Fishery Management Report No. 21-08

Management Report for Southeast Alaska and Yakutat Red and Blue King Crab Fisheries, 2017/18–2019/20

by

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and

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April 2021

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

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Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations

alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	′
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	″
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

FISHERY MANAGEMENT REPORT NO. 21-08

MANAGEMENT REPORT FOR SOUTHEAST ALASKA AND YAKUTAT RED AND BLUE KING CRAB FISHERIES, 2017/18–2019/20

by

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ABSTRACT

This report reviews the commercial and personal use fisheries for red and blue king crab in Region I, which includes Registration Area A (Southeast Alaska) and Registration Area D (Yakutat).

The commercial red and blue king crab harvest in Southeast Alaska totaled 120,566 lb valued at $1.2 million during the 2017/18 season, which was the last season the fishery was open. The average dock price per pound for red and blue king crab during that season was $9.95.

The red king crab fishery in Southeast Alaska is fully developed. Red king crab stocks in Southeast Alaska are assessed in an annual Alaska Department of Fish and Game red king crab pot survey that began in 1979. There have no stock assessment surveys for Yakutat red king crab stocks and harvests in this area have been sporadic and relatively low.

The Southeast Alaska commercial red king crab fishery and the personal use red king crab fishery in Section 11-A are managed based on biomass identified in the annual survey. The personal use red king crab fishery outside of Section 11-A is managed by bag and possession limits and area-specific closures defined through emergency orders. Dockside sampling and skipper interviews also are routinely conducted in Southeast Alaska commercial red and blue king crab fisheries.

Key words: Red king crab, *Paralithodes camtschaticus*, Southeast Alaska, Yakutat, fisheries management, blue king crab, *Paralithodes platypus*, harvest statistics.

CHAPTER 1: SOUTHEAST ALASKA RED AND BLUE KING CRAB FISHERY

INTRODUCTION

This chapter presents an overview of the commercial and personal use red and blue king crab fisheries in Southeast Alaska (Registration Area A) with emphasis on the last three fishing seasons—2017/18, 2018/19, and 2019/20—and the Section 11-A (Juneau Area) personal use fishery. Information is presented on historical harvest and effort, regulation development, research results, and stock assessment.

Red king crab (*Paralithodes camtschaticus*) are taken primarily in the protected bays, inlets, and adjacent shorelines in Southeast Alaska north of Petersburg; few red king crab are caught from the southern portion of Southeast. Red king crab generally inhabit depths less than 200 fathoms. Historically, important red king crab fishing grounds have included Gambier Bay, Pybus Bay, Seymour Canal, the Juneau area, Lynn Canal, Holkham Bay, Excursion Inlet, and Peril Strait (Figure 1.1). Blue king crab (*P. platypus*) may be taken only during the open fisheries for red and golden king crab (*Lithodes aequispinus*) and Tanner crab (*Chionoecetes bairdi*). Small quantities of blue king crab are harvested incidentally during those fisheries.

Commercial vessels participating in the red king crab fishery are primarily salmon tenders, salmon purse seine vessels, and larger drift gillnet boats. Fishing gear has evolved to include both side-loading king crab pots (7 ft x 7 ft x 30-in) and top-loading pyramid or conical-style pots with 5 ft to 8 ft bases.

Management of the commercial red king crab fishery is based on the Southeast Alaska Red King Crab Management Plan (5 AAC 34.113) and policies that establishes a season that avoid sensitive life history stages of reproduction including mating and molting (November–January), restricting harvest to males only with a minimum legal-size limit of 7 inches carapace width (CW), gear restrictions, limit participation, and set annual guideline harvest levels (GHLs) based on appropriate harvest rates and results of an annual stock assessment survey. Harvest of king crab regardless of sex or size infected with parasitic barnacle species *Briarosaccus auratum* (which only infects golden king crab) and *B. regalis* (which only infects red and blue king crab) is allowed because these parasites hinder reproduction and suppress growth of king crab (Noever et al. 2016).

Within Section 11-A, management of the personal use red and blue king crab fishery is based on the Section 11-A Red and Blue King Crab Management and Allocation Plan (5 AAC 34.111), which allocates harvest between the commercial and personal use fishery at 40% and 60% respectively. In addition, the Section 11-A personal use fishery has allocations for a winter and summer season to provide greater opportunity for the public at 10% and 50% respectively. The personal use fishery requires harvest permits for Section 11-A and for the remainder of the region to record harvest and effort to manage the fishery. The regionwide permit was implemented in 2018 and is required for all king crab species (red, blue, and golden), whereas the Section 11-A permit is required for only red and blue king crab.

FISHERY HISTORY AND DEVELOPMENT

COMMERCIAL FISHERY HISTORY

Commercial king crab fishing in Southeast Alaska was initially documented in 1960 when a small harvest occurred within the vicinity of Petersburg and Wrangell. The fishery rapidly developed with harvesting peaking at 2 million lb in 1968 by 19 permit holders and subsequently declined the following year in 1969 to 1.9 million lb by 39 permit holders (Table 1.1). High harvests during

this time period can be attributed to multiple factors: rapid development of the fishery; lack of a management strategy that would limit gear, effort, and harvest at the species level (red, blue, and golden); and the smaller legal size (6.5 inches CW), which allowed for a higher harvest rate. Historic and present harvest primarily comes from northern districts of Southeast (Table 1.2). In 1970, the Alaska Department of Fish and Game (department) began collecting information on the species composition of the commercial king crab harvest dockside sampling and skipper interview programs. During the 1970/71 season harvest declined from 1.4 million lb to 0.4 million lb, resulting in the season being closed by emergency order and the minimum legal size being increased to 7 inches CW.

From the 1976/77 through the 1984/85 fishing seasons, the number of permit holders increased to more than 90, and harvests averaged 0.4 million lb of red king crab. Effort continued to increase in the 1983/84 and 1984/85 season while harvest continued to decline, and the department independent stock assessment survey results indicated low stock abundance resulting in the commercial fishery closing for eight seasons (1985/86–1992/93) (Table 1.1). The fishery was reopened for the 1993/94 season after department survey data indicated that red king crab stocks had rebuilt to levels sufficient to support a commercial harvest above the minimum threshold of 300,000 lb. The fishery continued during the next four seasons, with an average harvest of about 300,000 lb by about 79 permit holders. Declines in the abundance of legal crab in Pybus Bay, Gambier Bay, and Peril Strait resulted in an allowable harvest below the minimum regulatory threshold level of 300,000 lb for the 1998/99 and 2000/01 fishing seasons; therefore, the fishery was closed. Beginning with the 2002/03 season, the board reduced the minimum threshold to 200,000 lb. During the 2004/05 through 2019/20 seasons the fishery was closed in all but three seasons due to estimates of allowable harvest below the minimum threshold. The harvest over the last three open seasons (2005/06, 2011/12, and 2017/18) has averaged 168,970 lb.

EXPERIMENTAL COMMERCIAL FISHING

In 1976 the department received funding to survey portions of Southeast Alaska that were not normally fished by the commercial fleet. The goal of these surveys was to find additional stocks to help support the commercial fishery. Three commercial fishing operators were contracted to fish for 10 days each in Districts 3 and 4 (Figure 1.2) during February and March. February and March were selected because of the propensity for crab stocks to congregate in bay areas during hatching, molting, and mating in the late winter and spring months. Although some small, isolated stocks of red king crab were identified, the numbers of legal crab available were insufficient to support a commercial fishery. Catch rates were less than 0.01 legal crab per pot.

In 1988, the board adopted regulations that allowed experimental fishing in nontraditional areas by commercial king crab permit holders. These regulations included mandatory logbook completion. This experimental fishing effort was an attempt to find new and significant stocks to reach the threshold and reopen the commercial fishery. During the 1988/89 and 1989/90 seasons, the department issued experimental permits to 19 permit holders who fished at various times from July to January. Of the 19 permits issued, 7 resulted in landings totaling 2,061 lb. Thirty-six subdistricts were fished, with harvests reported from ten subdistricts. After two seasons of exploratory fishing, interest in these fisheries was low, catches were poor, and no major unexploited populations of either species had been found. Due to poor fishing performance and frequent violations of regulations, the board repealed regulations allowing for experimental king crab fishing in Southeast Alaska in 1990.

PERSONAL USE FISHERY

The personal use king crab fishery developed from the subsistence fishery. Current management of Southeast Alaska stocks is accomplished using a mixture of commercial and personal use regulations (Table 1.3). The Section 11-A fishery is conducted according to a management and allocation plan adopted by the board during the 1995/96 meeting cycle and modified in subsequent board sessions. Personal use permits in Section 11-A (since 1996), sport fishing creel census data, sport fishing statewide harvest survey data, and phone survey results have provided estimates of the noncommercial harvest of the king crab resource. Since 2018, a regionwide personal use permit has been required for all king crab species (red, blue, and golden).

Initially, noncommercial king crab fishing by Alaska residents occurred under subsistence regulations. Regulation changes affecting the noncommercial fishery occurred in various portions of the commercial, subsistence, and personal use regulations. The changes involve urban and rural preference in subsistence regulations, development of the personal use regulations, closed waters in the commercial regulations, and development of the management and allocation plan in the commercial regulations. Prior to 1988, the definitions of *urban* versus *rural* occurred in the subsistence regulations. In Southeast Alaska, the cities of Juneau, Sitka, and Ketchikan were classified as urban areas, with all other locations classified as rural areas. The board subsequently provided for a personal use fishery in the urban areas to replace the lost subsistence opportunities.

The board has not recognized customary and traditional subsistence use of king crab resources in Southeast Alaska. Currently all noncommercial utilization occurs under personal use regulations. Given the limited king crab resources available, there has been no allocation for sport users and there is no sport fishery for king crab. The board did adopt a customary and traditional use finding for shellfish, including king crab, in the waters of Yakutat Bay.

