

**Cook Inlet and Prince William Sound Areas Tanner
and King Crab Management Report, 2020–2023**

by

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November 2024

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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Weights and measures (metric)		General		Mathematics, statistics	
centimeter	cm	Alaska Administrative		all standard mathematical	
deciliter	dL	Code	AAC	signs, symbols and abbreviations	
gram	g	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	H _A
hectare	ha			base of natural logarithm	e
kilogram	kg	all commonly accepted		catch per unit effort	CPUE
kilometer	km	professional titles	e.g., Dr., Ph.D., R.N., etc.	coefficient of variation	CV
liter	L		@	common test statistics	(F, t, χ^2 , etc.)
meter	m	at		confidence interval	CI
milliliter	mL	compass directions:		correlation coefficient	
millimeter	mm	east	E	(multiple)	R
Weights and measures (English)		north	N	correlation coefficient	
		south	S	(simple)	r
cubic feet per second	ft ³ /s	west	W	covariance	cov
foot	ft	copyright	©	degree (angular)	°
gallon	gal	corporate suffixes:		degrees of freedom	df
inch	in	Company	Co.	expected value	E
mile	mi	Corporation	Corp.	greater than	>
nautical mile	nmi	Incorporated	Inc.	greater than or equal to	≥
ounce	oz	Limited	Ltd.	harvest per unit effort	HPUE
pound	lb	District of Columbia	D.C.	less than	<
quart	qt	et alii (and others)	et al.	less than or equal to	≤
yard	yd	et cetera (and so forth)	etc.	logarithm (natural)	ln
Time and temperature		exempli gratia		logarithm (base 10)	log
		(for example)	e.g.	logarithm (specify base)	log ₂ , etc.
day	d	Federal Information		minute (angular)	'
degrees Celsius	°C	Code	FIC	not significant	NS
degrees Fahrenheit	°F	id est (that is)	i.e.	null hypothesis	H ₀
degrees kelvin	K	latitude or longitude	lat or long	percent	%
hour	h	monetary symbols		probability	P
minute	min	(U.S.)	\$, ¢	probability of a type I error	
second	s	months (tables and figures): first three letters	Jan.,...,Dec	(rejection of the null hypothesis when true)	α
Physics and chemistry		registered trademark	®	probability of a type II error	
		trademark	™	(acceptance of the null hypothesis when false)	β
all atomic symbols		United States		second (angular)	"
alternating current	AC	(adjective)	U.S.	standard deviation	SD
ampere	A	United States of		standard error	SE
calorie	cal	America (noun)	USA	variance	
direct current	DC	U.S.C.	United States	population	Var
hertz	Hz		Code	sample	var
horsepower	hp	U.S. state	use two-letter abbreviations		
hydrogen ion activity (negative log of)	pH		(e.g., AK, WA)		
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

FISHERY MANAGEMENT REPORT NO. 24-29

**COOK INLET AND PRINCE WILLIAM SOUND AREAS TANNER AND
KING CRAB MANAGEMENT REPORT, 2020–2023**

by

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Division of Sport Fish, Research and Technical Services
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November 2024

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This document should be cited as follows:

Schuster, M., A. Pollak, A. Cole, J. Loboy, and C. Russ. 2024. Cook Inlet and Prince William Sound Areas Tanner and king crab management report, 2020–2023. Alaska Department of Fish and Game, Fishery Management Report No.24-29, Anchorage.

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TABLE OF CONTENTS

	Page
LIST OF TABLES.....	ii
LIST OF FIGURES.....	ii
ABSTRACT	1
INTRODUCTION	1
COOK INLET AREA	2
MANAGEMENT AREA	2
COOK INLET AREA TANNER CRAB.....	2
Commercial Regulations and Management	2
Commercial Harvest.....	3
Noncommercial Regulations and Management	4
Noncommercial Harvest.....	4
Research.....	5
COOK INLET AREA KING CRAB	6
Commercial and Noncommercial Regulations and Management	6
Commercial Harvest.....	6
Noncommercial Harvest.....	7
Research.....	7
PRINCE WILLIAM SOUND	7
MANAGEMENT AREA	7
PRINCE WILLIAM SOUND AREA TANNER CRAB	7
Commercial Regulations and Management	7
Commercial Harvest.....	8
Noncommercial Regulations and Management	10
Noncommercial Harvest.....	11
Research.....	11
PRINCE WILLIAM SOUND AREA KING CRAB.....	12
Commercial Regulations	12
Commercial Harvest.....	13
Noncommercial Regulations	13
Noncommercial Harvest.....	14
Research.....	14
ACKNOWLEDGEMENTS	14
REFERENCES CITED	15
TABLES	19
FIGURES	41

LIST OF TABLES

Table	Page
1. Cook Inlet Area Tanner crab harvest strategy, modified in 2020.....	20
2. Cook Inlet Area commercial Tanner crab harvest by district, 1968–2023 seasons.....	21
3. Male Tanner crab abundance estimates from Southern District, 1990–2019.....	22
4. Male Tanner crab abundance estimates from bottom trawl surveys in the Kamishak Bay and Barren Island Districts, 1990–2012.....	23
5. Commercial king crab harvest in the Cook Inlet Management Area, 1960–2023.....	24
6. Male and female king crab caught in the Kachemak and Kamishak Bay trawl.....	25
7. Prince William Sound Area Tanner crab harvest strategy, established in 2021.....	26
8. Prince William Sound areawide commercial Tanner crab harvest, 1968–1975.....	26
9. Commercial Tanner crab harvest in the Prince William Sound Area, 1977–2021.....	27
10. Commercial Tanner crab harvest in the Prince William Sound Area, 2022–2023.....	28
11. Prince William Sound Area Commissioner’s Permit Tanner crab fishery performance, effort, and management measures, 2018–2021.....	28
12. Prince William Sound Area Commissioner’s permit Tanner crab fishery harvest and effort.....	29
13. Subsistence Tanner crab harvest and effort in the Prince William Sound Management Area, 2009–2023.....	30
14. Tanner crab catch by pot surveys of traditional stations in the Northern and Hinchinbrook Districts, Prince William Sound Area, 1977–1991.....	31
15. Chronology of the large-mesh bottom trawl survey in the Prince.....	32
16. Male and female Tanner crab estimates from the Prince William Sound trawl survey in Northern and Hinchinbrook.....	33
17. CPUE, coefficient of variation, standard error, and abundance estimates with associated confidence intervals of Tanner crab for Central District in 2020.....	34
18. CPUE, coefficient of variation, standard error, and abundance estimates.....	35
19. CPUE, coefficient of variation, standard error, and abundance estimates with.....	36
20. Prince William Sound Area bottom trawl survey catch statistics and abundance estimates with associated CIs of Tanner crab in the Northeastern District in 2022.....	37
21. Prince William Sound Area commercial king crab harvest, 1960–2023.....	38
22. Prince William Sound golden king crab test fishery performance, effort, and management measures, 2020.....	39
23. Prince William Sound Area subsistence golden king crab fishery annual harvest, effort, and catch, 2009–2023.....	40

LIST OF FIGURES

Figure	Page
1. Cook Inlet Area, Registration Area H, and Prince William Sound Area, Registration Area E.....	42
2. Cook Inlet Area, Registration Area H, commercial crab fishing districts.....	43
3. Kachemak Bay large-mesh trawl survey stations.....	44
4. Kamishak Bay and Barren Islands large-mesh trawl survey locations.....	45
5. Kachemak Bay trawl survey legal male Tanner crab abundance estimates, 1990–2019.....	46
6. Kamishak Bay trawl survey legal male Tanner crab abundance estimates, 1990–2012.....	47
7. Prince William Sound Management Area, Registration Area E, commercial crab fishing districts prior to 2021.....	48
8. Prince William Sound Area, Registration Area E, Tanner crab districts created in 2021.....	49
9. Prince William Sound Area bottom trawl survey CPUE of mature-size male Tanner crab.....	50
10. Prince William Sound Area golden king crab test fishery areas.....	51

ABSTRACT

This management report summarizes Tanner crab *Chionoecetes bairdi*, red king crab *Paralithodes camtschaticus*, and golden king crab *Lithodes aequispinus* fisheries in the Cook Inlet Area (Registration Area H) and Prince William Sound Area (PWS; Registration Area E) through 2023. Alaska Department of Fish and Game surveys to estimate Tanner crab abundance have been conducted since the early 1990s in Cook Inlet and PWS. Due to low survey estimates of abundance, commercial fisheries for Tanner and king crab have been closed in the Cook Inlet Area since 1995. Commercial Tanner and king crab fisheries in PWS were closed from 1989 until 2016 when a Tanner crab test fishery was conducted. Tanner crab test fisheries were also conducted in 2020 to 2022. In 2017, a Commissioner's permit Tanner crab fishery was adopted into regulation in PWS, followed by the fishery being prosecuted from 2018 to 2021. Legal Tanner crab abundance levels have been high enough to allow a subsistence fishery in PWS since 2008. In 2017, Cook Inlet Tanner crab regulations were amended, allowing a restricted, limited noncommercial Tanner crab fishery. Red and golden king crab levels have been at low abundance levels in both areas, and a small amount of golden king crab have been harvested in the PWS subsistence fishery.

Keywords: Tanner crab, *Chionoecetes bairdi*, red king crab, *Paralithodes camtschaticus*, golden king crab, *Lithodes aequispinus*, 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 Area, Registration Area H, and Prince William Sound Area (PWS), Registration Area E (Figure 1).

The purpose of this report is to summarize recent Tanner crab and golden king crab (GKC) commercial and noncommercial fisheries in PWS, and recent noncommercial and historical commercial fisheries for Tanner crab in Cook Inlet. Regulations and management actions guiding these fisheries will be reviewed, and fishery-specific harvest and effort will be presented. Detailed information on recent Commissioner's permit, test fishery, and regulatory fisheries for PWS Tanner crab can be found in Rumble et al. (2021) and Rumble et al. (2022).¹ Detailed information on a 2020 test fishery for PWS golden king crab can be found in Russ et al. (2020).² Detailed information on recent Tanner crab bottom trawl surveys in PWS can be found in Rhea-Fournier et al. (2022, 2023b, and 2024). Detailed information on recent noncommercial Tanner crab fisheries in Cook Inlet can be found in Booz and Dickson (2023).

ADF&G, Division of Commercial Fisheries (DCF) has conducted bottom trawl surveys to estimate Tanner crab abundance in Cook Inlet and PWS since the early 1990s. These surveys monitor population status, provide an indication of recruitment to the fishery, and are the basis of harvest strategies in both areas. During the past 4 years, from 2020 to 2023, the Kachemak Bay trawl survey was not conducted, but limited sport and subsistence fisheries for Tanner crab have been open (Booz and Dickson 2023). DCF continues to conduct the PWS trawl survey and has operated test fisheries to establish an index of Tanner crab abundance in areas not conducive to trawling.

Tanner crab abundance in Cook Inlet and PWS has been at low levels since the mid-1980s, resulting in closures of commercial fisheries and some closures in noncommercial fisheries. One highlight was the reopening of the PWS subsistence Tanner crab fishery in 2008 because of an increase in legal male Tanner crab abundance, estimated from the PWS trawl survey and the reopening of Cook

¹ Rumble, J., E. Russ, and J. Loboy. 2022. 2022 Prince William Sound Tanner Crab Memorandum. Alaska Department of Fish and Game. https://www.adfg.alaska.gov/Static/fishing/pdfs/commercial/pws/2022_pws_tanner_memo.pdf (Accessed November 20, 2024).

² Russ, E. J. Rumble, W. Rhea-Fournier. 2020. Prince William Sound Golden King Crab Test Fishery Memorandum. Alaska Department of Fish and Game. https://www.adfg.alaska.gov/Static/fishing/pdfs/commercial/pws/2020_pws_gkc_memo.pdf.

Inlet noncommercial Tanner crab fisheries in Kachemak Bay. Following a test fishery for PWS Tanner crab in 2016, the Alaska Board of Fisheries (BOF) implemented a harvest strategy in 2017 for Tanner crab in PWS, which included a Commissioner's permit fishery, prosecuted from 2018 to 2021. In 2017, the BOF also adopted regulations to allow a more restricted, limited noncommercial fishery in Cook Inlet in the absence of a survey or if legal male Tanner crab abundance fell below commercial thresholds (Booz and Dickson 2023).

Commercial harvest data from Cook Inlet and PWS were compiled from historical management reports, previous BOF reports, and ADF&G's fish ticket database. PWS subsistence Tanner and golden king crab catch data were summarized from reported information on required permits and management reports. Additional information on subsistence harvests was gathered from the Division of Subsistence.

COOK INLET AREA

MANAGEMENT AREA

For commercial, personal use, and subsistence fisheries, the Cook Inlet Area (Registration Area H; Figure 1) includes all waters west of Cape Fairfield (long 148°50'W) and north of Cape Douglas (lat 58°51'N). 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 Area. For commercial crab fisheries management, the Cook Inlet Area is further divided into the Southern, Kamishak Bay, Barren Islands, Central, Outer, and Eastern Districts (Figure 2).

COOK INLET AREA TANNER CRAB

Commercial Regulations and Management

Cook Inlet commercial Tanner crab fisheries are managed under the *Registration Area H Tanner Crab Harvest Strategy* (5 AAC 35.408). In addition, Alaska Administrative Code 5 AAC 35.080 directs ADF&G to establish an annual harvest strategy for each Tanner crab stock that is consistent with the BOF's *Policy on King and Tanner Crab Resource Management*. These regulations also require that the BOF review harvest strategy changes prior to allowing fishing.

In 2017, following an analysis of the harvest strategy and legal size for Cook Inlet Tanner crab, ADF&G proposed a reduction in the legal size of male Tanner crab in the Cook Inlet Area from 5.5 inches (140 mm) to 4.5 inches (114 mm) for all commercial and noncommercial fisheries, which was adopted by the BOF. This was supported because studies suggest that male crab that have reached morphological maturity, evident by a larger claw size, will not molt again (Tamone et al. 2007). Analysis of chelae (claw) height in relation to carapace width data collected during Cook Inlet Area surveys indicated that size at maturity may have decreased in the Tanner crab population because a larger proportion of male crab in the population were observed in terminal molt condition before reaching the previously established legal size; and therefore, were not recruiting to the fishery. The goal of reducing the legal size was to allow more of these smaller-sized terminally molted crabs to be available for harvest and reduce harvest of larger, potentially faster-growing crab, and to minimize handling mortality from the reduced discard of undersized crab.

