and November 5, 2003. All observers boarded

their vessels in Dutch Harbor, with the exception of two observers who had remained on their vessel after the closure of the Bristol Bay red king crab general fishery.

The sampling goal for each C/V and C/P deployment was 10 measurement sample pots for each day of fishing. Harvest and effort information was reported tri-weekly to the department. All observers were to collect information on all tagged crab found on their assigned vessels.

The last delivery for the 2003 Bristol Bay CDQ red king crab fishery occurred on November 16, 2003. All observers disembarked in Dutch Harbor. Debriefings for the eight CDQ observers (nine deployments) took place in Dutch Harbor, ranging from October 31 to November 17, 2003.

The CDQ fleet put in approximately 61 combined fishing days before reaching all fishing allocations and pulled 5,704 pots, made 20 deliveries and landed 1,166,662 pounds of crab. Observers sampled 279 (6.4%) of the 4,372 pots pulled by all observed vessels and 4.9% of pots pulled by the entire CDQ fleet. During nine observer trips and 112 deployment days, observers had conducted 22 biological measurements and 12 legal tallies (Table 3-16). Observers reported 13 of the 15 red king crab tags retrieved (86.7% of all tags recovered). Evidence was collected on one observed vessel during the fishery.

2003 Petrel Bank Red King Crab Fishery Observer Activity

The 2003 Petrel Bank red king crab fishery opened on October 25, 2003 with 30 vessels, including 28 C/Vs and 2 C/Ps, one of which acted as an F/P after the fishery closure. All vessels were required to carry onboard observers 100% of the time, and observers were secured and paid for by the vessel operators.

Saltwater Incorporated, TSI, and DCI provided 30 observers. Observer program staff conducted briefings and debriefings in Dutch Harbor, Anchorage, and Adak. Briefings for 11 of the 30 observers took place in Anchorage from October 8 to 22, 2003. Three briefings occurred in Adak on October 22 and 23, and seventeen in Dutch Harbor between October 8 and October 22. One observer was briefed in Dutch Harbor but the vessel decided not to fish and the observer was debriefed four days later without boarding. Sixteen observers boarded their vessels in Dutch Harbor, seven boarded in Adak, one in King Cove, one in Cold Bay and five remained on previously assigned vessels. In order to help facilitate a rapid and expedient transition of observers between the Bristol Bay and Petrel Bank fisheries, nine certified observers were double-briefed for both fisheries even if they did not yet have vessel assignments for Petrel Bank. Five of these observers were deployed for the Petrel Bank fishery and four were never deployed.

Due to inclement weather conditions, some observers were unable to fly into Dutch Harbor to meet their vessels. Consequently, five vessels were allowed to register for the Petrel Bank red king crab fishery in Dutch Harbor on October 22 and travel to Adak without observers on board. Contractors then flew the observers directly to Adak where the vessels were required to pick up their observers before proceeding to the fishing grounds.

All observers were assigned a sampling goal of ten measurement sample pots per fishing day. Observers reported harvest and fishing effort information every 12 hours to the department.

The fishery closed at 6:00 AM on October 29, 2003. Seventeen observers disembarked in Dutch Harbor, nine in Adak, two in King Cove and two observers remained on their vessels for other crab fisheries. Debriefings were conducted with 18 observers from October 29 to November 3 in Dutch Harbor. Twelve debriefings took place in Adak from October 26 to November 1, and one debriefing was conducted in Anchorage on November 3.

During the 91-hour fishery, the fleet pulled 5,774 pots, made 31 deliveries, and landed 479,113 pounds of crab. Observers sampled 931 pots, which represented 16.1% of pots pulled during the fishery (Table 3-17). One C/V delivered to a catcher-processor. No evidence was collected during the fishery and no tags were recovered.

2003 Statewide Grooved Tanner Crab Fishery Observer Activity

A deep water Tanner crab and *L. couesi* crab permit was issued on June 19, 2003 for Area J/Bering Sea District. This fishery requires 100% mandatory observer coverage, which is secured directly by the vessel operators, paying all observer costs. Under the conditions of the commissioner's permit, the vessel could retain triangle Tanner crab and scarlet king crab as bycatch.

Saltwater, Inc. provided two certified observers during the course of the vessel's fishing activity. Observer briefings, midtrip debriefings, and final trip debriefings occurred in Dutch Harbor between June 20 and September 26, 2003. Both observers boarded the vessel in Dutch Harbor. The observers were assigned a sampling goal of ten measurement sample pots per fishing day. Harvest and fishing effort information was reported tri-weekly to the department.

After 97 observer deployment days, the observers conducted 10 legal tallies, 11 biological measurements and sampled 393 pots (Table 3-18). No evidence was collected.

2003 Norton Sound Red King Crab Fishery Observer Activity

No observer activity occurred in this fishery in 2003.

2003-2004 Weathervane Scallop Fisheries Observer Activity

The 2003/2004 scallop season opened in all state and federal waters on July 1, 2003. Throughout the 7.5 month season, two C/Ps fished in four registration areas, including Yakutat, Prince William Sound, Kodiak and the Bering Sea. All vessels were required to carry onboard observers 100% of the time, and observers were secured and paid for by the vessel operators. Saltwater, Inc. and AOI provided observers throughout the season for 13 total deployments.

The first two briefings occurred in Anchorage on June 27, 2003 for the Bering Sea registration area. Eleven additional briefings were conducted throughout the year in Kodiak, Yakutat and Dutch Harbor.

All observers were assigned a sampling goal of six tows per fishing day: One dredge is sampled each day for species composition and five dredges are sampled for crab and halibut bycatch and discarded/retained scallop catch monitoring. Other daily duties included measuring 100 scallops and collecting 10 scallops for age analysis. Observers reported harvest, fishing effort and location information on a tri-weekly basis. Bycatch of halibut, Dungeness crabs, red king crabs, snow crabs and Tanner crabs are estimated from observer data.

The last debriefing has held February 10, 2004 in Juneau. In addition to the 13 debriefings, eight midtrip debriefings were conducted throughout the season. Debriefings were conducted in Anchorage, Kodiak, Yakutat, Dutch Harbor, or Juneau.

For the 2003/2004 regulatory season, observers made 13 trips, accounting for nearly 13 deployment months, the lowest since 1995 (Table 3-19). Six of the thirteen observer trips were made in the Kodiak registration area, and accounted for 6.5 (50.3%) of the total observer deployment months (Table 3-20). No evidence was collected on any of the trips.

2003 Fisheries Evidence Collected by Observers

Shellfish observers collected evidence associated with potential illegal activities on seven observer trips in 2003. Evidence was collected in the Bristol Bay red king crab fishery and the Bering Sea snow crab fisheries. Of the seven cases, two plead no contest, three are under investigation, and in two circumstances, no charges were filed after investigation. Evidence collection remains low over the last five years, contrary to an increase in the catcher-only vessel coverage (Table 3-21).

OBSERVER DATA USE AND ANALYSIS

The MSFCMA mandates collection of reliable data for fisheries conservation and management. Although ADF&G continues to collect retained catch data shore-side, it relies on data collected on the fishing grounds by at-sea observers who are in a unique position to collect specific and accurate baseline data. The crab observer database has accumulated enough data to become an important source of objective information for fisheries management and research. Some of the applications of this data are discussed in Schwenzfeier et al., (2000). The observer program database staff summarizes the large volume of biological data collected by crab observers annually. The most recent summary and analysis of BSAI observer data is available in Barnard and Burt (2004).

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Table 3-1. Observer coverage levels implemented by the Crab Observer Oversight Task Force for the 2003/2004 BSAI crab fisheries.

Fishery	Preseason Registration Deadline ^a	Catcher Vessels ^b		At-Sea Processors	
		Observer Coverage	Cost-Recovery Funded?	Observer Coverage	Cost-Recovery Funded?
St. Matthew blue king crab	24-Aug	Partial	YES	100%	NO
Pribilof red and blue king crab	24-Aug	Partial	YES	100%	NO
Bristol Bay red king crab	24-Sep	Partial	YES	100%	NO
Bering Sea Tanner crab	24-Sep	Partial	YES	100%	NO
Bering Sea snow crab	24-Dec	Partial	YES	100%	NO
St. Matthew golden king crab	none	100%	NO	100%	NO
Pribilof golden king crab	none	100%	NO	100%	NO
Hair crab	none	100%	NO	100%	NO
Triangle Tanner and grooved Tanner	none	100%	NO	100%	NO
Aleutian king crab (red or golden)	none	100%	NO	100%	NO

^a When the pre-registration deadline occurs on a Saturday, Sunday, or state holiday, the deadline is extended to the next workday.