In Section 11-A for the 1995/96 season, a bag and possession limit of three crab per individual was implemented with no seasonal limit. In the 1996/97 season, separate summer and winter individual permits were issued for the personal use king crab fishery. In the 1997/98 season, household permits replaced individual permits to simplify the permitting and reporting process. The bag and possession limit decreased to two crab per person in order to keep the fishery open for the entire season. A combined summer/winter limit of 20 crab per household permit, or 10 crab per household when the household was a single person, went into effect for the 1998/99 fishery. The purpose of the seasonal bag limit was to ensure that anyone wanting to fish in the winter season could do so without worry that the season would close early. This seasonal approach has been used since the 1999/00 season.

Following board action, harvest reallocation from commercial to personal use resulted in a 2000/01 summer bag limit of three crab per person and a limit of 40 crab per household permit, or 20 crab per household when the household was a single person. In the 2001/02 season, limits were reduced to two crab per person and a limit of 20 crab per household permit, or 10 crab per household when the household was a single person for both summer and winter season.

For the 2003/04 season, the restriction on households of one person was removed and the summer permit limits were two crab per person and a limit of 20 crab per household, and the winter limit was one crab per person and a limit of 20 crab per household.

In early 2009, the board repealed the provision requiring the reallocation of the commercial fishery allocation to the personal use fishery. Since that time, the commercial allocation has not been harvested when the threshold for a commercial fishery is not met.

Personal use red king crab harvest has been estimated in three ways: through a personal use permit program in the Section 11-A Juneau area, through a sport fishing statewide harvest survey (SWHS) elsewhere, and through a sport fishery creel census. Since 2018 a personal use permit has been required for Section 11-A and outside Section 11-A for harvest of red king crab and is the primary data source for managing the personal use fishery.

A personal use permit holder must record the number of red king crab caught by date (Hebert et al. 2002; Hebert et al. 2005; Hebert et al. 2008; Suchanek 1995; ADF&G staff 1999). In 2018, a permit system began for the area outside Section 11-A, requiring the permit holder to record the number of king crab, date, and the geographical area of harvested crab. The department is in the process of compiling permit data from outside of Section 11-A and working it into biomass estimates.

A detailed history of regulatory changes, management actions, and harvest for red and blue king crab fisheries in Section 11-A is provided in Tables 1.4 and 1.5. Permit procedures and bag and possession limits have been revised each season in an effort to more precisely achieve allocation and management objectives specified in the Section 11-A red and blue king crab management and allocation plan (5 AAC 34.111). Many of the management actions taken for the personal use fisheries were to comply with the board's direction to have the summer and winter personal use seasons last as long as possible.

REGULATION DEVELOPMENT

FISHING SEASONS

From 1961 to 1968, there was no closed season for the commercial king crab fishery. Prior to the 1969/70 fishing season, a closed season was established from March 16 to August 14. A fishing season of September 1 through January 31 was established in 1971 to provide closures during the molting and mating season, during a portion of the aggregation period prior to the molting and mating season, and during the major growth period when meat recovery rates are low. The current regulatory season extends from November 1 to January 24.

From 1979 to 1999, the open fishing period was set preseason based on estimates of population size and predicted fishing effort necessary to achieve the GHL. Section 11-A (Juneau area) has been managed for a separate GHL beginning with the 1996/97 season. Inseason harvest tracking to achieve the GHL with closure by emergency order has been conducted since 2001/02 when the fishery length was 12 days. In 2002/03 and 2003/04, the fishery closed after 8 and 4 fishing days, respectively, and the fishery was not opened during the 2004/05 season. The 2005/06 season opened for four days in the surveyed areas and 13 days in Section 11-A and the non-surveyed areas. The fishery closed to commercial fishing from the 2006/07 season through the 2010/11 seasons. In 2011/12, the season opened on November 1 and the GHL was split between four management areas: Section 11-A, Excursion Inlet/Lynn Sisters, Pybus/Gambier, and non-surveyed areas. Section 11-A closed after 24 hours, Pybus/Gambier closed after three days of fishing, and Excursion Inlet/Lynn Sisters and the non-surveyed areas closed after 13 days of fishing. In 2012 weather delay criteria were added to regulation to delay the fishery start date in cases of adverse weather conditions. The fishery closed from the 2012/13 season through the 2016/17 season. The

2017/18 fishery opened for 24 hours in survey areas that were determined to have a low level of harvestable surplus and all non-surveyed areas. After a 4-day stand-down period, the non-surveyed areas reopened. The non-surveyed areas were split into a northern section and a southern section preseason to allow for exploration of the non-surveyed southern area, which has shown low effort historically. The non-surveyed northern area closed after 23 days of fishing, reaching its 100,000 lb GHL. The non-surveyed southern area closed after 41days following low effort and catch rates. The fishery did not open for the 2018/19 and 2019/20 seasons.

At the January 2018 Southeast/Yakutat Shellfish BOF meeting, the board adopted a proposal that allowed a fishery for king crab by commissioner's permit from 3 to 200 miles in the Exclusive Economic Zone (EEZ) in Southeast. The required commissioner's permit may specify season dates, pot limits, and areas of fishing operations. The commissioner's permit will require a detailed logbook for fishing operations and may require observer coverage and other conditions deemed necessary for conservation and management purposes.

QUOTAS AND GUIDELINE HARVEST RANGES

In 1970, a 1.5 million lb quota was provided for king crab (all species combined) and the following year separate red and golden king crab fisheries were established with distinct seasons and quotas. From 1971 through the 1978/79 season, the red king crab quotas, guideline harvest ranges (GHR), or GHLs were based upon historical harvest and limited size-distribution information obtained from the dockside sampling program. The first red king crab quota was set in 1971 at 400,000 lb per season. This was increased to 600,000 lb in 1974 and then reduced back to 400,000 lb in 1977.

Quotas were replaced by GHRs after 1977. The first GHR of 200,000–400,000 lb was established in 1978. The GHR was increased to 300,000–600,000 lb in 1979 based on industry recommendations. Since the 1980/81 season, allowable harvests, expressed as either GHLs or GHRs, have been based on results from the red king crab stock assessment survey that determines an index of abundance. The available harvestable surplus is determined by applying a harvest rate. Beginning in 1988, a threshold of 300,000 lb of surplus legal-sized crab had to be available before the commercial fishery would be opened. In 2002, this threshold was reduced to 200,000 lb by the board in response to an industry proposal. At the time, industry stated that a threshold under 200,000 lb. would not be economically viable. Part of this threshold reduction included a 3-year sunset clause. The sunset clause was removed in 2005, and the current 200,000 lb threshold has been in place since that time.

FISHING GEAR

There were no restrictions on the amount or type of gear that could be fished by a vessel participating in the king crab fishery from 1961 to 1967. A limit of 40 pots per vessel was established for Southeast Alaska waters in 1968. The maximum number of pots per vessel was increased to 60 in 1974 and to 100 in 1978. This limit continued through the 1987/88 season. In 1988, the board required a 40-pot limit per vessel for GHLs between 300,000–400,000 lb and a 100-pot limit for GHLs above 400,000 lb. Based on information provided by the department, the board reduced the 40-pot limit to 20 pots in 1993. Current regulations provide for 20 to 50 pots per vessel based on a "sliding scale" system that is dependent on the allowable harvestable surplus or GHL.

To reduce the capture of undersized crab, all pots must have either 9.5-inch stretch mesh along one panel or four 6.25-inch escape rings. In order to reduce "ghost fishing" by lost pots, regulations

require degradable twine or a timed galvanic release device that will allow caught crab to escape after a short period of time. Tunnel height on standard side-loading pots must be a minimum of 8 inches in the vertical dimension. There are restrictions on pot storage before and after fishing seasons, and each stored pot or stack of pots must be buoyed and marked. Ring nets were eliminated as legal gear for king crab in 1990. Marking requirements for pot buoys include sequentially numbered tags, which are purchased from the department. In 2005, escape ring placement was amended to clarify how escape rings were to be optimally located to allow escape of undersized and female crab. Also in 2005, the gear storage regulations were changed from a limit of 3 days to a limit of 5 days after closure of a portion of Southeast Alaska.

MANAGEMENT PLAN

In 1993, the board adopted a comprehensive management plan for red king crab in Southeast Alaska. This management plan was designed to be consistent with the board's *Policy on King and Tanner Crab Resource Management* (ADF&G 1990). There are several key elements of the management plan:

1. Provisions to maintain an adequate abundance of various size classes of males and females necessary to provide for sustained harvests and stock conservation.
2. Application of a harvest rate based on both legal males and mature males.
3. A GHL based on stock conditions for each fishing district.
4. A minimum harvest threshold of legal males.
5. Conduct of an orderly fishery.
6. Conservative management when biological and fishery independent information is lacking.

Additional elements used to manage the fishery are included in regulations concerning lawful gear, closed waters, and allocation between commercial and personal use fishing operators in Section 11-A. A mandatory call-in program was implemented for all seasons after success with a voluntary call-in program in the 2001/02 season.

FISH TICKETS

Alaska seafood processors are required to submit detailed fish tickets recording harvest, effort, and location of harvest to the department. A fish ticket is submitted for each landing. Waters of Southeast Alaska are divided into 16 districts, some of which are further subdivided into sections, and all are divided into statistical areas of varying size and shape. Fish ticket data, archived in a statewide database, details red king crab harvest by statistical area since 1960.

LOGBOOKS

Logbooks are mandatory for vessels participating in the commercial fishery and provide information on red king crab catch and effort by statistical area and date. In addition, daily reporting of logbook data is used to manage for fishery area GHLs inseason.

SAMPLING

Commercial red king crab fishery landings are sampled dockside in Juneau, Petersburg, Sitka, and Wrangell, and onboard tenders at sea if possible. Carapace length and shell condition is recorded for 50-crab samples as crab are delivered to processors. Crab average weight is also determined for each delivery sampled, and skippers are interviewed to determine fishing location and effort.

Recruit composition of the harvest can be determined from carapace length and shell condition frequency (Table 1.6).

LIMITED ENTRY

A limited entry program was established for the king and Tanner crab pot fisheries in Southeast Alaska by the Commercial Fisheries Entry Commission (CFEC) in January 1984. Currently, there are 59 active permanent and interim permits eligible to participate in the red king crab fishery.