At the 2020 Statewide King and Tanner Crab BOF meeting in Anchorage, minimum stock thresholds for the Cook Inlet Tanner crab fishery were adjusted to account for the reduction in legal size. The harvest strategy is based on a minimum abundance threshold for legal-size male Tanner

crab (≥ 114 mm), and a stepwise harvest control rule of no more than 15% or 25% of the estimated abundance from district specific bottom trawl surveys (Table 1). A maximum harvest rate of 25% of legal-size Tanner crab is defined for the 3 districts for which the harvest strategy applies.

This harvest strategy also contains a provision that opens limited or standard noncommercial, sport, and subsistence fisheries for Tanner crab depending on Tanner crab abundance estimates from the Kachemak Bay trawl survey as provided in (5 AAC 58.022(11)(A)) and (B) for the sport fishery, and (5 AAC 02.325(a)) and (b) for the subsistence fishery. Both the sport and subsistence fisheries are monitored and managed by the Division of Sport Fish in Homer (Booz and Dickson 2023).

Additional regulations include the following:

- 1) Registration deadline 5:00 PM January 10 (5 AAC 35.406).
- 2) Season dates are January 15 through March 31, unless changed by emergency order (5 AAC 35.410).
- 3) Size limit of 4.5 inches or larger of male Tanner crab (5 AAC 35.420).
- 4) Maximum pot limit of 75 king and Tanner crab pots in aggregate per vessel, except for Southern district where no more than 40 or 20 pots may be operated depending on the guideline harvest level (GHL) (5 AAC 35.425).
- 5) ADF&G inspection (5 AAC 35.445).
- 6) Pot storage requirements (5 AAC 35.427).

The Cook Inlet Area is designated a superexclusive registration area for commercial fishing of Tanner crab (5 AAC 35.406); and therefore, a vessel used to harvest Tanner crab may not be used to take Tanner crab in any other registration area during that registration year (5 AAC 35.005). Additionally, an operator of a Tanner crab vessel validly registered for a superexclusive registration area may not operate any other Tanner crab vessel registered for any other superexclusive registration area in the same registration year (5 AAC 35.020(h)).

Commercial Harvest

Historically, the Cook Inlet Area has supported commercial Tanner crab fisheries in the Central, Kamishak Bay, Southern, Barren Islands, Outer, and Eastern Districts (Figure 2). The fishery has been closed since 1995; however, all districts saw closures in the late 1980s, and except for some limited openings between 1990 and 1992, only the Southern District was open during the final years of the fishery (Table 2). 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 substantial harvests, but minimal harvest occurred in the Central District only in 1987 and 1988.

When the Cook Inlet Area was open for commercial Tanner crab harvest, effort in the Southern District occurred in the relatively protected waters of Kachemak Bay, and fishing depths ranged between 30 and 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 Tanner crab harvest was 1.4 million pounds in 1969, mainly from the Southern District. Fishing effort quickly expanded to other districts, and a peak harvest of 8.0 million pounds from all districts combined occurred during 1974. Commercial Tanner crab fishing closures began in 1989 in all districts, followed by limited fishing through 1992, and only the Southern District was open in 1993 and 1994

(Table 2). The commercial fishery has remained closed since 1995 due to depressed Tanner crab abundance levels.

Tagging, survey, and fishery information indicate that the Tanner crab population in Kamishak Bay and Barren Islands Districts are a different stock than those crab in the Southern District. Therefore, the districts were managed separately with different surveys.

Noncommercial Regulations and Management

In 2014, the regulatory season dates for the noncommercial sport and subsistence fisheries were changed from July 15 through March 15 to September 1 through March 31. Additionally, the period for evaluating average legal male stock abundance was reduced from the recent 5-year period to the recent 3-year period.

In 2017, the harvest strategy was again amended, this time to allow limited noncommercial fisheries in the absence of a trawl survey or when legal male Tanner crab abundance levels fall below minimum thresholds. When abundance levels meet the required thresholds for the standard fishery, the bag, possession, and annual limit is 5 crab per person and 40 crab annually. Allowable gear is 2 pots or ring nets per person and 2 per vessel. The restricted, limited fishery allows 1 pot or ring net per person and 1 per vessel. Bag, possession, and annual limits are 3 crab per person and 20 crab annually, and the season is reduced to October 1 through the last day in February (5 AAC 58.022 and 5 AAC 02.325). The legal size of male Tanner crab was also reduced from 5.5 inches to 4.5 inches for all fisheries, including noncommercial fisheries.

Noncommercial fishery permits have been required since 1996. Permits are available online for sport and subsistence users and include mandatory online reporting. Regulations require that crab must remain whole and intact until the crab has been processed or prepared for consumption so that the sex and size of the crab may be determined. For more information on noncommercial Tanner crab management see Booz and Dickson (2023).

Noncommercial Harvest

The noncommercial fishery has been managed through a harvest permit since 1996. Noncommercial harvest data from 1981 through 1995 are available from the annual Alaska Statewide Harvest Survey (SWHS) administered through Division of Sport Fish (DSF).

Noncommercial Tanner crab harvest data estimated from the SWHS from 1981 to 1995 in Cook Inlet, including Kachemak Bay, ranged between 1,142 and 10,936 crab annually, with season closures in 1989 and 1990 (Mills 1982–1994; Howe et al. 1995–1996). The highest harvests occurred during the 3 years prior to the permit being implemented in 1996. Harvest reported on shellfish permits increased between 1996 and 2000 to an average harvest of approximately 15,400 crab, under a bag and possession limit of 20 Tanner crab. Noncommercial Tanner crab harvest reported on shellfish permits are considered more accurate and are higher than harvest estimated from the SWHS (Kerkvliet et al. 2013). The noncommercial Tanner crab fishery harvest peaked in 2000 at 19,672 crab. The bag limit was reduced by emergency order (EO) to 5 Tanner crab in 2001, and resulted in a decreased harvest of 6,499 crab for the calendar year. In 2002, the fishery closed early in the season by EO to protect Tanner crab in Kachemak Bay from overharvest. Noncommercial fisheries in the entire Cook Inlet Area remained closed from 2003 until 2008.

From 2021 to 2023, sport and subsistence harvest of Tanner crab combined ranged from 6,311 to 7,515 crab annually. The number of sport and subsistence permits combined ranged from 1,327 to

1,889 permits annually. Additional harvest and effort information is reported in Booz and Dickson (2023).

Research

ADF&G has conducted surveys to assess Tanner crab abundance within Cook Inlet since 1974 (Goldman et al. 2018). Surveys were conducted using pot gear through 1990 (Kimker 1991a). Pot survey objectives were to provide indices of legal and sublegal male Tanner crab and to monitor the reproductive success of female Tanner crab. This information was used to determine relative stock condition, as well as to set preseason harvest guidelines for the commercial fishery.

Recognizing the inherent weaknesses of pot surveys, primarily the inability to expand catches to estimate population abundance, ADF&G implemented trawl surveys as the primary survey method in 1990 (Kimker 1991b; Bechtol 2005). An advantage of trawl surveys is that population abundance estimates can be generated by using an area swept method. Trawl surveys to assess crab stocks are also used by ADF&G in other management areas and by the National Marine Fisheries Service for the Bering Sea (Knutson 2018). Historically, large-mesh trawl surveys were conducted in Kachemak Bay in the Southern District, and Kamishak Bay in the Kamishak Bay and Barren Islands Districts (Figures 3 and 4). The Kachemak Bay survey was conducted by DCF annually from 1990 through 2013, excluding 2010 (Table 3 and Figure 5). The survey was not conducted between 2014 and 2016 because of DCF funding reductions. The survey resumed in 2017 with funding support from DSF, and was conducted annually through 2019. The Kamishak Bay survey was conducted annually through 2007, and then again in 2010 and 2012; the survey has not been conducted since 2012 due to DCF budget constraints and low abundance of legal crab in the survey (Table 4). 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 harvest strategy was adopted by the BOF (Bechtol et al. 2002).

In the Kachemak Bay trawl survey, legal male Tanner crab estimated abundance had declined to just under 200,000 crab in 1994 (Table 3 and Figure 5), the last year the commercial fishery was open. The estimated abundance of legal male Tanner crab increased by almost 50% in 1995 before dropping again the following year, and remained between 100,000 and 200,000 legal male crab through 1999. After 1999, abundance estimates showed a further declining trend, and by 2005, estimates were approximately 45,000 legal crab. After an increase in 2006 to over 200,000 crab, the abundance of legal male Tanner crab remained between 100,000 and 200,000 crab through 2009. This enabled the noncommercial fisheries to open for the 2008 season after regulatory average abundance thresholds were met. However, after no survey in 2010, the 2011 through 2013 legal male abundance estimates were at their lowest levels since 1990. This triggered the noncommercial fisheries in Kachemak Bay to close after the abundance estimate dropped below the single-year threshold of 50,000 legal crab, where it remained through 2013.

No survey was conducted from 2014 through 2016, which prevented a fishery from being opened. However, the noncommercial fishery reopened in the entire Cook Inlet Area for the 2017 season after the BOF adopted regulations in 2017 to allow a restricted, limited noncommercial fishery to be prosecuted when abundance estimates were below minimum thresholds, or in the absence of a survey. In 2017, the BOF also adopted a new legal size of Tanner crab of 4.5 in (114 mm), which was reduced from 5.5 in (140 mm). The 2019 survey provided a third consecutive year of estimates, and the recent 3-year average was above the minimum stock threshold for a noncommercial fishery,

which allowed the standard (unrestricted) regulatory noncommercial fishery to reopen (Table 3 and Figure 5).

In the Kamishak Bay trawl survey, abundance estimates of legal male Tanner crab steadily declined from nearly 900,000 crab in 1990 to approximately 245,000 crab in 1992 (Table 4 and Figure 6). The commercial fishery in the Kamishak Bay and Barren Islands Districts has been closed every year since 1992. Legal male Tanner crab abundance estimates exceeded 600,000 crab in 1996 and 1997, but declined precipitously in 1998, and declined further in 1999 to just over 100,000 crab. From 2000 through 2005, legal male abundance estimates were at the lowest levels since 1990, and averaged less than 50,000 crab. Trawl survey results between 2006 and 2010 were highly variable: estimates ranged from 508,000 legal crab in 2006, to approximately 54,000 crab in 2007, followed by 2 years with no survey, and then to over 300,000 crab in 2010. There was no survey in 2011. In 2012, the final year of the survey, the estimated legal male Tanner crab abundance was 0 crab because no legal crab were caught.

Survey estimates in Kamishak Bay in 2006 and 2010 enabled the noncommercial fisheries to open in 2008, in conjunction with the Kachemak Bay noncommercial fisheries, because average abundance minimum thresholds were met. During the 2012 survey, no legal male Tanner crab were captured in Kamishak Bay (Table 4 and Figure 6). In response to the low level of Tanner crab abundance and reduced project funding, the Kamishak Bay trawl survey was discontinued, and there are no future survey plans. The noncommercial fisheries closed in 2012, and remained closed until the BOF adopted regulations in 2017, allowing a limited noncommercial fishery to open in the entire Cook Inlet Area in the absence of a trawl survey. The limited noncommercial fishery has been open in Kamishak Bay concurrent with the areawide Cook Inlet opening and, although there is low effort, any population rebound could be reflected in the noncommercial harvest.

COOK INLET AREA KING CRAB

Commercial and Noncommercial Regulations and Management

Both red king crab and golden king crab are found in the Cook Inlet Area, although golden king crab have been caught infrequently, and only in the outer portion of the management area in the Gulf of Alaska. In 1999, the BOF closed the commercial harvest of king crab in the Cook Inlet Area until the crab stocks have recovered enough for a harvest strategy to be developed by ADF&G (5 AAC 34.310).

The Cook Inlet Area is designated a superexclusive registration area for king crab (5 AAC 34.005). Regulations that guided the fishery included a size limit permitting only male king crab 7 inches (178 mm) or greater in shell width to be taken or possessed, pot requirements allowing only king crab pots and ring nets, and pot limits and pot marking requirements.

Noncommercial king crab fishing regulations exist for sport and subsistence fishing. However, king crab fishing is closed for both sport and subsistence fisheries (5 AAC 02.320 and 5 AAC 58.022).

Commercial Harvest

Commercial fisheries for both species of king crab have been closed due to low abundance since 1983. Harvest ranged from a high of 8.6 million pounds in 1962 to a low of 192,531 pounds in 1983, the final season the fishery was open (Table 5). When commercial fisheries were open, most of the red king crab harvest occurred in the Southern, Kamishak Bay, and Barren Islands Districts. Very

small harvests occurred in the Outer District, and no harvests were reported from the Eastern District.

Noncommercial Harvest

Noncommercial fishing for king crab has been closed in the Cook Inlet Area since 1985. Estimates of sport and subsistence king crab harvests are only available from 1981 to 1984, with harvests ranging from a high of 6,178 crab in 1981 to a low of 62 king crab in 1984 (Rumble et al. 2014). After this marked decrease, the fishery was closed and not reopened.

Research

In the ADF&G large-mesh trawl survey for Kachemak Bay, low numbers of red king crab were caught between 1990 and 2019, ranging between 0 and 102 male crab (Table 6). No red king crab have been caught in the Kachemak Bay survey since 2005. 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 numbers are still very low overall, ranging between 0 and 131 male crab. During the last Kamishak Bay survey in 2012, 2 male red king crab were caught.

PRINCE WILLIAM SOUND

MANAGEMENT AREA

For commercial, personal use, and subsistence fisheries, PWS (Registration Area E; Figure 1) includes waters of PWS and the Gulf of Alaska bounded by long 144°00'W near Cape Suckling on the east and long 148°50.25'W at Cape Fairfield on the west. PWS is further divided into districts for crab management, which were changed along with the adoption of a new Tanner crab harvest strategy at the 2021 Prince William Sound/Upper Copper and Upper Susitna Rivers Finfish and Shellfish (except shrimp) meeting in Cordova, Alaska. Prior to 2021, PWS consisted of 4 crab management districts, the Northern, Hinchinbrook, Eastern, and Western Districts (Figure 7). After 2021, PWS consisted of the Northwestern, Northeastern, Southwestern, and Southeastern Districts (Figure 8). ADF&G manages all commercial shellfish fisheries within the territorial waters of PWS or those waters from the shoreline to 3 nautical miles offshore. ADF&G also manages all commercial shellfish fisheries in the adjacent waters of the federal exclusive economic zone (EEZ), which are those waters beyond 3 nautical miles offshore.

PRINCE WILLIAM SOUND AREA TANNER CRAB

Commercial Regulations and Management

In 2017, the BOF adopted the *Registration Area E Tanner Crab Harvest Strategy* (5 AAC 35.308). The harvest strategy established an abundance threshold of 200,000 legal male Tanner crab that when met would trigger a commercial fishery in the entire registration area. The legal size of Tanner crab was also reduced to 5 inches (127 millimeters) from the historical legal size of 5.3 inches (135 millimeters).

