

**Cook Inlet and Prince William Sound Area  
Management Report for Tanner and King Crab  
Fisheries through 2013**

by

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Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries





***FISHERY MANAGEMENT REPORT NO. 14-08***

**COOK INLET AND PRINCE WILLIAM SOUND  
AREA MANAGEMENT REPORT FOR TANNER AND KING CRAB  
FISHERIES THROUGH 2013**

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## ABSTRACT

This management report summarizes Tanner crab, *Chionoecetes bairdi*, red king crab, *Paralithodes camtschaticus*, and golden king crab *Lithodes aequispina*, fisheries in Cook Inlet and Prince William Sound through 2013. Because of low abundance, commercial fisheries for Tanner and king crab have not been opened prior to 1995. Department surveys to estimate Tanner abundance have been conducted beginning in the early 1990's to the present in Cook Inlet and Prince William Sound. Based on surveys in Kachemak and Kamishak bays, abundance estimates reached noncommercial management thresholds from 2008 through 2011; which allowed those fisheries to be prosecuted. In Prince William Sound, Tanner crab abundance has been at levels that have allowed a subsistence fishery for the past five seasons. Red and golden king crab levels have been had low abundance regionwide with a small amount of golden king crab being harvested in the Prince William Sound subsistence fishery.

Key words Tanner crab *Chionoecetes bairdi*, red king crab *Paralithodes camtschaticus*, golden king crab *Lithodes aequispina* noncommercial fishery, commercial fishery, guideline harvest level, catch per unit effort, trawl survey, Alaska Board of Fisheries, Cook Inlet, Prince William Sound.

## INTRODUCTION

This management report provides information on Tanner and king crab fisheries managed by the Alaska Department of Fish and Game (ADF&G) in the Cook Inlet (CI) and Prince William Sound (PWS) Management areas (Figure 1).

The purpose of this report is to summarize: 1) recent noncommercial Tanner crab fisheries in CI and PWS, 2) historical Tanner and king crab commercial fisheries in CI and PWS, and 3) recent noncommercial PWS golden king crab fisheries. Regulations and management actions guiding these fisheries will be reviewed and fishery-specific harvest and effort in these fisheries will be presented.

Tanner crab abundance in Cook Inlet and Prince William Sound has been at low levels since the mid-1980's resulting in closed commercial fisheries and some closures in noncommercial fisheries. One recent highlight has been the reopening of the PWS subsistence Tanner crab fishery during the last four seasons because of an increase in legal male Tanner crab abundance, estimated from the PWS trawl survey. Noncommercial fishing in Cook Inlet was opened for four seasons, from the 2008/2009 season to the 2011/2012 season, (2011/2012 season was closed early because of conservation concerns), but closed again for the past two seasons due to low abundance of legal male Tanner crab, as estimated from the Kachemak Bay trawl survey.

Commercial harvest data from the Cook Inlet and Prince William Sound Management areas were compiled from historical management reports, previous reports to the Alaska Board of Fisheries (BOF), and data summaries from the ADF&G's fish ticket harvest database. Data on the sport, personal use, and subsistence harvests come from a statewide mail survey and required reporting permits.

## COOK INLET

### MANAGEMENT AREA

For commercial, personal use, and subsistence fisheries, the Cook Inlet Management Area (Statistical Area H) includes all waters west of Cape Fairfield (148° 50' W long) and north of Cape Douglas (58° 51' N lat). Because there is no federal management plan for crab fisheries in federal waters of the Gulf of Alaska, state regulations for king and Tanner crab fisheries also apply to federal waters adjacent to the Cook Inlet Management Area. Commercial and noncommercial management areas are different and defined later in the document (Figures 2 and 3).

## **COOK INLET TANNER CRAB**

### **Research Results**

Large-mesh multi-species trawl surveys have been conducted annually since 1990 in Kachemak Bay within the Southern District (Table 1; Figures 4 and 5). Data from these surveys have been used to estimate the relative abundance of Tanner crab, to track numbers of red king crab, and to set harvest limits, since 2002, when a management plan and harvest strategy were adopted by the BOF (Bechtol et al. 2002). Estimated legal male abundance was nearly 200,000 crab when the commercial fishery closed in 1994 and remained between approximately 100,000 and 200,000 legal males through 1999. From 1999 through 2005, estimates of legal male Tanner crab dropped precipitously from just over 100,000 to approximately 45,000. Numbers of legal males showed a large increase in 2006, but immediately began declining again from 2007 through 2013. This enabled a noncommercial fishery to open between 2008 and 2012, but with abundance threshold levels not being met, the noncommercial fisheries in Kachemak Bay closed in the 2011/2012 season.

A large-mesh, multi-species trawl survey has also been conducted by ADF&G since 1990 in Kamishak Bay. This survey was conducted annually between 1990 and 2007. The survey was rescheduled and became a biennial survey beginning in 2009, but severe weather that year prevented the survey from being conducted, and the biennial cycle began in 2010. As with Kachemak Bay in the Southern District, data from this survey are used to estimate the relative abundance of Tanner crab and to track numbers of red king crab, and to set harvest limits for commercial and noncommercial Tanner crab fisheries. Relative abundance estimates dropped from over 600,000 legal male Tanner crab in 1991 to approximately 245,000 in 1992, and the commercial fishery has been closed since that year (Table 2; Figures 6 and 7). Legal male Tanner crab abundance estimates did climb back over 600,000 in 1996 and 1997, but dropped precipitously in 1998 and remained at low numbers through 2005. Highly variable survey results (e.g. over 508,000 in 2006, just over 54,000 in 2007 and approximately 300,000 in 2010) were obtained between 2006 and 2010, and no legal male Tanner crab were captured during the 2012 survey. The large survey estimates in 2006 and 2010 enabled a noncommercial fishery to open between 2008 and 2012. However, after that, the average number of legal male Tanner crab did not meet management threshold levels, so the noncommercial fisheries in Kamishak Bay closed in the 2011/2012 season.

### **Commercial Fisheries Harvest**

Historically, Cook Inlet Management Area has supported commercial Tanner crab fisheries in the Central, Kamishak Bay, Southern, Barren Islands, Outer and Eastern districts (Figure 2). Since the late 1980's, however, commercial fishing has remained closed, except for an opening from 1991 through 1994 in the Southern District (Table 3). When commercial seasons were open, the Southern, Kamishak Bay and Barren Islands districts supported the largest commercial harvests. The Outer and Eastern districts produced lower, although significant, harvests, while minimal harvest occurred in the Central District with effort only in 1987 and 1988.

When the Cook Inlet Management Area was open for commercial Tanner crab harvest, effort in the Southern District occurred in relatively protected waters of Kachemak Bay with fishing depths generally ranging from 30 fathoms to 65 fathoms. Commercial Tanner crab fishing began in the mid-1960s when Tanner crab were harvested incidentally to red king crab (Davis 1981).



Greater fishing effort was directed toward Tanner crab during the 1970s when price and demand increased. The first large harvest (in the 1968/1969 season) of Tanner crab was 1.4 million pounds, mainly from the Southern District. Fishing effort quickly expanded to other Cook Inlet districts and a peak harvest of 8.0 million lb, from all districts combined, occurred during the 1973/1974 season. Effort was the highest in the Southern District and ranged from 35 vessels in 1976/1977 to 136 vessels in 1993. Commercial fishing for Tanner crab in the Southern District was closed for the 1989 and 1990 seasons, and has remained closed since 1995 due to depressed abundance levels.

Tagging, survey, and fishery information indicate that the Tanner crab in Kamishak and Barren Islands districts are a different stock than those in the Southern District. Therefore, the districts have been managed separately and have separate surveys. The Kachemak Bay trawl survey is annual and the Kamishak Bay survey is biennial. The results from these surveys are used to estimate abundance in these two areas.

Historic harvest in the Kamishak and Barren Islands District ranged from 12,398 lb during the 1968/1969 season to 4.7 million lb in the 1973/1974 season (Table 3). Fishing effort ranged from 7 vessels to 28 vessels. The commercial fishery was closed in 1989 and again in 1992, and has remained closed since, due to low crab abundance.

### **Noncommercial Fisheries Harvest**

The noncommercial Tanner crab fishery in the Cook Inlet Area includes personal use, sport, and subsistence harvest. The fishery has been managed through a harvest permit since 1996. Noncommercial harvest data (sport and personal use) from 1981 through 1995 is available from the from the annual statewide sportfishing harvest survey (SWHS) administered through the Division of Sport Fish. The fishery closed inseason in 2011 and remains closed.

Noncommercial Tanner crab harvest data SWHS from 1981 to 1995 for Lower Cook Inlet, including Kachemak Bay, ranged from 1,142 to 10,936 crab annually with season closures in 1989 and 1990 (Table 4; Mills 1981–1994; Howe et al. 1994–1995). The highest harvests occurred during the 3 years prior to the permit being implemented in 1996. Harvest reported on shellfish permits increased from 1996 to 2000 with an average harvest of 15,383 crab for the period, under a bag and possession limit of 20 Tanner crab. Noncommercial Tanner crab harvest reported on shellfish permits is considered more accurate and is higher than harvest estimated from the SWHS (Kerkvliet et al 2013). The noncommercial Tanner crab fishery harvest peaked in 2000 at 19,672 crab. In 2001 on July 12, by emergency order (EO) the bag limit was reduced from 20 Tanner crab to 5 Tanner crab and resulted in a decreased harvest of 6,499 crab for the calendar year.

The BOF adopted the current harvest strategy in March 2002. After analysis of 2002 trawl survey data, according to the harvest strategy, abundance estimates of legal male Tanner crab did not meet the thresholds required to open the fishery and the noncommercial fishery was closed by EO inseason on August 3, 2002. In the Kachemak Bay trawl survey, the abundance estimate of legal male Tanner crab fell below 100,000 crab for the third consecutive year in 2002 (Table 1; Figure 5). In the Kamishak Bay trawl survey, the abundance estimate of legal male Tanner crab fell below the 40,000 crab single-year threshold in 2002 (Table 2; Figure 7). The Kamishak and Barren Islands noncommercial fishery remained closed until 2008.

The noncommercial fishery reopened in 2008 when minimum stock thresholds were achieved. The bag and possession limit remained 5 male Tanner crab, with a carapace width of 5 ½ inches or greater. With a new more detailed permit, harvest reporting was required for the season (July-March) rather than the calendar year. The noncommercial Tanner crab fishery areas were designated as A–E (Figure 3) on the new Tanner crab harvest permit. Although not defined in regulation, a map is provided on the harvest permit to facilitate reporting of harvest by these discrete areas. As provided by the harvest strategy and related regulations, areas A, B, and C are aligned with the Kamishak Bay trawl survey and the commercial Southern District west of a line from Point Pogibshi to Anchor Point. The Kamishak, Barren Islands, Outer, Eastern, and Central Districts (areas D and E) are aligned with the Kachemak Bay trawl survey and that portion of the Southern District east of a line from Point Pogibshi to Anchor Point. The majority of the noncommercial Tanner crab harvest occurs in areas D and E, Kachemak Bay, within the commercial Southern District.

Guideline harvest levels (GHL) were set by areas. The GHL for areas D–E was set at 13,373 Tanner crab for the 2008/2009 season and 14,860 crab for the 2009/2010 season (Table 4). Harvest exceeded the GHL in both seasons, by 21% and 15% respectively. The bag limit was reduced by EO because of conservation concerns from 5 crab to 4 crab in areas D–E for the 2010–2011 season and the GHL was set at 18,284 crab. Harvest during the 2010/2011 season was 31% below the GHL, and no EO was issued to reduce the bag limit for the 2011/2012 season, returning it to a 5 crab limit, and the season opened by regulation on July 15, 2011.

The trawl survey occurs during the summer, close to the regulatory opening date of the noncommercial fishery. After the analysis of the 2011 Kachemak Bay trawl survey data was complete, the legal male Tanner crab abundance was estimated at 41,595 crab (Table 1), which below the single-year threshold of 50,000 crab for areas D–E. Because of this, areas D–E were closed by EO on September 6, 2011 after 8,271 crab had been harvested. The season remained open in areas A–C through the remainder of the 2011/2012 season.