STOCK ASSESSMENT

Management of the regionwide commercial and Section 11-A personal use red king crab fishery in Southeast Alaska is abundance-based and requires annual surveys to assess stock size (Stratman et al. 2019). Stock assessment requires three types of data: commercial harvest, personal use harvest, and catch per unit effort (CPUE) and length/weight relationships from the stock assessment survey. These data, along with estimates of growth and natural mortality, are used as input to a 3-stage catch-survey model (CSA model) to determine survey area and regional biomass estimates of mature and legal red king crab and apply exploitation rates to determine harvestable surplus levels for the commercial and personal use fisheries (Palof and Stratman 2021).

Outside Section 11-A, red and blue king crab personal use fisheries are managed by size, sex, season, and a bag limit. There are no allocations specified in regulation, and GHLs are not established. However, stock assessment information is used to guide decisions on closing areas to personal use fishing and to establish personal use bag and possession limits.

SURVEYS

The department has conducted a survey of red king crab abundance in Southeast Alaska since 1979. The survey provides indices of crab abundance by sex and recruit class in terms of crab per pot. The survey is conducted in areas where the majority of red king crab harvest occurs (Figure 1.1). Significant improvements, resulting in successive decreases in the coefficient of variation (CV) of CPUE data, have been achieved over the 30-year survey time series. These include a move from fixed to random pot locations and stratification of survey areas in 1986; a gradual shift from square to cone pots over the period 1995–1999 (Zhou and Shirley 1997); re-stratification of the survey to redefine strata boundaries based upon the CPUE of legal, sublegal, and female red king crab in 2005 (Clark 2008); and, most recently, an increase in the number of pots set in each surveyed area to improve the precision of survey area estimates. A detailed timeline and methods of survey development is outlined in Clark (2008) and Clark et al. (2003).

Due to industry concerns about the red king crab stock assessment program, the department initiated an external review in 2005 (Quinn et al. 2006) and several suggestions for improvements were made, including delaying the start date of the survey to avoid nonfeeding molting crab, restratification of survey design for more precise pot placement (Clark 2008), comparing mark–recapture abundance estimates to the CSA (Palof and Stratman 2021), implementing a tagging study to help determine molt increments and movements, deploying temperature loggers on each pot, and assessing clutch fullness each year in each bay (Stratman et al. 2019). Even with these improvements, because of continued industry concerns, the department and industry cooperatively operated a project from 2010 to 2018 to independently estimate red king crab population size using mark–recapture methods.

RECENT SEASONS

2017/2018 SEASON SUMMARY

The commercial fishery GHL for the 2017/18 season exceeded the 200,000 lb threshold at 201,200 lb of red and blue king crab. The season opened with the GHL allocated among six management areas: Section 11-A, Excursion Inlet, Pybus/Gambier/Round Rock, Seymour Canal, Non-Surveyed Northern, and Non-Surveyed Southern. The GHLs were set at 18,600 pounds for Section 11-A, 7,600 pounds for Excursion Inlet, 20,000 pounds for Pybus/Gambier/Round Rock, 20,000 pounds for Seymour Canal, 100,000 pounds for Non-Surveyed Northern, and 35,000 pounds for Non-Surveyed Southern. Surveyed areas Section 11-A, Excursion Inlet, Pybus/Gambier, and Seymour Canal were closed after 24 hours with a total harvest of 20,279 pounds in Section 11-A, 9,207 pounds in Pybus/Gambier/Round Rock, and 5,603 pounds in Seymour Canal. Harvest in Excusion Inlet was confidential due to fewer than three permits fished. The Non-Surveyed Northern area was closed after 23 days of fishing with a total harvest of 85,075 pounds and the Non-Surveyed Southern area closed after 41 days with a confidential harvest. Red king crab harvest in Southeast totaled 120,002 pounds (Table 1.1) valued at $1.19 million. For the 48 permits who participated in the fishery, the average dock price per pound for red king crab during the 2017/18 season was $9.95.

The red and blue king crab personal use fishery opened with a reduced bag and possession limit of one red and blue king crab in combination for non-surveyed and surveyed areas. Analysis of the 2017 Section 11-A red king crab stock assessment survey data indicated sufficient stock abundance to allow the prosecution of a personal use fishery for summer and winter season with a bag and possession limit per household permit of 2 and 6 crab respectively. The survey indicated that the regionwide harvestable biomass of mature red and blue king crab was above the 200,000 lb threshold, which by regulation resulted in the bag and possession limit outside of Sections 11-A, 12-B, 15-B, and 15-C to be six king crab per person. All areas open to personal use red and blue king crab fishing within Sections 12-B, 15-B, and 15-C had a bag and possession limit of three red or blue king crab.

2018/2019 SEASON SUMMARY

The commercial fishery GHL for the 2018/19 season was 158,772 lb of red and blue king crab. This GHL did not exceed the 200,000 lb threshold in regulation; therefore, the commercial red and blue king crab fishery in Southeast Alaska did not open for the 2018/19 season.

The red and blue king crab personal use fishery opened with bag and possession limits outside of Sections 11-A, 12-B, 15-B, and 15-C at six king crab per person. Bag and possession limits in Sections 12-B, 15-B, and 15-C were set at three king crab per person, and closures of personal use red and blue king crab fishing in Peril Strait and Lynn Sisters remained in place based on poor stock health. The 2018 Section 11-A red king crab stock assessment survey data indicated a sufficient stock abundance to allow the prosecution of a personal use fishery. The fishery opened a summer seasonal limit of two crab per household permit and a winter seasonal limit of three crab per household permit. The survey indicated that the regionwide harvestable biomass of mature red and blue king crab was below 200,000 lb. Stock health in Peril Strait remained poor and stayed closed. Stock health in Gambier Bay declined to poor status and closed in September. Lynn Sisters declined slightly from the previous year and remained closed. With stock health in surveyed areas combined declining to below average, stocks in non-surveyed areas were believed to be exhibiting

the same trends. Therefore, the non-surveyed areas bag and possession limits decreased to one red or blue king crab per day to allow a low-level personal use harvest.

2019/2020 Season Summary

The commercial fishery GHL for the 2019/20 season was 108,622 lb of red and blue king crab. This GHL did not exceed the 200,000 lb threshold in regulation; therefore, the commercial red and blue king crab fishery in Southeast Alaska did not open for the 2019/20 season (Palof and Stratman 2020).

The red and blue king crab personal use fishery opened by regulation on July 1, 2019, with non-surveyed areas having bag and possession limits of one red or blue king crab per day, and closures of personal use red and blue king crab fishing in Peril Strait, Gambier Bay, and Lynn Sisters were maintained based on 2018 survey results. The 2018 Section 11-A red king crab stock assessment survey data indicated a sufficient stock abundance to allow the prosecution of a personal use fishery. Therefore, the 11-A personal use fishery opened with a summer seasonal limit of two crab per household permit and a winter seasonal limit of one crab per household permit. The department completed a review of the 2019 red king crab stock assessment survey in late summer 2019. The survey indicated a regionwide harvestable biomass of mature red and blue king crab below 200,000 lb. Stock health in Peril Strait, Lynn Sisters, and Gambier Bay remained unchanged in legal biomass, and thus remained closed. Stock health in Seymour Canal and Pybus Bay saw declines in stock status, closing in September. Excursion Inlet showed signs of a slight decline and remained open. Non-surveyed areas had an estimated harvestable surplus and remained open with a minimal bag and possession limit of one crab.

2020/2021 Season Outlook

The GHL for the 2020/21 season was 97,881 lb of red and blue king crab. This GHL did not exceed the 200,000 lb threshold in regulation; therefore, the commercial red and blue king crab fishery in Southeast Alaska did not open for the 2020/21 season (Palof and Stratman 2021).

The red and blue king crab personal use fishery opened by regulation on July 1, 2020, in non-surveyed areas with bag and possession limits of one red or blue king crab per day and continued closures of personal use red and blue king crab fishing in Peril Strait, Gambier Bay, Seymour Canal, Pybus Bay, and Lynn Sisters based on 2019 survey results. Results of the 2020 survey suggested that Excursion Inlet's stock status could not sustain any harvest; thus, the personal use red king crab fishery closed in September. Findings of the 2020 Section 11-A red king crab stock assessment survey data indicated that stock status in the Juneau area had improved slightly. As such, an 8% harvest rate was set, providing a total GHL of 3,491 crabs. The allocation of this harvest was 1,745 crabs for the summer personal use season and 349 crabs for the winter season.

CHAPTER 1—TABLES AND FIGURES

Table 1.1.–Red king crab harvest (lb), number of landings, and number of permits in Registration Area A (Southeast Alaska) by year or season, 1960 to present. The data from 1960 to 1969 include all three species of king crab (red, blue, and golden) from all of Southeast Alaska including Yakutat. Yakutat king crab is included in the 1969/70 season.

Season[a]	Total Harvest (lb)	Number of landings[b]	Number of permits[c]
1960	3,424	–	–
1961	*	*	*
1962	1,289,550	–	8
1963	1,112,200	–	8
1964	820,530	–	9
1965	579,300	–	7
1966	105,899	–	8
1967	599,078	–	7
1968	2,199,722	–	19
1969	1,899,930	122	39
1969/70	1,438,226	401	33
1970/71	389,373	150	20
1971/72	670,645	183	19
1972/73	528,025	198	19
1973/74	758,103	234	29
1974/75	535,534	201	46
1975/76	356,771	170	32
1976/77	328,145	174	35
1977/78	234,494	138	34
1978/79	443,639	165	34
1979/80	658,087	229	39
1980/81	532,674	193	35
1981/82	524,109	171	46
1982/83	412,605	115	58
1983/84	280,681	119	97
1984/85	270,495	121	95
1985/86–1992/93		Fishery Closed	
1993/94	202,384	180	83
1994/95	256,267	246	84
1995/96	357,815	203	73
1996/97	428,549	218	79
1997/98	308,322	187	76
1998/99		Fishery Closed	
1999/00	289,548	215	77
2000/01		Fishery Closed	
2001/02	296,967	177	77
2002/03	233,630	154	75
2003/04	193,759	93	67
2004/05		Fishery Closed	
2005/06	209,799	113	58
2006/07–2010/11		Fishery Closed	
2011/12	176,545	105	54
2012/13–2016/17		Fishery Closed	
2017/18	120,002	119	48
2018/19–2019/20		Fishery Closed	

* Fewer than 3 permits were fished; information is confidential.