At the 2021 BOF meeting, the 2017 Tanner crab harvest strategy was modified to include 5 districts, the Northeastern, Northwestern, Central, Southwestern, and Southeastern (Figure 8; Rhea-Fournier 2021, 2022, 2023a). The Northeastern, Central, and Southwestern Districts contain a considerable amount of trawlable Tanner crab habitat and, thus, allow ADF&G to continue using bottom trawl surveys as the primary Tanner crab assessment method. The Northwestern District does not have sufficient trawlable habitat to develop an assessment, and the Southeastern District did not have any

substantial harvest during recent Commissioner's permit fisheries, and given its large size, it was not feasible to develop a management strategy based on trawl survey assessments. The harvest strategy is based on a minimum abundance threshold for mature-size male Tanner crab (≥ 4.45 inches or 113 millimeters) and a stepwise harvest control rule of 10%, 15%, and 20% of the estimated abundance of mature-size male crab. District specific bottom trawl surveys set the district specific guideline harvest level (GHL) of legal-size crab (Table 7; Rhea-Fournier et al. 2023a). A maximum harvest rate of 20% of legal-size Tanner crab is defined for the 3 districts for which the harvest strategy applies. GHLs for legal-size crab are produced in numbers of crab and then converted to pounds for managing the fishery, by applying average weight data from port sampling.

This harvest strategy also contains a provision that opens a sport fishery for Tanner crab in the same district as the commercial fishery if the commercial fishery is opened, as provided in (5 AAC 55.022(b)(3)), which contains the methods and means for this sport fishery.

Regulations in the harvest strategy include the following:

- 1) Registration deadline 15 days before commercial opening (5 AAC 35.306).
- 2) Season dates are January 15 through April 15, unless changed by emergency order (5 AAC 35.310).
- 3) Size limit of 5.0 inches or larger of male Tanner crab (5 AAC 35.320).
- 4) Operation of gear from 8:00 AM to 6:00 PM (5 AAC 35.325(g)).
- 5) Maximum pot limit of 30 pots per vessel, which could be reduced by ADF&G depending on: number of registrants, CPUE during the fishery, or GHL (5 AAC 35.325(d)).
- 6) ADF&G inspection if they deem it necessary (5 AAC 35.345).
- 7) Pot storage requirements (5 AAC 35.327(a)).
- 8) Log sheet requirement (5 AAC 35.350).
- 9) Daily call-in requirement (5 AAC 35.358).

PWS is designated an exclusive registration area for commercial fishing of Tanner crab; and therefore, a vessel used to harvest Tanner crab may not be used to take Tanner crab in any other exclusive registration area during that registration year.

Commercial Harvest

The PWS Tanner crab fishery was closed from 1989 to 2015 due to low abundance demonstrated in the trawl survey and poor fishery performance in the later years of the commercial fishery. A test fishery was conducted in 2016, followed by a regulatory change adopted by BOF in 2017 that allowed ADF&G to open a Commissioner's permit fishery for Tanner crab in the Eastern and Western Districts of PWS from 2018 to 2021. A regulatory fishery was also prosecuted in 2022 under the modifications to the PWS tanner crab harvest strategy adopted at the 2021 BOF (ADF&G 2021).

Historical Fishery

The PWS commercial Tanner crab fishery began in 1969 when 1.2 million pounds were landed (Table 8). The harvest peaked at 14.0 million pounds in 1972, which was 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 (Table 9). The final 3 years of the fishery, 1986 to 1988, yielded smaller harvests of approximately 0.5 million pounds.

The collapse of Tanner crab within PWS in the 1980s includes 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 GHL. 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, changes in environmental conditions, documented throughout the Gulf of Alaska, 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 (Rumble et al. 2014).

Regulatory commercial fishery 2022

In 2022, the first regulatory fishery since 1988 was opened in PWS after the mature male Tanner crab abundance estimate from the 2019 ADF&G trawl survey in the Northeastern District exceeded the minimum abundance threshold. The fishery in the Northeastern District opened March 1 with a pot limit of 25 pots per vessel and a GHL of 61,800 pounds of legal male Tanner crab (5.0 inches or greater in carapace width). All other districts remained closed (except in the 2022 Test Fishery). The Northeastern District GHL was not achieved, with less than 40% of the GHL harvested, and the season closed March 31 (Table 10).

There were 17 vessels registered with 38 total landings in the 2022 regulatory fishery (Table 10). The total harvest was 24,360 pounds from 13,781 crab in 2,767 pot lifts resulting in an overall fishery CPUE of 5.0 crab per pot. For more information on the 2022 regulatory fishery, please see Rumble et al. (2022).³

Commissioner's Permit Fishery

The PWS Commissioner's permit Tanner crab fishery was established by the BOF in 2017 and was prosecuted from 2018 to 2021 (Rumble et al. 2021). The fishery was open only in the Eastern and Western Districts delineated in the 2017 harvest strategy, and only if the threshold to open a regulatory commercial fishery was not met. The Commissioner's permit fishery was removed from regulation in 2021 concurrent with the adoption of a modified harvest strategy. Participation in the Commissioner's permit fishery ranged from 22 vessels in 2020 to 10 vessels in 2021 (Table 11). Pot limits were set at 50 in 2019, the regulatory maximum, and reduced to 25 for all other years.

Tanner crab harvest ranged from a low of 56,351 pounds in 2021 to a high of 124,707 pounds in 2019 (Table 11). In 2020, the highest number of pot lifts, about 6,000, resulted in the lowest CPUE of 11.0 crab per pot. The highest CPUE of 15.4 crab per pot from approximately 5,000 pot lifts was in 2019. The lowest effort, lowest harvest, and second lowest CPUE occurred in the most recent Commissioner's permit fishery during 2021.

There was no GHL specified in regulation for the PWS Tanner crab Commissioner's permit fishery. Inseason management actions to limit harvest and effort were taken based on harvest, effort, and CPUE. For example, rapidly decreasing CPUE during the first 10 days of the fishery in 2020 caused managers to close Icy and Whale Bays to avoid localized depletion. These areas were also closed

³ Rumble, J., E. Russ, and J. Loboy. 2022. 2022 Prince William Sound Tanner Crab Memorandum. Alaska Department of Fish and Game. https://www.adfg.alaska.gov/Static/fishing/pdfs/commercial/pws/2022_pws_tanner_memo.pdf (Accessed November 20, 2024).

for the entirety of the 2021 season. For detailed information on PWS Commissioner's permit fisheries, including port sampling data, please see Rumble et al. (2021).

Test Fisheries

ADF&G offered request for quotations for PWS Tanner crab test fisheries in 2016 and from 2020 to 2022. Test fisheries were introduced as a response to public interest in a pot survey like the historical ADF&G index pot survey, and were continued as an assessment tool in areas overlapping with the trawl survey and in habitat not conducive to trawling. Bids were solicited for up to six 5,000 pound lots in each year the test fishery took place. Within each lot, 25 pots had to be fished at locations specified by ADF&G staff, while additional pot locations within each lot were selected by the vessel operator. Pot limits were set at 25 pots per vessel.

Tanner crab harvest ranged from a low of 3,946 pounds in 2016, when only 2 lots were awarded, to a high of 23,771 pounds in 2020, when 6 lots were awarded (Table 12). CPUE was highest in 2020 and 2021 at 16.2 and 15.2 crab per pot, respectively. CPUE was 7.0 crab per pot in 2016 and 10.4 crab per pot in 2022.

Mandatory pot locations in the test fishery will establish a long-term dataset in habitat not conducive to trawling, and provide an additional metric to assess the Tanner crab stock in areas where trawl surveys take place. Mandatory pot locations in the Northwestern District now have 4 years of test fishery data, parts of the Central and Southeastern Districts have 3 years of data, and the Southwestern District has 1 year of data. For detailed information on Tanner crab test fisheries in PWS see Rumble et al. (2021) and (2022).⁴

Noncommercial Regulations and Management

There is no sport fishery for Tanner crab in PWS. The PWS subsistence Tanner crab fishery has been open for 15 seasons, from 2008 to present. The season is open from October 1 through March 31 (5 AAC 02.220). Participants in the subsistence fishery must obtain a permit, and Tanner crab may be taken using pots, ring nets, dip nets, diving gear, hooked or hookless hand lines, or by hand. Only 2 pots may be fished per person, and a maximum of 2 pots per vessel. Certain waters, including Port Valdez, Galena Bay, Port Fidalgo, and Port Gravina remain closed to subsistence Tanner crab harvest (Figure 7).

Two regulatory changes occurred at the 2017 BOF meeting: (1) the legal size limit for male Tanner crab was reduced from 5.5 inches to 5.0 inches, and (2) the daily bag and possession limit was increased from 5 legal male Tanner crab per permit holder to 12 legal male Tanner crab.

Mandatory permits require harvest information, including date of harvest, area of harvest, number of pots fished, number of legal male Tanner crab harvested, number of legal male Tanner crab discarded, number of sublegal male Tanner crab caught, and the number of females captured. This harvest information must be recorded each time pots are pulled. Harvest must be reported by April 15 each season.

⁴ Rumble, J., E. Russ, and J. Loboy. 2022. 2022 Prince William Sound Tanner Crab Memorandum. Alaska Department of Fish and Game. https://www.adfg.alaska.gov/Static/fishing/pdfs/commercial/pws/2022_pws_tanner_memo.pdf (Accessed November 20, 2024).

Noncommercial Harvest

Historical Noncommercial Fishery

Shellfish, including crab, have a long history of harvest in PWS. All noncommercial crab fisheries were closed by regulation in 1999 after years of documented declines in abundance by ADF&G surveys (Rumble et al. 2014). Prior to 1999, there was no mechanism to directly monitor effort or harvest of Tanner crab in historical noncommercial fisheries within PWS. Data from DSF SWHS indicated an annual harvest range of between 137 and 537 crab, and an average annual harvest of 300 Tanner crab from 1994 to 1998 (Howe et al. 1995–1996, 2001a–c), which seems low considering the harvest of Tanner crab after the subsistence fishery opened in 2008. Limited data developed through household interviews by ADF&G Division of Subsistence 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 2008, the BOF opened a subsistence fishery for Tanner crab following rising estimates of legal male Tanner crab abundance from trawl survey results. Participation was low for the first 4 seasons but then increased steadily from 2012 to present, with the highest participation during the 2021 season at 358 permits issued (Table 13). Most permits in any given year are not fished, with participation averaging 35% for the most recent 3-year period.

From the opening of the subsistence fishery in 2008 to 2019, harvest of legal male crab ranged from 44 in 2009 to 2,067 in 2013 (Table 13). Harvest in 2013 was significantly higher than in any other years and was corroborated by the ADF&G survey results of Tanner crab abundance from 2011 and 2013. After 2013, despite consistent participation, harvest was below 1,000 legal male crab annually, except for 2017 when harvest was 1,073 legal male crab. The liberalized bag limit in 2017 was not followed by an increase in harvest.

Noncommercial Fishery 2020 to 2022

Effort was substantially higher in recent years, with an average of 101 permits fished recently versus an average of 69 permits fished from 2009 to 2020 (Table 13). However, legal male Tanner crab harvest averaged 392 crab in recent years and 604 crab previously. Trawl survey abundance estimates for recent years are also low when compared with earlier years. In recent years, most legal male Tanner crab are harvested near the communities of Whittier and Cordova in Passage Canal and Orca Inlet, respectively.

Research

Historical Surveys

ADF&G has conducted surveys to assess Tanner crab abundance levels within PWS since 1977 (Berceli et al. 2002). As in Cook Inlet, these surveys were initially conducted using pot gear, but switched solely to bottom trawl surveys in 1991 (Kimker 1984; Bechtol 1999; Kimker and Trowbridge 1992). The trawl survey area is based on the historical pot survey area and has stations in the Northern, Hinchinbrook, and Western Districts of PWS (Figure 7). However, the trawl survey does not include outside waters encompassed in the pot survey area.

Pot survey data indicated steady declines in the numbers of male and female Tanner crab beginning in 1981 (Table 14). Prior to 1981, CPUE for legal male Tanner crab averaged 54 crab per pot. During

the most recent 3-year period of the survey, from 1989 to 1991, CPUE for legal male Tanner crab averaged only 12 crab per pot.

Tanner crab large-mesh trawl surveys were conducted from 1991 through 2019 on an annual or biennial basis to provide estimates of abundance and CPUE in the number of crabs per square nautical mile of all male recruit classes and females each year the survey took place (Table 15). CPUE is the most useful indicator of stock health over time (Figure 9). The *Registration Area E Tanner Crab Harvest Strategy* was adopted by BOF in 2017 and used estimates from the PWS trawl survey to potentially open or continue the closure of a Tanner crab fishery in the entire PWS management area.

The PWS trawl survey abundance estimates of legal male Tanner crab declined sharply from 134,890 crab in 1991 to 68,119 crab in 1992, the first 2 years of the survey (Table 16). After rebounding to 121,184 crab in 1993, survey estimates declined again and continued to drop precipitously through 1999 to 3,677 crab. Abundance estimates then began to increase from 6,626 crab in 2001 to 43,836 crab in 2009. In 2011 and 2013, estimates of reached the highest levels seen in the survey, at 186,422 crab in 2011 and 184,993 crab in 2013. Estimates of legal male abundance again decreased over the next 2 years to 102,789 crab in 2015. After increasing to approximately 149,481 crab in 2017, abundance again dropped to 75,103 and 63,454 crab in 2018 and 2019, respectively. All legal male abundance estimates reflect the historical legal size of 5.3 inches.

Recent Surveys 2021 to 2023

Since 2020, the year prior to adoption of the new Tanner crab harvest strategy, trawl surveys have been completed in the new Northeastern, Central, and Southwestern Districts (Figure 8). Mature male abundance estimates are used as the threshold to determine whether each fishery opens; however, abundance and CPUE estimates for current legal-size males (5.0 inches), historic legal size males (5.3 inches), total males, and females are provided. The Central District was surveyed twice, in 2020 and in 2023, with abundance estimates of 166,711 and 146,755 mature males, respectively (Tables 17 and 18). The Southwestern District was surveyed in 2021 with an abundance estimate of 166,983 mature males, and the Northeastern District was surveyed in 2022 with an abundance estimate of 45,792 mature males (Tables 19 and 20). From 2020 to 2023, CPUE estimates were at their lowest level since the late 1990s (Figure 9). Since the adoption of the new harvest strategy in 2021, only the Northeastern District in 2022 has had a regulatory commercial fishery. For detailed information on recent Tanner crab surveys in PWS see Rhea-Fournier et al. (2022, 2023b, and 2024).