^b AFA and CDQ catcher vessels are pay-as-you-go.

Table 3-2. Shellfish onboard observer program cost-recovery harvest statistics, 1999 - 2003.

Year	Number of		Harvest ^{a,b}	Number of Pots Pulled	Average		Deadloss ^a
	Landings	Crabs			CPUE ^c	Weight ^a	
1999 ^d	2	16,930	106,179	541	31.0	6.3	245
2000			No cost-recovery fishing				
2001 ^d	2	13,065	90,151	463	28.2	6.9	103
2002 ^d	1	10,837	71,661	198	54.7	6.6	134
2003			No cost-recovery fishing				

^a In pounds.

^b Deadloss included.

^c Number of legal crabs per pot lift.

^d Cost-recovery fishing occurred after the general Bristol Bay red king crab fishery.

Table 3-3. Economic performance of the shellfish onboard observer program cost-recovery harvest, 1999 - 2003.

Year	Harvest ^a	Value		Charter Dates	Total Charter Days
		Exvessel ^b	Total		
1999	105,934	\$6.32	\$669,500	10/25-11/10	17
2000		No cost-recovery fishing			
2001	90,048	\$5.12	\$461,045	10/23-11/08	17
2002	71,527	\$6.41	\$458,488	10/17-10/27	10
2003		No cost-recovery fishing			

^a In pounds, deadloss not included.

^b Price per pound.

Table 3-4. Crab observer training and participation in the Shellfish Onboard Observer Program, 1988 - 2003.

Year Class	Number of		Certified at Year's End ^a	Percent Turnover	Certification Status for Year Class as of December 31, 2003		
	Classes	Trainees			Current ^a	Expired ^b	Other ^c
1988	3	81	80	1.0	0	67	14
1989	1	41	98	19.0	1	35	5
1990	3	27	121	3.2	0	25	2
1991	4	59	108	40.0	0	54	5
1992	3	40	104	29.7	1	38	1
1993	2	19	78	36.6	0	17	2
1994	1	14	65	29.3	0	11	3
1995	3	55	77	35.8	3	48	4
1996	3	36	72	36.3	3	33	0
1997	2	27	67	32.3	3	23	1
1998	2	22	54	39.3	3	19	0
1999	1	11	43	33.8	0	11	0
2000	2	14	37	35.1	3	11	0
2001	3	25	57	8.1	10	14	1
2002	2	28	67	21.2	18	8	2
2003	2	26	71	23.7	26	0	0
Totals	37	525	NA	NA	71	414	40

^a Represents all crab observers who hold a certificate or trainee permit.

^b Due to 12-month shellfish observer employment inactivity or trainee permit expiration.

^c Certification revoked for non-compliance with shellfish observer program standards.

NA = not applicable

Table 3-5. Scallop observer training and participation in the Shellfish Onboard Observer Program, 1991 - 2003.

Year Class	Number of		Certified at Year's End ^a	Percent Turnover	Certification Status for Year Class as of December 31, 2003		
	Classes	Trainees			Current ^a	Expired ^b	Other ^c
1993	3	23	22	4.0	0	22	1
1994	3	16	5	86.8	0	13	3
1995	0	0	2	60.0	0	0	0
1996	2	10	5	58.3	0	10	0
1997	2	10	7	53.3	0	10	0
1998	1	8	5	66.7	0	8	0
1999	1	9	5	64.3	0	8	1
2000	1	6	6	45.5	0	6	0
2001	1	6	9	25.0	1	5	0
2002	1	5	9	35.7	3	2	0
2003	2	6	10	33.3	6	0	0
Totals	17	99	NA	NA	10	84	5

^a Represents all scallop observers who hold a certificate or trainee permit.

^b Due to 12-month shellfish observer employment inactivity or trainee permit expiration.

^c Certification revoked for non-compliance with shellfish observer program standards.

NA = not applicable

Table 3-6. Summary of observer deployment activity in the shellfish onboard observer program, from July 1988 through December 2003.

Year	Vessels ^a					Observer Trips	Deployed Observers	Certified at Year's End ^b	Observer Months	Number of Sessions ^c	Active Contractors
	C/P	F/P	C/V	S/V	Total						
1988	21	6	0	0	27	46	28	80	31.4	89	6
1989	22	12	0	0	34	124	53	98	124.0	252	7
1990	26	15	0	0	41	140	61	121	163.5	268	7
1991	33	18	0	1	52	282	105	114	352.2	651	6
1992	32	19	2	0	53	225	100	105	280.3	531	7
1993	29	21	14	11	75	235	80	102	216.8	412	7
1994	24	17	19	12	72	185	74	87	178.8	350	7
1995	21	15	50	8	94	211	91	95	213.0	478	5
1996	16	13	38	5	72	209	82	80	250.5	491	5
1997	15	11	30	6	62	157	71	78	184.4	347	5
1998	13	11	44	8	76	186	62	65	203.1	382	5
1999	11	11	42	8	72	152	48	55	148.5	345	4
2000	9	6	62	6	83	154	48	45	128.0	335	3
2001	9	5	62	4	80	161	59	64	150.3	364	4
2002	10	6	85	4	105	199	70	75	158.8	429	5
2003	9	7	83	2	101	171	70	80	137.6	363	5

^a Unique vessels requiring observer coverage: C/P = Catcher-Processor, F/P = Floating Processor, C/V = Catcher-Only Vessel, and S/V = Scallop Vessel (C/P or C/V).

^b Total number of observers who possess either a shellfish observer trainee permit or are currently certified on December 31st of each year.

^c Includes briefings, midtrip debriefings and final debriefings.

Table 3-7. Number of shellfish observer sessions by fishery for calendar year 2003.

Fishery	Number of			Totals	Percent of Total Sessions
	Briefings	Midtrips	Debriefings		
Aleutian Islands golden king crab	33	11	33	77	21.2
Bering Sea golden king crab	3	3	3	9	2.5
Bering Sea snow crab	30	0	30	60	16.5
Bering Sea snow crab CDQ	10	3	10	23	6.3
Bristol Bay red king crab	37	0	37	74	20.4
Bristol Bay red king crab CDQ	9	0	9	18	5.0
Petrel Bank red king crab fishery	32	0	32	64	17.6
Bering Sea grooved Tanner	2	1	2	5	1.4
Statewide scallops, excluding Cook Inlet	11	9	13	33	9.1
Totals	167	27	169	363	100

Table 3-8. Number of shellfish observer sessions by month and year, including briefings, midtrip debriefings and final debriefings, 1988 - 2003.

Year	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Yearly Total
1988	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27	36	12	14	89
1989	9	3	9	4	15	9	13	51	56	55	12	16	252
1990	21	14	16	13	8	8	5	17	20	41	77	28	268
1991	73	56	94	68	63	49	24	7	24	43	96	54	651
1992	101	60	41	111	8	10	13	31	22	28	62	44	531
1993	71	24	75	15	4	14	14	20	42	35	62	36	412
1994	49	4	81	25	8	7	28	38	38	26	26	20	350
1995	41	70	20	23	31	17	16	36	44	84	65	31	478
1996	42	22	68	28	36	26	39	42	34	53	64	37	491
1997	37	22	54	14	15	10	10	25	27	38	82	13	347
1998	32	17	67	20	35	14	9	28	43	65	50	2	382
1999	23	8	43	33	22	10	13	29	39	74	36	15	345
2000	24	7	26	38	15	11	13	42	42	86	21	10	335
2001	27	43	25	20	20	10	9	41	29	104	25	11	364
2002	40	46	37	19	7	3	5	34	31	148	43	16	429
2003	58	31	13	2	4	3	7	35	22	146	30	12	363
Average	43	28	45	29	19	13	15	32	34	66	48	22	380

Table 3-9. Summary of observed vessels, observer trips, percentage of total observer trips, observer months at sea, and percentage of total observer months at sea by fishery in the shellfish onboard observer program, 2003.