[a] Data for years 1960 through the 1969/1970 season are taken directly from the last board report.

[b] Total landings are the number of unique fish tickets reporting king crab landings in any combination in a season.

[c] Total permits are the number of unique CFEC numbers that made landings in a season.

Table 1.2.–Red king crab harvest in thousands of pounds by district and season in Registration Area A (Southeast Alaska), 1970/71 to present.

	Districts															
Season	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
1970/71	0	0	0	0	0	*	0	*	45.8	116.4	119.6	*	*	*	53.8	389.4
1971/72	0	0	0	0	0	0	0	*	*	197.6	259.4	*	95.8	*	*	670.6
1972/73	*	0	0	0	0	*	0	16.8	*	223.8	103.6	*	40.0	*	*	528.0
1973/74	0	0	0	0	*	*	*	*	21.2	365.1	120.7	*	98.7	87.1	*	758.1
1974/75	*	0	0	0	0	*	*	8.3	27.9	124.5	74.1	60.2	101.2	128.8	8.8	535.5
1975/76	0	0	0	0	*	*	0	15.5	*	30.4	35.1	53.4	95.8	116.1	*	356.8
1976/77	0	0	*	0	*	*	0	16.7	17.5	49.3	82.0	*	*	63.8	24.7	328.1
1977/78	*	0	0	0	*	*	0	*	0	43.1	64.5	*	*	18.5	*	234.5
1978/79	0	0	0	0	0	0	0	*	0	118.5	122.9	14.1	112.5	40.2	28.9	443.6
1979/80	*	0	0	0	*	*	*	*	*	168.4	220.2	39.5	79.4	89.1	11.8	658.1
1980/81	*	0	0	0	0	*	*	27.4	*	163.7	179.2	*	73.4	*	39.9	532.7
1981/82	0	0	0	0	*	*	*	*	*	114.4	135.4	32.7	116.7	32.8	52.8	524.1
1982/83	0	0	0	0	7.3	0	*	*	*	77.4	53.8	98.0	70.8	79.5	20.5	412.6
1983/84	*	0	*	0	*	*	*	0	*	79.5	35.2	30.2	46.7	50.8	1.9	280.7
1984/85	*	0	*	0	0	0	0	0	*	58.7	89.0	14.2	51.9	48.9	6.2	270.5
1985/86–1992/93	Fishery Closed															
1993/94	0	0	0	0	0	*	0	*	2.4	29.6	76.9	38.9	22.7	10.3	20.9	202.4
1994/95	0	0	0	0	*	0	0	*	*	69.5	113.5	24.8	21.8	13.4	6.6	256.3
1995/96	0	0	0	0	0	0	0	*	*	169.7	142.2	*	13.1	18.8	6.3	357.8
1996/97	0	0	0	0	0	0	0	*	1.5	176.7	206.2	2.2	18.3	18.0	*	428.5
1997/98	0	0	0	0	0	0	0	*	1.4	76.7	184.2	*	*	25.3	8.0	308.3
1998/99	Fishery Closed															
1999/00	0	0	0	0	0	0	0	*	*	43.5	191.9	11.7	*	32.9	9.3	289.5
2000/01	Fishery Closed															
2001/02	0	0	0	0	0	0	0	*	*	83.0	147.9	5.9	*	41.6	15.5	297.0
2002/03	0	0	0	0	0	0	0	*	*	69.2	96.1	10.0	*	41.6	11.4	233.6
2003/04	0	0	0	0	0	0	0	*	*	64.0	98.2	4.1	*	19.8	7.5	193.8
2004/05	Fishery Closed															
2005/06	0	0	0	0	0	0	0	*	1.3	67.8	109.9	5.7	*	4.9	16.7	209.8
2006–10	Fishery Closed															
2011/12	0	0	0	0	0	0	*	12.3	10.3	107.8	20.7	3.3	*	11.4	10.7	176.6
2012–17	Fishery Closed															
2017/18	0	*	0	0	0	*	0	1.8	36.8	26.5	32.0	2.1	0	12.8	7.1	120.5
2018/19–2019/20	Fishery Closed															

* Fewer than 3 permits were fished; information is confidential.

Table 1.3.–Estimated number of red and blue king crab harvested in the personal use and commercial fisheries and number of commercial permits fished in Section 11-A and elsewhere in Southeast Alaska, Registration Area A, 1988/89 through 2019/20 seasons.

Season	Personal use harvest in Section 11-A	Personal use harvest in other Southeast areas	Commercial fishery harvest in Section 11-A	Number of commercial permits fished in Section 11-A	Commercial fishery harvest in other Southeast areas	Total number of commercial permits fished in Southeast Alaska
1988/89	665	1,130	0	0	0	0
1989/90	2,228	1,130	0	0	0	0
1990/91	2,361	1,130	0	0	0	0
1991/92	2,972	1,130	0	0	0	0
1992/93	6,835	1,625	0	0	0	0
1993/94	10,799	2,806	4,153	19	23,314	83
1994/95	7,139	2,855	6,089	31	29,558	84
1995/96	5,540	3,253	673	6	50,988	73
1996/97	6,989	2,209	2,842	11	55,302	79
1997/98	6,390	3,208	2,830	12	36,764	76
1998/99	6,967	5,295	0	0	0	0
1999/00	8,994	862	11,173	16	27,061	77
2000/01	9,455	737	0	0	0	0
2001/02	9,611	2,970	8,525	29	31,022	76
2002/03	9,076	521	5,165	31	24,905	75
2003/04	11,963	1,140	6,987	30	18,424	67
2004/05	10,178	476	0	0	0	0
2005/06	10,406	829	7,079	24	19,296	58
2006/07	7,518	1,051	0	0	0	0
2007/08	2,541	349	0	0	0	0
2008/09	0	18	0	0	0	0
2009/10	0	672	0	0	0	0
2010/11	1,477	786	0	0	0	0
2011/12	1,673	433	960	7	16,098	54
2012/13	0	217	0	0	0	0
2013/14	0	–	0	0	0	0
2014/15	0	–	0	0	0	0
2015/16	0	–	0	0	0	0
2016/17	0	–	0	0	0	0
2017/18	3,612	–	2,516	13	13,644	48
2018/19	2,485	3,250	0	0	0	0
2019/20	1,689	2,123	0	0	0	0

Note: Does not include winter harvest; en dash indicates no data were available for those years.

Table 1.4.–Openings, closures, and fishery regulations by season for the red and blue king crab personal use fishery in Section 11-A from 1996/97 through 2020/21 seasons. Permits were issued per individual during the 1996/97 seasons only and have been issued by household since 1997/98.

Season	Bag Limit	Season Limit
1996/97 Summer	3 Crab/Person	No Limit
1996/97 Winter	3 Crab/Person	No Limit
1997/98 Summer	2 Crab/Person	No Limit
1997/98 Winter	2 Crab/Person	No Limit
1998/99 Summer	2 Crab/Person	10/20 Crab per Individual/ Household for Summer and Winter Season
1998/99 Winter	2 Crab/Person	
1999/00 Summer	2 Crab/Person	10/20 Crab per Individual/ Household for Summer and Winter Season
1999/00 Winter	2 Crab/Person	
2000/01 Summer (July 1 – July 19)	1 Crab/Person	5/10 Crab per Individual/Household in Summer
2000/01 Summer (July 20 – Aug. 3)	2 Crab/Person	10/20 Crab per Individual/Household in Summer
2000/01 Summer (Aug. 4 –Sept. 30)	3 Crab/Person	20/40 Crab per Individual/Household in Summer
2000/01 Winter	2 Crab/Person	10/20 Crab per Individual/Household in Winter
2001/02 Summer	2 Crab/Person	10/ 20 Crab per Individual/Household in Summer
2001/02 Winter	2 Crab/Person	10/20 Crab per Individual/Household in Winter
2002/03 Summer	2 Crab/Person	20 Crab per Household
2002/03 Winter	1 Crab/Permit	20 Crab per Household
2003/04 Summer	2 Crab/Person	20 Crab per Household
2003/04 Winter	1 Crab/Permit	20 Crab per Household
2004/05 Summer	2 Crab/Person	20 Crab per Household
2004/05 Winter	1 Crab/Permit	20 Crab per Household
2005/06 Summer	2 Crab/Person	20 Crab per Household
2005/06 Winter	1 Crab/Permit	20 Crab per Household
2006/07 Summer	2 Crab/Person	20 Crab per Household
2006/07 Winter	1 Crab/Permit	6 Crab per Household
2007/08 Summer	2 Crab/Permit	10 Crab per Household
2007/08 Winter		Season Closed
2008/09 Summer/Winter		Season Closed
2009/10 Summer/Winter		Season Closed
2010/11 Summer	2 Crab/permit	2 Crab per Household
2010/11 Winter	1 Crab/permit	2 Crab per Household
2011/12 Summer	2 Crab/permit	2 Crab per Household
2011/12 Winter	1 Crab/permit	2 Crab per Household
2012/13–2016/17		Season Closed
2017/18 Summer	2 Crab/permit	2 Crab per Household
2017/18 Winter	2 Crab/permit	6 Crab per Household
2018/19 Summer	2 Crab/permit	2 Crab per Household
2018/19 Winter	2 Crab/permit	3 Crab per Household
2019/20 Summer	2 Crab/permit	2 Crab per Household
2019/20 Winter	1 Crab/permit	1 Crab per Household

Table 1.5.–Number of permits issued and returned, total reported harvest of returned permits, and percentage of harvest by type of gear in the Section 11-A red and blue king crab personal use fishery by season, 1996/97 through 2019/20.