PRINCE WILLIAM SOUND AREA KING CRAB

Commercial 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 (5 AA 34.210). A guideline harvest range (GHR) of 0 to 60,000 pounds is in place for golden king crab. Regulations specify size limits for red, golden, and blue king crab; king crab pot requirements; fishing seasons; and a GHR. Registration Area E is a superexclusive registration area for king crab.

Commercial Harvest

Historical Fishery

The first commercial harvest of king crab in PWS occurred in 1957 (Kaydas and Koppen 1957). The fishery quickly developed, and the second highest harvest of 246,965 pounds was landed in 1961 (Table 21). King crab harvest was not reported by species before 1979, although the high harvest of 296,200 pounds in 1973 was reported primarily as blue king crab. Between 1979 and 1984, both blue and red king crab harvest declined, and commercial fisheries for both these species were closed by EO from 1985 through 1995. These closures coincided with the development of the golden king crab fishery from 1982 to 1989 (Rumble et al. 2014).

Harvest of golden king crab was relatively low for the duration of the fishery, which took place from 1979 to 1989, with negligible harvest in the first 3 seasons (Table 21). During the fishery, the average weight of golden king crab decreased from 9.7 pounds in 1983 to 6.6 pounds in 1988. Decreasing harvest and average size of harvested crab caused the BOF to establish a GHR of between 40,000 and 60,000 pounds for the fishery, which was later reduced to the current GHR of 0 to 60,000 pounds. After the GHR was established, the lower end was not achieved leading to the closure of the commercial fishery in 1992 and the following season. Although the fishery did reopen for a month during the 1994 season, participation and harvest were low, and the fishery was closed by EO each season until the BOF closed it by regulation in 1999 (Rumble et al. 2014).

Golden King Crab Test Fishery 2020

ADF&G accepted bids for 15,000 pounds of PWS golden king crab in 2020 from interested processors. The winning bidder was awarded 3 lots of 5,000 pounds each. The processor contracted 1 vessel to prosecute the fishery. There were no mandatory pot locations for the golden king crab test fishery. Other regulations included a 50-pot limit, a season from September 14 to November 30, and a maximum harvest of 2,500 pounds from any single statistical area.

Legal size golden king crab harvest in Area C, Southwestern PWS, was 5,326 pounds (667 crab), or 93% of the total harvest for the test fishery (Figure 10 and Table 22). Area C also saw 43% of effort for the entire fishery at 160 pot lifts. Area A, Northern and Northeastern PWS, had 6% of the total harvest. Area B, Northwestern PWS, had minimal harvest and effort. Legal male golden king crab had an average weight of 8.0 pounds. CPUE for the entire fishery was 1.9 crab per pot. In Area C, CPUE was 4.2 crab per pot; and in areas A and B, CPUE was low at 0.4 and less than 0.1 pounds per pot, respectively. For more information on the 2020 golden king crab test fishery, please see Russ et al. (2020).⁵

Noncommercial Regulations

The noncommercial king crab fishery is restricted to subsistence harvest of golden king crab, which may only be harvested west of long 147°20.00'W. Only male golden king crab with a carapace width of 7.0 inches (178 mm) or greater may be retained, and there is an annual household limit of 3 legal crab. All other regulations in the fishery are identical to the subsistence Tanner crab fishery.

Mandatory permits require the following harvest information to be recorded: date of harvest, statistical area of harvest, number of pots fished, number of legal male golden king crab retained,

⁵ Russ, E. J. Rumble, W. Rhea-Fournier. 2020. Prince William Sound Golden King Crab Test Fishery Memorandum. Alaska Department of Fish and Game. https://www.adfg.alaska.gov/Static/fishing/pdfs/commercial/pws/2020_pws_gkc_memo.pdf.

number of legal male golden king crab released, number of sublegal male golden king crab released, and the number of females released. This harvest information must be recorded each time the crab pots are pulled. The permit must be returned by April 15 after each season.

Noncommercial Harvest

Similar to Tanner crab, prior to 1999 there was no mechanism in place to directly monitor the effort or harvest in noncommercial king crab fisheries in PWS. Unpublished data from the DSF SWHS indicates that some limited sport fish catch of king crab occurred in 1997 and 1998, and limited data developed through household interviews by ADF&G Division of Subsistence staff suggested that subsistence harvests totaled fewer 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 for golden king crab. Harvest in this fishery is monitored with a required permit and administered in conjunction with the subsistence Tanner crab fishery. Harvest and participation have remained low since the fishery opened during the 2008 and 2009 seasons (Table 23). Effort is difficult to separate from the subsistence Tanner crab fishery because harvest for both species is recorded on the same permit, but it can be assumed that a trip with golden king crab harvest is targeting golden king crab only because Tanner crab and golden king crab have distinct habitat preferences that do not overlap. Legal male harvest of golden king crab ranged from 47 in 2019 to 0 in 2013. In recent years, legal male harvest has averaged 33 crab annually compared with 17 crab annually for years prior to 2020.

Research

Both red and golden king crab are infrequently caught in the PWS large-mesh trawl survey. Numbers of red king crab caught in the survey have ranged between 0 to 2 crab in a given year and none have been caught in the survey since 2005, whereas only 3 golden king crab have ever been captured in the history of the survey in 1995, 1997, and 2023 (Goldman et al. 2018; Rhea-Fournier et al. 2024). 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 golden king crab numbers in the Knight Island Passage area of PWS appeared stable, but were at levels not high enough to sustain a commercial harvest (Rumble et al. 2014).⁶

ACKNOWLEDGEMENTS

We want to thank Captain Dave Anderson and his crew on the R/V *Solstice*, Captain Ted Jewell and David Knight on the R/V *Pandalus*, and many that came before them for their efforts in setting and retrieving gear and providing safe at-sea working conditions for all biological staff. We thank the many biological staff, including those before our time, that may have been overlooked in the following list: Robert Berceci, Margaret Spahn, Charles Trowbridge, Heath Kimball, Tom Sigurdsson, Josh Mumm, Jan Rumble, Maria Wessel, Mike Byerly, Chris Russ, Elisa Russ, and Wyatt Rhea-Fournier. We also thank the following fisheries staff that conducted biological sampling and vessel inspections during the 2018 and 2019 Commissioner's permit Tanner crab fisheries: Karen Swartzbart, Corey Litwiniak, and Neild Buitrago.

⁶ Goldman, K. G., and M. Spahn. Unpublished. Prince William Sound golden king crab abundance and distribution. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau. (Unpublished report drafted in 2014).

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TABLES

Table 1.—Cook Inlet Area Tanner crab harvest strategy, modified in 2020.

District	Abundance estimate ^a	Harvest rate
Southern	<1,000,000	0%
	1,000,000 to 2,000,000	≤15%
	>2,000,000	≤25%
Kamishak and Barren Islands	<4,000,000	0%
	≥4,000,000 to 8,000,000	≤15%
	>8,000,000	≤25%

^a Number of legal-size (≥114 mm) male Tanner crab.

Table 2.—Cook Inlet Area commercial Tanner crab harvest by district, 1968–2023 seasons.

Season	Southern		Kamishak/Barren Islands		Outer/Eastern		Central		Total harvest
	Vessels	Harvest	Vessels	Harvest	Vessels	Harvest	Vessels	Harvest	
1969	ND	1,388,282	ND	12,398	ND	816	ND	0	1,401,496
1970	ND	1,147,154	ND	71,196	ND	104,191	ND	0	1,322,541
1971	ND	1,046,803	ND	541,212	ND	3,000	ND	0	1,591,015
1972	ND	2,462,956	ND	974,962	ND	804,765	ND	0	4,242,683
1973	ND	2,935,662	ND	3,361,023	ND	1,266,023	ND	0	7,562,708
1974	ND	1,387,535	ND	4,689,251	ND	1,891,021	ND	0	7,967,807
1975	ND	967,762	ND	2,150,462	ND	656,660	ND	0	3,774,884
1976	ND	1,339,245	17	3,281,084	ND	850,964	ND	0	5,471,293
1977	35	2,009,633	24	1,765,926	ND	824,520	ND	0	4,600,079
1978	55	2,806,568	28	2,077,092	ND	502,049	ND	0	5,385,709
1979	75	2,323,420	27	2,713,339	ND	694,728	ND	0	5,731,487
1980	68	1,134,940	24	3,338,623	ND	595,645	ND	0	5,069,208
1981	46	1,047,630	20	1,757,331	ND	463,201	ND	0	3,268,162
1982	41	548,529	18	1,286,332	9	524,897	ND	0	2,359,758
1983	48	584,908	20	1,693,794	20	682,919	ND	0	2,961,621
1984	45	996,763	17	1,373,674	14	443,384	ND	0	2,813,821
1985	83	1,229,298	19	1,535,547	7	259,083	ND	0	3,023,928
1986	103	1,164,261	24	1,288,711	5	177,041	ND	0	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				
1990	Closed		7	510,034		Closed			510,034
1991	68	271,379	8	266,106		Closed			537,485
1992	110	354,868		Closed	16	53,049	Closed		407,917
1993	136	534,003			Closed				534,003
1994	110	284,676			Closed				284,676
1995–2023					Closed				
Average									
1968–1988	68	1,427,175	22	1,772,024	13	558,253	3	808	3,758,259
1989–1994	106	361,232	8	388,070		53,049			454,823

Note: Calendar year season established in 1987.

Note: ND = no data.

Table 3.—Male Tanner crab abundance estimates from Southern District (Kachemak Bay), 1990–2019.

Year	Legal size (mm)	Sublegal		Legal		Total	
		Abundance	± 95% CI	Abundance	± 95% CI	Abundance	± 95% CI
1990	140	2,326,212	940,070	388,422	403,617	2,714,634	1,145,882
1991	140	2,222,493	817,710	499,815	226,608	2,722,308	879,693
1992	140	1,719,710	621,618	1,055,855	734,287	2,775,565	1,097,301
1993	140	1,129,034	371,852	518,498	254,074	1,647,532	430,628
1994	140	813,905	437,350	193,199	106,304	1,007,104	451,486
1995	140	1,817,979	1,099,207	278,365	296,245	2,096,344	1,299,465
1996	140	1,355,042	1,144,620	101,322	69,836	1,456,364	1,174,485
1997	140	909,048	301,610	143,111	80,729	1,052,159	323,702
1998	140	565,279	261,034	205,808	190,004	771,087	373,615
1999	140	2,970,078	2,734,037	104,282	91,894	3,074,360	2,743,906
2000	140	1,738,494	768,749	82,374	72,974	1,820,868	754,144
2001	140	2,987,273	1,985,095	96,951	61,266	3,084,224	1,995,590
2002	140	4,013,716	2,093,524	88,010	69,895	4,101,726	2,098,934
2003	140	3,416,197	1,726,567	48,717	52,980	3,464,914	1,726,501
2004	140	3,512,354	1,821,768	110,930	75,834	3,623,284	1,875,763
2005	140	1,764,003	1,074,790	45,676	41,786	1,809,679	1,083,062
2006	140	1,642,729	1,761,725	214,520	278,492	1,857,249	1,827,892
2007	140	981,410	1,034,755	162,504	238,989	1,143,914	1,252,423
2008	140	1,160,697	726,507	103,535	130,587	1,264,232	784,561
2009	140	3,051,196	2,228,033	143,882	141,993	3,195,079	2,338,396
2010	140			No survey			
2011	140	4,405,350	1,976,150	42,660	40,810	4,448,010	1,983,150
2012	140	4,810,302	1,792,101	21,408	20,993	4,831,710	1,795,663
2013	140	3,141,622	970,426	38,077	34,026	3,179,700	975,013
2014	140			No survey			
2015	140			No survey			
2016	140			No survey			
2017	114	1,010,978	699,983	124,965	132,255	1,135,943	806,870
2018	114	7,770,221	13,364,748	222,852	197,861	7,993,072	13,363,159
2019	114	832,180	421,144	273,511	170,281	1,105,691	518,574
Average							
1990–2016		2,280,614	1,247,361	203,823	161,488	2,484,437	1,322,228
2017–2019		3,204,460	4,828,625	207,109	166,799	3,411,569	4,896,201

Table 4.—Male Tanner crab abundance estimates from bottom trawl surveys in the Kamishak Bay and Barren Island Districts, 1990–2012.

Year	Tows	Sublegal male abundance	Legal males		Total	± 95% CI
			Abundance	± 95% CI		
1990	24	7,528,790	878,119	908,963	8,406,909	5,347,618
1991	17	3,688,781	633,072	861,578	4,321,853	3,683,036
1992	25	3,264,226	255,690	261,499	3,519,915	2,627,080
1993	15	3,670,987	217,974	297,377	3,888,960	2,786,986
1994	17	7,377,904	313,137	248,129	7,691,041	6,782,889
1995	24	4,936,672	300,676	191,956	5,237,347	3,281,458
1996	18	6,089,525	653,725	854,499	6,743,250	4,360,052
1997	18	4,086,815	634,540	550,799	4,721,354	2,650,767
1998	22	1,044,880	155,707	130,260	1,200,587	758,395
1999	19	3,820,040	104,686	98,278	3,924,726	5,203,674
2000	24	1,037,999	18,906	18,248	1,056,905	601,950
2001	24	5,225,423	48,739	32,206	5,274,162	5,714,424
2002	19	15,696,414	36,244	41,245	15,732,658	17,351,538
2003	17	4,476,842	61,798	82,649	4,538,640	4,014,458
2004	22	8,169,745	15,991	18,263	8,185,736	4,298,470
2005	21	11,854,973	60,810	59,265	11,915,783	11,300,835
2006	27	8,920,999	508,114	358,459	9,429,112	4,346,765
2007	24	1,286,855	54,864	53,871	1,341,717	701,198
2008			No survey			
2009			No survey			
2010	23	1,492,844	321,871	489,159	1,819,863	2,625,747
2011			No survey			
2012	23	2,091,708	0	0	2,091,708	2,022,469
Average						
1990–2009	21	5,676,548	275,155	281,530	5,951,703	4,767,311
2010–2012	23	1,792,276	160,936	244,580	1,955,786	2,324,108

Table 5.—Commercial king crab harvest (pounds) in the Cook Inlet Management Area, 1960–2023.