The GHL for areas A–C (Kamishak Bay and Barren Islands area) averaged just over 21,000 crab for the four seasons the fishery was open and annual harvest averaged approximately 885 crab. The 2012 Kamishak Bay biennial trawl survey produced an abundance estimate of zero legal male Tanner crab and the season was closed in areas A–C for both the 2012/2013 and 2013/2014 seasons. The 2012 Kachemak Bay trawl survey produced a legal male Tanner crab abundance estimate of 20,501 crab and 38,053 crab in 2013; which kept the fishery in areas D–E closed through the 2012/2013 and 2013/2014 seasons.

Shell condition at harvest, handling injury and the resulting mortality is another issue that may be affecting the Tanner crab abundance in the Cook Inlet Management Area. Harvest permit reporting has collected information on the catch, handling and release of females, legal males, and sublegal males (Table 5). Of the three recent full seasons, the total number of released crab was three times the number of crab that were caught and retained. For instance, in the 2009/2010 season, 61,781 sublegal and legal males and females were caught in pots and released; the number of legal male crab that were retained was 18,827.

### **Commercial Fisheries Regulations**

The Registration Area H Tanner Crab Harvest Strategy 5AAC 35.408 contains regulations related to the commercial harvest of Tanner crab, although the fishery is not currently open. In addition, a statewide Policy on King and Tanner Resource Management guides ADF&G to

develop a Tanner crab harvest strategy if adequate data are available according to 5AAC 35.080 Harvest Strategy. These regulations also require that the BOF review harvest strategy changes prior to allowing fishing.

For Cook Inlet Tanner crab, elements of the strategy include abundance thresholds for the Southern, Kamishak and Barren Island districts of Cook Inlet and exploitation rates related to abundance.

For the Southern District, the commercial fishery will open if the legal male Tanner crab abundance is at least 500,000 legal male crab. More specifically, if this abundance is higher than 1,000,000 legal male crab, the harvest rate is 25%. If the estimated abundance falls between 500,000 and 1,000,000 crab, the commercial fishery will open to harvest at a rate, in combination with the noncommercial fishery, that will not exceed 15% of the estimated abundance level of legal male Tanner crab. This commercial fishery will not open if this estimated abundance is less than 500,000 crab or would cause the level of Tanner crab to go below 500,000 crab. The fishery may not open if the harvest capacity (number of registered vessels multiplied by the legal pot limit) and the estimated catch rate exceed the guideline harvest level during a commercial fishery with a minimum 12-hour duration.

In the Kamishak and Barren Islands districts combined, the commercial fishery will open if the legal male Tanner crab abundance is at least 700,000 legal male crab. If the abundance is higher than 1,400,000 legal male crab, the harvest rate is 25%. If the estimated abundance falls between 700,000 and 1,400,000 crab, the commercial fishery will open to harvest at a rate, in combination with the noncommercial fishery, that will not exceed 15% of the estimated abundance level of legal male Tanner crab. This commercial fishery will not open if this estimated abundance is less than 700,000 crab or would cause the level of Tanner crab to go below 700,000 crab. This fishery has the same harvest capacity and catch rate limits as the Southern District.

Commercial harvest is limited to male Tanner crab that are 5½ inches or greater in width of shell (5 AAC 35.060). Commercial Tanner crab seasons for the Cook Inlet Area are established under 5 AAC 35.410. Commercial seasons for the Southern District and for the Kamishak and Barren Islands districts may only be established by EO within the period January 15 through March 31, and must take into account weather factors that affect crab mortality. There is also a provision closing the seasons in the Outer, Eastern, and Central districts until the Tanner crab stocks have recovered and a harvest strategy is developed by ADF&G and adopted in a regulation by the BOF. Lawful gear and differential pot limits are established under 5 AAC 35.425.

### **Noncommercial Fisheries Regulations**

Regulations regarding noncommercial fishing for Tanner crab in Area H are established in 5 AAC 77.516 for personal use, 5 AAC 58.022 for sport fishing, and 5 AAC 02.325 for subsistence. The noncommercial fishery season is July 15 through March 15, except there is a 2 week closure in Kachemak Bay east of a line from Anchor Point to Point Pogibshi from January 1 through January 15, or the beginning of the commercial fishing season, if it is open, whichever date is later.

A permit is required and the current daily bag and possession limit is 5 male Tanner crab that are 5½ inches or greater in width of shell. Only whole crab, cooked or uncooked, may be taken off a vessel so that the sex and size of the crab may be determined.

The Registration Area H Tanner Crab Harvest Strategy (5 AAC 35.408) was adopted by the BOF in March 2002. The noncommercial GHL may not exceed 10% of the recent 5-year average of legal male stock abundance when legal male stock abundance is below the minimum stock threshold for a commercial fishery. Separate GHGs are established for 1) that portion of the Southern District east of a line from Point Pogibshi to Anchor Point using the abundance estimated from the Kachemak Bay trawl survey and 2) for the Southern District west of that line and also the Kamishak and Barren Islands districts using the abundance estimated from the Kamishak Bay trawl survey.

There are also provisions that close the noncommercial season in the Cook Inlet Area. For Kachemak Bay (that portion of the Southern District east of a line from Point Pogibshi to Anchor Point), the noncommercial season will close, if the 1) recent 5-year average stock abundance of legal male Tanner crab estimated from the Kachemak Bay trawl survey is less than 100,000 Tanner crab, 2) estimated stock abundance of legal male Tanner crab from that same survey is less than 100,000 Tanner crab for three consecutive years; or 3) estimated stock abundance of legal male Tanner crab is less than 50,000 Tanner crab in any given year. For that portion of the Southern District west of a line from Point Pogibshi to Anchor Point and the Kamishak and Barren Islands Districts, the noncommercial season will close, if the 1) recent 5-year average stock abundance of legal male Tanner crab estimated from the Kamishak Bay trawl survey is less than 50,000 Tanner crab or 2) estimated stock abundance level of legal male Tanner crab from Kamishak trawl survey is less than 40,000 in any given year.

If the noncommercial season is closed in the Kamishak or Barren Island districts, the season will also close in the Eastern, Outer, and Central districts (5 AAC 35.410).

## **COOK INLET KING CRAB**

### **Research Results**

In the ADF&G large-mesh survey for Kachemak Bay, red king crab were caught between 1990 and 1997, with numbers ranging between 3 and 105 male crab (Table 6). A few red king crab were also recorded in the survey in 1999, 2000, 2001 and 2003; but no red king crab have been caught in the survey since then. Red king crab catches in the Kamishak Bay large-mesh trawl survey have been more consistent than in the Kachemak Bay survey over the years, but like Kachemak Bay, numbers are still very low overall. The Kamishak Bay survey has caught red king crab in all years except 2005 and 2010. Numbers of red king crab recorded were low, ranging from 2 to 46 crab (with the exception of 2000 where 140 red king crab were captured in the survey).

### **Commercial Fisheries Harvest**

Both red king crab and golden king crab are found in the Cook Inlet Management Area (H), although golden king crab have been caught infrequently in the outer portion of the management area in the Gulf of Alaska. Commercial fisheries for both of these species of king crab have been closed due to low abundance following the 1983/1984 season. Harvest ranged from a high of 8.6 million lb during the 1962/1963 season to a low of 192,531 lb in the final season (Table 7). When commercial fisheries were open, most of the red king crab harvest occurred in the Southern, Kamishak, and Barren Islands districts (Figure 2). Very small harvests occurred in the Outer District and no harvests were reported from the Eastern District.

## **Noncommercial Fisheries Harvest**

Noncommercial fishing for king crab has been closed in the Cook Inlet Management area (5 AAC 77.514) since 1985. Estimates of king crab harvests are only available from 1981 to 1984; harvests ranged from a high of 6,178 crab in 1981 to a low of 62 king crab in 1984. After this marked decrease, the fishery was closed and not reopened.

## **Commercial and Noncommercial Fishery Regulations**

In 1999, the BOF closed the commercial harvest of king crab in Registration Area H until the crab stocks have recovered enough for a harvest strategy to be developed by ADF&G (5 AAC 34.310 Fishing Seasons for Registration Area H).

When king crab commercial fisheries were open in Registration Area H, it was a superexclusive registration area. Regulations that guided the fishery included: only male king crab 7 inches (178 mm) or greater in width of shell could be taken or possessed, king crab could be harvested with king crab pots and ring nets, and there were pot limits and pot marking requirements.

Noncommercial king crab fishing regulations exist for subsistence, personal use, and sport fishing. In regulation, all of these fisheries are closed: 5 AAC 02.320 Subsistence king crab fishery, 5 AAC 77.514; Personal use and sport fishing king crab fisheries 5 AAC 58.022 (9) Waters; seasons; bag, possession, and size limits; and special provisions for Cook Inlet–Resurrection Bay Saltwater Area.

# **PRINCE WILLIAM SOUND**

## **MANAGEMENT AREA**

The ADF&G Prince William Sound Management Area (Area E) includes waters of PWS and the Gulf of Alaska bounded by 144°00'W. longitude near Cape Suckling on the east and Cape Fairfield (148°50.25'W) on the west (Figure 1). ADF&G manages all commercial shellfish fisheries within the territorial waters of PWS or those waters from the shoreline to three nautical miles offshore. ADF&G also manages all commercial shellfish fisheries in the adjacent waters of the federal exclusive economic zone (EEZ), those waters beyond three nautical miles offshore.

## **PRINCE WILLIAM SOUND TANNER CRAB**

### **Research Results**

Large-mesh multi-species trawl surveys were conducted annually in PWS from 1991 through 1995 and have been prosecuted on a biennial basis since 1996 (Table 8). Data from these surveys have been used to estimate the relative abundance of Tanner crab within the Hinchinbrook district, Orca Bay and adjacent fjords, near Valdez and to keep track of king crab numbers. These data along with all historical catch data may be used by ADF&G to develop a management plan and harvest strategy for PWS Tanner crab. Estimates of legal male Tanner crab abundance dropped precipitously between 1993 and 1999, going from approximately 100,000 legal males to a little more than 3,500 legal males. Numbers of legal males increased steadily from 2001 through 2009 reaching almost 80,000. The most recent two surveys (2011 and 2013) have indicated a significant increase in legal male abundance with both surveys providing estimates of around 185,000. This bodes well for PWS Tanner crab, since there was a subsistence harvest between

the two surveys (Table 10), and the 2013 survey reported the largest number of small pre-recruit crab in the history of the survey (Table 8).

### **Commercial Fisheries Harvest**

The Tanner crab commercial fishery in PWS was last prosecuted in 1989 and has been closed through the current year. This long closure period has been due to low abundance demonstrated in the biennial trawl survey and poor fishery performance. Previous to 1988, there was a commercial fishery that lasted about 20 years.

The PWS commercial Tanner crab fishery began in 1968 when 1.2 million pounds were landed (Table 9). The harvest peaked in the 1972/1973 season at 13.9 million pounds, prior to the 1976 adoption of a minimum legal carapace width. Harvests decreased during the late 1970s and early 1980s, followed by district closures during 1984 and 1985. Small postrecruit fisheries during 1986 to 1988 yielded harvests of approximately 0.5 million pounds. However, skip molting in the prerecruit-1 size class resulted in fewer legal males and no harvest in the Eastern District.

Harvest declined markedly in the early 1980's from high levels of harvest in the early 1970's (Table 9). The highest harvest of almost 14 million lbs occurred in the 1972/1973 season and decreased to a low of 474,092 lbs in 1988, the season before the closure. Potential explanations for the collapse of Tanner crab within PWS include factors related to fishing mortality and environmental conditions. Overharvesting may have occurred prior to the 1976 adoption of the male-only restriction and minimum carapace size limit of 5.3 inches. The legal male portion of PWS Tanner crab may have been overharvested because early fisheries were limited by regulatory season length rather than an abundance based guideline harvest level. Handling mortality of undersized and female crab may have contributed to the decline, particularly during fishing seasons of 7 months duration, which encompassed some of the molting and mating seasons. Finally, and perhaps more importantly, changes in environmental conditions, documented on a Gulf of Alaska-wide basis, may have caused greater mortality of Tanner crab larvae, impaired growth and reproduction, and coincided with increased production of crab predators such as gadoid fishes.