Fishery	Observed Vessels			Observer Trips	% Total Observer Trips	Observer Months	% Total Observer Months	% Coverage		Vessel Participation
	C/P	F/P ^a	C/V ^b					C/P & F/P	C/V	
Aleutian Islands golden king crab ^c	1	0	21	33	19.5	51.3	38.1	100.0	100.0	22
Bering Sea golden king crab	0	0	3	3	1.8	4.6	3.4	NA	100.0	3
Bering Sea snow crab	5	5	18	30	17.8	20.6	15.3	100.0	9.6	195
Bering Sea snow crab CDQ	1	0	8	10	5.9	10.4	7.7	100.0	88.9	10
Bristol Bay red king crab ^d	8	4	22	37	21.9	16.4	12.2	100.0	9.1	252
Bristol Bay red king crab CDQ	2	0	6	9	5.3	3.7	2.7	100.0	54.5	13
Petrel Bank red king crab	2	1	28	31	18.9	11.6	8.6	100.0	100.0	30
Bering Sea grooved Tanner	0	0	1	2	1.2	3.2	2.4	NA	100.0	1
Statewide scallops ^e	2	0	0	13	7.7	12.9	9.6	100.0	NA	2
Totals ^f	11	7	83	168	NA	134.7	NA	NA	NA	NA

^a May include vessels that also operated as a C/P during the same fishery.

^b C/Vs required to carry onboard shellfish observers.

^c 2002/2003 fishery.

^d Includes three AFA vessels.

^e 2003/2004 fisheries, excluding Cook Inlet.

^f Vessels are unique.

NA = not applicable

Table 3-10. Observer sampling effort and fishing effort by vessel type on observed vessels for statewide scallop and BSAI crab fisheries, 2003.

Fishery	Vessel Type	Number of		Percent Sampled	Number of Landings	Harvest ^a
		Sample Pots	Pots or Tows			
Aleutian Islands golden king crab ^b	C/V	5,834		CONFIDENTIAL		
	C/P	660		CONFIDENTIAL		
	Total	6,494	147,618	4.4	115	5,462,802
Bering Sea snow crab	C/V	741	12,813	5.8	21	2,348,475
	C/P	129	3,623	3.6	11	806,472
	Total	870	16,436	5.3	32	3,154,947
Bering Sea snow crab CDQ	C/V	622		CONFIDENTIAL		
	C/P	124		CONFIDENTIAL		
	Total	746		CONFIDENTIAL		
Bering Sea golden king crab	C/V	593		CONFIDENTIAL		
Bristol Bay red king crab	C/V ^c	485	10,531	4.6	24	1,297,968
	AFA C/V	71	911	7.8	3	114,995
	C/P	175	4,986	3.9	13	680,694
	Total	731	16,428	4.6	40	2,093,657
Bristol Bay red king crab CDQ	C/V	184		CONFIDENTIAL		
	C/P	95		CONFIDENTIAL		
	Total	279	4,372	6.4	13	813,392
Petrel Bank red king crab	C/V	884		CONFIDENTIAL		
	C/P	47		CONFIDENTIAL		
	Total	931	5,774	16.1	31	479,113
Bering Sea grooved Tanner	C/V	393		CONFIDENTIAL		
Statewide scallops ^d	C/P	1,276	4,765	26.8	18	484,536
Totals		12,313	216,876	5.7	292	14,821,661

^a In pounds, deadloss included.

^b 2002/2003 fishery

^c Non-AFA catcher vessels

^d 2003/2004 fishery

Table 3-11. Aleutian Islands golden king crab observer sampling efforts for bycatch and retained catch by vessel type, 1996 - 2002.

Year	Vessel Type	Number of ^a		% Obs. Coverage	Number of				% Sample Pot Pulls by Vessel Type	% Sample Pot Pulls of Total Fleet	Number of	
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pots	Pot Pulls by Vessel Type			Bio. Meas. ^b	Legal Tallies ^c
1996/1997	C/V	15	15	100.0	44	73.6	9,741	146,629	6.6	5.5	90	111
	C/P	3	3	100.0	11	16.0	1,610	32,023	5.0	0.9	239	257
	F/P	0	0	NA	0	0.0	NA	NA	NA	NA	NA	NA
	TOTAL	18	18	100.0	55	88.6	11,351	178,652	NA	6.4	329	368
1997/1998	C/V	11	11	100.0	41	62.0	6,871	124,073	5.5	4.1	83	94
	C/P	4	4	100.0	12	18.8	1,388	41,922	3.3	0.8	267	259
	F/P	0	0	NA	0	0.0	NA	NA	NA	NA	NA	NA
	TOTAL	15	15	100.0	53	80.8	8,259	165,995	NA	5.0	350	353
1998/1999	C/V	13	13	100.0	17	29.0	3,076	68,960	4.5	2.9	43	47
	C/P	3	3	100.0	7	13.0	1,293	37,584	3.4	1.2	230	233
	F/P	1	1	100.0	1	1.0	NA	NA	NA	NA	4	4
	TOTAL	17	17	100.0	25	43.0	4,369	106,544	NA	4.1	277	284
1999/2000	C/V	15	15	100.0	49	69.0	7,642	CONFIDENTIAL			97	121
	C/P	1	1	100.0	5	11.2	822	CONFIDENTIAL			228	230
	F/P	0	0	NA	0	0.0	NA	NA	NA	NA	NA	NA
	TOTAL	16	16	100.0	54	80.2	8,464	186,430	NA	4.5	325	351
2000/2001	C/V	16	16	100.0	47	63.5	9,015	CONFIDENTIAL			102	106
	C/P	1	1	100.0	5	9.2	742	CONFIDENTIAL			183	174
	F/P	0	0	NA	0	0.0	NA	NA	NA	NA	NA	NA
	TOTAL	17	17	100.0	52	72.7	9,757	173,241	NA	5.6	285	280

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Table 3-11. (Page 2 of 2)

Year	Vessel Type	Number of ^a		% Obs. Coverage	Number of			Pot Pulls by Vessel Type	% Sample Pot Pulls by Vessel Type	% Sample Pot Pulls of Total Fleet	Number of	
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pots				Bio. Meas. ^b	Legal Tallies ^c
2001/2002	C/V	20	20	100.0	44	58.7	8,344	CONFIDENTIAL		100	102	
	C/P	1	1	100.0	4	7.7	700	CONFIDENTIAL		146	147	
	F/P	1	1	100.0	1	0.1	NA	NA	NA	1	1	
	TOTAL	21	21	100.0	49	66.5	9,044	167,544	NA	5.4	247	250
2002/2003	C/V	21	21	100.0	31	44.3	5,834	CONFIDENTIAL		81	81	
	C/P	1	1	100.0	2	7.0	660	CONFIDENTIAL		144	146	
	F/P	0	0	NA	0	0.0	NA	NA	NA	NA	NA	
	TOTAL	22	22	100.0	33	51.3	6,494	147,618	NA	4.4	225	227

^a Some vessels participated as both a C/P and F/P, but are counted once in the total number of vessels.

^b Biological measurements taken on retained catch; each data set typically consists of 100 crab.

^c Each legal tally typically consists of 600 crab.

NA = not applicable

Table 3-12. Bering Sea snow crab observer sampling efforts for bycatch and retained catch by vessel type, 1995 - 2003.