Season	Permits issued	Permits returned	% returned	Reported harvest	Estimated harvest	% by gear		
						Pot	Dive	Ring Net
1996/97 Summer	1,474	1,215	82.40%	5,193	5,693	99.4%	0.3%	0.3%
1996/97 Winter	643	385	59.9%	1,036	1,296	78.7%	18.5%	2.8%
1996/97 Total	2,117	1,600	75.6%	6,229	6,989			
1997/98 Summer	1,266	840	66.4%	4,632	5,567	99.5%	0.3%	0.2%
1997/98 Winter	152	98	64.5%	677	823	93.4%	5.1%	1.5%
1997/98 Total	1,418	938	66.1%	5,309	6,390			
1998/99 Summer	1,404	1,181	84.1%	4,964	5,392	99.7%	0.2%	0.1%
1998/99 Winter	245	213	86.9%	1,472	1,575	75.9%	14.2%	9.9%
1998/99 Total	1,649	1,394	84.5%	6,436	6,967			
1999/00 Summer	1,660	1,367	82.3%	6,212	6,813	99.7%	0.0%	0.3%
1999/00 Winter	249	196	78.7%	1,949	2,181	80.8%	9.6%	9.6%
1999/00 Total	1,909	1,563	81.9%	8,161	8,994			
2000/01 Summer	1,751	1,595	91.1%	6,424	6,724	99.6%	0.2%	0.2%
2000/01 Winter	277	246	88.8%	2,578	2,731	72.1%	10.7%	17.2%
2000/01 Total	2,028	1,841	90.8%	9,002	9,455			
2001/02 Summer	1,793	1,688	94.1%	6,988	7,199	99.7%	0.2%	0.1%
2001/02 Winter	285	261	91.6%	2,310	2,412	74.1%	13.4%	12.5%
2001/02 Total	2,078	1,949	93.8%	9,298	9,611			
2002/03 Summer	2,166	1,990	91.9%	7,025	7,322	99.8%	0.1%	0.1%
2002/03 Winter	872	690	79.1%	1,571	1,754	71.7%	15.1%	13.2%
2002/03 Total	3,038	2,680	88.2%	8,596	9,076			
2003/04 Summer	2,231	2,073	92.9%	10,248	10,624	99.3%	0.2%	0.5%
2003/04 Winter	1,082	977	90.3%	1,274	1,339	77.2%	13.2%	9.6%
2003/04 Total	3,313	3,050	92.1%	11,522	11,963			
2004/05 Summer	2,303	2,096	91.0%	8,292	8,682	99.6%	0.2%	0.2%
2004/05 Winter	921	833	90.4%	1,425	1,496	63.0%	16.6%	20.4%
2004/05 Total	3,224	2,929	90.8%	9,717	10,178			
2005/06 Summer	2,152	1,694	78.7%	8,202	9,179	99.6%	0.0%	0.4%
2005/06 Winter	860	713	82.9%	1,122	1,227	72.9%	9.0%	18.1%
2005/06 Total	3,012	2,407	79.9%	9,324	10,406			
2006/07 Summer	2,046	1,397	68.3%	5,857	6,961	99.9%	0%	0.1%
2006/07 Winter	679	458	67.5%	466	557	68.2%	13.7%	18.1%
2006/07 Total	2,725	1,855	68.1%	6,323	7,518			
2007/08 Summer	1,250	909	72.7%	2,194	2,541	99.7%	0.3%	0%
2007/08 Winter	0	0		0	0	0	0	0
2007/08 Total	1,250	909	72.7%	2,194	2,541	–	–	–
2008/09 Total				Season closed				
2009/10 Total				Season closed				
2010/11 Summer	1,329	1,048	78.8%	981	1,104	98.7%	0%	1.3%
2010/11 Winter	505	358	70.9%	309	373	46.9%	18.1%	29.1%
2010/11 Total	1,834	1,406	76.7%	1,290	1,477	–	–	–

-continued-

Table 1.5.–Page 2 of 2.

Season	Permits issued	Permits returned	% returned	Reported harvest	Estimated harvest	% by gear		
						Pot	Dive	Ring Net
2011/12 Summer	1,459	1,386	95.0%	1,163	1,192	97.9%	0.0%	2.1%
2011/12 Winter	594	577	97.1%	474	481	55.4%	13.3%	31.3%
2011/12 Total	2,053	1,963	95.6%	1,637	1,673	–	–	–
2012/13–2016/17				Season closed				
2017/18 Summer	1,348	1,292	95.8%	1,663	–	98.4%	0.01%	0.01%
2017/18 Winter	1,236	1,129	91.3%	1,949	–	97.7%	0.01%	0.01%
2018/19 Summer	1,195	859	71.8%	1,343	–	99.7%	0.01%	0.0%
2018/19 Winter	911	636	69.8%	1,142	–	91.8%	5.2%	1.6%
2019/20 Summer	1,379	1,234	89.5%	1,446	–	99.0%	0.01%	0.0%
2019/20 Winter	409	400	97.8%	234	–	81.4%	15.1%	7.5%

Note: Estimated harvest is the harvest estimate that includes reporters and non-reporters combined. En dashes indicate that data are not available.

Table 1.6.–Total allowable harvest, allocations, and estimated harvest of red and blue king crab in number of crab for the personal use and commercial fisheries of Section 11-A, Southeast Alaska, Registration Area A, 1996/97 through 2019/20.

	Commercial fishery		Summer personal use fishery		Winter personal use fishery		Total allowable harvest	
Season	Allocation	Estimated harvest	Allocation	Estimated harvest	Allocation	Estimated harvest	Goal	Estimated harvest
1996/1997[a]	3,825	2,842	3,900	5,693	765	1,296	8,490	9,831
1997/1998[a]	3,750	2,830	3,800	5,567	750	823	8,300	9,220
1998/99[a]	6,533	0	6,678	5,392	1,307	1,575	14,518	6,967
1999/00	4,964	11,173	6,200	6,813	1,241	2,181	12,405	20,167
2000/01	4,140	0	5,176	–	1,035	–	–	0
2000/01 Reallocation[b]	0	0	8,626	6,724	1,725	2,731	10,351	9,455
2001/02	7,189	8,525	8,986	7,199	1,797	2,412	17,972	18,136
2002/03	4,503	5,165	5,600	7,322	1,100	1,754	11,203	14,241
2003/04	6,462	6,987	8,078	10,624	1,616	1,339	16,156	18,950
2004/05	3,868	0	4,836	–	967	–	–	0
2004/05 Reallocation[b]	0	0	7,737	8,682	1,934	1,496	9,671	10,178
2005/06	7,161	7,079	8,952	9,179	1,790	1,227	17,903	17,485
2006/07	1,720	0	2,149	–	430	–	–	0
2006/07 Reallocation[b]	0	0	3,439	6,961	860	557	4,299	7,518
2007/08[c]	0	0	0	2,541	0	0	0	2,541
2008/09	0	0	0	0	0	0	0	0
2009/10	0	0	0	0	0	0	0	0
2010/11	1,094	0	1,494	1,104	298	373	1,792	1,477
2011/12	853	960	1,023	1,013	256	266	2,132	2,239
2012/13	0	0	0	0	0	0	0	0
2013/14	0	0	0	0	0	0	0	0
2014/15	0	0	0	0	0	0	0	0
2015/16	0	0	0	0	0	0	0	0
2016/17	0	0	0	0	0	0	0	0
2017/18	2,410	2,516	3,012	1,663	602	1,949	6,024	6,128
2018/19	0	0	2,168	1,343	434	1,142	2,602	2,485
2019/20	0	0	1,566	1,446	313	243	1,879	1,680

[a] Allocation guidelines established by Board of Fisheries in October 1995 as 45% commercial, 46% summer personal use, and 9% winter personal use.

[b] Allocation guidelines revised by Board of Fisheries in March 1999 as 40% commercial, 50% summer personal use, and 10% winter personal use. If there is no commercial fishery, total allowable harvest is reallocated to personal use fisheries as 80% summer and 20% winter personal use.

[c] The fishery opened during the 2007/08 season prior to the stock health rating and closed when 11-A was rated "poor," resulting in the 0% harvest rate.

Table 1.7.–Summary of Southeast Alaska personal use king crab harvest in numbers by area, 1993–2019. Information is based on ADF&G Sport Fish Division Statewide Harvest Survey (SWHS) estimates, and those results are compared with creel census and personal use permit estimates for Section 11-A of the Juneau SWHS area E only.

	Data source				
	Statewide harvest survey		Creel census	Personal use permit	Personal use permit
Year	Other areas	Juneau area	Section 11-A	Section 11-A	Outside 11-A
1993	2,806	9,130	–	–	–
1994	2,855	7,236	–	–	–
1995	3,253	5,167	–	–	–
1996	2,209	2,669	–	6,989	–
1997	3,208	2,808	–	6,390	–
1998	5,295	1,601	–	6,967	–
1999	862	6,187	6,442	8,994	–
2000	737	4,371	5,974	9,455	–
2001	2,970	5,564	5,605	9,611	–
2002	521	2,677	5,216	9,076	–
2003	1,140	6,562	9,587	11,963	–
2004	476	3,761	6,093	10,178	–
2005	829	5,634	6,880	10,406	–
2006	1,051	3,432	5,759	7,518	–
2007	349	4,083	2,093	2,541	–
2008	18	18	–	0	–
2009	672	178	–	0	–
2010	786	941	–	1,477	–
2011	433	1,710	–	2,239	–
2012	217	474	–	0	–
2013	–	–	–	0	–
2014	–	–	–	0	
2015	–	–	–	0	–
2016	–	–	–	0	–
2017	–	–	–	3,612	–
2018	–	–	–	2,485	3,250
2019	–	–	–	1,689	2,123
Average	1,534	3,710	5,365	6,106	2,687

Note: En dashes indicate no data or a fishery closure.

Table 1.8.–Summary of commercial red king crab length frequency, weight, and recruit class (recruit and postrecruit) data collected during dockside sampling in Registration Area A (Southeast Alaska), 1970/71 to present.