### **Noncommercial Fisheries Harvest**

Shellfish, including crab, have been harvested in the PWS area since long before historical contact up until the present. All noncommercial fisheries were closed by regulation in 1999 after years of documented declines in abundance by ADF&G surveys. In 2008, the BOF opened a subsistence fishery for Tanner crab following rising estimates of legal male Tanner crab abundance from survey results. Participation and harvest have been rising in this small fishery since then (Table 10).

Prior to 2008, there was no mechanism to directly monitor effort or harvest of Tanner crab in historical noncommercial fisheries within PWS. Data from the Division of Sport Fish Statewide Harvest Survey indicated an annual harvest range of between 137 to 537 crab, with an average annual harvest of 300 Tanner crab from 1994 to 1998 (Table 11; Howe et al. 1994–1995, 2001a-c). Limited data developed through household interviews by ADF&G Subsistence Division staff suggested that subsistence harvests totaled less than 4,900 Tanner crab among all PWS communities in 1997 (ADF&G 1999). No harvest occurred between 1999 and 2008, when the noncommercial fisheries were closed by regulation.

In March 2008, the BOF made a positive customary and traditional use finding for Tanner crab in PWS and subsequently opened a subsistence fishery, which is open to Alaska residents only and is monitored through a required permit system. Information is collected through this permit on total harvest of legal male crab and the number of Tanner crab released. Since the fishery opened in 2008 there has been increasing catch and harvest (Table 10). Total legal male crab caught in the fishery have increased from 48 in 2008/2009 season to 3,564 in the 2012/2013 season, and average harvest per permit fished has increased from 1 crab in the 2008/2009 season to 27 crab in the 2012/2013 season.

During the 2012/2013 fishery, the majority of harvest (2,014 crab) occurred in statistical areas associated with Orca Bay, which is closest to the port and city of Cordova (Table 12). Prior to this year, there was minimal harvest taken from these statistical areas in the current subsistence fishery, although the waters of Orca Bay and adjacent fjords have been identified by ADF&G surveys as key production areas. Waters in the Northwest of PWS, which are closest to the port of Whittier, have seen fairly consistent harvest between the 2008/2009 and 2011/2012 seasons with an increase to 87 crab harvested during the 2012/2013 season. Harvest in Northern waters (accessible from Valdez), and in the Southwestern waters (accessible from Chenega Bay) peaked in the 2011/2012 season at 97 crab and 93 crab, respectively.

Despite the historically high subsistence harvests in 2012/2013 season, the overall abundance estimate of legal male Tanner crab in 2013 remained similar to the 2011 estimate, which is encouraging. Participation rates in the subsistence fishery appear to remain high during the current 2013/2014 season with 155 permits issued to date, although anecdotal reports from the near shore Cordova fishing areas indicate that soft shell crab were prevalent in the October and November catches. Limited reports indicate that this condition was abating during late December.

### **Commercial fishery Regulations**

According to 5AAC 35.310 Fishing Seasons for Registration Area E, the commercial harvest of Tanner crab in Prince William Sound Area is closed until the BOF has adopted and published a harvest strategy. Although the fishery is closed, regulations still exist. This includes that only male Tanner crab 5.3 inches or greater in shell width may be taken or possessed (5AAC 35.310). Also, Tanner crab may only be taken by crab pots or ring nets with escape rings that are  $4\frac{3}{4}$  inches inside diameter. There are also other pot specifications that must be adhered to. An aggregate of no more than 75 king and Tanner crab pots may be operated from a vessel registered to fish for Tanner crab 5AAC 35.325 (d). When the fishery was open, fishing seasons opened January 15 and closed March 31.

Pot marking requirements exist according to 5AAC 35.326 and pots may also be stored in the waters before and after the fishery with no bait and doors open 5AAC 35.327. Inspection requirements exist for vessels participating in the fishery before the season opens according to 5AAC 35.345.

PWS is divided into four commercial Tanner crab management districts (Figure 3). The Northern and Hinchinbrook Districts include most of the waters inside PWS proper, while the Eastern and Western Districts encompass waters of the Gulf of Alaska and southwestern PWS. Historically, the commercial Tanner crab harvest was equally divided between the Gulf of Alaska and PWS portions of the management area.

## **Noncommercial fisheries Regulations**

The Tanner crab abundance has rebounded in the past 4 years which has allowed subsistence harvest to occur (Table 10). The season is open from October 1 through March 31 and participants in the subsistence fishery must obtain a permit according to 5AAC 02.206 and Tanner crab can only be taken with pots, ring nets, dip nets, diving gear, hooked or hookless hand lines, and by hand (5AAC 02.207 (1)). Only 2 pots can be fished per person and a maximum 2 pots per vessel (5AAC 02.206 (3)). Pots must have 2 escape rings that are at least 4<sup>3</sup>/<sub>8</sub> inches inside diameter (5AAC 02.207 (2)). Buoy and line requirements also exist. Only male Tanner crab may be harvested 5½ inches or greater, females and sublegal males must be returned to the sea. There is a daily bag and possession limit of 5 legal male Tanner crab per permit holder fishing and certain waters, including Port Valdez, Galena Bay, Port Fidalgo, and Port Gravina, remain closed to the subsistence harvest of Tanner crab (Figure 9).

Mandatory permits require harvest information including date of harvest, area of harvest, number of pots fished, number of legal male Tanner crab captured, number of male Tanner crab retained, number of sublegal male Tanner crab captured, and the number of females captured. This harvest information must be recorded each time the crab pots are pulled. The permit must be returned by April 15 each season. Information from the last 4 years of this subsistence fishery is included in Table 10.

## **PRINCE WILLIAM SOUND KING CRAB**

### **Research Results**

Both red and golden king crabs have been caught in the PWS large-mesh trawl survey. Numbers of red king crab have ranged from zero to two and none have been caught in the survey since 2005, while only 2 golden king crab have ever been captured (in 1995 and 1997) in the history of the survey. ADF&G conducted a 3-year pot survey for golden king crab in western PWS from 2004 through 2006. Data obtained over the course of that 3 year survey provided an indication that the golden king crab numbers in the Knight Island Passage area of PWS appear steady, but are at low levels, not close to being high enough to sustain commercial harvest.

### **Commercial Fisheries Harvest**

The first commercial harvest of king crab in PWS was landed in 1957 (Kaydas and Koppen 1957). The fishery quickly developed and the second highest harvest was landed, 246,965 lbs, in 1960 (Table 13). Species separation of the king crab species in harvest reporting began in the 1979/1980 season. In 1972, 296,200 lbs of primarily blue king crab were landed. Between 1979 and 1984 both blue and red king crab harvest declined and commercial fisheries for both these species were closed by EO from the 1984/1985 season through the 1990/1991 season and also from 1991 through 1998. These closures coincided with development of the golden king crab fishery from 1982 to 1989.

Harvest levels of golden king crab were relatively small for the duration of the fishery, 1979-1980 season through the 1988/1989 season. During this same period, the average weight of the crab decreased from 9.7 lbs to 6.6 lbs in the 1988/1989 season. Because of the low harvest level and the decrease in average size of harvested crab, the BOF established a guideline harvest range (GHR) of between 40,000 and 60,000 lbs. For the following years, the lower end of the GHR was not achieved leading to a closure of the commercial fishery in 1992 and the following



season. Although the fishery did reopen for a month during the 1994/1995 season, participation and harvest were low, and the fishery was closed by EO each season until the BOF closed it by regulation in 1999.

### **Noncommercial Fisheries Harvest**

There was no mechanism in place to directly monitor the effort or harvest in noncommercial king crab fisheries in PWS. Unpublished data from the SWHS indicates that some limited sport fish catch of king crab occurred in 1997 and in 1998, and limited data developed through household interviews by ADF&G Subsistence Division staff suggested that subsistence harvests totaled less than 150 king crab among all PWS communities in 1997 (ADF&G 1999).

In March 2008, the BOF made a positive customary and traditional use finding for king crab in PWS and subsequently opened a subsistence fishery which is only open to Alaska residents. Harvest in this fishery is monitored with a required permit, and administered in conjunction with the subsistence Tanner crab fishery. Harvest and participation has remained low since the fishery opened in 2008 with an average of 13.25 crab caught during the 2008/2009 season through the 2011/2012 season; there was no reported effort or harvest during the 2012/2013 season (Table 14).

### **Commercial Fisheries Regulations**

The commercial harvest of king crab in Registration Area E is closed until the crab stocks have recovered enough for a harvest strategy to be developed by ADF&G and adopted by the BOF.

Registration Area E is a superexclusive registration area for king crab. Other regulations in the fishery include only male king crab 7 inches (178 mm) or greater (red and golden king crab) or 5.9 inches (150 mm) or greater (blue king crab) in width of shell can be taken or possessed; King crab can be harvested only with king crab pots; there are pot marking requirements specified in 5 AAC 34.051; and pots may be stored in the waters before and after the fishery with no bait and doors open (5AAC 34.227). Inspection requirements exist for vessels participating in the fishery before the season opens according to 5AAC 35.030. Past regulatory seasons provided two open periods, October 1 to December 20 and January 15 to March 15, and a GHR for golden king crab is defined in 5 AAC 34.217 at 40,000 to 60,000 lb.

### **Noncommercial Fisheries Regulations**

The noncommercial king crab fishery is restricted to subsistence harvest of golden king crab which may be harvested west of 147°20.00' W. long. (Figure 11). Only male golden king crab with a carapace width of 7 inches (178 mm) or greater may be retained and there is an annual household limit of three. All other regulations in the fishery are identical to the subsistence Tanner crab fishery: the season is open from October 1 through March 31 and participants in the subsistence fishery must obtain a permit according to 5AAC 02.206. King crab can only be taken with pots, ring nets, dip nets, diving gear, hooked or hookless hand lines, and by hand (5AAC 02.207 (1)). Only 2 pots can be fished per person and a maximum 2 pots per vessel are allowed (5AAC 02.206 (3)). Pots must have two escape rings that are at least 4<sup>3</sup>/<sub>8</sub> inches inside diameter (5AAC 02.207 (2)). Buoy and line requirements also exist.

Mandatory permits require harvest information including date of harvest, area of harvest, number of pots fished, number of legal male golden king crab captured, number of male golden king crab retained, number of sublegal male golden king crab captured, and the number of females

captured. This harvest information must be recorded each time the crab pots are pulled. The permit must be returned by April 15 each season. Information from the last 5 years of this subsistence fishery is included in Table 14.

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## **TABLES AND FIGURES**

Table 1.–Male (by recruit category) and female Tanner crab estimates from the Kachemak Bay trawl survey, 1990–2013.

Year	No. of Tows	Prerecruits <115 mm	Prerecruits 115-139 mm	Recruits 140-165 mm	Postrecruits >165 mm	Legal Males >139 mm	Females Total
1990	19	1,844,958	494,420	319,670	70,430	390,100	1,431,357
1991	20	1,389,346	853,703	435,837	65,377	501,214	1,336,555
1992	18	789,472	919,649	977,453	81,468	1,058,920	590,951
1993	20	856,087	372,841	537,910	71,162	609,073	1,285,100
1994	20	647,305	160,089	169,665	29,732	199,397	1,026,328
1995	20	1,312,681	505,813	256,852	18,597	275,449	1,542,876
1996	19	754,031	597,340	98,926	0	98,926	730,245
1997	23	560,581	314,231	138,852	695	139,547	468,837
1998	23	387,768	195,921	200,246	6,178	206,424	498,442
1999	20	2,788,178	202,873	102,169	2,394	104,563	1,810,731
2000	23	1,387,590	385,323	81,164	1,545	82,709	961,227
2001	22	2,606,832	393,619	95,605	1,545	97,150	2,625,882
2002	21	3,815,506	211,554	88,170	0	88,170	3,195,219
2003	23	3,137,843	290,954	48,961	0	48,961	1,568,200
2004	23	2,333,925	569,970	84,794	0	84,794	2,408,582
2005	22	1,421,528	349,348	45,882	0	45,882	1,223,975
2006	23	1,502,965	240,712	238,859	0	238,859	1,027,023
2007	23	612,151	380,032	164,602	785	165,387	2,118,008
2008	16	930,720	230,979	98,996	2,489	101,485	807,399
2009	16	2,509,529	556,074	144,282	0	144,282	2,960,217
2010*							
2011	38	4,924,202	93,670	41,595	0	41,595	4,821,029
2012	37	4,772,547	57,087	20,501	0	20,501	5,326,806
2013	37	3,058,108	141,934	35,434	2,619	38,053	3,194,150

\* no survey conducted in 2010.