Year	Vessel Type	Number of ^a		% Obs. Coverage	Number of					% Sample Pot Pulls of Obs. Fleet ^b	% Sample Pot Pulls of Total Fleet ^b	Number of	
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pots	Pot Pulls by Obs. Vessel Type ^b	Pot Pulls by Total Vessel Type ^b			Bio. Meas. ^c	Legal Tallies ^d
1995	C/V	234	0	0.0	NA	NA	NA	NA	-	NA	NA	NA	NA
	C/P	19	19	100.0	36	31.6	1,574	-	-	-	-	465	475
	F/P	15	15	100.0	17	22.5	NA	NA	NA	NA	NA	-	-
	TOTAL	268	34	12.7	53	54.1	1,574	-	506,802	-	0.3	465	475
1996	C/V	219	0	0.0	NA	NA	NA	NA	-	NA	NA	NA	NA
	C/P	15	15	100.0	35	31.3	1,412	-	-	-	-	479	494
	F/P	13	13	100.0	15	25.1	NA	NA	NA	NA	NA	246	292
	TOTAL	247	28	11.3	50	56.4	1,412	-	520,651	-	0.3	725	786
1997	C/V	216	0	0.0	NA	NA	NA	NA	680,725	NA	NA	NA	NA
	C/P	14	14	100.0	24	33.5	1,728	73,415	73,415	2.4	0.2	607	621
	F/P	11	11	100.0	17	26.5	NA	NA	NA	NA	NA	440	447
	TOTAL	237	25	10.5	41	60.0	1,728	73,415	754,140	2.4	0.2	1,047	1,068
1998	C/V	217	0	0.0	NA	NA	NA	NA	825,832	NA	NA	NA	NA
	C/P	12	12	100.0	21	30.7	5,872	65,436	65,436	9.0	0.7	598	609
	F/P	11	11	100.0	14	26.9	NA	NA	NA	NA	NA	751	762
	TOTAL	240	23	9.6	35	57.6	5,872	65,436	891,268	9.0	0.7	1,349	1,371
1999	C/V	231	0	0.0	NA	NA	NA	NA	846,163	NA	NA	NA	NA
	C/P	10	10	100.0	15	24.6	1,593	52,880	52,880	3.0	0.2	694	8
	F/P	11	11	100.0	12	26.3	NA	NA	NA	NA	NA	736	683
	TOTAL	252	21	8.3	27	50.9	1,593	52,880	899,043	3.0	0.2	1,430	691

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Table 3-12. (Page 2 of 2)

Year	Vessel Type	Number of ^a		% Obs. Coverage	Number of				% Sample Pot Pulls of Obs. Fleet ^b	% Sample Pot Pulls of Total Fleet ^b	Number of		
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pots	Pot Pulls by Obs. Vessel Type ^b			Pot Pulls by Total Vessel Type ^b	Bio. Meas. ^c	Legal Tallies ^d
2000	C/V	220	0	0.0	NA	NA	NA	NA	161,579	NA	NA	NA	NA
	C/P	9	9	100.0	10	5.7	202	8,485	8,485	2.4	0.1	76	60
	F/P	5	5	100.0	5	3.5	NA	NA	NA	NA	NA	111	91
	TOTAL	234	14	6.0	15	9.2	202	8,485	170,064	2.4	0.1	187	151
2001	C/V	200	7	3.5	7	9.6	241	4,663	159,438	5.2	0.1	7	6
	C/P	7	7	100.0	10	9.4	487	17,492	17,492	2.8	0.3	162	83
	F/P	3	3	100.0	3	4.3	NA	NA	NA	NA	NA	74	64
	TOTAL	210	17	8.1	20	23.3	728	22,155	176,930	3.3	0.4	243	153
2002	C/V	183	10	5.5	12	11.8	809	16,021	292,846	5.0	0.3	29	21
	C/P	8	8	100.0	9	8.0	509	14,820	14,820	3.4	0.2	170	121
	F/P	5	5	100.0	5	4.0	NA	NA	NA	NA	NA	192	105
	TOTAL	194	21	10.8	26	23.8	1,318	30,841	307,666	4.3	0.4	391	247
2003	C/V	187	18	9.6	19	14.1	741	12,813	136,280	5.8	0.5	20	20
	C/P	5	5	100.0	5	3.0	129	3,623	3,623	3.6	0.1	47	47
	F/P	5	5	100.0	6	3.5	NA	NA	NA	NA	NA	61	61
	TOTAL	195	26	13.3	30	20.6	870	16,436	139,903	5.3	0.6	128	128

^a Some vessels participated as both a C/P and F/P, but are counted once in the total number of vessels.

^b Information is not available for 1995 - 1996.

^c Biological measurements taken on retained catch; each data set typically consists of 100 crab. Information is not available for 1995.

^d Each legal tally typically consists of 600 crab. Information is not available for 1995.

NA = not applicable

Table 3-13. Bering Sea snow crab CDQ observer sampling efforts for bycatch and retained catch by vessel type, 1998 - 2003.

Year	Vessel Type	Number of ^a		% Obs. Coverage	Number of					% Sample Pot Pulls of Obs. Fleet	% Sample Pot Pulls of Total Fleet	Number of	
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pots	Pot Pulls by Obs. Vessel Type	Pot Pulls by Total Vessel Type			Bio. Meas. ^b	Legal Tallies ^c
1998	C/V	20	20	all vessels	25	34.0	1,726	39,333	39,333	4.4	4.4	80	82
	F/P	0	0	all F/Ps	NA	NA	NA	NA	NA	NA	NA	NA	NA
	TOTAL	20	20		25	34.0	1,726	39,333	39,333	4.4	4.4	80	82
1999	C/V	23	21	1 per group	26	10.2	789	14,131	46,490	5.6	1.7	35	27
	F/P	1	1	all F/Ps	2	1.9	NA	NA	NA	NA	NA	24	19
	TOTAL	24	22		28	12.1	789	14,131	46,490	5.6	1.7	59	46
2000	C/V	13	12	2 per group	12	8.5	629	CONFIDENTIAL	12,570	CONFIDENTIAL	5.0	32	26
	F/P	0	0	all F/Ps	NA	NA	NA	NA	NA	NA	NA	NA	NA
	TOTAL	13	12		12	8.5	629	CONFIDENTIAL	12,570	CONFIDENTIAL	5.0	32	26
2001	C/V	11	11	2 per group	11	9.9	771	14,270	14,270	5.4	5.4	33	11
	F/P	0	0	all F/Ps	NA	NA	NA	NA	NA	NA	NA	NA	NA
	TOTAL	11	11		11	9.9	771	14,270	14,270	5.4	5.4	33	11
2002	C/V	11	11	2 per group	15	16.0	1,098	CONFIDENTIAL	18,845	CONFIDENTIAL	5.8	12	10
	F/P	0	0	all F/Ps	NA	NA	NA	NA	NA	NA	NA	NA	NA
	TOTAL	11	11		15	16.0	1,098	CONFIDENTIAL	18,845	CONFIDENTIAL	5.8	12	10

-Continued-

Table 3-13. (Page 2 of 2)

Year	Vessel Type	Number of ^a		% Obs. Coverage	Observer Trips	Observer Months	Number of			% Bycatch	% Bycatch	Number of	
		Total Vessels	Obs. Vessels				Bycatch Sample Pots	Pot Pulls by Obs. Vessel Type	Pot Pulls by Total Vessel Type	Sample Pot Pulls of Obs. Fleet	Sample Pot Pulls of Total Fleet	Bio. Meas. ^b	Legal Tallies ^c
2003 ^d	C/V	9	8	2 per group	8	8.3	622	CONFIDENTIAL			4.3	21	21
	C/P	1	1	all C/Ps	2	2.1	124	CONFIDENTIAL			0.9	40	40
	F/P	0	0	all F/Ps	NA	NA	NA	NA	NA	NA	NA	NA	NA
	TOTAL	10	9		10	10.4	746	CONFIDENTIAL	14,583	CONFIDENTIAL	5.1	61	61

^a Vessels may not have had observer coverage for 100% of the fishing time.

^b Biological measurements taken on retained catch; each data set typically consists of 100 crab.

^c Each legal tally typically consists of 600 crab.

^d 2003 was the first year a C/P participated in the fishery.

NA = not applicable

Table 3-14. Bering Sea golden king crab observer sampling efforts for bycatch and retained catch by vessel type in 1989, 1992, 2001 - 2003.