Year	District			Total
	Southern	Kamishak Bay and Barren Islands	Outer	
1960	2,699,680	986,551	118,067	3,804,298
1961	1,619,642	3,642,500	368,909	5,631,051
1962	2,769,343	5,509,708	343,505	8,622,556
1963	1,960,426	4,915,303	59,352	6,935,081
1964	1,892,479	1,850,572	963	3,744,014
1965	1,948,012	1,684,346	14,491	3,646,849
1966	1,347,904	1,386,008	89,510	2,823,422
1967	1,117,394	1,883,605	239,518	3,240,517
1968	750,906	1,711,296	87,302	2,549,504
1969	1,464,721	1,688,803	73,644	3,227,168
1970	1,540,018	2,115,991	9,468	3,665,477
1971	1,992,224	2,868,315	12,657	4,873,196
1972	1,391,024	2,756,023	1,966	4,149,013
1973	1,971,841	2,236,131	5,613	4,213,585
1974	1,816,512	2,965,310	2,035	4,783,857
1975	1,674,872	1,832,484	45,293	3,552,649
1976	1,035,316	3,103,895	16,384	4,155,595
1977	584,090	1,099,279	1,350	1,684,719
1978	664,388	480,261	1,753	1,146,402
1979	853,584	489,365	4,871	1,347,820
1980	508,670	1,635,922	8,022	2,152,614
1981	183,899	1,371,821	4,142	1,559,862
1982	Closed	807,079	15,280	822,359
1983	Closed	188,027	4,504	192,531
1984–2023			Closed	
Average				
1960–1984	1,444,861	2,050,358	63,692	3,438,506

Table 6.–Male and female king crab caught in the Kachemak and Kamishak Bay trawl surveys, 1990–2019.

Year	Kachemak Bay			Kamishak Bay		
	No. of tows	Females	Males	No. of tows	Females	Males
1990	14	2	4	24	4	6
1991	15	8	102	17	0	7
1992	15	81	51	25	3	17
1993	16	21	15	15	0	2
1994	16	10	11	17	0	3
1995	16	1	3	24	4	6
1996	16	2	5	18	9	31
1997	16	0	1	18	67	57
1998	16	0	0	22	5	14
1999	16	0	2	19	0	2
2000	16	0	2	24	9	131
2001	16	0	4	24	53	79
2002	14	0	0	19	1	5
2003	16	0	2	17	0	3
2004	16	0	3	22	2	6
2005	15	0	0	21	1	0
2006	17	0	0	27	10	8
2007	16	0	0	24	5	6
2008	16	0	0		No survey	
2009	15	0	0		No survey	
2010		No survey		23	1	0
2011	37	0	0		No survey	
2012	37	0	0	23	0	2
2013	37	0	0		No survey	
2014–2016		No survey			No survey	
2017	38	0	0		No survey	
2018	39	0	0		No survey	
2019	38	0	0		No survey	
Average						
1990–2008	16	7	11	21	10	21
2009–2019	34	0	0	23	1	1

Table 7.—Prince William Sound Area Tanner crab harvest strategy, established in 2021.

District	Abundance estimate ^a	Harvest rate (%)	GHL ^b
Northwestern	217,800 to <326,700	10	21,800 to 32,700
	326,700 to <435,700	15	49,000 to 65,400
	≥435,700	20	87,100+
Central	246,700 to <370,100	10	24,700 to 37,000
	370,100 to <493,500	15	55,500 to 74,000
	≥493,500	20	98,700+
Southeastern	327,000 to <490,400	10	32,700 to 49,000
	490,400 to <653,900	15	73,600 to 98,100
	≥653,900	20	130,800+

^a Number of mature-size (≥113 mm) male Tanner crab.

^b Number of legal-size (≥127 mm) male Tanner crab

Table 8.—Prince William Sound areawide commercial Tanner crab harvest, 1968–1975.

Season	Harvest (lb)		
	Inside	Outside	Total
1968	—	—	1,235,613
1969	—	—	1,284,597
1970	—	—	4,159
1971	—	—	7,788,498
1972	—	—	13,927,868
1973	1,658,000	8,500,000	10,158,000
1974	1,187,000	2,667,000	3,854,000
1975	3,322,482	3,810,262	7,132,744
Average			
1968–1975	2,055,827	4,992,421	5,673,185

Note: En dashes = no data.

Table 9.—Commercial Tanner crab harvest in the Prince William Sound Area, 1977–2021.

Year	Vessels	Landings	Harvest (pounds)				Total harvest (pounds)	Average weight (pounds)	Number of crab
			Northern	Hinchinbrook	Western	Eastern			
1977	23	316	782,048	766,650	701,725	70,925	2,321,348	ND	ND
1978	38	591	994,721	1,161,831	2,079,549	570,573	4,806,674	2.2	2,184,852
1979	51	783	649,977	708,562	2,248,545	3,443,471	7,050,555	2.1	3,357,408
1980	49	561	140,228	332,583	1,462,059	4,057,847	5,992,717	2.0	2,996,359
1981	30	304	152,196	812,352	1,561,207	250,076	2,775,831	2.1	1,321,824
1982	29	216	351,139	722,834	1,503,253	288,425	2,865,651	ND	ND
1983	40	304	471,422	31,447	921,663	45,308	1,469,840	2.1	699,924
1984	0	0	Closed	Closed	Closed	0	0	ND	0
1985	0	0	Closed	Closed	0	0	0	ND	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
1989–2015					Closed				
2016 ^a	1	1	NA	NA	NA	NA	3,946	ND	1,973
2017					Closed				
2018 ^b	14	38	NA	NA	NA	NA	83,338	1.9	47,397
2019 ^b	14	53	NA	NA	NA	NA	124,707	1.6	74,405
2020 ^{a,b}	27	65	NA	NA	NA	NA	132,630	1.7	77,474
2021 ^{a,b}	12	35	NA	NA	NA	NA	72,261	1.7	42,171
Average									
1976–1989	27	268	388,821	522,106	1,002,430	727,268	2,405,268	ND	1,414,129
2016–2021	17	48	ND	ND	ND	ND	83,376	2	48,684

Note: ND = no data. NA= Not applicable.

Note: New districts and minimum legal size established in 1976, calendar year season established in 1984, Tanner crab harvest strategy and Commissioner's permit fishery established in 2017.

^a Test fishery.

^b Commissioner's permit fishery.

Table 10.—Commercial Tanner crab harvest in the Prince William Sound Area, 2022–2023.

Year	Vessels	Landings	Harvest (pounds)					Total harvest (pounds)	Average weight (pounds)	Number of crab
			Northwestern	Northeastern	Central	Southwestern	Southeastern			
2022 ^a	17	43	11,575	24,360	1,066	5,273	0	42,274	ND	23,566
2023						Closed				

^a Both a test fishery and a commercial fishery took place in 2022.

Table 11.—Prince William Sound Area Commissioner’s Permit Tanner crab fishery performance, effort, and management measures, 2018–2021.

Year	Fishery performance			Effort				Percent (%) participation	Management	
	Harvest (No. of crab)	Harvest (lb)	CPUE (crab per pot)	Pot lifts	Vessels	Permits	Participants		Pot limit	Start date
2018	47,394	83,338	12.7	3,736	14	18	15	83	50	1-Mar
2019	74,407	124,707	15.4	4,841	14	25	14	56	25	1-Mar
2020	64,557	108,859	11.0	5,885	22	26	22	85	25	2-Mar
2021	33,803	56,351	11.6	2,923	10	13	10	77	25	2-Mar
Average										
2018–2021	55,040	93,314	12.7	4,346	15	21	15	75	31	

Table 12.—Prince William Sound Area Commissioner's permit Tanner crab fishery harvest and effort.

Fishery performance				Effort			Management		
	Harvest	Harvest	CPUE						
Year	(No. of crab)	(lb)	(crab per pot)	Pot lifts	Lots	Participants	Pot limit	GHL (lb)	Start date
2016	1,982	3,946	9.6	206	2	1	30	No GHL	20-Oct
2020	12,917	23,771	16.2	796	6	5	25	30,000	22-Feb
2021	8,368	15,910	15.2	552	5	2	25	25,000	22-Feb
2022	9,785	17,914	10.4	680	6	3	25	30,000	22-Feb
Average									
2016–2022	8,263	15,385	13.8	559	5	3	26	28,333	

Note: GHL = guideline harvest level.

Table 13.—Subsistence Tanner crab harvest and effort in the Prince William Sound Management Area, 2009–2023.

Year	Effort					Harvest (count)					
	Permits issued	Permits not fished	Permits fished	Participation (%)	Total trips	Legal males kept	Total legal males released	Total legal crab caught	Total sublegal crab released	Total female crab released	Average harvest per permit fished
2009	115	75	40	35	82	44	5	49	127	18	1
2010	93	60	33	35	74	85	16	101	265	55	3
2011	73	44	29	40	61	78	11	89	223	18	3
2012	79	45	34	43	91	213	41	254	465	77	6
2013	151	64	87	58	368	2,067	1,447	3,514	4,892	750	24
2014	173	93	80	46	186	629	274	903	1,515	185	8
2015	211	120	91	43	221	793	1,249	2,042	1,679	204	9
2016	206	113	93	45	225	816	2,370	3,186	1,582	219	9
2017	183	92	91	50	192	548	1,259	1,807	1,050	191	6
2018	179	109	70	39	196	1,073	344	1,417	740	100	15
2019	192	96	96	50	202	624	252	876	713	219	7
2020	251	168	83	33	115	281	11	292	139	22	3
2021	358	232	126	35	134	435	81	516	301	90	3
2022	271	180	91	34	125	370	88	458	312	126	4
2023	240	155	85	35	177	371	25	396	461	85	4
Average											
2009–2020	159	90	69	43	168	604	607	1,211	1,116	172	8
2021–2023	290	189	101	35	145	392	65	457	358	100	4

Table 14.—Tanner crab catch by pot surveys of traditional stations in the Northern and Hinchinbrook Districts, Prince William Sound Area, 1977–1991.

Year	Number of pots	Male Tanner crab	Female Tanner crab	Total Tanner crab (both sexes)	Mean Tanner crab per pot
1977	51	2,773	1,972	4,745	93.0
1978	146	6,376	1,099	7,475	51.2
1979	237	16,831	3,210	20,041	84.6
1980	240	11,012	2,092	13,104	54.6
1981	216	8,114	1,064	9,178	42.5
1982	224	4,734	849	5,583	24.9
1983	180	3,225	573	3,798	21.1
1984	178	3,440	610	4,050	22.8
1985	163	2,191	212	2,403	14.7
1986	168	2,473	570	3,043	18.1
1987	138	2,336	1,010	3,346	24.2
1988	119	1,195	750	1,945	16.3
1989	114	1,640	459	2,099	18.4
1990	109	1,336	255	1,591	14.6
1991	81	724	331	1,055	13.0
Average					
1977–1991	158	4,560	1,004	5,564	34.3

Table 15.—Chronology of the large-mesh bottom trawl survey in the Prince William Sound Area.

Year	Survey area	Dates	Stations surveyed
1990	Historical	8/21–8/24	17
1991	Historical	8/20–8/30	43
1992	Historical	8/3–8/13	42
1993	Historical	7/22–8/2	48
1994	Historical	7/19–7/25	45
1995	Historical	7/29–8/3	33
1996	No survey	—	—
1997	Historical	8/16–8/26	53
1998	No survey	—	—
1999	Historical	6/28–7/12	66
2000	No survey	—	—
2001	Historical	7/17–7/28	51
2002	No survey	—	—
2003	Historical	8/10–8/20	44
2004	No survey	—	—
2005	Historical	7/11–7/24	57
2006	No survey	—	—
2007	Historical	7/22–8/1	46
2008	No survey	—	—
2009	Historical	7/9–7/19	54
2010	No survey	—	—
2011	Historical	7/5–7/14	49
2012	No survey	—	—
2013	Historical	7/5–7/14	48
2014	Historical	6/3–6/12	46
2015	Historical	6/20–6/29	48
2016	No survey	—	—
2017	Historical	6/9–6/16	48
2018	Historical	6/13–8/30	44
2019	Historical	6/15–6/22	49
2020	Central District	6/11–6/19	42
2021	Southwestern District	6/5–6/17	57
2022	Northeastern District	8/29–9/5	43
2023	Central District and historical	6/6–6/18	66

Note: Historical survey area is the survey grid used for 1990 to 2019 surveys (see Figure 7). En dashes = no data because no survey conducted.

Table 16.–Male (by recruit category) and female Tanner crab estimates from the Prince William Sound trawl survey in Northern and Hinchinbrook Districts, 1991–2019.

Year	Pre-recruits				Historical legal males		Total males	
	Pre-4 (≤73)	Pre-3 (73–92)	Pre-2 (93–112)	Pre-1 (113–134)	Abundance (≥135)	± 95% CI	Abundance	± 95% CI
1991	832,376	697,768	326,658	275,497	134,820	106,043	2,267,119	1,420,647
1992	601,934	319,988	487,459	318,010	68,119	39,590	1,795,511	606,398
1993	470,946	118,931	226,671	266,073	121,184	39,588	1,203,805	433,640
1994	669,317	79,685	123,373	182,595	55,544	23,511	1,110,513	484,107
1995	294,093	41,317	71,749	100,786	24,820	15,535	532,765	171,825
1997	209,713	55,957	51,115	34,283	11,336	11,048	362,403	158,018
1999	116,969	7,717	27,531	16,792	3,677	3,574	172,686	64,516
2001	1,364,121	407,171	223,047	59,143	6,626	6,655	2,060,109	784,610
2003	495,341	113,424	195,928	94,758	15,882	17,969	915,333	360,036
2005	279,702	80,563	142,569	117,450	28,940	25,743	649,224	291,641
2007	747,359	201,817	219,781	225,888	17,749	14,290	1,412,595	423,048
2009	1,009,676	509,029	256,459	337,161	43,836	30,505	2,156,161	883,720
2011	984,555	403,755	537,706	574,852	186,422	87,727	2,687,291	1,732,997
2013	5,986,794	1,024,721	429,215	322,264	184,993	74,780	7,947,986	2,332,125
2014	817,801	634,475	421,009	329,437	134,929	80,188	2,337,652	647,317
2015	611,044	466,331	609,544	302,250	102,789	46,797	2,091,958	882,128
2017	219,496	75,278	253,599	444,370	149,481	70,117	1,142,224	290,506
2018	347,925	114,176	209,609	227,648	75,103	28,106	974,462	322,243
2019	141,230	51,621	154,868	212,511	63,454	25,431	623,684	182,780
Average								
1991–2016	968,234	322,666	271,863	222,327	71,354	38,971	1,856,444	729,798
2017–2019	236,217	80,358	206,025	294,843	96,013	41,218	913,457	265,176

Table 17.—CPUE, coefficient of variation (CV), standard error (SE), and abundance estimates with associated confidence intervals (CI) of Tanner crab for Central District in 2020.