Table 2.–Male (by recruit category) and female Tanner crab estimates from the Kamishak Bay trawl survey, 1990–2012.

Year	No. of Tows	Prerecruits <115 mm	Prerecruits-1 115-139 mm	Recruit 140-165 mm	Post-recruit >165 mm	Legal Males	Females Total
1990	24	4,097,243	3,525,182	878,364	0	878,364	3,479,750
1991	17	1,265,562	2,420,775	633,816	0	633,816	622,091
1992	26	1,568,835	1,568,835	241,255	4,509	245,765	752,626
1993	15	4,606,968	1,795,420	310,310	0	310,310	3,802,663
1994	17	4,638,785	2,753,891	310,356	6,897	317,253	2,506,296
1995	24	2,626,300	2,226,688	297,999	0	297,999	864,686
1996	18	2,337,605	3,721,052	647,925	6,514	654,439	1,189,272
1997	18	1,391,965	2,415,258	590,136	11,725	601,860	470,936
1998	22	543,593	451,395	148,689	0	148,689	369,856
1999	20	3,146,284	519,398	110,211	0	110,211	1,268,010
2000	25	949,067	211,980	19,697	0	19,697	862,102
2001	24	5,173,459	143,626	49,341	0	49,341	4,905,260
2002	19	15,503,562	211,659	36,408	0	36,408	10,017,088
2003	17	4,142,216	337,253	62,071	0	62,071	3,530,470
2004	22	7,575,927	641,210	24,576	0	24,576	2,753,671
2005	21	9,777,719	2,107,070	61,414	0	61,414	6,915,253
2006	27	6,623,294	2,392,983	504,027	4,342	508,369	5,010,731
2007	24	1,011,787	277,323	54,115	0	54,115	575,179
2010	24	677,279	820,936	302,582	4,885	307,042	195,171
2012	23	1,993,253	98,449	0	0	0	1,117,271

Table 3.—Commercial Tanner crab harvest in the different districts in the Cook Inlet Management Area from 1968/1969 through 2013.

Season	Southern		Kamishak/Barren Islands		Outer/Eastern		Central		Harvest
	Vessels	Harvest	Vessels	Harvest	Vessels	Harvest	Vessels	Harvest	
1968/69		1,388,282		12,398		816			1,401,496
1969/70		1,147,154		71,196		104,191			1,322,541
1970/71		1,046,803		541,212		3,000			1,591,015
1971/72		2,462,956		974,962		804,765			4,242,683
1972/73		2,935,662		3,361,023		1,266,023			7,562,708
1973/74		1,387,535		4,689,251		1,891,021			7,967,807
1974/75		967,762		2,150,462		656,660			3,774,884
1975/76		1,339,245	17	3,281,084		850,964			5,471,293
1976/77	35	2,009,633	24	1,765,926		824,520			4,600,079
1977/78	55	2,806,568	28	2,077,092		502,049			5,385,709
1978/79	75	2,323,420	27	2,713,339		694,728			5,731,487
1979/80	68	1,134,940	24	3,338,623		595,645			5,069,208
1980/81	46	1,047,630	20	1,757,331		463,201			3,268,162
1981/82	41	548,529	18	1,286,332	9	524,897			2,359,758
1982/83	48	584,908	20	1,693,794	20	682,919			2,961,621
1983/84	45	996,763	17	1,373,674	14	443,384			2,813,821
1984/85	83	1,229,298	19	1,535,547	7	259,083			3,023,928
1985/86	103	1,164,261	24	1,288,711	5	177,041			2,630,013
1987	87	1,077,379	21	1,111,339	13	251,174	2	7,771	2,447,663
1988	127	944,763	24	417,182	23	168,969	3	8,396	1,539,310
1989		Closed		Closed		Closed		Closed	Closed
1990		Closed	7	510,034		Closed		Closed	510,034
1991	68	271,379	8	266,106		Closed		Closed	537,485
1992	110	354,868		Closed	16	53,049		Closed	407,917
1993	136	534,003		Closed		Closed		Closed	534,003
1994	110	284,676		Closed		Closed		Closed	284,676
1995-2013		Closed		Closed		Closed		Closed	0



Table 4.–Noncommercial Tanner crab harvest (number of crab) and GHL in the management sections (A-E) of the Cook Inlet Management Area.

Year	Total Harvest <sup>a,b</sup>	Harvest Area A-C <sup>c</sup>	GHL Area A-C	Harvest Area D-E <sup>c</sup>	GHL Area D-E	Unknown
1981	4,320					
1982	4,234					
1983	3,084					
1984	2,332					
1985	3,502					
1986	7,926					
1987	8,988					
1988	4,669					
1989-90	closed					
1991	1,142					
1992	4,165					
1993	9,206					
1994	9,648					
1995	10,936					
1996	12,059					146
1997	11,376					146
1998	16,763					1,046
1999	17,045					589
2000	19,672					911
2001 <sup>d</sup>	6,499					117
2002 <sup>e</sup>	3,574					105
2003-07	closed					
2008-09 <sup>d</sup>	17,173	832	16,212	16,185	13,373	156
2009-10 <sup>e</sup>	18,827	1,581	20,797	17,141	14,860	105
2010-11 <sup>e</sup>	13,745	685	28,984	12,676	18,284	384
2011-12 <sup>e</sup>	8,979	441	18,058	8,271	11,709	267
2012-14	closed					

<sup>a</sup> Harvest estimated from Statewide Harvest Survey (SWHS) 1981–1995.

<sup>b</sup> Harvest reported on Tanner crab harvest permits 1996–present, with harvest data available by Area A–E.

<sup>c</sup> Unknown not included in Area A–C and D–E harvest totals.

<sup>d</sup> Harvest reporting changed from calendar year to season (July–March).

<sup>e</sup> Harvest numbers expanded for non-respondents.

Table 5.—Noncommercial Tanner crab harvest (crab), effort (days), and released female, undersized, and legal crab in Areas A-C, D-E, and unknown in the Cook Inlet Management Area.

Season	Area A-C		Area D-E		Total Harvest <sup>a</sup>	Released <sup>b</sup>			Total <sup>b</sup> Released
	Harvest	Effort	Harvest	Effort		Females	Sublegal Males	Legal Males	
2008/09	832	271	16,185	4,783	17,173	21,199	31,195	6,946	59,340
2009/10 <sup>c</sup>	1,581	490	17,141	4,775	18,827	21,849	32,981	6,951	61,781
2010/11 <sup>c</sup>	685	242	12,676	4,296	13,745	7,454	19,486	5,717	32,657
2011/12 <sup>c</sup>	441	132	8,271	2,663	8,979	8,373	9,720	1,366	19,459
2012/13	closed								
2013/14	closed								

<sup>a</sup> Includes harvest from unknown area.

<sup>b</sup> Released crab numbers reported on returned crab permits (not adjusted for non-respondents) for all areas combined.

<sup>c</sup> Harvest numbers adjusted for non-respondent harvest.

Table 6.—Male and female king crab caught (number) in the Kachemak and Kamishak Bay trawl surveys, 1990–2013.

Year	Kachemak			Kamishak		
	No. of Tows	Females	Males	No. of Tows	Females	Males
1990	19	2	4	28	4	6
1991	20	8	105	20	0	7
1992	18	81	48	28	4	26
1993	19	21	15	16	0	2
1994	20	10	11	17	0	3
1995	20	1	3	27	4	6
1996	19	2	4	20	9	31
1997	23	39	9	20	67	46
1998	23	0	0	23	0	14
1999	20	0	2	19	0	2
2000	23	0	4	28	16	140
2001	22	0	4	22	53	43
2002	21	0	0	24	10	6
2003	23	0	3	18	0	3
2004	23	0	0	23	4	4
2005	22	0	0	21	1	0
2006	23	0	0	27	10	8
2007	23	0	0	24	5	6
2008	16	0	0	ns	ns	ns
2009	16	0	0	ns	ns	ns
2010	ns	ns	ns	24	1	0
2011	38	0	0	ns	ns	ns
2012	37	0	0	23	0	2
2013	37	0	0	ns	ns	ns

Table 7.—Commercial king crab harvest (lb) in the Cook Inlet Management Area, from the 1960/1961 season through the 1983/1984 season.

Year	Southern	Kamishak and Barren Islands	Outer and Eastern	Total
1960/61	2,699,680	986,551	118,067	3,804,298
1961/62	1,619,642	3,642,500	368,909	5,631,051
1962/63	2,769,343	5,509,708	343,505	8,622,556
1963/64	1,960,426	4,915,303	59,352	6,935,081
1964/65	1,892,479	1,850,572	963	3,744,014
1965/66	1,948,012	1,684,346	14,491	3,646,849
1966/67	1,347,904	1,386,008	89,510	2,823,422
1967/68	1,117,394	1,883,605	239,518	3,240,517
1968/69	750,906	1,711,296	87,302	2,549,504
1969/70	1,464,721	1,688,803	73,644	3,227,168
1970/71	1,540,018	2,115,991	9,468	3,665,477
1971/72	1,992,224	2,868,315	12,657	4,873,196
1972/73	1,391,024	2,756,023	1,966	4,149,013
1973/74	1,971,841	2,236,131	5,613	4,213,585
1974/75	1,816,512	2,965,310	2,035	4,783,857
1975/76	1,674,872	1,832,484	45,293	3,552,649
1976/77	1,035,316	3,103,895	16,384	4,155,595
1977/78	584,090	1,099,279	1,350	1,684,719
1978/79	664,388	480,261	1,753	1,146,402
1979/80	853,584	489,365	4,871	1,347,820
1980/81	508,670	1,635,922	8,022	2,152,614
1981/82	183,899	1,371,821	4,142	1,559,862
1982/83	Closed	807,079	15,280	822,359
1983/84	Closed	188,027	4,504	192,531
After 1984	Closed	Closed	Closed	Closed

Table 8.—Male (by recruit category) and female Tanner crab estimates from the Prince William Sound trawl survey, 1991–2013.

Year	No. of Tows	Prerecruits <112 mm	Prerecruits-1 113 – 134 mm	Recruits 135–157 mm	Postrecruits >157 mm	Legal Males	Females
1991	29	1,694,798	237,328	114,870	4,670	119,539	
1992	37	1,314,143	283,275	57,918	2,653	60,571	
1993	38	779,440	237,601	106,105	2,584	108,689	
1994	38	872,726	182,986	54,377	998	55,375	
1995	32	357,697	97,511	22,275	0	22,275	
1997	39	314,980	32,859	10,694	0	10,694	
1999	40	152,459	16,872	2,749	948	3,697	46,524
2001	40	1,991,713	59,051	6,635	0	6,635	121,776
2003	40	805,089	95,070	15,924	0	15,924	
2005	40	503,122	117,439	28,057	948	29,004	38,227
2007	35	1,195,852	202,609	33,518	0	33,518	42,170
2009	43	1,767,583	307,013	79,712	0	79,712	78,327
2011	43	1,928,261	574,852	186,422	0	186,422	42,272
2013	43	7,440,865	322,264	178,096	6,897	184,992	30,902

*Note:* Surveys conducted annually through 1995; from 1996 forward conducted in uneven years only.

Table 9.—Commercial Tanner crab harvest in the Prince William Sound Management Area, from the 1968/1969 season through 2013.