Year ^a	Vessel Type	Number of		% Obs. Coverage	Number of				% Sample Pot Pulls by Vessel Type ^b	% Sample Pot Pulls of Total Fleet ^a	Number of	
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pots ^b	Pot Pulls by Vessel Type ^b			Bio. Meas. ^{b,c}	Legal Tallies ^{b,d}
1989	C/V	0	0	100.0	0	0.0	NA	NA	NA	NA	NA	NA
	C/P	2	2	100.0	2	1.5	-	-	-	-	-	-
	TOTAL	2	2	100.0	2	1.5	-	-	-	-	-	-
1992	C/V	0	0	100.0	0	0.0	NA	NA	NA	NA	NA	NA
	C/P	2	2	100.0	2	1.3	-	-	-	-	-	-
	TOTAL	2	2	100.0	0	1.3	-	-	-	-	-	-
2001	C/V	6	6	100.0	9	10.5	1,356	4,513	30.0	30.0	13	14
	C/P	0	0	100.0	0	0.0	NA	NA	NA	NA	NA	NA
	TOTAL	6	6	100.0	9	10.5	1,356	4,513	NA	30.0	13	14
2002	C/V	8	8	100.0	11	11.4	1,505	5,464	27.5	27.5	9	10
	C/P	0	0	100.0	0	0.0	NA	NA	NA	NA	NA	NA
	TOTAL	8	8	100.0	11	11.4	1,505	5,464	NA	27.5	9	10
2003	C/V	3	3	100.0	3	4.6	593	CONFIDENTIAL			6	6
	C/P	0	0	100.0	0	0	NA	NA	NA	NA	NA	NA
	TOTAL	3	3	100.0	3	4.6	593	CONFIDENTIAL			6	6

^a Does not include years during which no observer participation occurred.

^b Information is not available for 1989 and 1992.

^c Biological measurements taken on retained catch; each data set typically consists of 100 crab.

^d Each legal tally typically consists of 600 crab.

NA = not applicable

Table 3-15. Bristol Bay red king crab observer sampling efforts for bycatch and retained catch by vessel type, 1988 - 2003.

Year	Vessel Type	Number of ^a		% Obs. Coverage	Number of					% Sample Pot Pulls of Obs. Fleet ^b	% Sample Pots for Total Fleet	Number of	
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pots	Pot Pulls by Obs. Vessel Type ^b	Pot Pulls by Total Vessel Type ^b			Bio. Meas. ^c	Legal Tallies ^{b,d}
1988	C/V	180	0	0.0	0	0	NA	NA	-	NA	NA	NA	NA
	C/P	20	20	100.0	20	8.4	31	-	-	-	<.1	0	-
	F/P	5	5	100.0	5	1.9	NA	NA	NA	NA	NA	0	-
	TOTAL	205	25	12.2	25	10.3	31	-	153,004	-	<.1	0	-
1989	C/V	193	0	0.0	0	0	NA	NA	-	NA	NA	NA	NA
	C/P	18	18	100.0	18	10.9	94	-	-	-	<.1	110	-
	F/P	12	12	100.0	12	6.8	NA	NA	NA	NA	NA	101	-
	TOTAL	223	30	13.5	30	17.6	94	-	208,684	-	<.1	211	-
1990	C/V	220	0	0.0	0	0	NA	NA	-	NA	NA	NA	NA
	C/P	20	20	100.0	20	11.9	140	-	-	-	0.1	-	-
	F/P	15	15	100.0	15	8.9	NA	NA	NA	NA	NA	-	-
	TOTAL	255	35	13.7	35	20.8	140	-	262,131	-	0.1	-	-
1991	C/V	277	0	0.0	0	0	NA	NA	-	NA	NA	NA	NA
	C/P	25	25	100.0	26	14.2	272	-	-	-	0.1	163	-
	F/P	14	14	100.0	14	7.4	NA	NA	NA	NA	NA	130	-
	TOTAL	316	39	12.3	40	21.5	272	-	227,555	-	0.1	293	-
1992	C/V	263	0	0.0	0	0	NA	NA	-	NA	NA	NA	NA
	C/P	18	18	100.0	19	9.0	290	-	-	-	0.1	99	-
	F/P	6	6	100.0	6	3.0	NA	NA	NA	NA	NA	80	-
	TOTAL	287	24	8.4	25	12.0	290	-	205,940	-	0.1	179	-
1993	C/V	275	0	0.0	0	0	NA	NA	-	NA	NA	NA	NA
	C/P	17	17	100.0	19	10.6	558	-	-	-	0.2	124	-
	F/P	7	7	100.0	7	4.5	NA	NA	NA	NA	NA	112	-
	TOTAL	299	24	8.0	26	15.1	558	-	253,794	-	0.2	236	-

-Continued-

Table 3-15. (Page 2 of 3)

Year	Vessel Type	Number of ^a		% Obs. Coverage	Number of				% Sample Pot Pulls of Obs. Fleet ^b	% Sample Pots for Total Fleet	Number of		
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pots	Pot Pulls by Obs. Vessel Type ^b			Pot Pulls by Total Vessel Type ^b	Bio. Meas. ^c	Legal Tallies ^{b,d}
1994													
1995													
1996	C/V	192	0	0.0	0	0	0	NA	73,908	NA	NA	NA	NA
	C/P	4	4	100.0	7	2.0	84	2,525	2,525	3.3	0.1	19	19
	F/P	2	2	100.0	2	0.8	NA	NA	NA	NA	NA	26	62
	TOTAL	197	5	2.5	9	2.8	84	2,525	76,433	3.3	0.1	45	81
1997	C/V	248	0	0.0	0	0	0	NA	86,968	NA	NA	NA	NA
	C/P	8	8	100.0	12	3.9	146	3,542	3,542	4.1	0.2	28	28
	F/P	3	3	100.0	3	1.6	NA	NA	NA	NA	NA	52	56
	TOTAL	259	11	4.2	15	5.5	146	3,542	90,510	4.1	0.2	80	84
1998	C/V	263	0	0.0	0	0	0	NA	135,093	NA	NA	NA	NA
	C/P	11	11	100.0	19	6.7	131	6,614	6,614	2.0	0.1	48	52
	F/P	5	5	100.0	3	1.8	NA	NA	NA	NA	NA	37	52
	TOTAL	277	14	5.1	22	8.5	131	6,614	141,707	2.0	0.1	85	104
1999	C/V	249	0	0.0	0	0	0	NA	141,298	NA	NA	NA	NA
	C/P	8	8	100.0	10	4.6	135	5,699	5,699	2.4	0.1	46	56
	F/P	3	3	100.0	1	1.0	NA	NA	NA	NA	NA	22	26
	TOTAL	258	9	3.5	11	5.6	135	5,699	146,997	2.4	0.1	68	82
2000	C/V ^e	214	11	5.1	11	5.1	403	4,429	86,313	9.1	0.4	10	11
	AFA C/V	25	3	12.0	3	1.1	88	1,024	8,340	8.6	0.1	3	3
	C/P	7	7	100.0	9	3.4	156	4,041	4,041	3.9	0.2	28	29
	F/P	2	2	100.0	3	0.6	NA	NA	NA	NA	NA	14	17
	TOTAL	247	22	8.9	26	10.2	647	9,494	98,694	6.8	0.7	55	60

-Continued-

Table 3-15. (Page 3 of 3)

Year	Vessel Type	Number of ^a		% Obs. Coverage	Number of				% Sample Pot Pulls of Obs. Fleet ^b	% Sample Pots for Total Fleet	Number of		
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pots	Pot Pulls by Obs. Vessel Type ^b			Pot Pulls by Total Vessel Type ^b	Bio. Meas. ^c	Legal Tallies ^{b,d}
2001	C/V ^e	193	20	10.4	20	9.5	359	5,746	54,804	6.2	0.6	19	19
	AFA C/V	31	3	9.7	3	1.0	48	682	6,662	7.0	0.1	3	3
	C/P	6	6	100.0	7	2.3	97	1,776	1,776	5.5	0.2	13	13
	F/P	3	3	100.0	3	1.2	NA	NA	NA	NA	NA	19	19
	TOTAL	231	30	13.0	33	14.0	504	8,204	63,242	6.1	0.8	54	54
2002	C/V ^e	204	17	8.3	17	7.1	330	5,236	55,496	6.3	0.5	16	18
	AFA C/V	31	3	9.7	3	1.3	37	551	5,776	6.7	0.1	3	3
	C/P	7	7	100.0	8	2.3	144	2,556	2,556	5.6	0.2	21	21
	F/P	3	3	100.0	3	1.0	NA	NA	NA	NA	NA	9	9
	TOTAL	243	28	11.5	31	11.8	511	8,343	63,828	6.1	0.8	49	51
2003	C/V ^e	212	19	9.0	20	10.0	485	10,531	111,120	4.6	0.4	11	11
	AFA C/V	32	3	9.4	3	1.2	71	911	12,913	7.8	0.1	1	1
	C/P	8	8	100.0	10	3.6	175	4,986	4,986	3.5	0.1	35	32
	F/P	4	4	100.0	4	1.6	NA	NA	NA	NA	NA	16	18
	TOTAL	252	31	12.3	37	16.4	731	16,428	129,019	4.4	0.6	63	62

^a Some vessels participated as both a C/P and F/P and are only counted once in the total number of vessels.