	Number Sampled		Carapace length (mm)[a]		Weight (lb)		Recruit Class	
Season	Boats	Crab	Mean	Range	Mean	Range	Recruits[b]	%PR[c]
1970/71	29	2,264	161	138–201	8.6	–	40.2	59.8
1971/72	10	742	160.2	134–203	–	–	47.7	52.3
1972/73	30	3,032	158.7	133–205	–	–	53.5	46.5
1973/74	15	1,438	161.6	140–208	–	–	27.6	72.4
1974/75	20	2,181	166.3	137–200	–	–	27.6	72.4
1975/76	21	1,969	160.3	135–207	8.4	7.5–9.2	49.0	51.0
1976/77	18	1,460	160.6	115–204	8.0	7.3–10.1	50.1	49.9
1977/78	32	3,161	156.7	136–203	7.5	6.9–9.8	29.7	70.3
1978/79	18	1,712	155.4	137–202	7.2	6.3–8.7	61.5	38.5
1979/80	30	3,082	156.1	137–193	7.4	6.6–7.9	55.5	44.5
1980/81	49	4,103	156.3	134–196	7.2	6.4–8.2	53.0	47.0
1981/82	37	3,425	158.8	123–199	7.2	6.5–8.7	47.1	52.9
1982/83	30	2,821	159.4	137–200	7.7	6.6–8.5	46.0	54.0
1983/84	42	3,521	158.4	137–196	7.0	5.5–8.5	51.9	48.1
1984/85	36	3,641	159.6	139–196	7.4	6.7–8.5	48.3	51.7
1985/86–1992/93	Fishery Closed							
1993/94	116	8,601	162.9	103–209	8.1	5.8–9.6	30.5	69.5
1994/95	124	7,974	162.8	90–209	8.0	6.2–10.3	34.5	65.5
1995/96	73	5,882	159.4	96–204	7.5	5.5–8.7	56.2	43.8
1996/97	132	7,744	161.5	113–212	7.8	6.3–9.6	38.6	61.4
1997/98	111	5,919	164.4	122–207	8.3	5.7–9.8	28.2	71.8
1998/99	Fishery Closed							
1999/00	136	6,320	161.1	135–199	7.6	5.5–10.0	44.5	55.5
2000/01	Fishery Closed							
2001/02	105	5,162	160.1	135–195	7.7	6.1–8.6	40.4	59.6
2002/03	66	3,217	161.4	138–194	7.9	6.6–9.2	41.4	58.6
2003/04	53	2,619	159.9	138–195	7.7	6.3–8.9	49.4	50.6
2004/05	Fishery Closed							
2005/06	58	2,873	163.7	139–206	8	7.0–9.8	29.6	70.4
2006/07–2010/11	Fishery Closed							
2011/12	66	3,194	166.1	141-201	8.6	7.2–10.1	18.8	81.2
2012/13–2016/17	Fishery Closed							
2017/18	42	1,810	161.0	140-192	–	–	33.0	67.0
2018/19–2019/20	Fishery Closed							

Note: Recruitment is expressed as a percentage of the given size classes.

[a] Sublegal and female crab may be harvested if they are infected with *Briarosaccus callosus* parasite.

[b] Recruits = all new- and soft-shell crab ≥145 mm and ≤161 mm carapace length.

[c] PR = all new- and soft-shell crab ≥162 mm, and old-shell crab ≥145 mm carapace length.

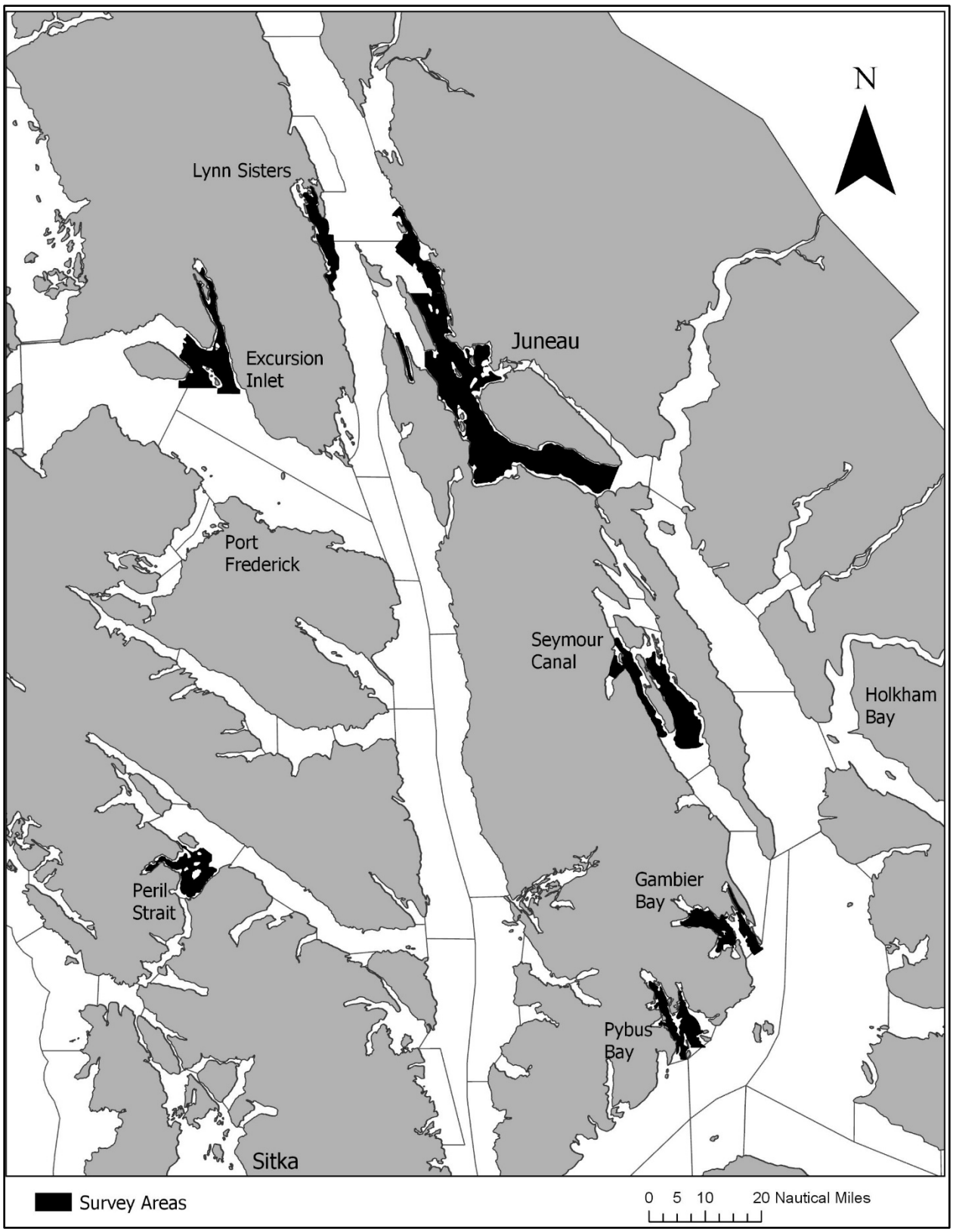

Figure 1.1.–Map showing 2020 red king crab survey areas in Southeast Alaska. In 2015, Port Frederick, Rodman Bay, and Holkham Bay were removed as survey areas.

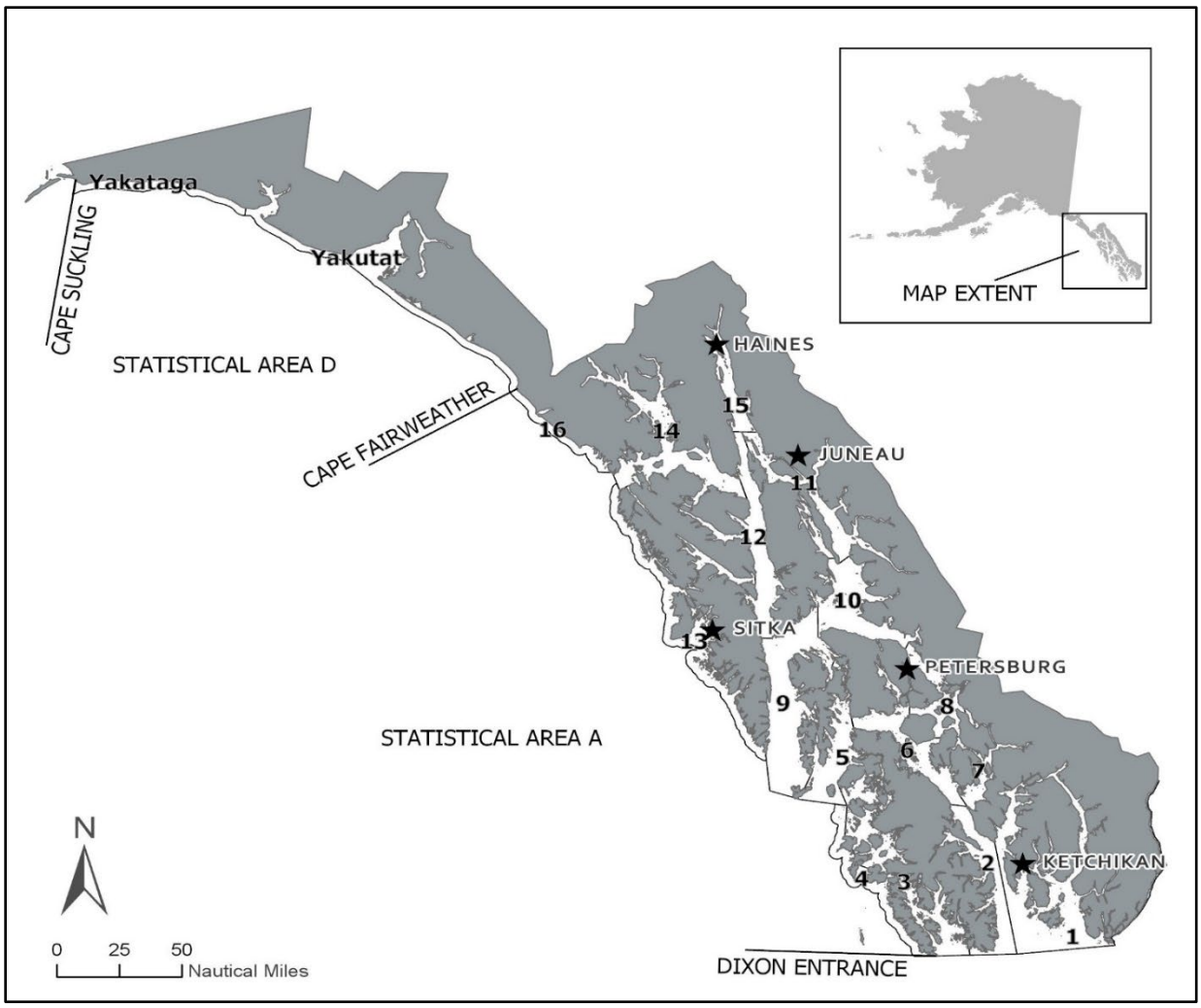

Figure 1.2.–Map showing fishing districts in Southeast Alaska and Yakutat.