Season <sup>a</sup>	Vessels	Landings	Harvest by Area (lb)				Total	Mean Weight (lb/crab)	Number of Crab
			Inside	Outside					
1968/69									
1969/70									
1970/71									
1971/72									
1972/73									
1973/74			1,658,000	8,500,000					
1974/75			1,187,000	2,667,000					
1975/76			3,322,482	3,810,262					
			Northern	Hinchinbrook	Western	Eastern	Total		
1976/77 <sup>b</sup>	23	316	782,048	766,650	701,725	70,925	2,321,348		
1977/78	38	591	994,721	1,161,831	2,079,549	570,573	4,806,674	2.2	2,184,852
1978/79	51	783	649,977	708,562	2,248,545	3,443,471	7,050,555	2.1	3,357,408
1979/80	49	561	140,228	332,583	1,462,059	4,057,847	5,992,717	2.0	2,996,359
1980/81	30	304	152,196	812,352	1,561,207	250,076	2,775,831	2.1	1,321,824
1981/82	29	216	351,139	722,834	1,503,253	288,425	2,865,651	No Data	
1982/83	40	304	471,422	31,447	921,663	45,308	1,469,840	2.1	699,924
1984 <sup>c</sup>	0	0	Closed	Closed	Closed	No Effort	0		
1985	0	0	Closed	Closed	No Effort	No Effort	0		
1986	14	35	137,720	236,241	160,829	587	535,377	2.1	254,941
1987	23	65	152,834	222,052	196,246	0	571,132	2.1	271,968
1988	21	46	55,929	226,509	191,654	0	474,092	2.1	225,758
1989–2013	0	0	Closed	Closed	Closed	Closed	0		

<sup>a</sup> Closed from 1989 to present.

<sup>b</sup> New districts and minimum legal size established.

<sup>c</sup> Calendar year season established.

Table 10.—Subsistence Tanner crab harvest and effort in the Prince William Sound Management Area from the 2008/09 through the 2012/2013 seasons.

Year	Permits Issued	Permits Fished	Total Trips Made	Harvest (count)		
				Legal Males Harvested	Total Legal Males Caught	Average Harvest per Permit Fished
2008-09	130	37	83	44	48	1
2009-10	95	29	75	85	101	3
2010-11	74	25	59	78	89	3
2011-12	82	32	91	268	309	8
2012-13	150	81	378	2,162	3,564	27

Table 11.—Prince William Sound Management Area Tanner crab estimated sport and personal use harvest.

Year	Tanner Crab Harvested
1994	333
1995	304
1996	137
1997	537
1998	189

Source: Alaska Statewide Harvest Survey, 1994–1998.

Table 12.—Subsistence Tanner crab harvest by location in Prince William Sound from the 2008/2009 through 2012/2013 seasons.

Location	Year				
	2008/09	2009/10	2010/11	2011/12	2012/13
Orca Bay <sup>a</sup>	0	0	5	32	2,014
Northwest <sup>b</sup>	27	45	26	42	87
Northern <sup>c</sup>	0	6	25	97	4
Southwest <sup>d</sup>	13	29	22	93	32
Hinchinbrook <sup>e</sup>	0	0	0	0	19

<sup>a</sup> Statistical areas 456031, 456032, 466031, and 466032.

<sup>b</sup> Statistical areas 476033, 486031, 486033, and 486034.

<sup>c</sup> Statistical areas 466033, 476034, 476035, 476036, and 476101.

<sup>d</sup> Statistical areas 476004, 476005, 476006, 476007, 486001, and 486005.

<sup>e</sup> Statistical area 466003.

Table 13.–Prince William Sound Management Area commercial king crab harvests, 1960–2013.

Season <sup>a,b,c</sup>	Vessels	Landings	King Crab Harvest Biomass (lbs.)				Avg. Wt. Golden King
			Red	Blue	Golden	Total	
1960						246,965	
1961						236,081	
1962						31,478	
1963						43,569	
1964						14,028	
1965						5,500	
1966						11,000	
1967						41,800	
1968						200,000	
1969						48,100	
1970						94,300	
1971						144,200	
1972						296,200	
1973						207,916	
1974						85,379	
1975						53,423	
1976/77						17,087	
1977/78						86,595	
1978/79						114,000	
1979/80	18	109	52,026	13,662	0	65,688	
1980/81	14	65	32,433	7,282	20	39,735	No Data
1981/82	11	43	25,358	5,634	0	30,992	
1982/83	31	187	30,809	10,433	147,016	188,258	9.7
1983/84	18	69	16,467	5,324	50,535	73,226	8.8
1984/85	4	14	235	closed	40,232	40,467	No Data
1985/86	4	11	closed	closed	51,800	51,800	5.8
1986/87	4	11	closed	closed	65,674	65,837	6.1
1987/88	4	15	closed	closed	68,270	68,270	6.6
1988/89	5	14	closed	closed	48,442	48,442	6.6
1989/90	0	0	closed	closed	closed	0	
1990/91	<sup>d</sup>	<sup>d</sup>	closed	closed	<sup>d</sup>	<sup>d</sup>	No Data
1991/92	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	<sup>d</sup>	No Data
1992/93	0	0	closed	closed	closed	0	
1993/94	0	0	closed	closed	closed	0	
1994/95	<sup>d</sup>	<sup>d</sup>	closed	closed	<sup>d</sup>	<sup>d</sup>	
1996–2013 <sup>e</sup>							

<sup>a</sup> 1995/1996 to 1999 Seasons closed by emergency order.

<sup>b</sup> Seasons closed by regulation effective August 1999.

<sup>c</sup> Catch not reported by species prior to 1979/1980 season.

<sup>d</sup> Data are confidential under AS 16.05.815.

<sup>e</sup> Seasons closed by regulation.



Table 14.—Annual effort, harvest and catch of golden king crab in the Prince William Sound subsistence fishery, 2008–2012.

Year	Permits Issued	Permits Fished	Total Trips Made	Harvest (count)		
				Legal Males Harvested	Total Legal Males Caught	Average Harvest Per Permit Fished
2008/2009	130	7	13	5	13	0.7
2009/2010	95	4	9	3	10	0.8
2010/2011	74	7	12	12	12	1.7
2011/2012	82	9	9	10	18	1.1
2012/2013	150	0	0	0	0	n/a

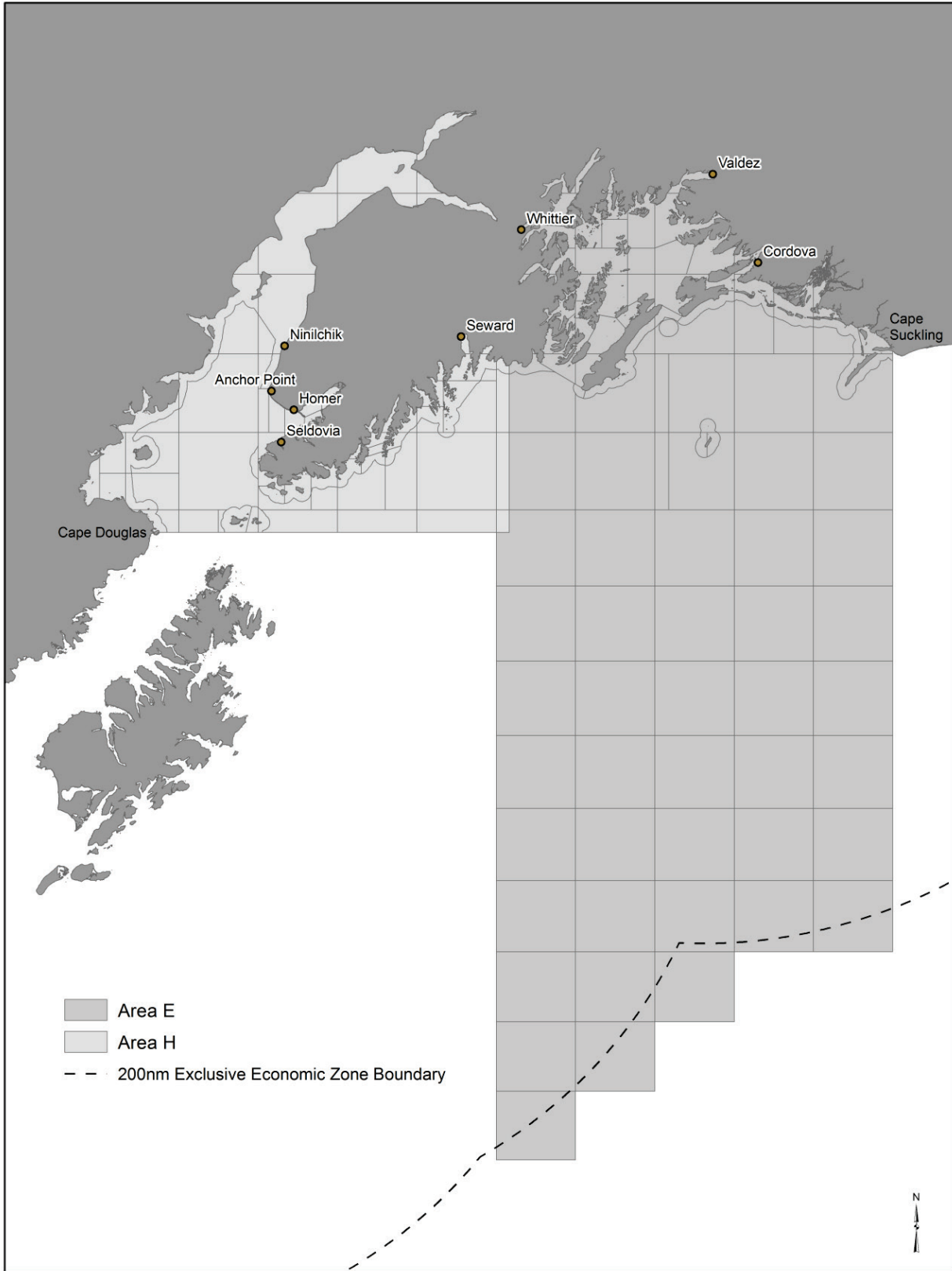


Figure 1.—Cook Inlet (Area H) and Prince William Sound (Area E) management areas.

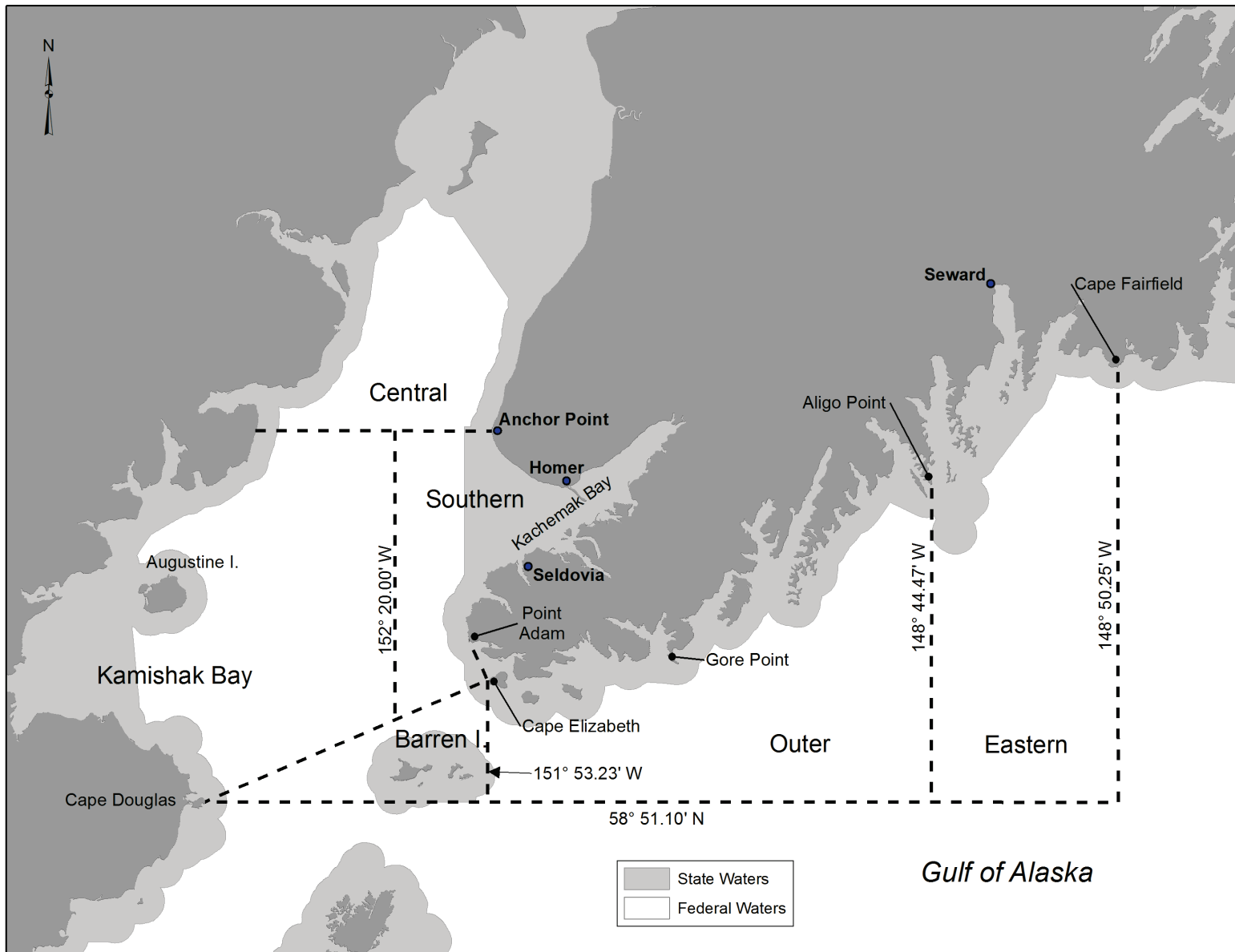


Figure 2.—Cook Inlet Management Area (Area H) commercial crab fishing districts.