Group	Catch (<i>n</i>)	CPUE	CV	SE	Abundance	Lower 90% CI	Upper 90% CI
Total males	382	1,591.2	0.15	237.7	459,934	348,863	574,446
Historically legal males	7	28.3	0.39	11.2	8,187	3,483	14,029
Legal males	30	124.3	0.23	29.2	35,914	23,019	50,838
Mature males	139	576.8	0.22	128.0	166,711	110,042	231,213
Immature males	243	1,014.5	0.17	171.9	293,223	214,474	377,317
Total females	465	1,988.1	0.19	377.5	574,636	403,841	765,036
Mature females	345	1,488.9	0.24	355.6	430,357	271,897	612,781
Immature females	120	499.2	0.27	134.1	144,279	87,013	212,857

Note: Historical legal-size males are crab ≥ 135 mm carapace width. Legal-size males are crab ≥ 127 mm carapace width. Mature males are crab ≥ 113 mm carapace width. Immature males are crab < 113 mm carapace width. CPUE is number of crab per square nautical mile. “*n*” = number of crab.

Table 18.—CPUE, coefficient of variation (CV), standard error (SE), and abundance estimates with associated confidence intervals (CI) of Tanner crab for Northeastern District in 2020.

Group	Catch (<i>n</i>)	FO (%)	CPUE	CV	SE	Abundance	Lower 90% CI	Upper 90% CI
Total males	2,584	89.5	10,777.9	0.22	2328.5	3,137,121	2,174,994	4,305,421
Historically legal males	5	7.9	21.0	0.64	13.5	6,109	1,158	13,357
Legal-size males	26	26.3	101.8	0.46	46.7	29,627	10,492	54,490
Mature males	126	47.4	504.2	0.38	193.8	146,755	68,876	243,579
Immature males	2,458	89.5	10,273.7	0.23	2310.7	2,990,366	2,009,847	4,157,597
Total females	2,209	92.1	9,168.1	0.19	1698.2	2,668,571	1,947,248	3,533,716
Mature females	705	76.3	2,872.6	0.44	1266.2	836,115	348,578	1,518,663
Immature females	1,504	92.1	6,295.6	0.18	1116.4	1,832,455	1,311,458	2,381,034

Note: Historical legal-size males are crab ≥ 135 mm carapace width. Legal-size males are crab ≥ 127 mm carapace width. Mature males are crab ≥ 113 mm carapace width. Immature males are crab < 113 mm carapace width. CPUE is number of crab per square nautical mile. “*n*” = number of crab.

Table 19.—CPUE, coefficient of variation (CV), standard error (SE), and abundance estimates with associated confidence intervals (CI) of Tanner crab for Southwestern in 2021.

Group	Catch (<i>n</i>)	CPUE	CV	SE	Abundance	Lower 90% CI	Upper 90% CI
Total males	986	3,019.50	0.25	763.0	1,622,285	1,021,772	2,368,560
Historically legal males	4	11.6	0.60	7.0	6,242	1,521	12,606
Legal-size males	26	75	0.27	20.1	40,289	23,499	58,842
Mature males	106	310.8	0.38	119.0	166,983	82,468	287,594
Immature males	880	2,708.70	0.28	752.9	1,455,302	861,733	2,182,324
Total females	1077	3,268.30	0.24	775.1	1,755,997	1,151,405	2,511,420
Mature females	173	505.5	0.28	142.7	271,598	160,080	409,362
Immature females	904	2,762.80	0.27	747.1	1,484,399	907,352	2,237,355

Note: Historical legal-size males are crab ≥ 135 mm carapace width. Legal-size males are crab ≥ 127 mm carapace width. Mature males are crab ≥ 113 mm carapace width. Immature males are crab < 113 mm carapace width. CPUE is number of crab per square nautical mile. “*n*” = number of crab.

Table 20.—Prince William Sound Area bottom trawl survey catch statistics and abundance estimates with associated CIs of Tanner crab in the Northeastern District in 2022.

Group	Catch (<i>n</i>)	FO (%)	CPUE	CV	SE	Abundance	Lower 90% CI	Upper 90% CI
Total males	462	93.0	1,615.3	0.22	349.3	515,042	346,917	708,734
Historical legal-size males	4	9.3	12.7	0.47	6.0	4,048	1,021	7,113
Legal-size males	8	18.6	25.9	0.32	8.3	8,259	4,114	12,595
Mature males	41	48.8	143.6	0.24	34.3	45,792	29,102	65,714
Immature males	421	88.4	1,471.7	0.22	328.3	469,250	308,986	644,672
Total females	500	95.3	1,713.2	0.18	313.8	546,279	396,774	725,218
Mature females	108	46.5	363.3	0.29	104.0	115,827	63,192	173,285
Immature females	392	90.7	1,350.0	0.22	289.4	430,452	279,693	584,512

Note: Historical legal-size males are crab ≥ 135 mm carapace width. Legal-size males are crab ≥ 127 mm carapace width. Mature males are crab ≥ 113 mm carapace width. Immature males are crab < 113 mm carapace width. CPUE is number of crab per square nautical mile. “*n*” = number of crab.

Table 21.—Prince William Sound Area commercial king crab harvest, 1960–2023.

Year	Vessels	Landings	King crab harvest (lb)				CPUE golden king	Average weight golden king
			Red	Blue	Golden	Total		
1961	ND	ND	ND	ND	ND	246,965	ND	ND
1962	ND	ND	ND	ND	ND	236,081	ND	ND
1963	ND	ND	ND	ND	ND	31,478	ND	ND
1964	ND	ND	ND	ND	ND	43,569	ND	ND
1965	ND	ND	ND	ND	ND	14,028	ND	ND
1966	ND	ND	ND	ND	ND	5,500	ND	ND
1967	ND	ND	ND	ND	ND	11,000	ND	ND
1968	ND	ND	ND	ND	ND	41,800	ND	ND
1969	ND	ND	ND	ND	ND	200,000	ND	ND
1970	ND	ND	ND	ND	ND	48,100	ND	ND
1971	ND	ND	ND	ND	ND	94,300	ND	ND
1972	ND	ND	ND	ND	ND	144,200	ND	ND
1973	ND	ND	ND	ND	ND	296,200	ND	ND
1974	ND	ND	ND	ND	ND	207,916	ND	ND
1975	ND	ND	ND	ND	ND	85,379	ND	ND
1976	ND	ND	ND	ND	ND	53,423	ND	ND
1977	ND	ND	ND	ND	ND	17,087	ND	ND
1978	ND	ND	ND	ND	ND	86,595	ND	ND
1979	ND	ND	ND	ND	ND	114,000	ND	ND
1980	18	109	52,026	13,662	0	65,688	ND	ND
1981	14	65	32,433	7,282	20	39,735	ND	ND
1982	11	43	25,358	5,634	0	30,992	ND	ND
1983	31	187	30,809	10,433	147,016	188,258	ND	9.7
1984	18	69	16,467	5,324	50,535	73,226	ND	8.8
1985	4	14	Closed		40,232	40,467	1	ND
1986	4	11	Closed		51,800	51,800	1	5.8
1987	4	11	Closed		65,674	65,837	3	6.1
1988	4	15	Closed		68,270	68,270	2	6.6
1989	5	14	Closed		48,442	48,442	3	6.6
1990					Closed			
1991	a	a	Closed		a	a	0.8	6.4
1992	a	a	Closed		a	a	0.6	6.5
1993					Closed			
1994					Closed			
1995	a	a	Closed		a	a	1.4	7.9
1996–2019					Closed			
2020 ^b	a	a	Closed		a	a	1.9	8.0
2021–2023					Closed			
Average								
1960–1979	ND	ND	ND	ND	ND	104,085	ND	ND
1980–1989	11	54	31,419	8,467	47,199	67,272	2	7.3

Note: Catch not reported by species prior to 1980. ND indicates no data.

^a Data confidential.

^b Test fishery.

Table 22.—Prince William Sound golden king crab test fishery performance, effort, and management measures, 2020.

Year	Fishery performance			Effort			Management		
	Harvest (No. of crab)	Harvest (lb)	CPUE	Pot lifts	Lots	Participants	Pot limit	GHL (lb)	Start date
2020	716	5713	1.9	372	1	1	50	15,000	14-Sep

Note: GHL = guideline harvest level.

Table 23.—Prince William Sound Area subsistence golden king crab fishery annual harvest, effort, and catch, 2009–2023.

Year	Number of legal crab kept	Number of legal crab released	Total legal crab caught	Number of sublegal crab released	Number of female crab released	Number of trips
2009	5	8	13	9	12	13
2010	3	7	10	21	22	9
2011	12	0	12	5	8	12
2012	10	8	18	23	39	9
2013	0	0	0	0	0	0
2014	27	2	29	6	97	20
2015	35	22	57	15	179	24
2016	16	7	23	9	39	16
2017	5	0	5	4	7	15
2018	6	4	10	12	27	6
2019	47	134	181	230	605	42
2020	38	12	50	12	20	75
2021	19	8	27	140	134	101
2022	40	102	142	140	134	92
2023	40	102	142	291	324	93
Average						
2009–2020	17	17	34	29	88	20
2021–2023	33	71	104	190	197	95

FIGURES

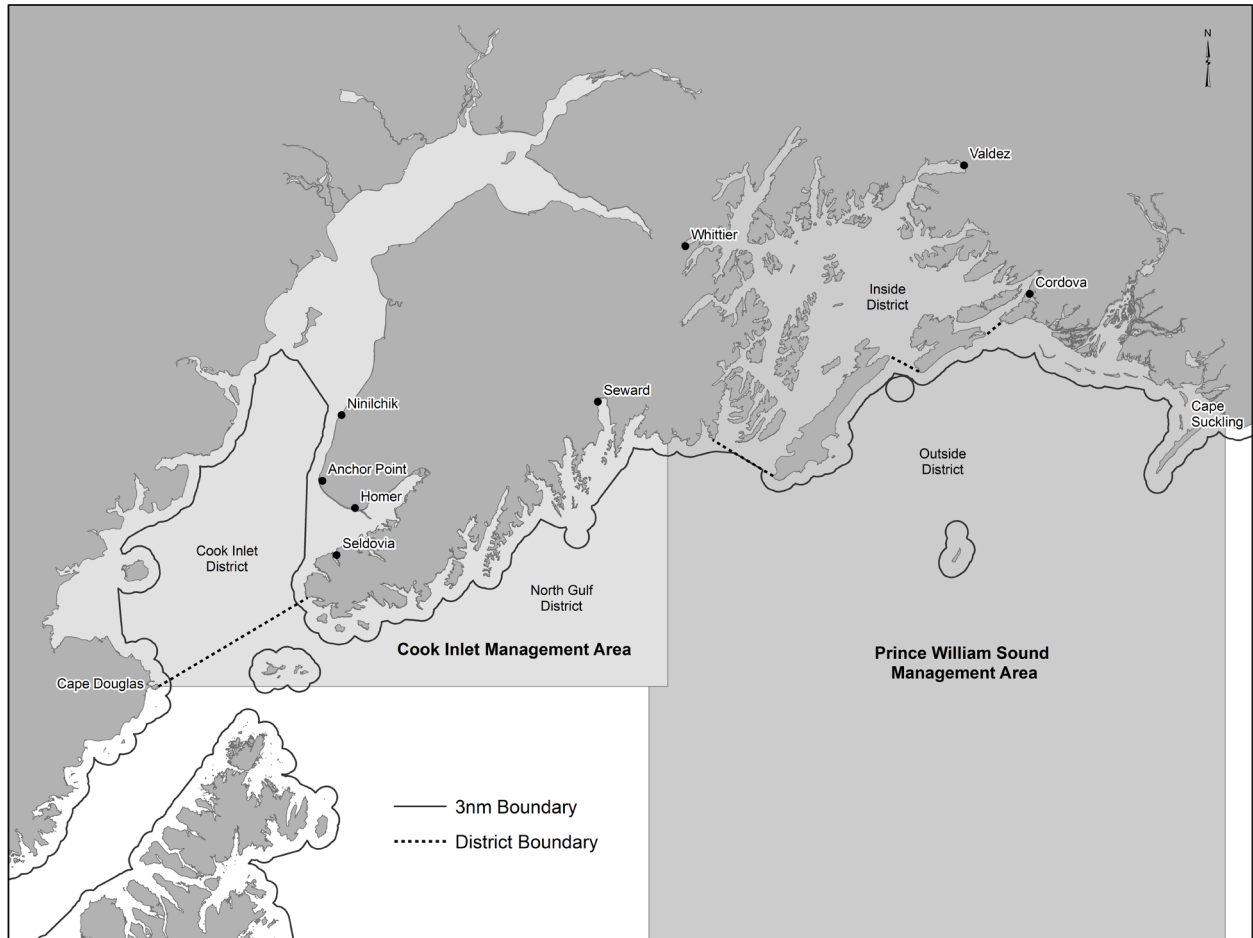


Figure 1.—Cook Inlet Area, Registration Area H, and Prince William Sound Area, Registration Area E.

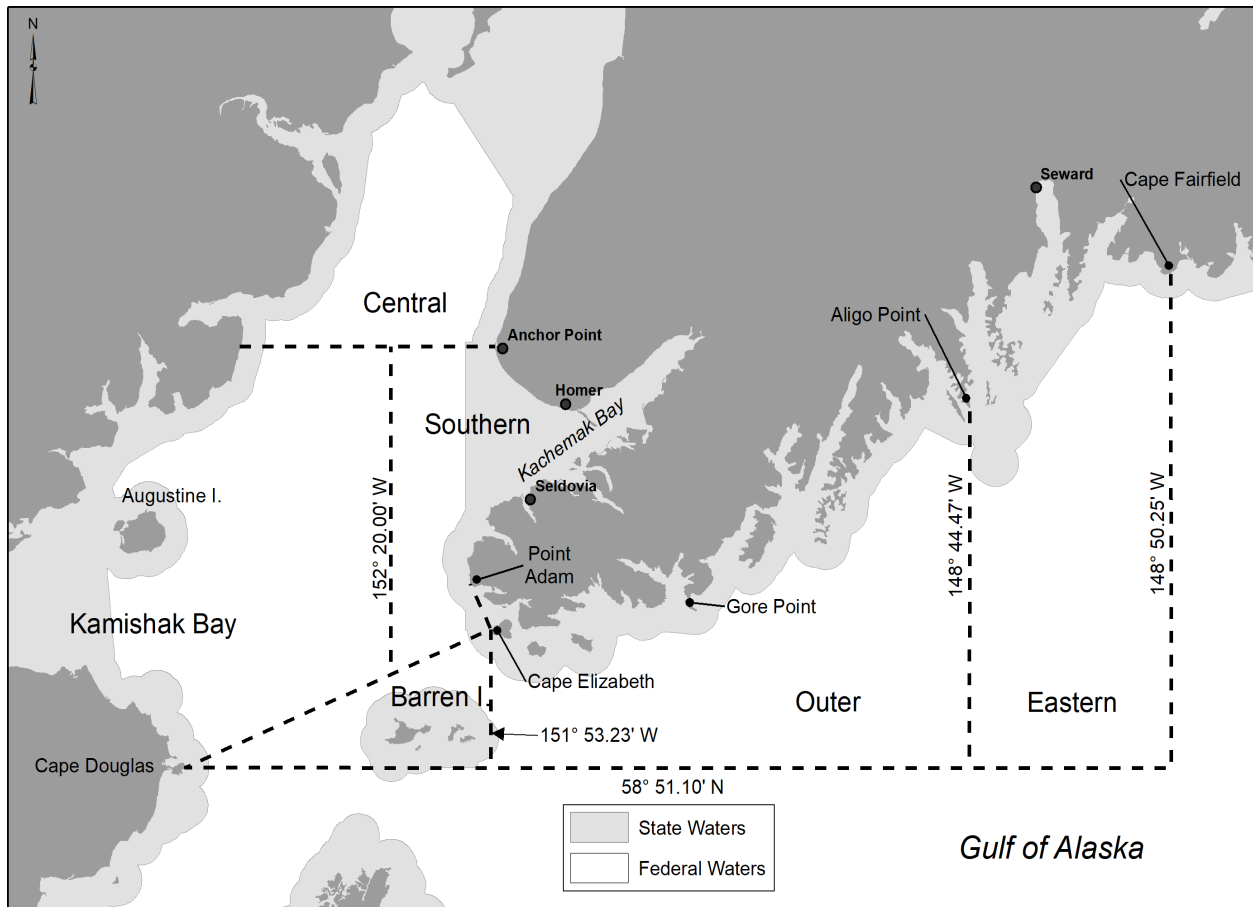


Figure 2.—Cook Inlet Area, Registration Area H, commercial crab fishing districts.