^b Information is not available for 1988-1993.

^c Biological measurements taken on retained catch; each data set typically consists of 100 crab. Information is not available for 1990.

^d Each legal tally typically consists of 600 crab.

^e Non-AFA catcher vessels.

NA = not applicable

Table 3-16. Bristol Bay red king crab CDQ observer sampling efforts for bycatch and retained catch by vessel type, 1998 - 2003.

Year	Vessel Type	Number of		% Obs. Coverage	Observer Trips	Observer Months	Number of		% Sample Pot Pulls of Obs. Fleet	% Sample Pot Pulls of Total Fleet	Number of		
		Total Vessels	Obs. Vessels				Sample Pots	Pot Pulls by Obs. Vessel Type			Pot Pulls by Total Vessel Type	Bio. Meas. ^a	Legal Tallies ^b
1998	C/V	7	7	all vessels	7	3.1	193	3,405	3,405	5.7	5.7	9	10
1999	C/V	10	10	all vessels	10	3.5	263	2,976	2,976	8.8	8.8	9	12
2000	C/V	11	11	all vessels	11	4.4	423	4,663	4,663	9.1	9.1	1	0
2001	C/V	10	6	1 per group	6	2.9	166	2,516	3,158	6.6	5.3	9	9
2002	C/V	10	6	1 per group	6	2.7	242	2,875	3,909	8.4	6.2	9	9
2003 ^c	C/V	11	6	1 per group	7	2.8	184	CONFIDENTIAL				8	8
	C/P	2	2	all vessels	2	0.9	95	CONFIDENTIAL				14	4
TOTAL		13	8		9	3.7	279	4,372	5,704	6.4	4.9	22	12

^a Biological measurements taken on retained catch; each data set typically consists of 100 crab.

^b Each legal tally typically consists of 600 crab.

^c 2003 was the first year C/Ps fished Bristol Bay CDQ red king crab.

Table 3-17. Petrel Bank red king crab observer sampling efforts for bycatch and retained catch by vessel type, 2001 - 2003.

Year	Vessel Type	Number of ^a		% Obs. Coverage	Number of			Pot Pulls by Vessel Type	% Sample Pot Pulls by Vessel Type	% Sample Pot Pulls of Total Fleet	Number of	
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pots				Bio. Meas. ^b	Legal Tallies ^c
2001 ^d	C/V	3	3	100.0	4	3.3	105	524	20.0	8.8	3	3
	C/P	1	1	100.0	2	5.1	133	671	19.8	11.1	5	5
	F/P	0	0	NA	0	0.0	NA	NA	NA	NA	0	0
	TOTAL	4	4	100.0	6	8.4	238	1,195	NA	19.9	8	8
2002	C/V	31	30	96.8	30	11.9	579	CONFIDENTIAL			21	22
	C/P	2	2	100.0	2	1.2	18	CONFIDENTIAL			3	3
	F/P	1	1	100.0	1	0.6	NA	NA	NA	NA	0	0
	TOTAL	33	32	97.0	33	13.6	597	3,782	NA	15.8	24	25
2003	C/V	28	28	100	28	10.9	884	CONFIDENTIAL			25	25
	C/P	2	2	100	2	0.6	47	CONFIDENTIAL			4	4
	F/P	1	1	100	1	0.07	NA	NA	NA	NA	0	0
	TOTAL	30	30	100.0	31	11.6	931	5,774	NA	16.1	29	29

^a Some vessels participated as both a C/P and F/P, but are counted once in the total number of vessels.

^b Biological measurements taken on retained catch; each data set typically consists of 100 crab.

^c Each legal tally typically consists of 600 crab.

^d A survey in 2001 was conducted during the months of January and November.

NA = not applicable

Table 3-18. Statewide grooved Tanner crab observer sampling efforts for bycatch and retained catch by vessel type, 1994 - 2003.

Year	Vessel Type	Number of		% Obs. Coverage	Number of			Pot Pulls by Vessel Type ^a	% Sample Pot Pulls by Vessel Type ^a	% Sample Pot Pulls of Total Fleet ^a	Number of	
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pots				Bio. Meas. ^b	Legal Tallies ^c
1994	C/V	6	6	100.0	14	16.6	1,782	-	-	-	58	30
	C/P	2	2	100.0	3	2.3	336	-	-	-	46.0	45.0
	TOTAL	8	8	100.0	17	18.8	2,118	55,433	NA	3.8	104	75
1995	C/V	16	16	100.0	47	55.2	10,343	-	-	-	155	145
	C/P	2	2	100.0	8	6.2	620	-	-	-	66.0	85.0
	TOTAL	18	18	100.0	55	61.3	10,963	163,462	NA	6.7	221	230
1996	C/V	9	9	100.0	20	26.3	4,469	73,960	6.0	8.0	40	62
	C/P	0	0	100.0	0	0.0	NA	NA	NA	NA	NA	NA
	TOTAL	9	9	100.0	20	26.3	4,469	73,960	NA	8.0	40	62
1997	NO VESSELS PARTICIPATED IN THE FISHERY											
1998	NO VESSELS PARTICIPATED IN THE FISHERY											
1999	NO VESSELS PARTICIPATED IN THE FISHERY											
2000	C/V	1	1	100.0	1	1.4	164	CONFIDENTIAL			3.0	3.0
	C/P	2	2	100.0	2	0.7	17	CONFIDENTIAL			5	0
	TOTAL	3	3	100.0	3	2.0	181	CONFIDENTIAL			8	3
2001	C/V	2	2	100.0	4	2.7	258	CONFIDENTIAL			15	15
	C/P	0	0	100.0	0	0.0	NA	NA	NA	NA	NA	NA
	TOTAL	2	2	100.0	4	2.7	258	CONFIDENTIAL			15	15
2002	No vessels participated in the fishery											

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Table 3-18. (page 2 of 2)

Year	Vessel Type	Number of		% Obs. Coverage	Number of			% Bycatch	% Bycatch	Number of	
		Total Vessels	Obs. Vessels		Observer Trips	Observer Months	Sample Pot Pulls by Vessel Type	Sample Pot Pulls by Vessel Type	Sample Pot Pulls of Total Fleet	Bio. Meas. ^a	Legal Tallies ^b
2003	C/V	1	1	100.0	2	3.2	393	CONFIDENTIAL		11	10
	C/P	0	0	100.0	0.0	0.0	NA	NA	NA	NA	NA
	TOTAL	1	1	100.0	2	3.2	393	CONFIDENTIAL		11	10

^a Information is not available for 1994 - 1995.

^b Biological measurements taken on retained catch; each data set typically consists of 100 crab.

^c Each legal tally typically consists of 600 crab.

NA = not applicable

Table 3-19. Yearly summary by region of observed scallop vessels, number of observer trips, and observer months at sea for Alaska weathervane scallop fisheries from 1993 - 2003, excluding Cook Inlet.