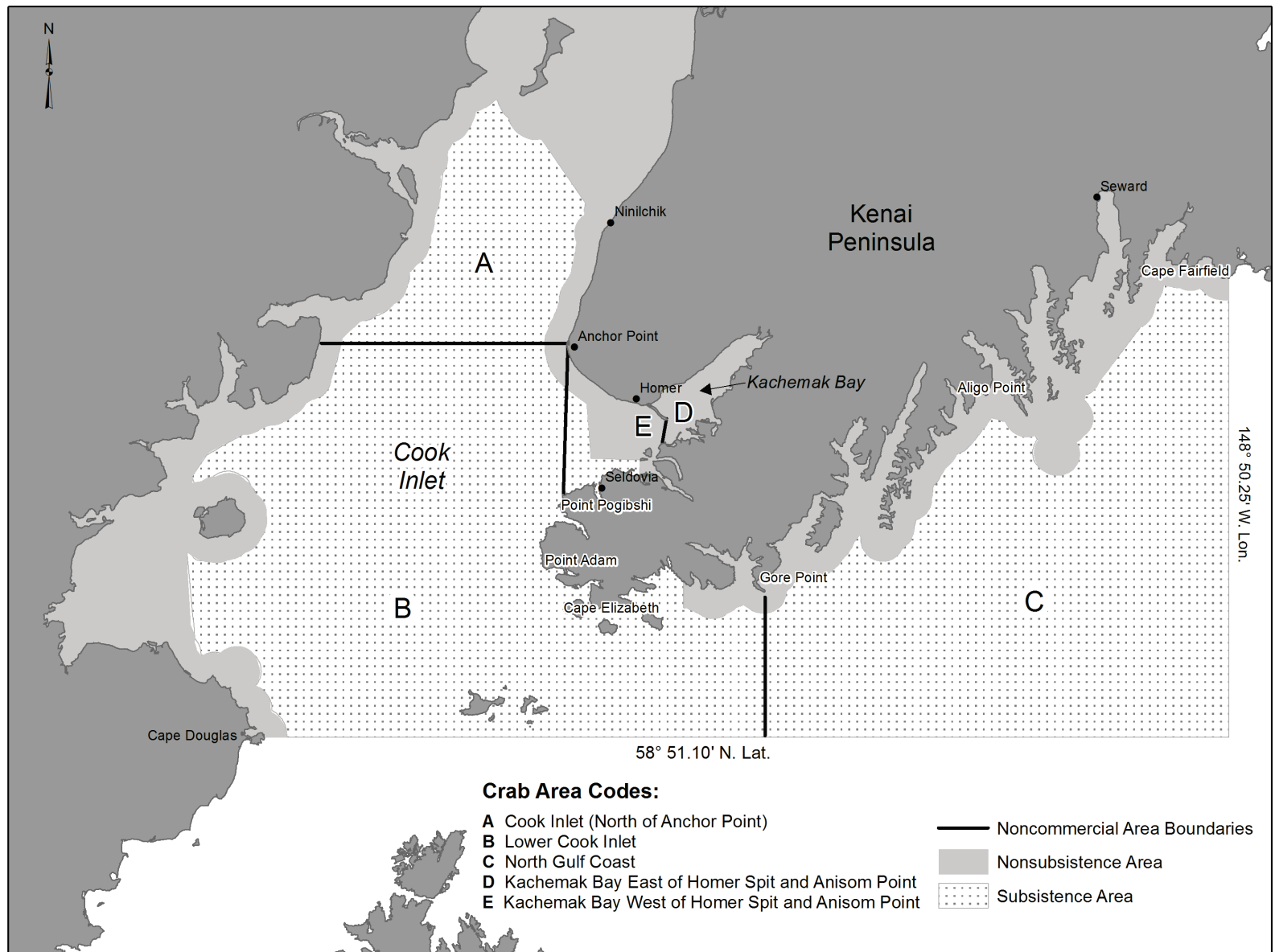


Figure 3.—Cook Inlet Management Area (Area H) noncommercial Tanner crab fishing areas.

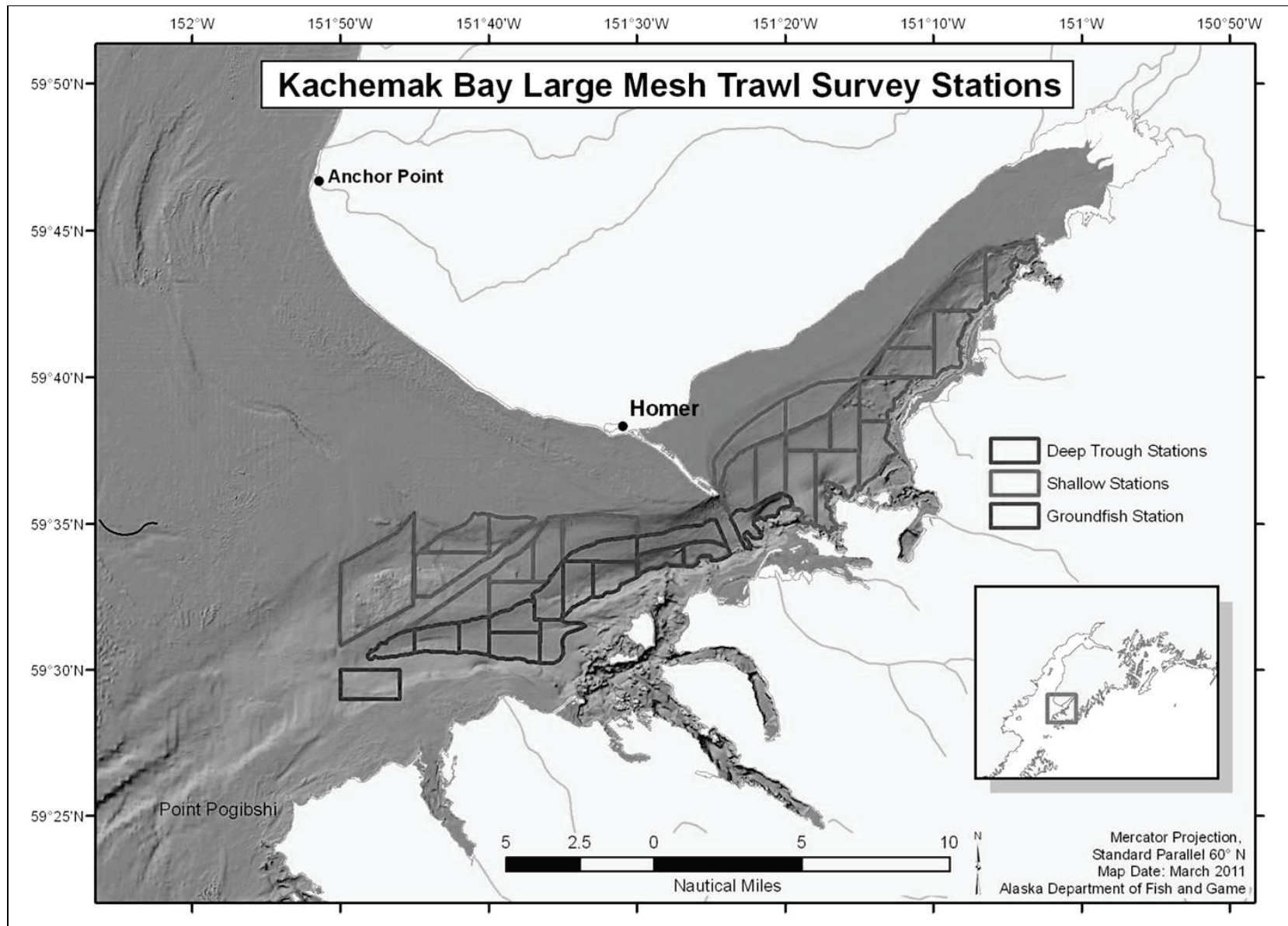


Figure 4.—Kachemak Bay large-mesh trawl survey stations.

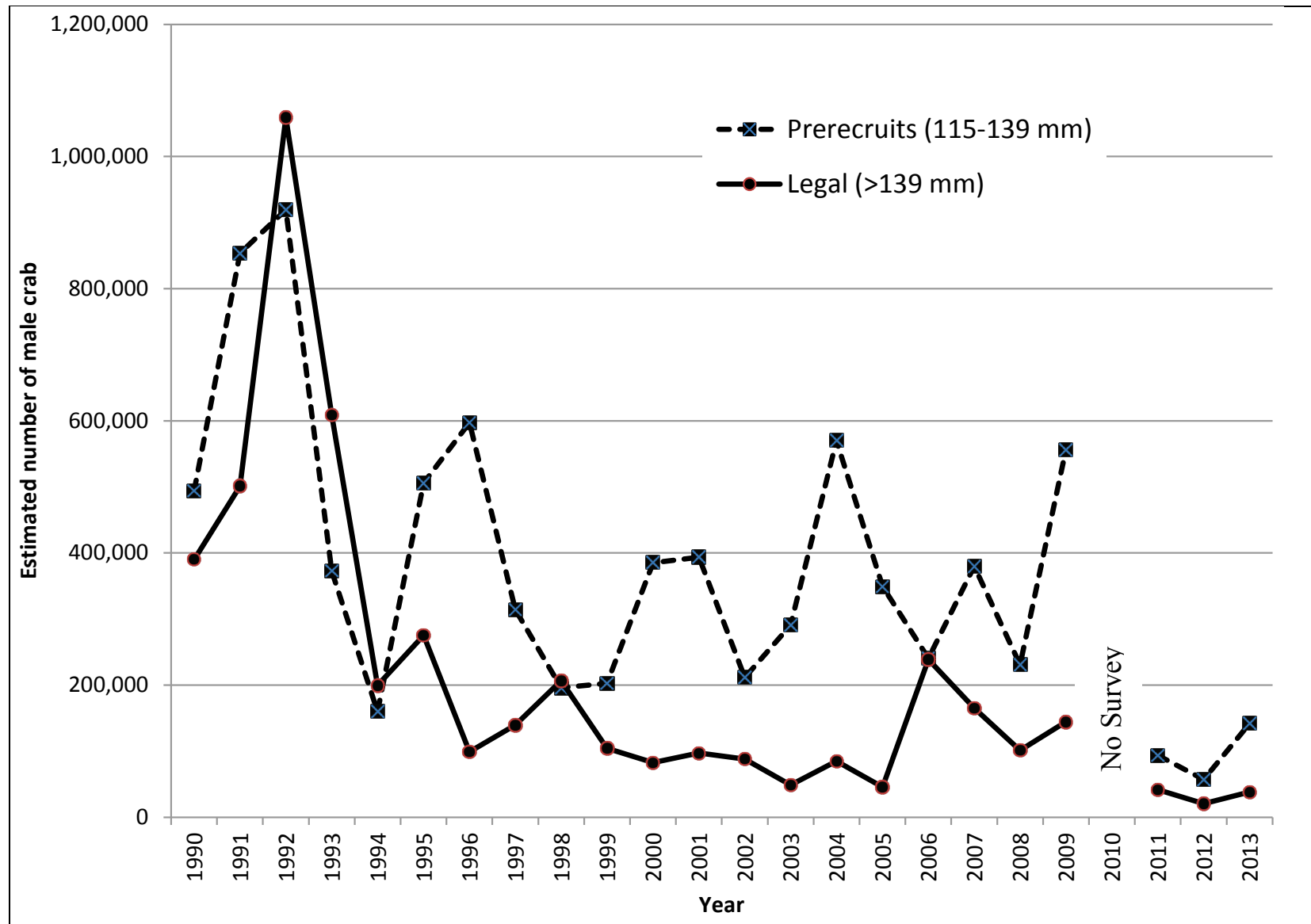


Figure 5.—Tanner crab prerecruit (115–139 mm carapace width) and legal male (>139 mm carapace width) abundance from large mesh survey in Kachemak Bay from 1990–2013.