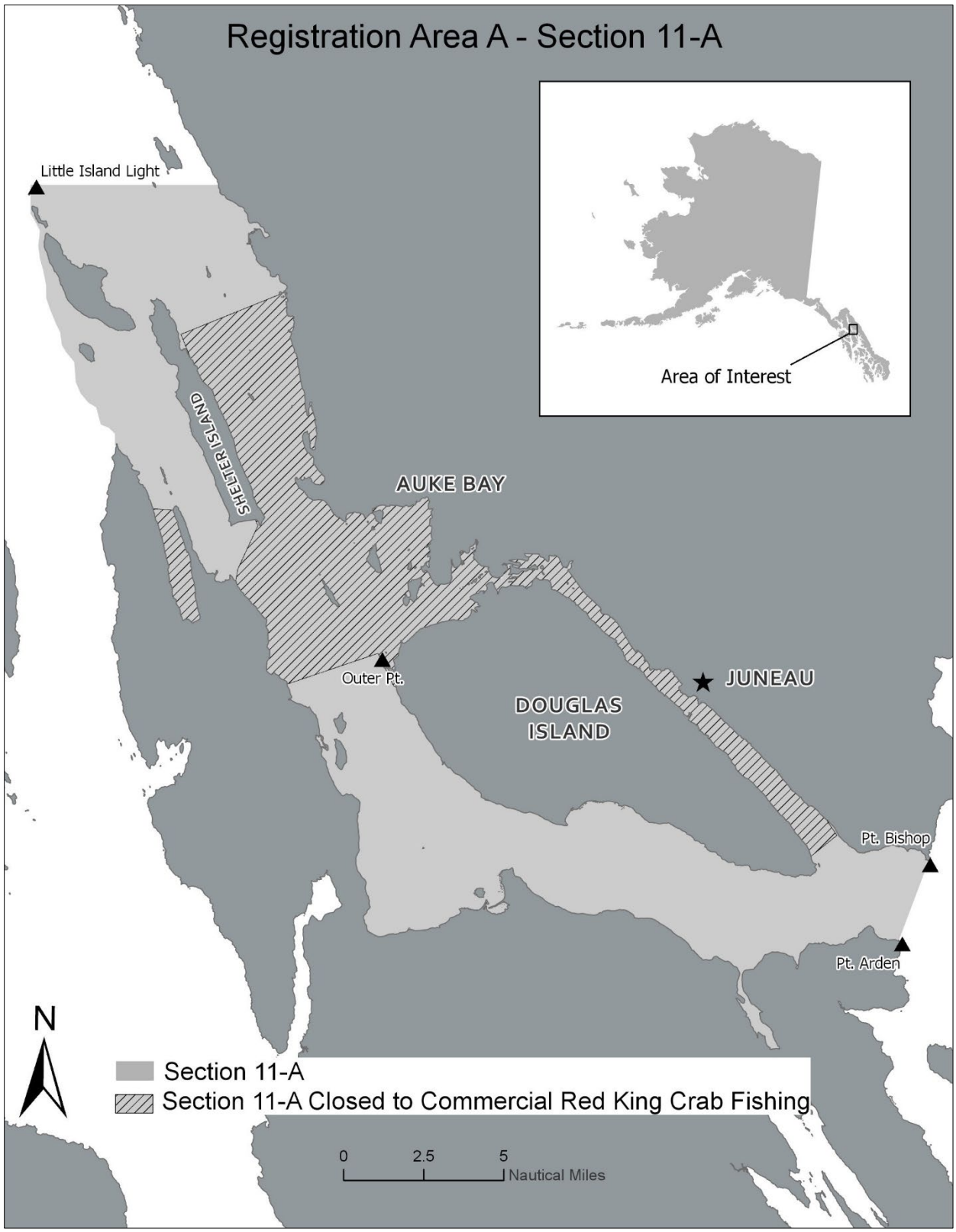

Figure 1.3.–Waters of Section 11-A, including waters closed to red king crab commercial fishing.

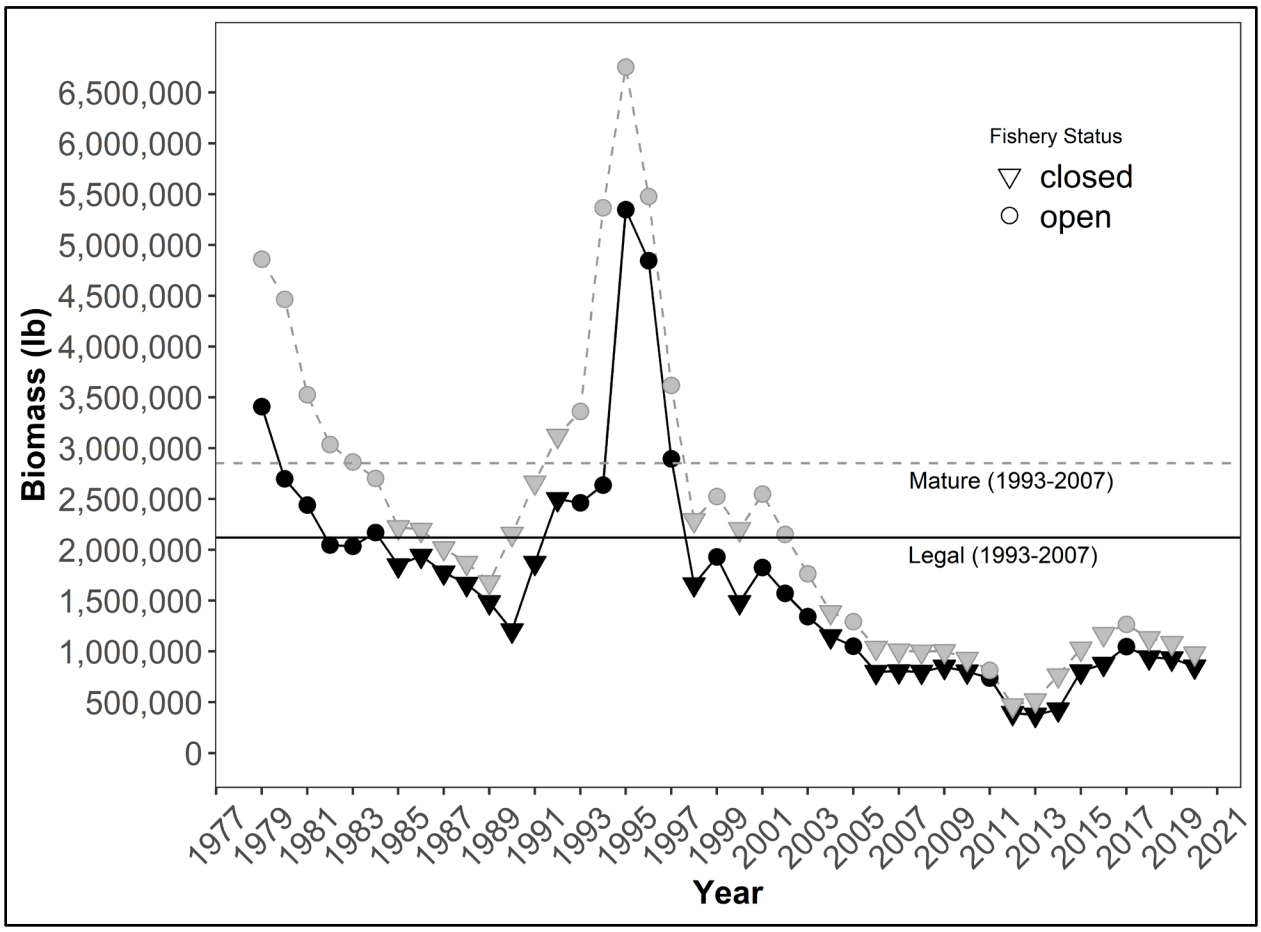

Figure 1.4.–Total biomass estimates of mature and legal red king crab for surveyed areas in Southeast Alaska. Estimates are adjusted using the mark–recapture experiments based on catch-survey analysis (CSA) methodologies. This does not include Holkham Bay or non-surveyed areas. Solid reference line represents long-term (1993–2007) average legal biomass estimate, and the dashed line represents the average mature biomass. Triangles represent years in which there was a commercial harvest closure.