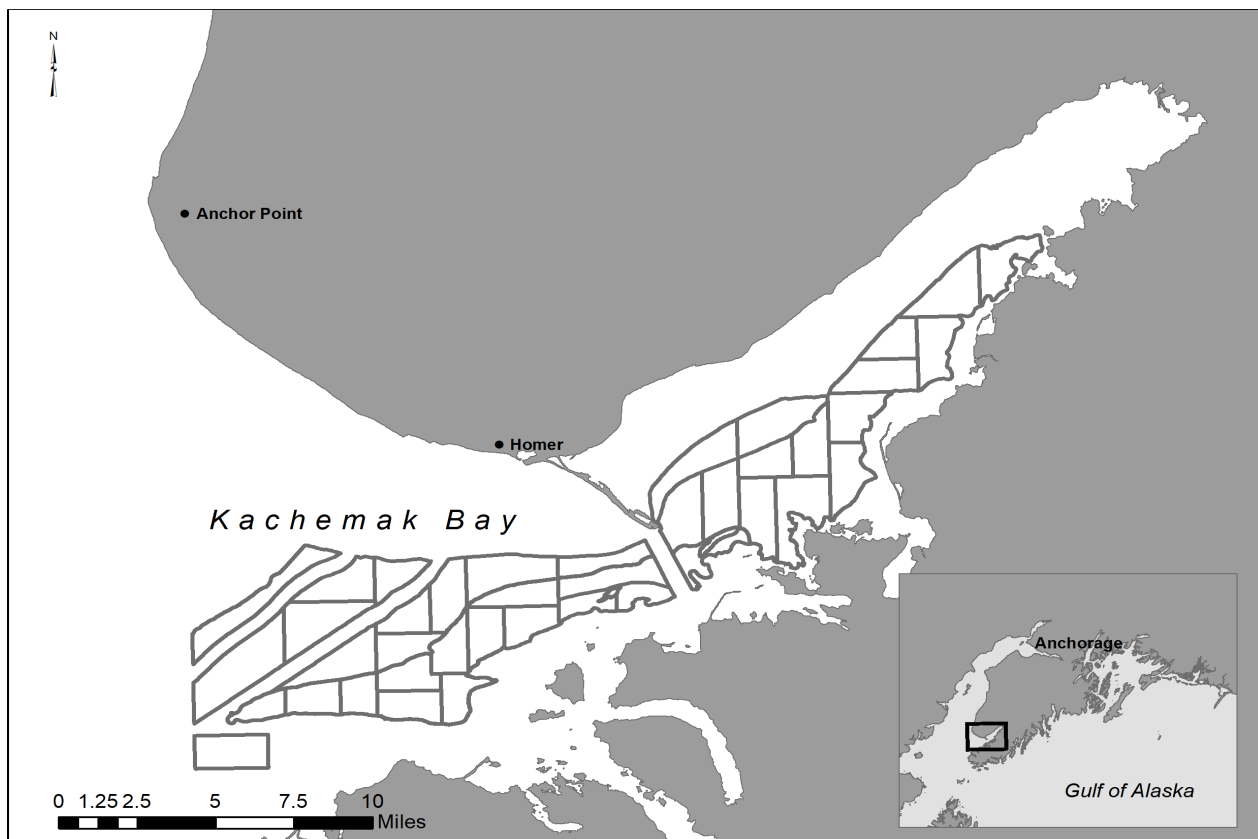


Figure 3.—Kachemak Bay large-mesh trawl survey stations.

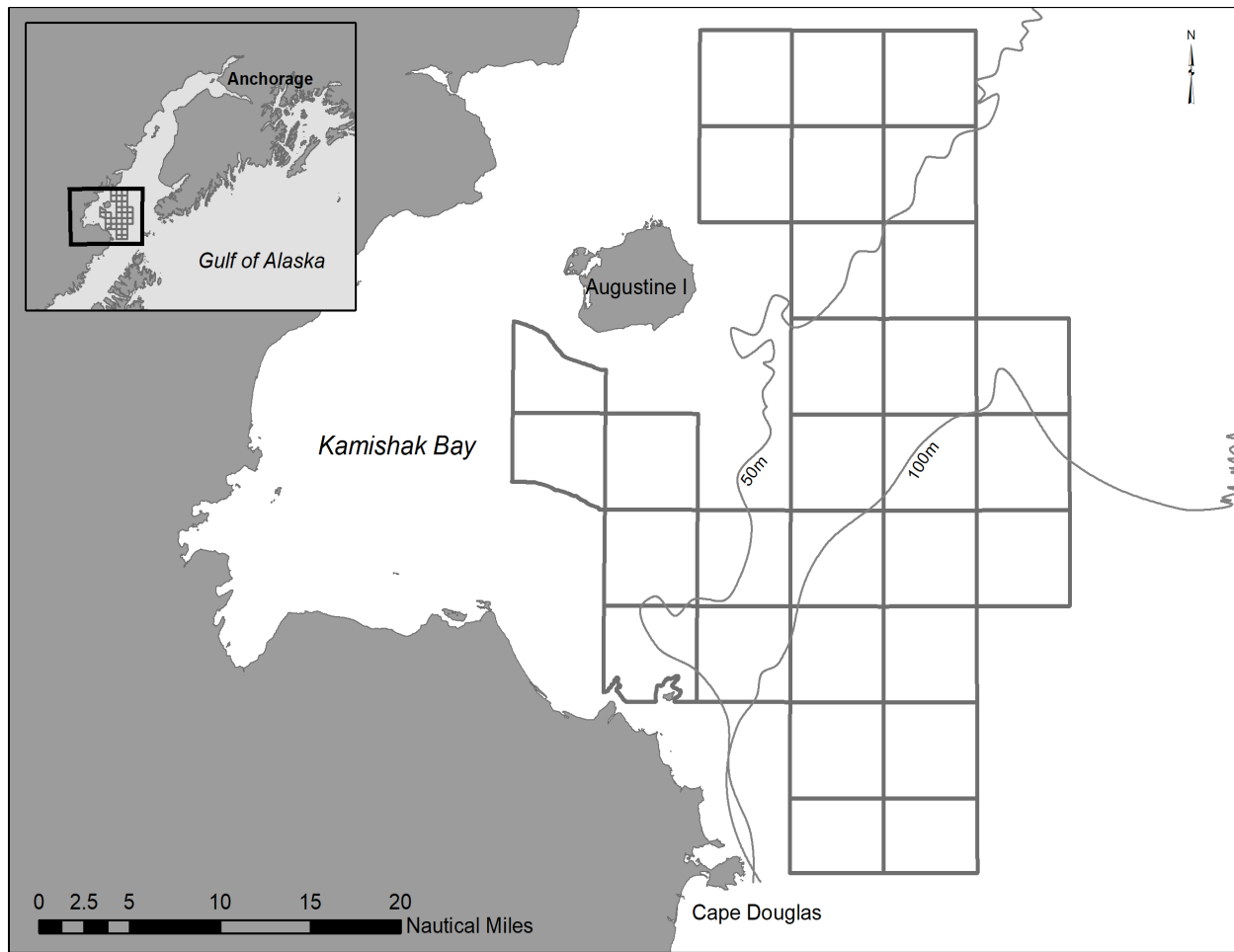


Figure 4.—Kamishak Bay and Barren Islands large-mesh trawl survey locations.

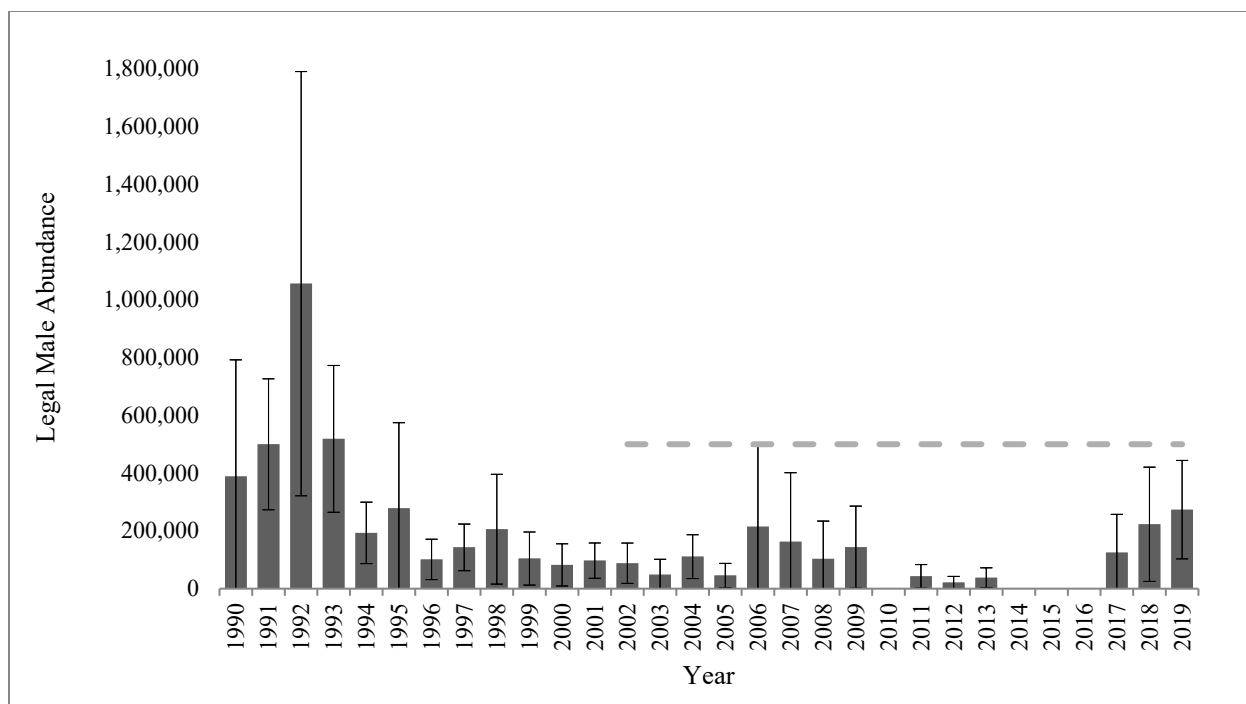


Figure 5.—Kachemak Bay trawl survey legal male Tanner crab abundance estimates, 1990–2019. Dashed line is 500,000 legal male crab minimum abundance threshold to open a commercial fishery.

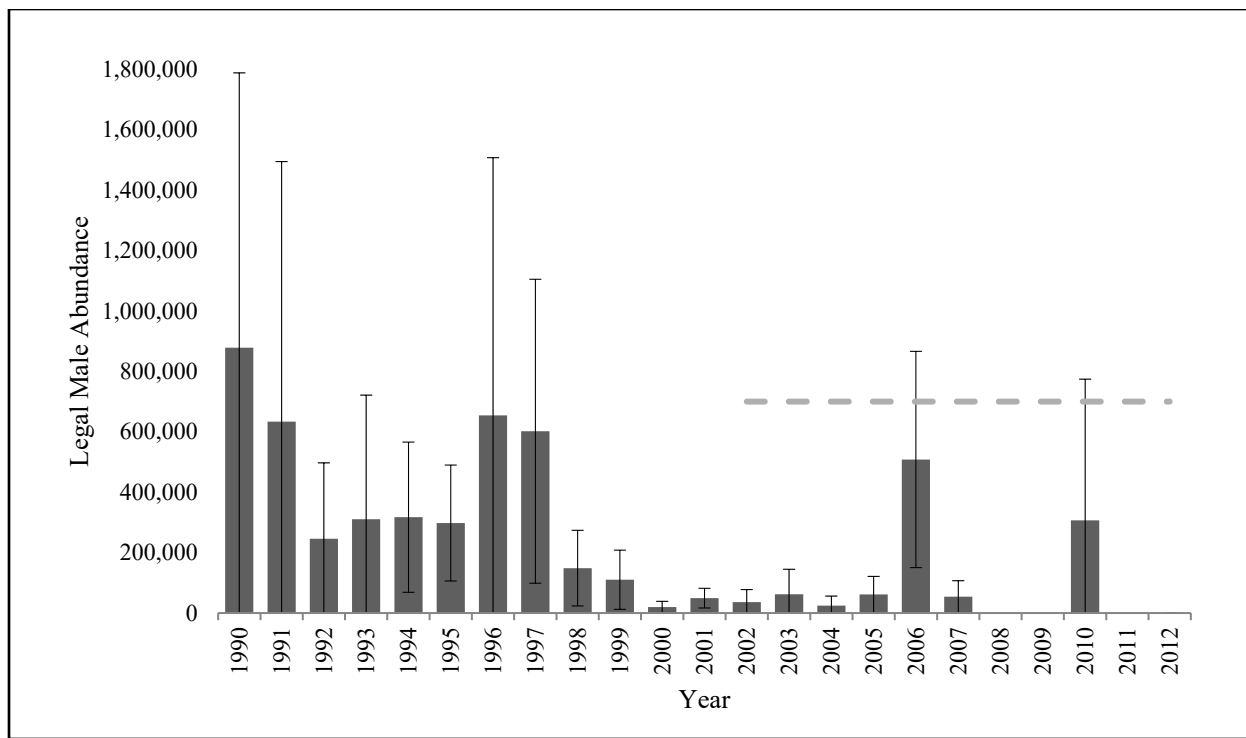


Figure 6.—Kamishak Bay trawl survey legal male Tanner crab abundance estimates, 1990–2012. Dashed line is 700,000 legal male crab minimum abundance threshold to open a commercial fishery.