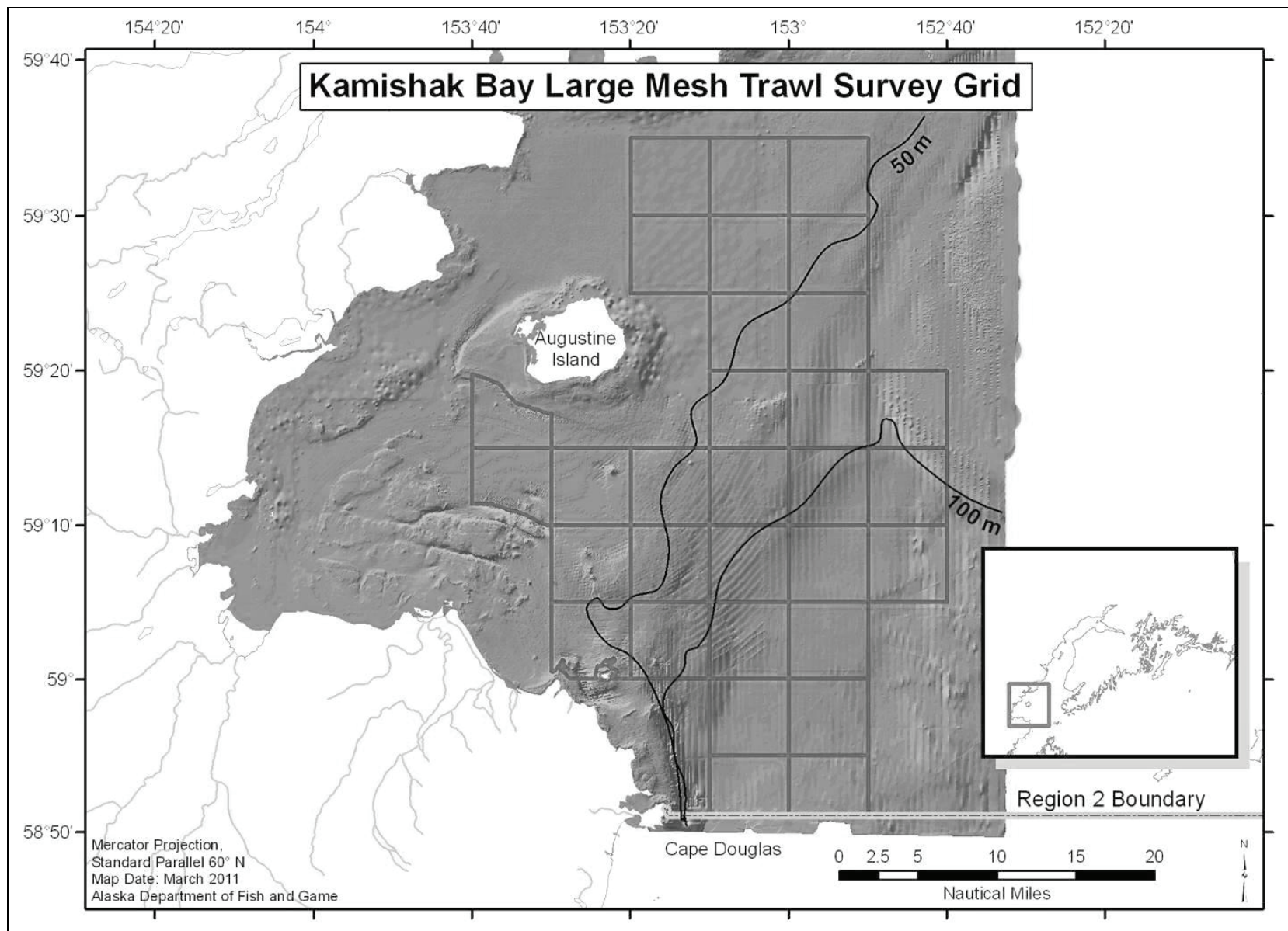


Figure 6.—Kamishak Bay and Barren Islands large mesh trawl survey locations.

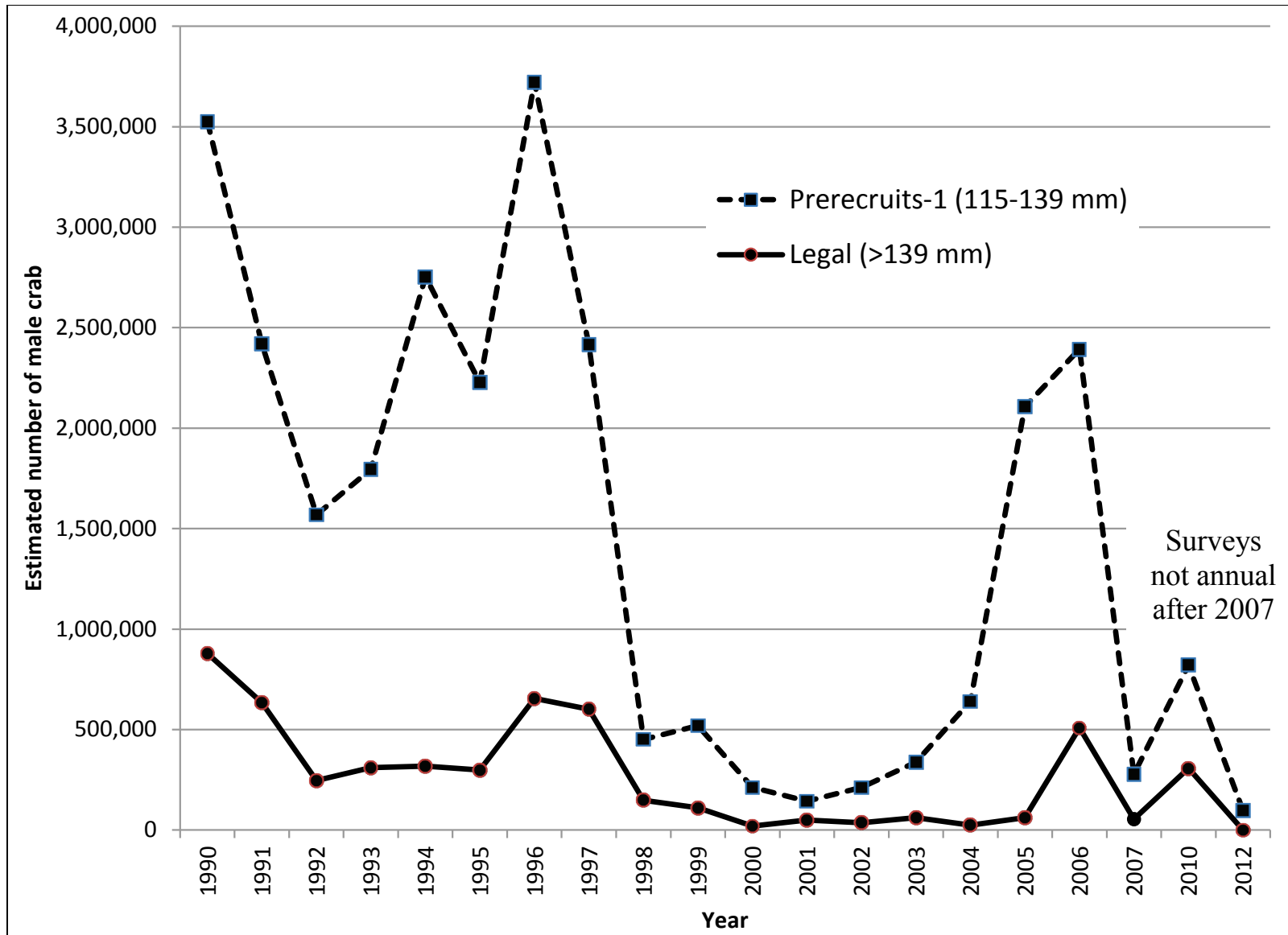


Figure 7.—Tanner crab prerecruit (115-139 mm carapace width) and legal male (>139 mm carapace width) abundance from large mesh survey in Kamishak Bay and Barren Islands from 1990–2013, no survey.



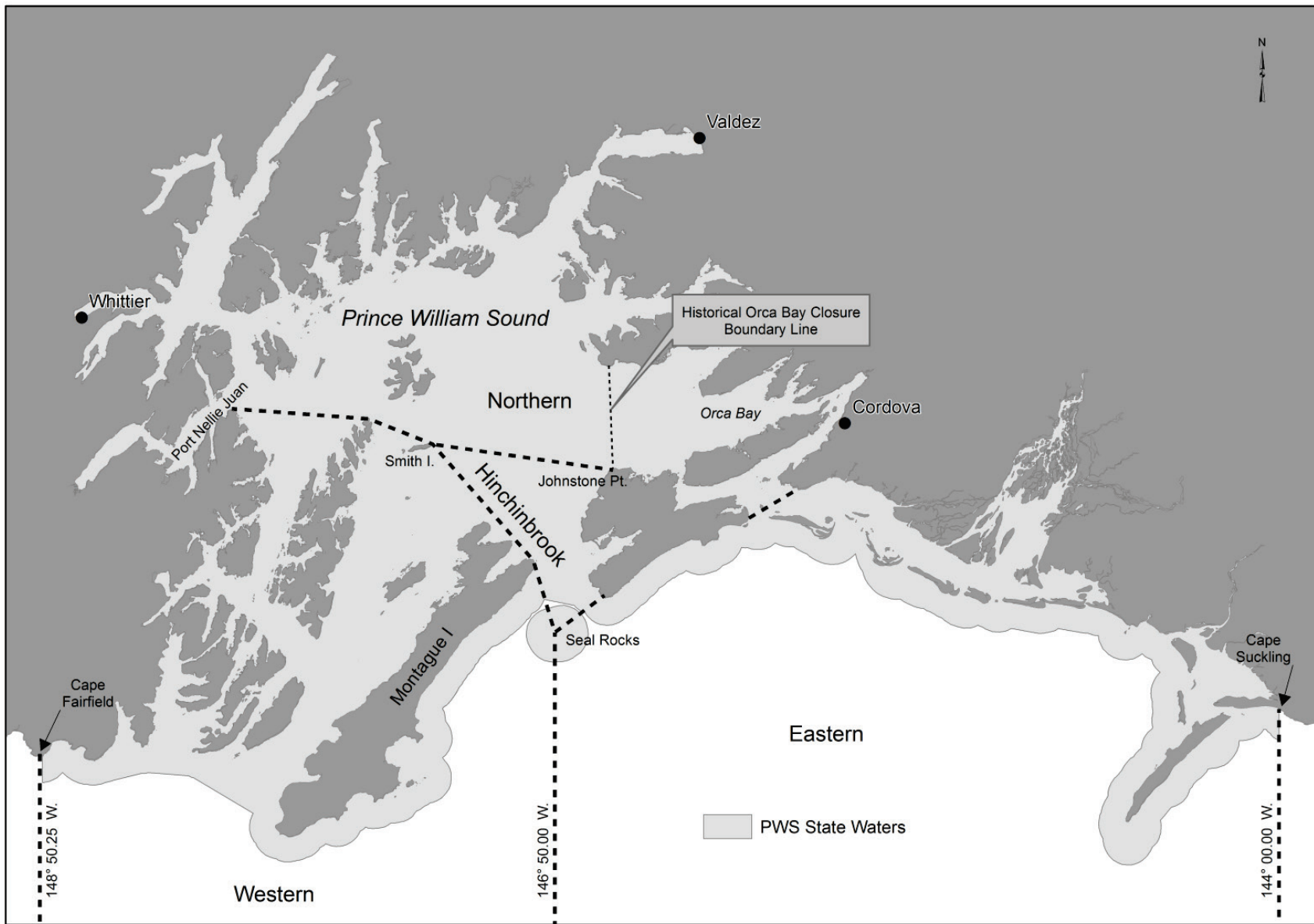


Figure 8.—Prince William Sound Management Area (Area E) commercial crab fishing districts.