Year	Yakutat ^a			Prince William Sound			Westward ^c			Total		
	Vessel ^b	Trips	Months	Vessel ^b	Trips	Months	Vessel ^b	Trips	Months	Vessel ^b	Trips	Months
1993	7	8	4.1	7	7	2.3	11	62	35.0	10	77	41.4
1994/1995	10	15	6.8	0	0	0.0	12	50	35.2	12	65	42.0
1995/1996	8	9	8.1	2	2	1.0	1	4	2.4	8	15	11.5
1996/1997	4	7	5.7	0	0	0.0	5	12	11.7	5	19	17.4
1997/1998	4	4	4.2	1	1	0.4	6	20	17.0	6	25	21.6
1998/1999	8	10	7.7	2	2	0.7	8	28	18.0	8	40	26.5
1999/2000	3	4	6.1	2	2	0.5	7	21	15.1	8	27	21.7
2000/2001	3	10	8.4	3	3	1.4	6	14	10.4	7	27	20.2
2001/2002	2	4	3.8	1	2	1.0	4	11	9.9	4	17	14.7
2002/2003	2	2	3.9	2	2	0.9	3	13	10.0	4	17	14.8
2003/2004	2	3	4.3	1	2	0.7	2	8	7.9	2	13	12.9
Average	5	6.9	5.7	2	2.1	0.8	6	22.1	15.7	7	31.1	22.2

^a Includes District 16.

^b Number of unique vessels.

^c Includes Kodiak, Alaska Peninsula, Dutch Harbor, Adak and Bering Sea registration areas.

Table 3-20. Scallop observer activity by area for the 2003/2004 regulatory season.

Area	Number of Vessels ^a	Observer Trips		Observer Months	Percent of Total Observer Months
		Number	Percent		
Yakutat	2	3	23.1	4.3	33.1
Prince William Sound	1	2	15.4	0.7	5.4
Kodiak	2	6	46.2	6.5	50.3
Bering Sea	2	2	15.4	1.4	10.8
Alaska Peninsula	0	0	0.0	0.0	0.0
Adak	0	0	0.0	0.0	0.0
Total	2	13	NA	12.9	NA

^a Number of unique vessels.

NA = not applicable

Table 3-21. Summary of evidence collected by shellfish observers during fisheries in which observers were deployed.

Fishery	Year	Observer Trips	Trips with Evidence	Percent of Observed Trips ^a	Percent of Year's Evidence ^b
St. Matthew / Pribilof red and blue king crab	1991	11	0	0.0	0.0
	1992	16	1	6.3	2.4
	1993	11	1	9.1	5.6
	1994	11	1	9.1	5.9
	1995	7	1	14.3	4.0
	1996	7	4	57.1	16.7
	1997	4	0	0.0	0.0
	1998	8	1	12.5	3.0
Dutch Harbor area golden king crab	1991	4	1	25.0	2.4
	1992	6	1	16.7	2.4
	1993	2	0	0.0	0.0
	1994	2	1	50.0	5.9
	1995	19	0	0.0	0.0
Adak area red and golden king crab	1991	23	3	13.0	7.1
	1992	12	5	41.7	11.9
	1993	5	1	20.0	5.6
	1994	12	2	16.7	11.8
	1995	60	5	8.3	20.0
Adak area red king crab only	1991	2	0	0.0	0.0
	1992	2	0	0.0	0.0
	1993	1	0	0.0	0.0
	1994	4	1	25.0	5.9
	2001	6	0	0.0	0.0
	2002	46	0	0.0	0.0
	2003	31	0	0.0	0.0
Aleutian Islands golden king crab ^c	1996	34	12	35.3	50.0
	1997	53	15	28.3	57.7
	1998	25	3	12.0	9.1
	1999	54	3	5.6	25.0
	2000	52	2	3.8	40.0
	2001	49	5	10.2	71.4
2002	33	0	0.0	0.0	

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Table 3-21. (Page 2 of 4)

Fishery	Year	Observer Trips	Trips with Evidence	Percent of Observed Trips ^a	Percent of Year's Evidence ^b
Bristol Bay red king crab	1996	9	0	0.0	0.0
	1997	15	3	20.0	11.5
	1998	24	3	12.5	9.1
	1999	15	3	20.0	25.0
	2000	26	1	3.8	20.0
	2001	33	2	6.1	28.6
	2002	33	0	0.0	0.0
	2003	37	3	8.1	42.9
Bering Sea snow crab	1991	151	18	11.9	42.9
	1992	107	19	17.8	45.2
	1993	63	8	12.7	44.4
	1994	55	8	14.5	47.1
	1995	53	14	26.4	56.0
	1996	50	3	6.0	12.5
	1997	41	4	9.8	15.4
	1998	35	11	31.4	33.3
	1999	27	5	18.5	41.7
	2000	15	0	0.0	0.0
	2001	20	0	0.0	0.0
	2002	26	3	11.5	100.0
	2003	30	3	10.0	42.9
Bering Sea Tanner crab	1991	52	12	23.1	28.6
	1992	42	8	19.0	19.0
	1993	22	5	22.7	27.8
	1994	10	2	20.0	11.8
	1995	12	2	16.7	8.0
	1996	3	0	0.0	0.0
Bering Sea hair crab	1992	10	0	0.0	0.0
	1993	27	0	0.0	0.0
	1994	12	1	8.3	5.9
	1995	22	0	0.0	0.0

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Table 3-21. (Page 3 of 4)

Fishery	Year	Observer Trips	Trips with Evidence	Percent of Observed Trips ^a	Percent of Year's Evidence ^b
Bering Sea hair crab	1996	21	3	14.3	12.5
	1997	16	4	25.0	15.4
	1998	12	2	16.7	6.1
	1999	8	0	0.0	0.0
	2000	3	0	0.0	0.0
Grooved Tanner crab All areas ^d	1994	14	1	7.1	5.9
	1995	57	1	1.8	4.0
	1996	20	2	10.0	8.3
	2000	3	0	0.0	0.0
	2001	4	0	0.0	0.0
Miscellaneous Fisheries ^e	2003	2	0	0.0	0.0
	1992	8	0	0.0	0.0
	1993	8	0	0.0	0.0
	1994	0	0	NA	0.0
	1995	15	2	13.3	8.0
	1996	1	0	0.0	0.0
	1997	4	0	0.0	0.0
	1998	0	0	NA	0.0
	1999	0	0	NA	0.0
	2000	1	0	0.0	0.0
Community Development Quota fisheries ^f	2001	10	0	0.0	0.0
	2002	12	0	0.0	0.0
	2003	3	0	0.0	0.0
	1998	35	13	37.1	39.4
	1999	38	1	2.6	8.3
	2000	23	2	8.7	40.0
	2001	17	0	0.0	0.0
Statewide scallops	2002	21	0	0.0	0.0
	2003	19	1	5.3	14.3
	2001	15	0	0.0	0.0
	2002	17	0	0.0	0.0
	2003	13	0	0.0	0.0

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Table 3-21. (Page 4 of 4)

Fishery	Year	Observer Trips	Trips with Evidence	Percent of Observed Trips ^a	Percent of Year's Evidence ^b
Summary	1991	283	34	12.0	
	1992	228	34	14.9	
	1993	165	15	9.1	
	1994	120	17	14.2	
	1995	245	25	10.2	
	1996	145	24	16.6	NA
	1997	133	26	19.5	
	1998	139	33	23.7	
	1999	142	12	8.5	
	2000	123	5	4.1	
	2001	154	7	4.5	
	2002	199	3	1.5	
	2003	168	7	4.2	

^a Percentage of trips in which evidence was collected.

^b Percentage of total evidence collected by fishery for the fishing season.

^c In 1996 the Adak and Dutch Harbor king crab Registration Areas were consolidated into the Aleutian Islands Area 'O' king crab Registration Area and opened on September 1st, the traditional opening time of the former Dutch Harbor area.

^d Grooved Tanner crab areas include the Bering Sea, Aleutian Islands, Kodiak, Alaska Peninsula, and Southeastern Alaska.

^e Miscellaneous fisheries for all years can include: Bering Sea golden king crab, BSAI octopus, surf clam, snail, St. Lawrence blue king crab, Norton Sound red king crab, eastern Aleutian triangle Tanner crab, western Aleutian Tanner and hair crab, Southeast Alaska misc. (urchins, shrimp, etc.).

^f CDQ fisheries include Bering Sea snow crab, St. Matthew blue king crab, Pribilof red and blue king crab, and Bristol Bay red king crab.