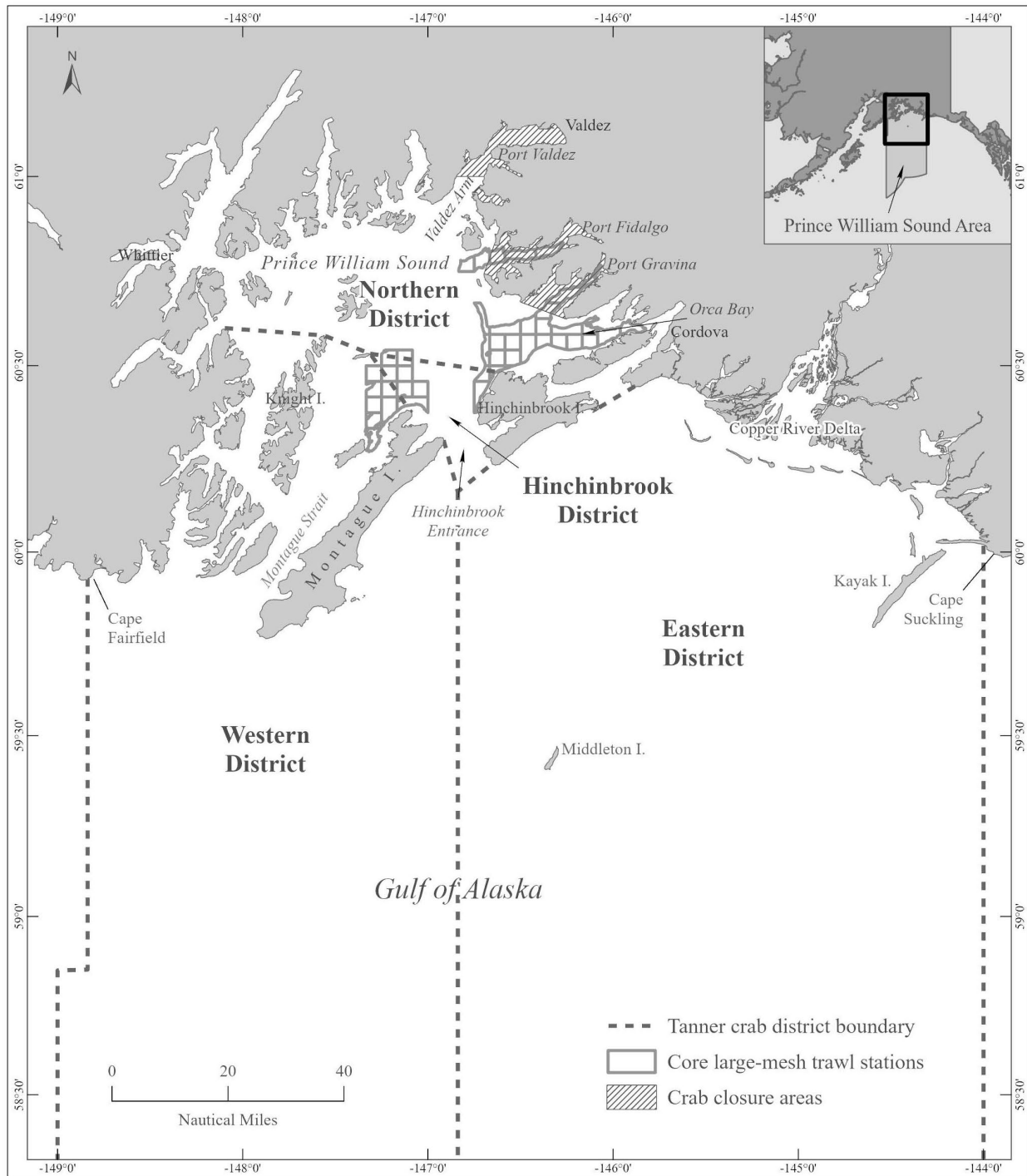


Figure 7.—Prince William Sound Management Area, Registration Area E, commercial crab fishing districts prior to 2021. Closed waters apply to commercial and subsistence Tanner crab fishery.

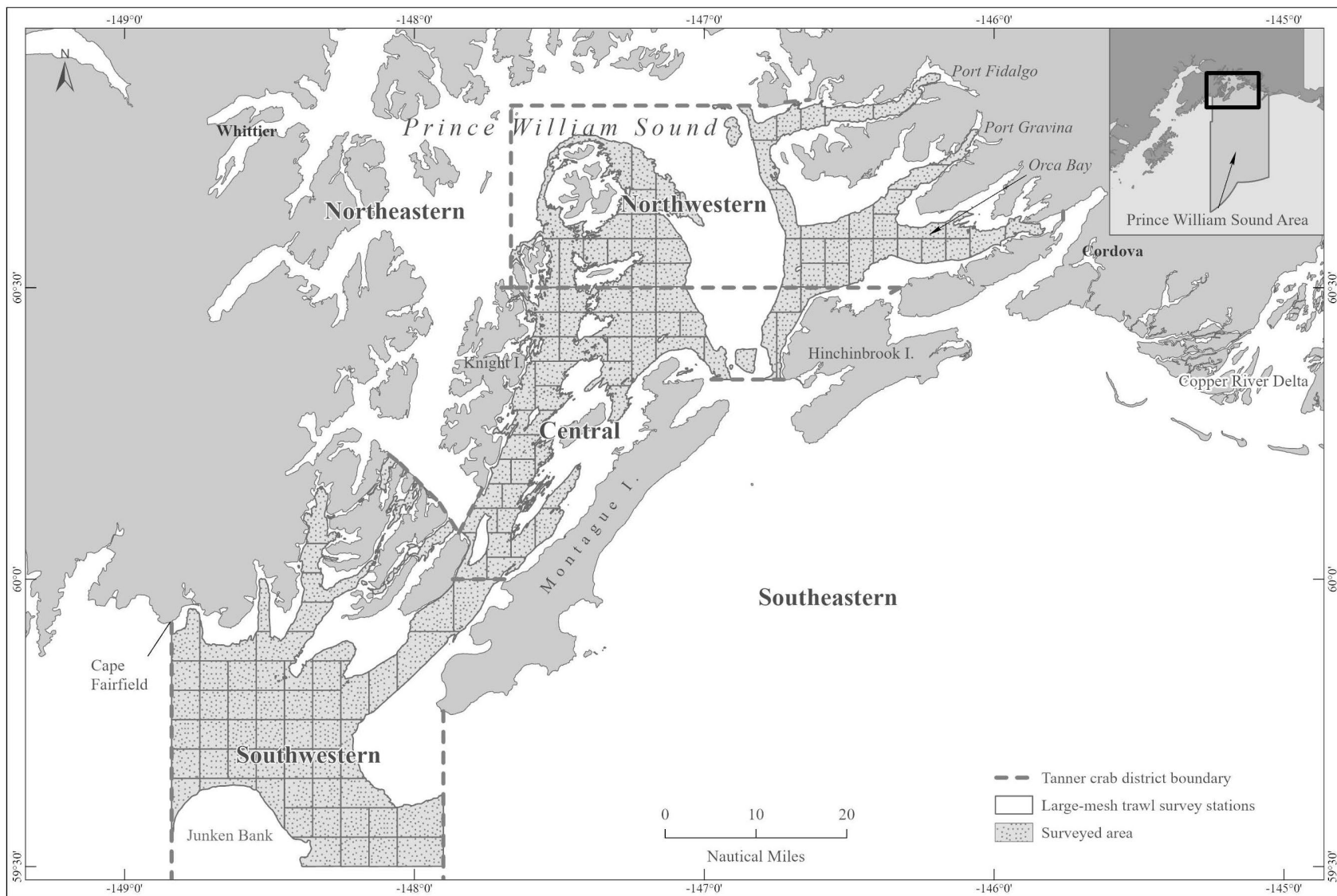


Figure 8.—Prince William Sound Area, Registration Area E, Tanner crab districts created in 2021.

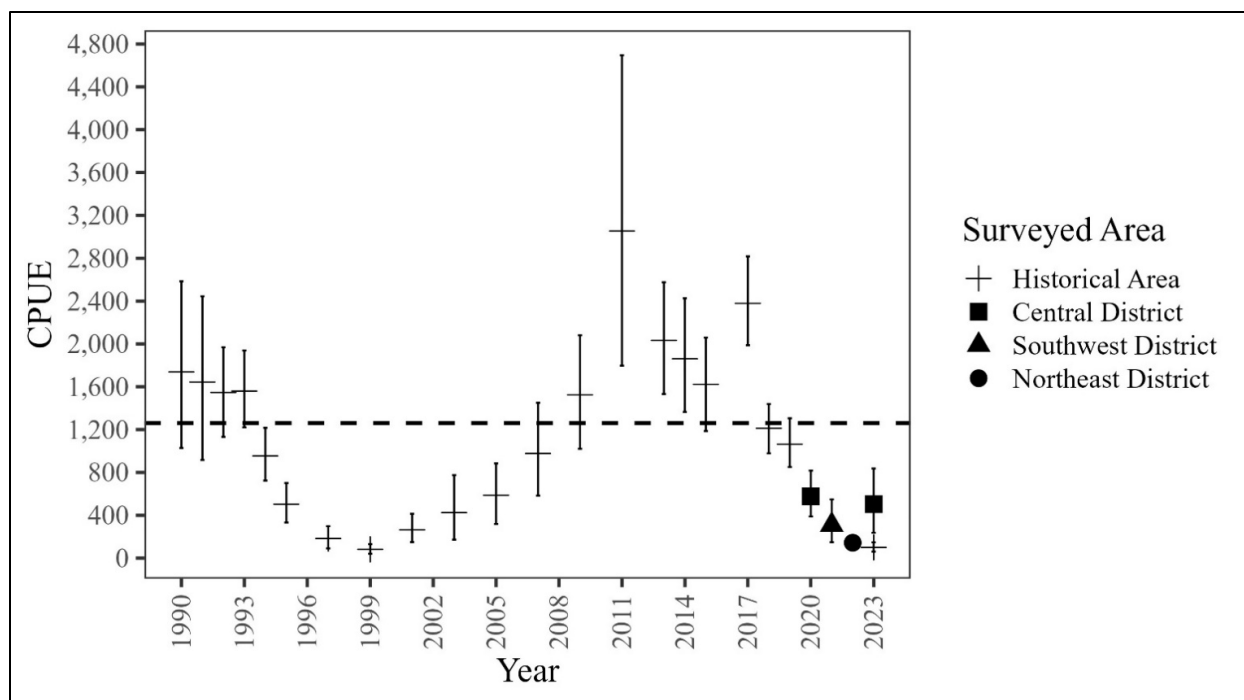


Figure 9.—Prince William Sound Area bottom trawl survey CPUE (crab per nmi²) of mature-size male Tanner crab.

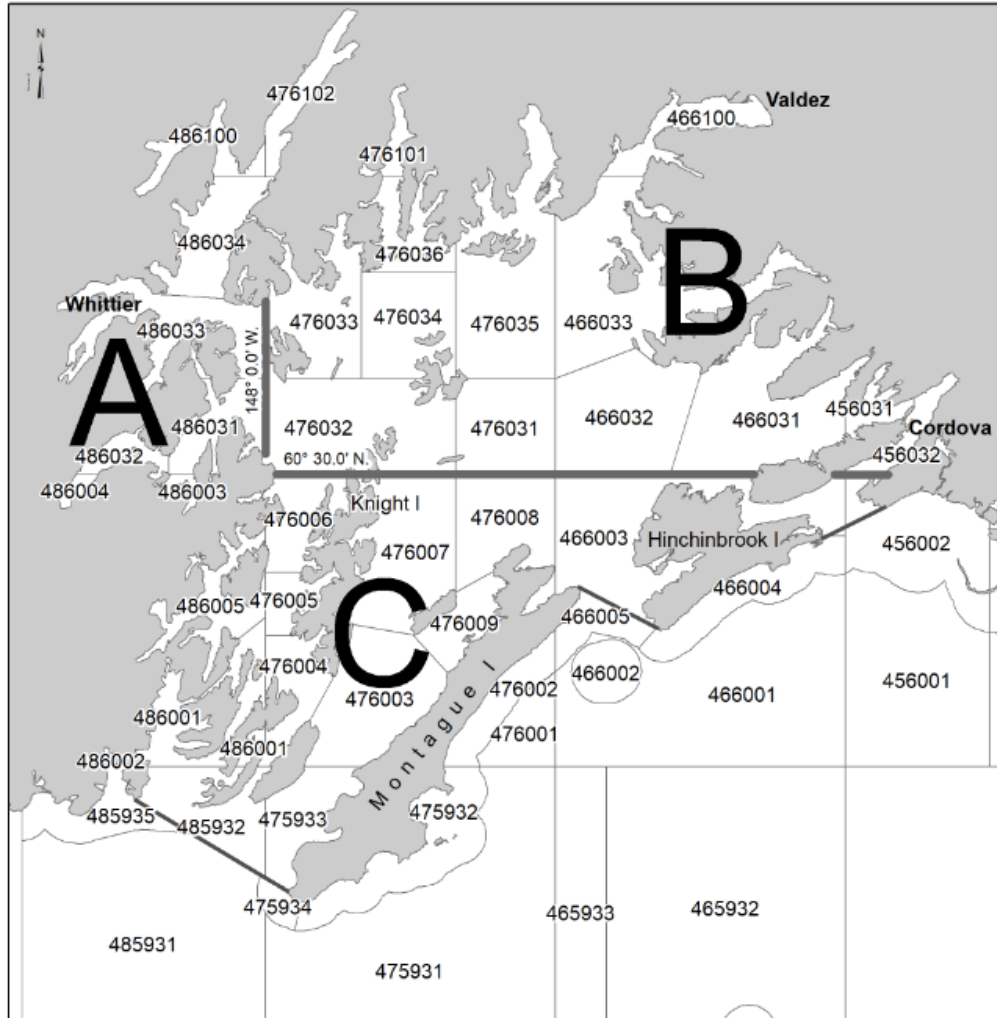


Figure 10.—Prince William Sound Area golden king crab test fishery areas.