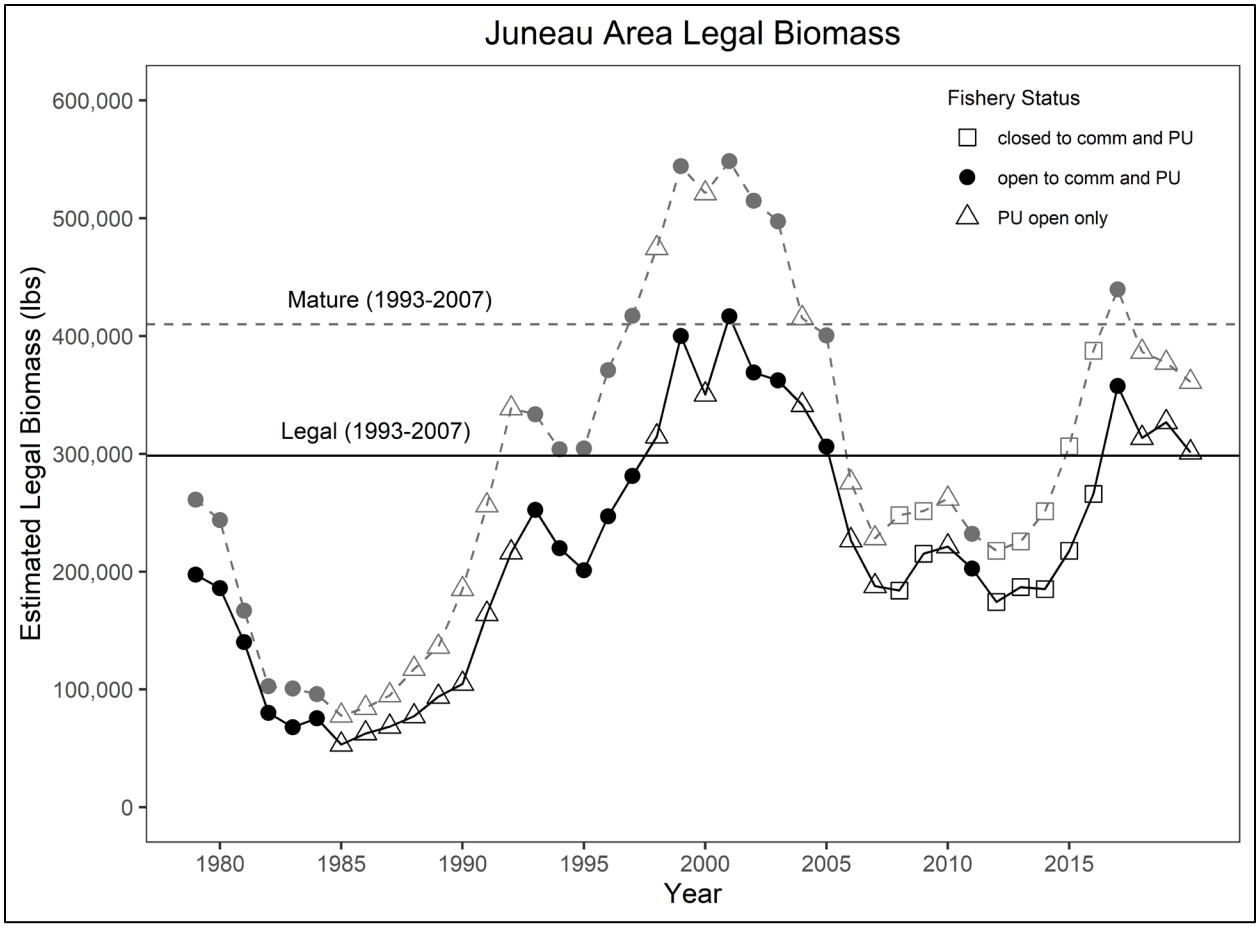

Figure 1.5.–Juneau Area biomass estimates for legal and mature red king crab from 3-stage catch-survey analysis (CSA). Black and grey dashed reference lines represent mean estimates (1979–2007) for legal and mature crab, respectively. Commercial and personal use closures are labeled as such.

CHAPTER 2: YAKUTAT RED AND BLUE KING CRAB FISHERY

INTRODUCTION

This chapter describes the commercial red and blue king crab fisheries in the Yakutat area (Registration Area D) (Figure 1.2). Red and blue king crab are harvested in small numbers during a season from October 24 through December 31. Harvest is limited by low abundance of both species in the Yakutat area.

Yakutat is a nonexclusive area, and the king crab fishery is not under limited entry. Depending on the circumstances in other crab fisheries in the state, the fishery attracts skiffs as well as an occasional Bering Sea–class crabber. However, most of the participating vessels are small vessels locally based in Yakutat. Fishing effort is limited by severe winter weather in Yakutat Bay and its associated fjords.

The current red and blue king crab management approach is to avoid fishing during sensitive life-history stages, to harvest only male crab, and to require a minimum legal CW of 7 inches for red and blue king crab.

FISHERY DEVELOPMENT AND HISTORY

Harvest and effort in this fishery has been relatively low and intermittent. Since 1972, there have been reported harvests during 21 seasons, with a maximum of 4 participating vessels, and resulting harvests have averaged 3,000 lb (Table 2.1). The highest seasonal harvest on record totaled less than 20,000 lb during the 1980/81 season. Both red and blue king crab have been landed. The harvest peak in the 1980s was primarily red king crab, although more recent seasons' harvests, peaking in the early 1990s, have consisted of a larger proportion of blue king crab.

REGULATION DEVELOPMENT

FISHING SEASONS

Starting in 1962, a season lasting throughout the entire calendar year was established by regulation. In 1969 the season was shortened to August 15–March 15. In 1970 the season length was tied into a maximum harvest of 1.5 million lb combined from Registration Areas A and D. In 1971 the season was from September 1 to January 31 or until 400,000 lb of red king crab were taken in Registration Areas A and D combined. The season remained the same but the harvest ceiling was raised to 600,000 lb in 1974. The season was shortened in 1981 to October 1–January 31 and in 1983 to November 15–January 24. In 1984 the season changed to October 10–January 24 and again in 1985 to November 15–January 24. Finally, the existing fishing season of October 24–December 31 was established in August of 1999, and the 1999/00 season opened on October 24, 1999. In 2018 the board adopted a proposal that expanded the king crab registration area in Yakutat from 3 to 200 miles offshore to allow for exploration in areas that had otherwise been unfished.

QUOTAS AND GUIDELINE HARVEST RANGES

In 1970, a quota of 1.5 million lb was provided for king crab, all species (red, blue, and golden) combined, for Southeast Alaska and Yakutat. The first red and blue king crab quota was set in 1971 at 400,000 lb per season for Southeast Alaska and Yakutat combined. This increased to 600,000 lb in 1974 and then incorporated into a GHR of 300,000 to 600,000 lb in 1979. In 1982, a GHL of 40,000 lb was established specifically for Yakutat. Harvest has never approached this level. In 2005, a GHR of 0 to 20,000 lb was adopted in regulation.

FISHING GEAR

Starting in 1962, only pots could be used in the Yakutat king crab fishery. In 1969, pot storage requirements were developed. Buoys were required to display the license number of the vessel operating the gear. In 1971, a limit of 40 pots per vessel was established for Yakutat waters. The maximum number of pots per vessel that could be set in Yakutat Bay increased to 60 in 1974 and to 100 in 1976. Rigid tunnels were required with a minimum size of 5 inches in one dimension and a total perimeter greater than 30 inches. In 1978 an escape panel, sewn with no greater than 120-count cotton or linen thread, was required to minimize ghost fishing from lost gear. Buoy stickers for pots fished in Yakutat Bay were implemented in 1979 and pot storage was permitted in waters less than 25 fathoms deep, with doors open and bait removed.

In-water gear storage was not allowed from May 1 to August 31 in 1981 and 1982. Side-loading pots were prohibited in Yakutat waters beginning on January 1, 1983. Pot storage requirements changed so that all gear needed to be removed from the water within 7 days of the closure of the 1983/84 season. Starting in 1985, pot gear could not be used for 14 days prior to the season opening date by crabbers intending to fish for red and blue king crab. Pots could be stored all year in waters of Russell Fjord. In 1988, escape panels were required to be fastened with no greater than 30-count cotton thread.

In 2015 the board passed multiple proposals pertaining to Yakutat king crab. After December 31, 2017, king crab cannot be taken with pots that have tunnel eye openings located on the vertical plane of the pot (i.e., square pots). In the waters of Russell Fjord and Yakutat Bay a pot reduction proposal was passed changing the pot limit from 100 pots to 40 pots. Logbooks and reporting requirements were also implemented for king crab fishing in all waters of Registration Area D.

RECENT COMMERCIAL SEASONS

Stock assessment surveys are not conducted in the Yakutat area. The average harvest in the 1990s was approximately 3,000 lb. There are some seasons when no harvests were reported (Table 2.1). The last season with reported harvest was 2000/01, when 391 lb were harvested by 3 permit holders. Vessels registered for the 2013/14 and 2017/18 seasons, but no harvest occurred.

2017/2018 – 2019/2020 SEASONS

Fishing opportunities are provided by regulation. Past fishing efforts and harvests have been limited, resulting in harvests far below the upper range of the GHR. Despite an open season, there has been no harvest since the 2000/01 season. The single vessel registered in 2013/14 did not fish. A GHL of 5,000 lb was established for the 2017/18 season. The vessel registered in 2017/18 did fish but harvested no crab. There were no registrants in the 2018/19 and 2019/20 seasons.

CHAPTER 2—TABLES AND FIGURES

Table 2.1.–Red and blue king crab harvest (combined), number of permits and number of landings by season in Registration Area D, 1972/73 to present.

Season	Harvest (lb)	Permits	Landings
1972/73	*	1	*
1973/74		No Harvest	
1974/75	*	1	*
1975/76		No Harvest	
1976/77		No Harvest	
1977/78	*	2	*
1978/79	*	1	*
1979/80	13,915	4	17
1980/81	18,652	3	5
1981/82	*	2	*
1982/83	4,118	4	14
1983/84	1,248	4	4
1984/85		No Harvest	
1985/86	*	2	*
1986/87–1989/90		No Harvest	
1990/91	*	2	*
1991/92	1,216	3	*
1992/93	*	2	*
1993/94	7,378	3	8
1994/95	2,174	3	7
1995/96	4,276	3	18
1996/97	4,467	3	17
1997/98	4,208	3	13
1998/99	2,053	4	10
1999/00	*	1	*
2000/01	391	3	4
2001/02–2019/20		No Harvest	

* Fewer than 3 permits were fished; information is confidential.

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