NA = not applicable

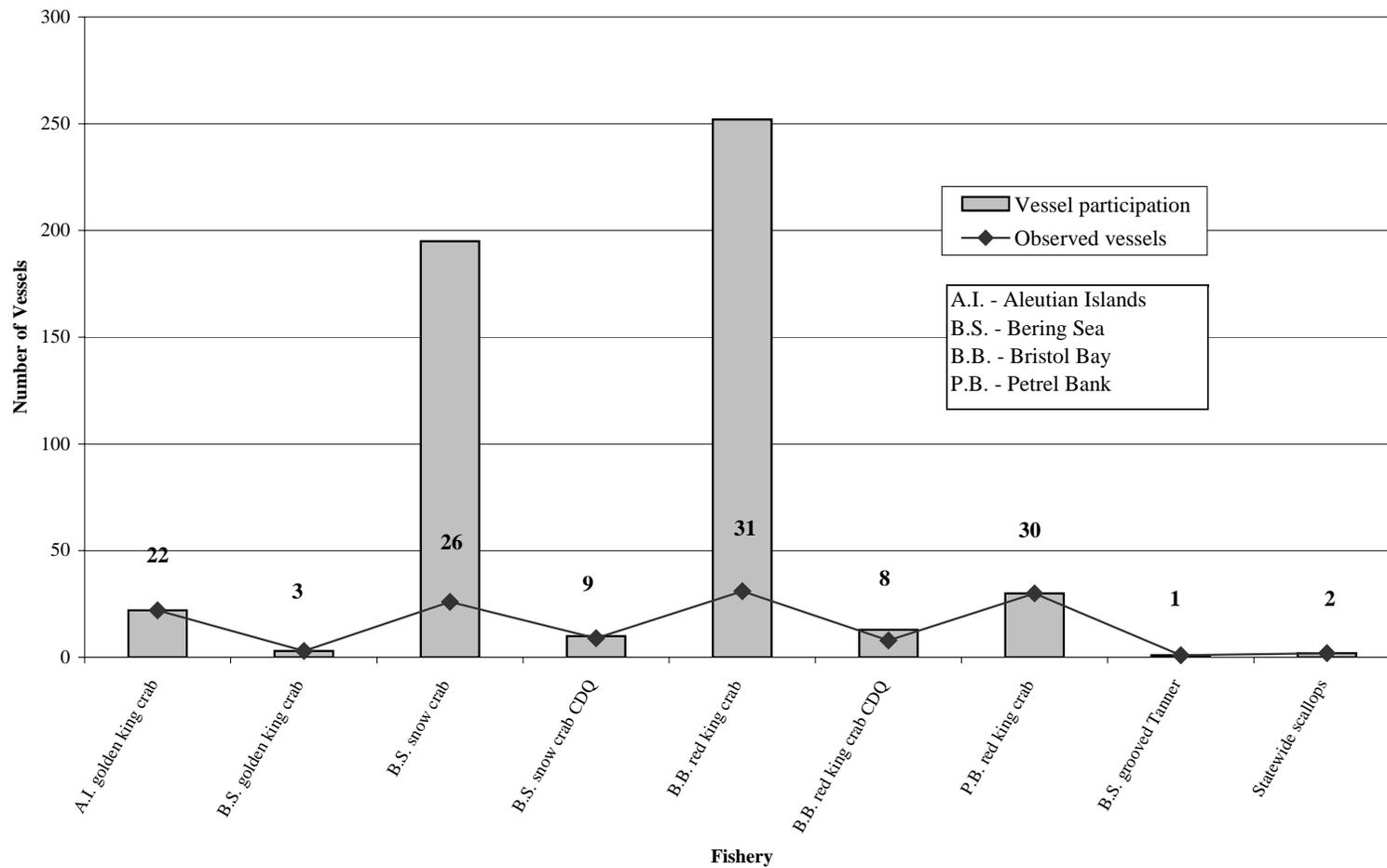


Figure 3-1. Level of observer coverage by fishery in 2003, and the 2002/2003 Aleutian Islands golden king crab fishery.

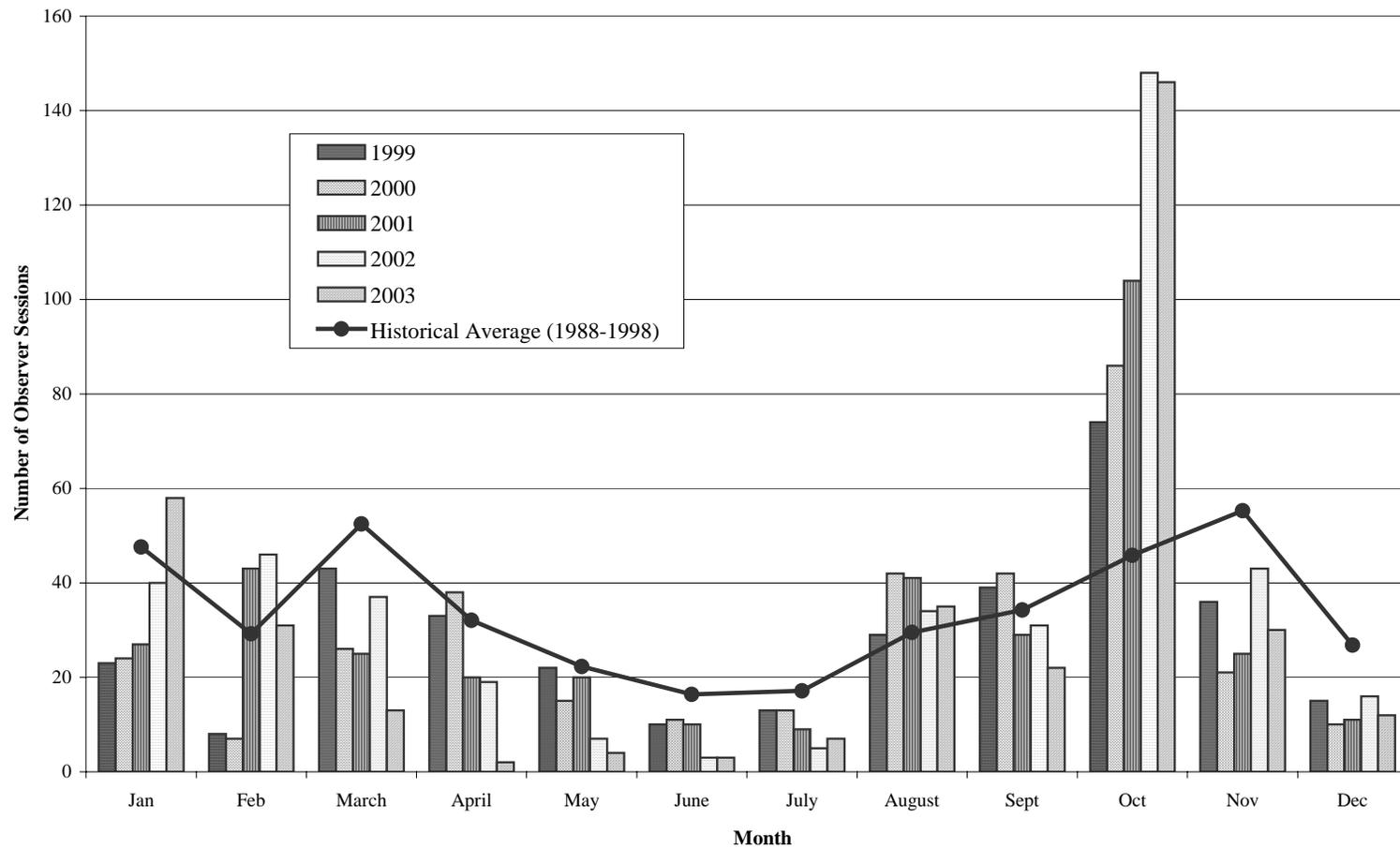


Figure 3-2. Comparison of the total number of crab and scallop observer sessions, including briefings, midtrips and debriefings for calendar years 1999, 2000, 2001, 2002 and 2003, and the historical average (1988 - 1998).

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