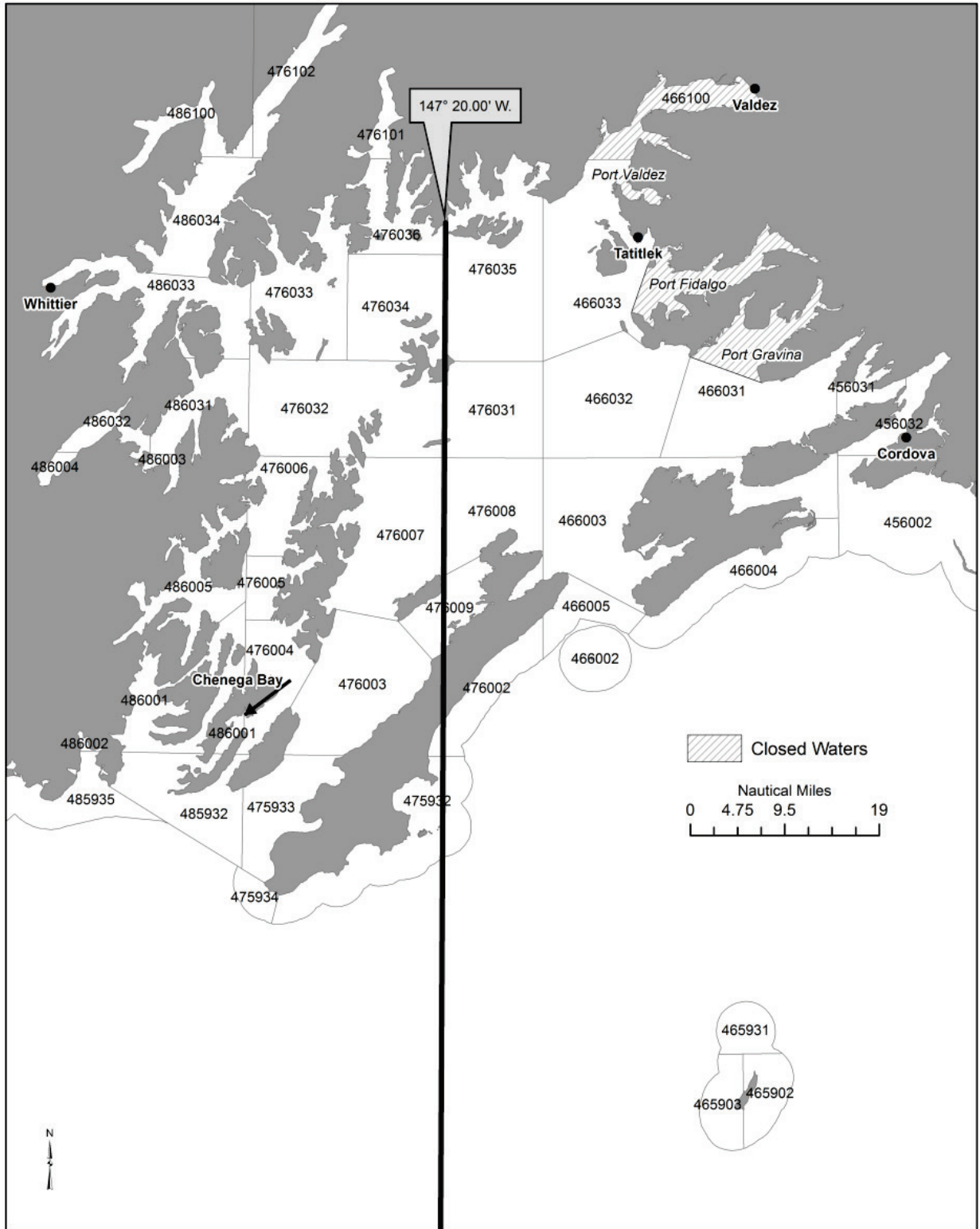


Figure 9.—Prince William Sound Management Area (Area E) noncommercial fishing areas.

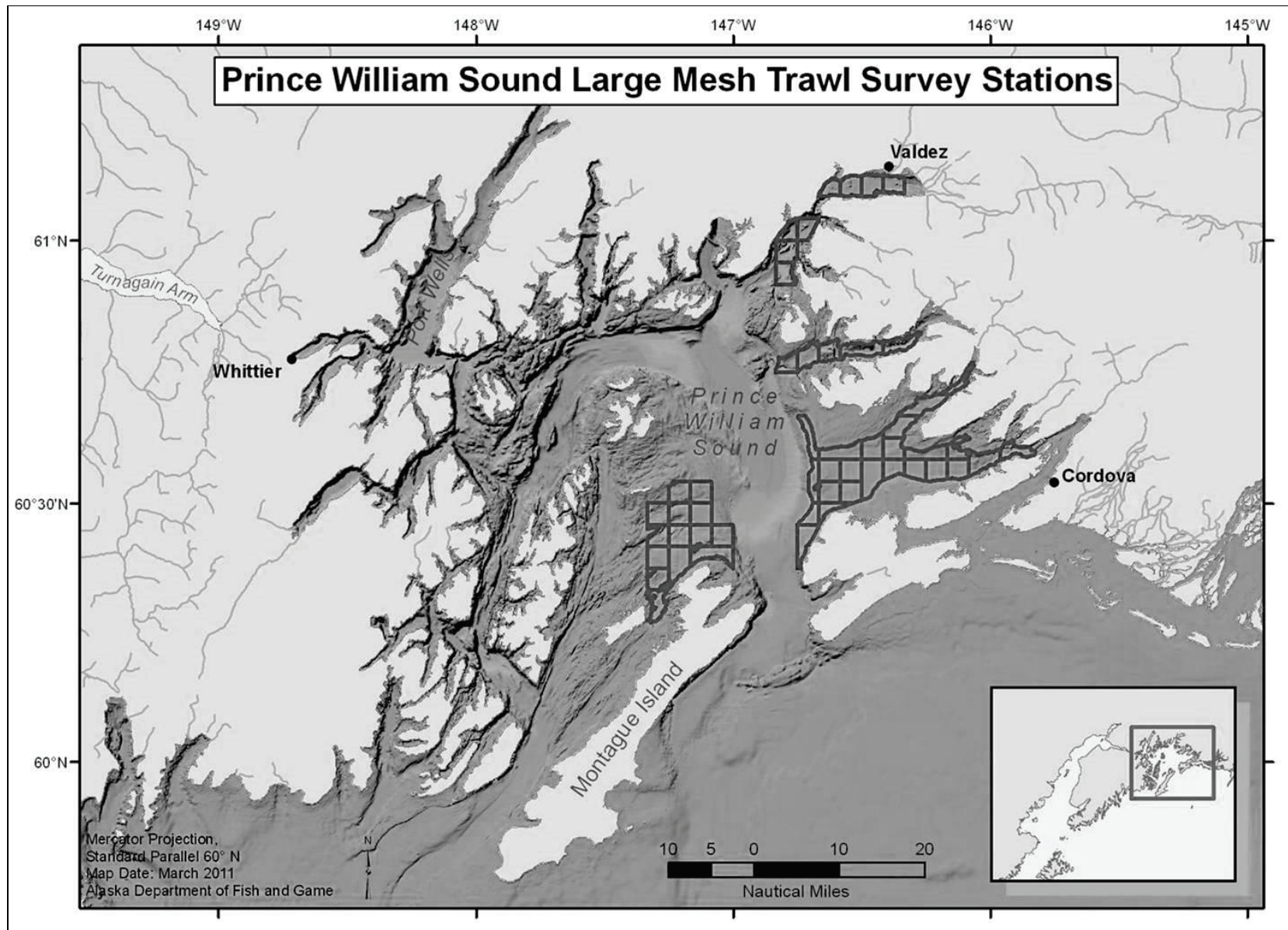


Figure 10.—Prince William Sound large mesh trawl survey locations.

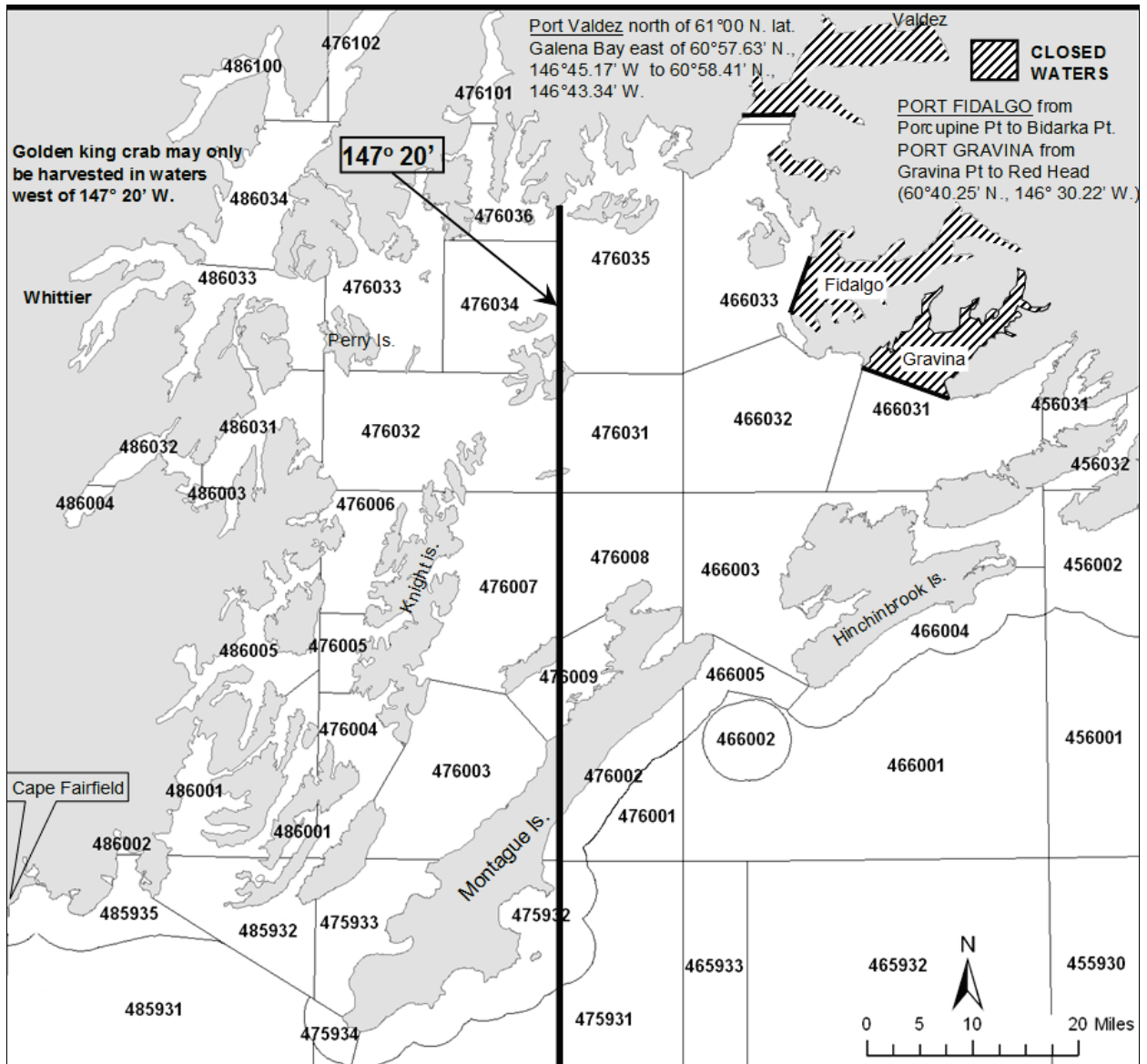


Figure 11.—Waters of Prince William Sound closed to subsistence harvest of Tanner and golden king crab.